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This application is a continuation of and claims priority to U.S. Patent Application Serial No. 12/821,041, filed on June 22, 2010, which claims priority to U.S. Patent Application Serial No. 12/494,598, filed on June 30, 2009, and now abandoned. The contents of both prior applications are incorporated herein by reference.

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Title: METHODS OF REDUCING THE RISK OF OCCURRENCE OF  
PULMONARY EDEMA ASSOCIATED WITH INHALATION OF  
NITRIC OXIDE GAS

Assignee: INO Therapeutics LLC

Enclosed are the following papers, including those required to receive a filing date under 37 C.F.R. § 1.53(b):

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Certification and Request for Prioritized Examination (Track I) (1 page)

Application Data Sheet (6 pages)

Power of Attorney to Prosecute Applications Before the USPTO (1 page)

together with Statement Under 37 CFR 3.73 (c) (2 pages)

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Enclosures

JKF/nab

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**METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS**

CROSS REFERENCE TO RELATED APPLICATIONS

**[0001]** This application is a continuation of and claims priority to U.S. Patent Application Serial No. 12/821,041, filed on June 22, 2010, which claims priority to U.S. Patent Application Serial No. 12/494,598, filed on June 30, 2009 and now abandoned. The contents of both prior applications are incorporated herein by reference.

BACKGROUND OF THE INVENTION

**[0002]** INOmax®, (nitric oxide) for inhalation is an approved drug product for the treatment of term and near-term (>34 weeks gestation) neonates having hypoxic respiratory failure associated with clinical or echocardiographic evidence of pulmonary hypertension.

**[0003]** The use of inhaled NO (iNO) has been studied and reported in the literature. (Kieler-Jensen M et al., 1994, Inhaled Nitric Oxide in the Evaluation of Heart Transplant Candidates with Elevated Pulmonary Vascular Resistance, *J Heart Lung Transplantation* 13:366-375; Pearl RG et al., 1983, Acute Hemodynamic Effects of Nitroglycerin in Pulmonary Hypertension, *American College of Physicians* 99:9-13; Ajami GH et al., 2007, Comparison of the Effectiveness of Oral Sildenafil Versus Oxygen Administration as a Test for Feasibility of Operation for Patients with Secondary Pulmonary Arterial Hypertension, *Pediatr Cardiol*; Schulze-Neick I et al., 2003, Intravenous Sildenafil Is a Potent Pulmonary Vasodilator in Children With Congenital Heart Disease, *Circulation* 108(Suppl II):II-167-II-173; Lepore JJ et al., 2002, Effect of Sildenafil on the Acute Pulmonary Vasodilator Response to Inhaled Nitric Oxide in Adults with Primary Pulmonary Hypertension, *The American Journal of Cardiology* 90:677-680; and Ziegler JW et al., 1998, Effects of Dipyridamole and Inhaled Nitric Oxide in Pediatric Patients with Pulmonary Hypertension, *American Journal of Respiratory and Critical Care Medicine* 158:1388-95).

### SUMMARY OF THE INVENTION

**[0004]** One aspect of the invention relates to a pre-screening methodology or protocol having exclusionary criteria to be evaluated by a medical provider prior to treatment of a patient with iNO. One objective of the invention is to evaluate and possibly exclude from treatment patients eligible for treatment with iNO, who have pre-existing left ventricular dysfunction (LVD). Patients who have pre-existing LVD may experience, and are at risk of, an increased rate of adverse events or serious adverse events (e.g., pulmonary edema) when treated with iNO. Such patients may be characterized as having a pulmonary capillary wedge pressure (PCWP) greater than 20 mm Hg, and should be evaluated on a case-by-case basis with respect to the benefit versus risk of using iNO as a treatment option.

**[0005]** Accordingly, one aspect of the invention includes a method of reducing the risk or preventing the occurrence, in a human patient, of an adverse event (AE) or a serious adverse event (SAE) associated with a medical treatment comprising inhalation of nitric oxide, said method comprising the steps or acts of (a) providing pharmaceutically acceptable nitric oxide gas to a medical provider; and, (b) informing the medical provider that excluding human patients who have pre-existing left ventricular dysfunction from said treatment reduces the risk or prevents the occurrence of the adverse event or the serious adverse event associated with said medical treatment.

**[0006]** Further provided herein is a method of reducing the risk or preventing the occurrence, in a human patient, of an adverse event or a serious adverse event associated with a medical treatment comprising inhalation of nitric oxide, said method comprising the steps or acts of (a) providing pharmaceutically acceptable nitric oxide gas to a medical provider; and, (b) informing the medical provider that human patients having pre-existing left ventricular dysfunction experience an increased risk of serious adverse events associated with said medical treatment.

**[0007]** Another aspect of the invention is a method of reducing one or more of an AE or a SAE in an intended patient population in need of being treated with iNO comprising the steps or acts of (a) identifying a patient eligible for iNO treatment; (b) evaluating and screening the patient to identify if the patient has pre-existing LVD, and (c) excluding from iNO treatment a patient identified as having pre-existing LVD.

**[0008]** Another aspect of the invention is a method of reducing the risk or preventing the occurrence, in a patient, of one or more of an AE or a SAE associated with a medical treatment comprising iNO, the method comprising the steps or acts of (a) identifying a patient in need of receiving iNO treatment; (b) evaluating and screening the patient to identify if the patient has pre-existing LVD; and (c) administering iNO if the patient does not have pre-existing LVD, thereby reducing the risk or preventing the occurrence of the AE or the SAE associated with the iNO treatment. Alternatively, step (c) may comprise further evaluating the risk versus benefit of utilizing iNO in a patient where the patients has clinically significant LVD before administering iNO to the patient.

**[0009]** In an exemplary embodiment of the method, the method further comprises informing the medical provider that there is a risk associated with using inhaled nitric oxide in human patients who have preexisting or clinically significant left ventricular dysfunction and that such risk should be evaluated on a case by case basis.

**[0010]** In another exemplary embodiment of the method, the method further comprises informing the medical provider that there is a risk associated with using inhaled nitric oxide in human patients who have left ventricular dysfunction.

**[0011]** In an exemplary embodiment of the methods described herein, a patient having pre-existing LVD is characterized as having PCWP greater than 20 mm Hg.

**[0012]** In an exemplary embodiment of the method, the patients having pre-existing LVD demonstrate a PCWP  $\geq$  20 mm Hg.

**[0013]** In another exemplary embodiment of the method, the iNO treatment further comprises inhalation of oxygen (O<sub>2</sub>) or concurrent ventilation.

**[0014]** In another exemplary embodiment of the method, the patients having pre-existing LVD have one or more of diastolic dysfunction, hypertensive cardiomyopathy, systolic dysfunction, ischemic cardiomyopathy, viral cardiomyopathy, idiopathic cardiomyopathy, autoimmune disease related cardiomyopathy, drug-related cardiomyopathy, toxin-related cardiomyopathy, structural heart disease, valvular heart disease, congenital heart disease, or associations thereof.

**[0015]** In another exemplary embodiment of the method, the patient population comprises children.

**[0016]** In another exemplary embodiment of the method, the patient population comprises adults.

**[0017]** In another exemplary embodiment of the method, the patients who have pre-existing LVD are at risk of experiencing an increased rate of one or more AEs or SAEs selected from pulmonary edema, hypotension, cardiac arrest, electrocardiogram changes, hypoxemia, hypoxia, bradycardia, or associations thereof.

**[0018]** In another exemplary embodiment of the method, the intended patient population in need of being treated with inhalation of nitric oxide has one or more of idiopathic pulmonary arterial hypertension characterized by a mean pulmonary artery pressure (PAPm) > 25 mm Hg at rest, PCWP ≤ 15 mm Hg, and a pulmonary vascular resistance index (PVRI) > 3 u·m<sup>2</sup>; congenital heart disease with pulmonary hypertension repaired and unrepaired characterized by PAPm > 25 mm Hg at rest and PVRI > 3 u·m<sup>2</sup>; cardiomyopathy characterized by PAPm > 25 mm Hg at rest and PVRI > 3 u·m<sup>2</sup>; or the patient is scheduled to undergo right heart catheterization to assess pulmonary vasoreactivity by acute pulmonary vasodilatation testing.

**[0019]** In another exemplary embodiment of any of the above methods, the method further comprises reducing left ventricular afterload to minimize or reduce the risk of the occurrence of an adverse event or serious adverse event being pulmonary edema in the patient. The left ventricular afterload may be minimized or reduced by administering a pharmaceutical dosage form comprising nitroglycerin or calcium channel blocker to the patient. The left ventricular afterload may also be minimized or reduced using an intra-aortic balloon pump.

#### DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

**[0020]** INOmax® (nitric oxide) for inhalation was approved for sale in the United States by the U.S. Food and Drug Administration (“FDA”) in 1999. Nitric oxide, the active substance in INOmax®, is a selective pulmonary vasodilator that increases the partial pressure of arterial oxygen (PaO<sub>2</sub>) by dilating pulmonary vessels in better ventilated areas of the lung, redistributing pulmonary blood flow away from the lung regions with low ventilation/perfusion (V/Q) ratios toward regions with normal ratios. INOmax® significantly improves oxygenation, reduces the need for extracorporeal oxygenation and is indicated to be used in conjunction with ventilatory support and other appropriate agents. The current FDA-approved prescribing information for INOmax® is incorporated herein by reference in its entirety. The CONTRAINDICATIONS

section of the prescribing information for INOmax® states that INOmax® should not be used in the treatment of neonates known to be dependent on right-to-left shunting of blood.

**[0021]** INOmax® is a gaseous blend of NO and nitrogen (0.08% and 99.92% respectively for 800 ppm; and 0.01% and 99.99% respectively for 100 ppm) and is supplied in aluminium cylinders as a compressed gas under high pressure. In general, INOmax® is administered to a patient in conjunction with ventilatory support and O<sub>2</sub>. Delivery devices suitable for the safe and effective delivery of gaseous NO for inhalation include the INOvent®, INOmax DS®, INOpulse®, INOblender®, or other suitable drug delivery and regulation devices or components incorporated therein, or other related processes, which are described in various patent documents including USPNs 5,558,083; 5,732,693; 5,752,504; 5,732,694; 6,089,229; 6,109,260; 6,125,846; 6,164,276; 6,581,592; 5,918,596; 5,839,433; 7,114,510; 5,417,950; 5,670,125; 5,670,127; 5,692,495; 5,514,204; 7,523,752; 5,699,790; 5,885,621; US Patent Application Serial Nos. 11/355,670 (US 2007/0190184); 10/520,270 (US 2006/0093681); 11/401,722 (US 2007/0202083); 10/053,535 (US 2002/0155166); 10/367,277 (US 2003/0219496); 10/439,632 (US 2004/0052866); 10/371,666 (US 2003/0219497); 10/413,817 (US 2004/0005367); 12/050,826 (US 2008/0167609); and PCT/US2009/045266, all of which are incorporated herein by reference in their entirety.

**[0022]** Such devices deliver INOmax® into the inspiratory limb of the patient breathing circuit in a way that provides a constant concentration of NO to the patient throughout the inspired breath. Importantly, suitable delivery devices provide continuous integrated monitoring of inspired O<sub>2</sub>, NO<sub>2</sub> and NO, a comprehensive alarm system, a suitable power source for uninterrupted NO delivery, and a backup NO delivery capability.

**[0023]** As used herein, the term "children" (and variations thereof) includes those being around 4 weeks to 18 years of age.

**[0024]** As used herein, the term "adult" (and variations thereof) includes those being over 18 years of age.

**[0025]** As used herein, the terms "adverse event" and "AE" (and variations thereof) mean any untoward occurrence in a subject or clinical investigation subject administered a pharmaceutical product (such as nitric oxide) and which does not necessarily have a causal relationship with such treatment. An adverse event can therefore be any unfavorable and

unintended sign (including an abnormal laboratory finding), symptom, or disease temporarily associated with the use of a medicinal/investigational product, whether or not related to the investigational product. A relationship to the investigational product is not necessarily proven or implied. However, abnormal values are not reported as adverse events unless considered clinically significant by the investigator.

**[0026]** As used herein, the terms "adverse drug reaction" and "ADR" (and variations thereof) mean any noxious and unintended response to a medicinal product related to any dose.

**[0027]** As used herein, the terms "serious adverse event" and "SAE" (or "serious adverse drug reaction" and "serious ADR") (and variations thereof) mean a significant hazard or side effect, regardless of the investigator's opinion on the relationship to the investigational product. A serious adverse event or reaction is any untoward medical occurrence that at any dose: results in death; is life-threatening (which refers to an event/reaction where the patient was at risk of death at the time of the event/reaction, however this does not refer to an event/reaction that hypothetically may have caused death if it were more severe); requires inpatient hospitalization or results in prolongation of existing hospitalization; results in persistent or significant disability/incapacity; is a congenital anomaly/birth defect; or is a medically important event or reaction. Medical and scientific judgment is exercised in deciding whether reporting is appropriate in other situations, such as important medical events that may not be immediately life threatening or result in death or hospitalization but may jeopardize the subject or may require medical or surgical intervention to prevent one of the other outcomes listed above--these are also considered serious. Examples of such medical events include cancer, allergic bronchospasm requiring intensive treatment in an emergency room or at home, blood dyscrasias or convulsions that do not result in hospitalizations, or the development of drug dependency or drug abuse. Serious clinical laboratory abnormalities directly associated with relevant clinical signs or symptoms are also reported.

**[0028]** Left Ventricular Dysfunction. Patients having pre-existing LVD may be described in general as those with elevated pulmonary capillary wedge pressure, including those with diastolic dysfunction (including hypertensive cardiomyopathy), those with systolic dysfunction, including those with cardiomyopathies (including ischemic or viral cardiomyopathy, or idiopathic cardiomyopathy, or autoimmune disease related cardiomyopathy,



and side effects due to drug related or toxic-related cardiomyopathy), or structural heart disease, valvular heart disease, congenital heart disease, idiopathic pulmonary arterial hypertension, pulmonary hypertension and cardiomyopathy, or associations thereof. Identifying patients with pre-existing LVD is known to those skilled in the medicinal arts, and such techniques for example may include assessment of clinical signs and symptoms of heart failure, or echocardiography diagnostic screening.

**[0029]** Pulmonary Capillary Wedge Pressure. Pulmonary capillary wedge pressure, or "PCWP", provides an estimate of left atrial pressure. Identifying patients with pre-existing PCWP is known to those skilled in the medicinal arts, and such techniques for example may include measuring by inserting a balloon-tipped, multi-lumen catheter (also known as a Swan-Ganz catheter). Measurement of PCWP may be used as a means to diagnose the severity of LVD (sometimes also referred to as left ventricular failure). PCWP is also a desired measure when evaluating pulmonary hypertension. Pulmonary hypertension is often caused by an increase in pulmonary vascular resistance (PVR), but may also arise from increases in pulmonary venous pressure and pulmonary blood volume secondary to left ventricular failure or mitral or aortic valve disease.

**[0030]** In cardiac physiology, the term "afterload" is used to mean the tension produced by a chamber of the heart in order to contract. If the chamber is not mentioned, it is usually assumed to be the left ventricle. However, the strict definition of the term relates to the properties of a single cardiac myocyte. It is therefore of direct relevance only in the laboratory; in the clinic, the term "end-systolic pressure" is usually more appropriate, although not equivalent.

**[0031]** The term "left ventricular afterload" (and variations thereof) refers to the pressure that the chamber of the heart has to generate in order to eject blood out of the chamber. Thus, it is a consequence of the aortic pressure, since the pressure in the ventricle must be greater than the systemic pressure in order to open the aortic valve. Everything else held equal, as afterload increases, cardiac output decreases. Disease processes that increase the left ventricular afterload include increased blood pressure and aortic valve disease. Hypertension (increased blood pressure) increases the left ventricular afterload because the left ventricle has to work harder to eject blood into the aorta. This is because the aortic valve won't open until the pressure

generated in the left ventricle is higher than the elevated blood pressure. Aortic stenosis increases the afterload because the left ventricle has to overcome the pressure gradient caused by the stenotic aortic valve in addition to the blood pressure in order to eject blood into the aorta. For instance, if the blood pressure is 120/80, and the aortic valve stenosis creates a trans-valvular gradient of 30 mmHg, the left ventricle has to generate a pressure of 110 mmHg in order to open the aortic valve and eject blood into the aorta. Aortic insufficiency increases afterload because a percentage of the blood that is ejected forward regurgitates back through the diseased aortic valve. This leads to elevated systolic blood pressure. The diastolic blood pressure would fall, due to regurgitation. This would result in an increased pulse pressure. Mitral regurgitation decreases the afterload. During ventricular systole, the blood can regurgitate through the diseased mitral valve as well as be ejected through the aortic valve. This means that the left ventricle has to work less to eject blood, causing a decreased afterload. Afterload is largely dependent upon aortic pressure.

**[0032]** An intra-aortic balloon pump (IABP) is a mechanical device that is used to decrease myocardial oxygen demand while at the same time increasing cardiac output. By increasing cardiac output it also increases coronary blood flow and therefore myocardial oxygen delivery. It consists of a cylindrical balloon that sits in the aorta and counterpulsates. That is, it actively deflates in systole, increasing forward blood flow by reducing afterload, and actively inflates in diastole increasing blood flow to the coronary arteries. These actions have the combined result of decreasing myocardial oxygen demand and increasing myocardial oxygen supply. The balloon is inflated during diastole by a computer controlled mechanism, usually linked to either an ECG or a pressure transducer at the distal tip of the catheter; some IABPs, such as the Datascope System 98XT, allow for asynchronous counterpulsation at a set rate, though this setting is rarely used. The computer controls the flow of helium from a cylinder into and out of the balloon. Helium is used because its low viscosity allows it to travel quickly through the long connecting tubes, and it has a lower risk of causing a harmful embolism should the balloon rupture while in use. Intraaortic balloon counterpulsation is used in situations when the heart's own cardiac output is insufficient to meet the oxygenation demands of the body. These situations could include cardiogenic shock, severe septic shock, post cardiac surgery and numerous other situations.

**[0033]** Patients eligible for treatment with iNO. In general, patients approved for treatment of iNO are term and near-term (>34 weeks gestation) neonates having hypoxic respiratory failure associated with clinical or echocardiographic evidence of pulmonary hypertension, a condition also known as persistent pulmonary hypertension in the newborn (PPHN). Due to the selective, non-systemic nature of iNO to reduce pulmonary hypertension, physicians skilled in the art further employ INOmax<sup>®</sup> to treat or prevent pulmonary hypertension and improve blood O<sub>2</sub> levels in a variety of other clinical settings, including in both pediatric and adult patients suffering from acute respiratory distress syndrome (ARDS), pediatric and adult patients undergoing cardiac or transplant surgeries, pediatric and adult patients for testing to diagnose reversible pulmonary hypertension, and in pediatric patients with congenital diaphragmatic hernia. In most, if not all, of these applications, INOmax<sup>®</sup> acts by preventing or treating reversible pulmonary vasoconstriction, reducing pulmonary arterial pressure and improving pulmonary gas exchange.

**[0034]** A small proportion of INOmax<sup>®</sup> sales stem from its use by clinicians in a premature infant population. In these patients, INOmax<sup>®</sup> is generally utilized by physicians as a rescue therapy primarily to vasodilate the lungs and improve pulmonary gas exchange. Some physicians speculate that INOmax<sup>®</sup> therapy may promote lung development and/or reduce or prevent the future development of lung disease in a subset of these patients. Although the precise mechanism(s) responsible for the benefits of INOmax<sup>®</sup> therapy in these patients is not completely understood, it appears that the benefits achieved in at least a majority of these patients are due to the ability of INOmax<sup>®</sup> to treat or prevent reversible pulmonary vasoconstriction.

**[0035]** In clinical practice, the use of INOmax<sup>®</sup> has reduced or eliminated the use of high risk systemic vasodilators for the treatment of PPHN. INOmax<sup>®</sup>, in contrast to systemic vasodilators, specifically dilates the pulmonary vasculature without dilating systemic blood vessels. Further, iNO preferentially vasodilates vessels of aveoli that are aerated, thus improving V/Q matching. In contrast, systemic vasodilators may increase blood flow to atelectatic (deflated or collapsed) aveoli, thereby increasing V/Q mismatch and worsening arterial oxygenation. (See Rubin LJ, Kerr KM, Pulmonary Hypertension, in *Critical Care Medicine: Principles of Diagnosis and Management in the Adult, 2d Ed.*, Parillo JE, Dellinger

RP (eds.), Mosby, Inc. 2001, pp. 900-09 at 906; Kinsella JP, Abman SH, The Role of Inhaled Nitric Oxide in Persistent Pulmonary Hypertension of the Newborn, in *Acute Respiratory Care of the Neonate: A Self-Study Course, 2d Ed.*, Askin DF (ed.), NICU Ink Book Publishers, 1997, pp. 369-378 at 372-73).

**[0036]** INOmax<sup>®</sup> also possesses highly desirable pharmacokinetic properties as a lung-specific vasodilator when compared to other ostensibly “pulmonary-specific vasodilators.” For example, the short half-life of INOmax<sup>®</sup> allows INOmax<sup>®</sup> to exhibit rapid “on” and “off” responses relative to INOmax<sup>®</sup> dosing, in contrast to non-gaseous alternatives. In this way, INOmax<sup>®</sup> can provide physicians with a useful therapeutic tool to easily control the magnitude and duration of the pulmonary vasodilatation desired. Also, the nearly instantaneous inactivation of INOmax<sup>®</sup> in the blood significantly reduces or prevents vasodilatation of non-pulmonary vessels.

**[0037]** The pivotal trials leading to the approval of INOmax<sup>®</sup> were the CINRGI and NINOS study.

**[0038]** CINRGI study. (See Davidson et al., March 1998, Inhaled Nitric Oxide for the Early Treatment of Persistent Pulmonary Hypertension of the term Newborn; A Randomized, Double-Masked, Placebo-Controlled, Dose-Response, Multicenter Study; *PEDIATRICS* Vol. 101, No. 3, p. 325).

**[0039]** This study was a double-blind, randomized, placebo-controlled, multicenter trial of 186 term and near-term neonates with pulmonary hypertension and hypoxic respiratory failure. The primary objective of the study was to determine whether INOmax<sup>®</sup> would reduce the receipt of extracorporeal membrane oxygenation (ECMO) in these patients. Hypoxic respiratory failure was caused by meconium aspiration syndrome (MAS) (35%), idiopathic persistent pulmonary hypertension of the newborn (PPHN) (30%), pneumonia/sepsis (24%), or respiratory distress syndrome (RDS) (8%). Patients with a mean PaO<sub>2</sub> of 54 mm Hg and a mean oxygenation index (OI) of 44 cm H<sub>2</sub>O/mm Hg were randomly assigned to receive either 20 ppm INOmax<sup>®</sup> (n=97) or nitrogen gas (placebo; n=89) in addition to their ventilatory support. Patients that exhibited a PaO<sub>2</sub> > 60 mm Hg and a pH < 7.55 were weaned to 5 ppm INOmax<sup>®</sup> or placebo. The primary results from the CINRGI study are presented in Table 1. ECMO was the primary endpoint of the study.

**Table 1: Summary of Clinical Results from CINRGI Study**

	<b>Placebo</b>	<b>INOmax®</b>	<b>P value</b>
Death or ECMO	51/89 (57%)	30/97 (31%)	<0.001
Death	5/89 (6%)	3/97 (3%)	0.48

**[0040]** Significantly fewer neonates in the ECMO group required ECMO, and INOmax® significantly improved oxygenation, as measured by PaO<sub>2</sub>, OI, and alveolar-arterial gradient.

**[0041]** NINOS study. (See Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure; NEJM, Vol. 336, No. 9, 597).

**[0042]** The Neonatal Inhaled Nitric Oxide Study (NINOS) group conducted a double-blind, randomized, placebo-controlled, multicenter trial in 235 neonates with hypoxic respiratory failure. The objective of the study was to determine whether iNO would reduce the occurrence of death and/or initiation of ECMO in a prospectively defined cohort of term or near-term neonates with hypoxic respiratory failure unresponsive to conventional therapy. Hypoxic respiratory failure was caused by meconium aspiration syndrome (MAS; 49%), pneumonia/sepsis (21%), idiopathic primary pulmonary hypertension of the newborn (PPHN; 17%), or respiratory distress syndrome (RDS; 11%). Infants ≤ 14 days of age (mean, 1.7 days) with a mean PaO<sub>2</sub> of 46 mm Hg and a mean oxygenation index (OI) of 43 cm H<sub>2</sub>O/mmHg were initially randomized to receive 100% O<sub>2</sub> with (n=114) or without (n=121) 20 ppm NO for up to 14 days. Response to study drug was defined as a change from baseline in PaO<sub>2</sub> 30 minutes after starting treatment (full response = > 20 mmHg, partial = 10–20 mm Hg, no response = < 10 mm Hg). Neonates with a less than full response were evaluated for a response to 80 ppm NO or control gas. The primary results from the NINOS study are presented in Table 2.

**Table 2: Summary of Clinical Results from NINOS Study**

	<b>Control (n=121)</b>	<b>NO (n=114)</b>	<b>P value</b>
Death or ECMO*, †	77 (64%)	52 (46%)	0.006
Death	20 (17%)	16 (14%)	0.60
ECMO	66 (55%)	44 (39%)	0.014

\* Extracorporeal membrane oxygenation

† Death or need for ECMO was the study's primary end point

**[0043]** Adverse Events from CINRGI & NINOS. Controlled studies have included 325 patients on INOmax® doses of 5 to 80 ppm and 251 patients on placebo. Total mortality in the pooled trials was 11% on placebo and 9% on INOmax®, a result adequate to exclude INOmax® mortality being more than 40% worse than placebo.

**[0044]** In both the NINOS and CINRGI studies, the duration of hospitalization was similar in INOmax® and placebo-treated groups.

**[0045]** From all controlled studies, at least 6 months of follow-up is available for 278 patients who received INOmax® and 212 patients who received placebo. Among these patients, there was no evidence of an AE of treatment on the need for re-hospitalization, special medical services, pulmonary disease, or neurological sequelae.

**[0046]** In the NINOS study, treatment groups were similar with respect to the incidence and severity of intracranial hemorrhage, Grade IV hemorrhage, per ventricular leukomalacia, cerebral infarction, seizures requiring anticonvulsant therapy, pulmonary hemorrhage, or gastrointestinal hemorrhage.

**[0047]** The table below shows adverse reactions that occurred in at least 5% of patients receiving INOmax® in the CINRGI study. None of the differences in these adverse reactions were statistically significant when iNO patients were compared to patients receiving placebo.

**Table 3: ADVERSE REACTIONS ON THE CINRGI TRIAL**

<b>Adverse Reaction</b>	<b>Placebo (n=89)</b>	<b>Inhaled NO (n=97)</b>
Atelectasis	5 (4.8%)	7 (6.5%)
Bilirubinemia	6 (5.8%)	7 (6.5%)
Hypokalemia	5 (4.8%)	9 (8.3%)
Hypotension	3 (2.9%)	6 (5.6%)
Thrombocytopenia	20 (19.2%)	16 (14.8%)

**[0048]** Post-Marketing Experience. The following AEs have been reported as part of the post-marketing surveillance. These events have not been reported above. Given the nature of spontaneously reported post-marketing surveillance data, it is impossible to determine the actual incidence of the events or definitively establish their causal relationship to the drug. The listing is alphabetical: dose errors associated with the delivery system; headaches associated with environmental exposure of INOmax® in hospital staff; hypotension associated with acute withdrawal of the drug; hypoxemia associated with acute withdrawal of the drug; pulmonary edema in patients with CREST syndrome.

**[0049]** An analysis of AEs and SAEs from both the CINRGI and NINOS studies, in addition to post-marketing surveillance, did not suggest that patients who have pre-existing LVD could experience an increased risk of AEs or SAEs. Nor was it predictable to physicians skilled in the art that patients having pre-existing LVD (possibly identified as those patients having a PCWP greater than 20 mmHg) should be evaluated in view of the benefit versus risk of using iNO in patients with clinically significant LVD, and that these patients should be evaluated on a case by case basis.

#### EXAMPLE 1: INOT22 STUDY

**[0050]** The INOT22 study, entitled "Comparison of supplemental oxygen and nitric oxide for inhalation plus oxygen in the evaluation of the reactivity of the pulmonary vasculature during acute pulmonary vasodilatory testing," was conducted both to assess the safety and

effectiveness of INOmax® as a diagnostic agent in patients undergoing assessment of pulmonary hypertension (primary endpoint), and to confirm the hypothesis that iNO is selective for the pulmonary vasculature (secondary endpoint).

**[0051]** During, and upon final analysis of the INOT22 study results, applicants discovered that rapidly decreasing the pulmonary vascular resistance, via the administration of iNO to a patient in need of such treatment, may be detrimental to patients with concomitant, pre-existing LVD. Therefore, a precaution for patients with LVD was proposed to be included in amended prescribing information for INOmax®. Physicians were further informed to consider reducing left ventricular afterload to minimize the occurrence of pulmonary edema in patients with pre-existing LVD.

**[0052]** In particular, the INOT22 protocol studied consecutive children undergoing cardiac catheterization that were prospectively enrolled at 16 centers in the US and Europe. Inclusion criteria: 4 weeks to 18 years of age, pulmonary hypertension diagnosis, i.e. either idiopathic pulmonary hypertension (IPAH) or related to congenital heart disease (CHD) (repaired or unrepaired) or cardiomyopathy, with pulmonary vascular resistance index (PVRI) > 3 u-m<sup>2</sup>. Later amendments, as discussed herein, added an additional inclusionary criterion of a PCWP less than 20 gmm Hg. Patients were studied under general anaesthesia, or with conscious sedation, according to the practice of the investigator. Exclusion criteria: focal infiltrates on chest X-ray, history of intrinsic lung disease, and/or currently taking PDE-5 inhibitors, prostacyclin analogues or sodium nitroprusside. The study involved supplemental O<sub>2</sub> and NO for inhalation plus O<sub>2</sub> in the evaluation of the reactivity of the pulmonary vasculature during acute pulmonary vasodilator testing. Consecutive children undergoing cardiac catheterization were prospectively enrolled at 16 centers in the US and Europe. As hypotension is expected in these neonatal populations, the comparison between iNO and placebo groups is difficult to assess. A specific secondary endpoint was evaluated in study INOT22 to provide a more definitive evaluation.

**[0053]** The primary objective was to compare the response frequency with iNO and O<sub>2</sub> vs. O<sub>2</sub> alone; in addition, all subjects were studied with iNO alone. Patients were studied during five periods: Baseline 1, Treatment Period 1, Treatment Period 2, Baseline 2 and Treatment Period 3. All patients received all three treatments; treatment sequence was randomized by



center in blocks of 4; in Period 1, patients received either NO alone or O<sub>2</sub> alone, and the alternate treatment in Period 3. All patients received the iNO and O<sub>2</sub> combination treatment in Period 2. Once the sequence was assigned, treatment was unblinded. Each treatment was given for 10 minutes prior to obtaining hemodynamic measurements, and the Baseline Period 2 was at least 10 minutes.

**[0054]** Results for the intent-to-treat (ITT) population, defined as all patients who were randomized to receive drug, indicated that treatment with NO plus O<sub>2</sub> and O<sub>2</sub> alone significantly increased systemic vascular resistance index (SVRI) (Table 4). The change from baseline for NO plus O<sub>2</sub> was 1.4 Woods Units per meter<sup>2</sup> (WU·m<sup>2</sup>) (p = 0.007) and that for O<sub>2</sub> was 1.3 WU·m<sup>2</sup> (p = 0.004). While the change from baseline in SVRI with NO alone was -0.2 WU·m<sup>2</sup> (p = 0.899) which demonstrates a lack of systemic effect.

**Table 4: SVRI Change From Baseline by Treatment (Intent-to-Treat)**

SVRI (WU·m <sup>2</sup> )	Treatment		
	NO Plus O <sub>2</sub> (n=109)	O <sub>2</sub> (n=106)	NO (n=106)
<b>Baseline (room air)</b>			
Mean	17.2	17.6	18.0
Standard Deviation (SD)	8.86	9.22	8.44
Median	15.9	16.1	16.2
Minimum, maximum	-7.6, 55.6	-7.6, 55.6	1.9, 44.8
<b>Post-treatment</b>			
Mean	18.7	18.9	17.8
SD	9.04	8.78	9.40
Median	17.1	17.1	15.4
Minimum, maximum	3.0, 47.4	3.9, 43.6	3.3, 50.7
<b>Change From Baseline</b>			
Mean	1.4	1.3	-0.2
SD	5.94	5.16	4.65
Median	1.2	1.0	0.2
Minimum, maximum	-20.5, 19.1	-18.1, 17.7	-12.5, 12.7
<b>p-value<sup>a</sup></b>	0.007	0.004	0.899
Pairwise comparisons NO plus O <sub>2</sub> versus O <sub>2</sub> , p=0.952 NO plus O <sub>2</sub> versus NO, p=0.014 O <sub>2</sub> versus NO, p=0.017			

<sup>a</sup> p-value from a Wilcoxon Signed Rank Test. Only patients with data to determine response at both treatments are included in this analysis.

Source: INOT22 CSR Table 6.4.1 and Appendix 16.2.6 (ATTACHMENT 1)

**[0055]** The ideal pulmonary vasodilator should reduce PVRI and/or PAPm while having no appreciable effect on systemic blood pressure or SVRI. In this case, the ratio of PVRI to SVRI would decrease, given some measure of the selectivity of the agent for the pulmonary vascular bed. The change in the ratio of PVRI to SVRI by treatment is shown in Table 5.

**Table 5: Change in Ratio of PVRI to SVRI by Treatment (Intent-to-Treat)**

Ratio PVRI/SVRI	Treatment		
	NO Plus O <sub>2</sub> (n=108)	O <sub>2</sub> (n=105)	NO (n=106)
<b>Baseline</b>			
Mean	0.6	0.5	0.6
SD	0.60	0.45	0.56
Median	0.5	0.5	0.4
Minimum, Maximum	-1.6, 4.7	-1.6, 1.8	0.0, 4.7
<b>Post Treatment</b>			
Mean	0.4	0.4	0.5
SD	0.31	0.31	0.46
Median	0.3	0.4	0.3
Minimum, Maximum	0.0, 1.3	0.0, 1.4	-1.2, 2.2
<b>Change from Baseline</b>			
Mean	-0.2	-0.1	-0.1
SD	0.52	0.31	0.54
Median	-0.1	-0.1	0.0
Minimum, Maximum	-4.4, 2.0	-1.6, 2.0	-4.4, 1.6
<b>P Value<sup>1</sup></b>	< 0.001	< 0.001	0.002

<sup>1</sup> Wilcoxon Signed Rank Test

Source: INOT22 CSR Table 6.5.1 (ATTACHMENT 2)

**[0056]** All three treatments have a preferential effect on the pulmonary vascular bed, suggesting that all three are selective pulmonary vasodilators. The greatest reduction in the ratio was during treatment with NO plus O<sub>2</sub>, possibly due to the decrease in SVRI effects seen with O<sub>2</sub> and NO plus O<sub>2</sub>. These results are displayed as percent change in the ratio (See Table 6).

**Table 6: Percent Change in Ratio of PVRI to SVRI by Treatment (Intent-to-Treat)**

Ratio PVRI/SVRI	Treatment		
	NO Plus O <sub>2</sub> (n=108)	O <sub>2</sub> (n=105)	NO (n=106)
<b>Baseline</b>			
Mean	0.6	0.5	0.6
SD	0.60	0.45	0.56
Median	0.5	0.5	0.4
Minimum, Maximum	-1.6, 4.7	-1.6, 1.8	0.0, 4.7
<b>Post Treatment</b>			
Mean	0.4	0.4	0.5
SD	0.31	0.31	0.46
Median	0.3	0.4	0.3
Minimum, Maximum	0.0, 1.3	0.0, 1.4	-1.2, 2.2
<b>Percent Change from Baseline</b>			
Mean	-33.5	-19.3	-6.2
SD	36.11	34.59	64.04
Median	-34.0	-21.3	-13.8
Minimum, Maximum	-122.2, 140.1	-122.7, 93.3	-256.1, 294.1
<b>P Value<sup>1</sup></b>	< 0.001	< 0.001	0.006

<sup>1</sup> Wilcoxon Signed Rank Test

Source: INOT22 CSR Table 6.5.2 (ATTACHMENT 3)

**[0057]** NO plus O<sub>2</sub> appeared to provide the greatest reduction in the ratio, suggesting that NO plus O<sub>2</sub> was more selective for the pulmonary vasculature than either agent alone.

**[0058]** Overview of Cardiovascular Safety. In the INOT22 diagnostic study, all treatments (NO plus O<sub>2</sub>, O<sub>2</sub>, and NO) were well-tolerated. Seven patients of 134 treated experienced an AE during the study. These included cardiac arrest, bradycardia, low cardiac output (CO) syndrome, elevated ST segment (the portion of an electrocardiogram between the end of the QRS complex and the beginning of the T wave) on the electrocardiography (ECG)

decreased O<sub>2</sub> saturation, hypotension, mouth hemorrhage and pulmonary hypertension (PH). The numbers of patients and events were too small to determine whether risk for AEs differed by treatment, diagnosis, age, gender or race. Eight patients are shown in Table 5 due to the time period in which events are reported. AEs were reported for 12 hours or until hospital discharge (which limits the period in which such events can be reported). There is technically no time limit in which SAEs are to be reported. So, there were 7 AEs during the study and at least one SAE after the study.

**[0059]** A total of 4 patients had AEs assessed as being related to study drug. These events included bradycardia, low CO syndrome, ST segment elevation on the ECG, low O<sub>2</sub> saturation, PH and hypotension. All but 2 AEs were mild or moderate in intensity and were resolved. Study treatments had slight and non-clinically significant effects on vital signs including heart rate, systolic arterial pressure and diastolic arterial pressure. When an investigator records an AE, they are required to say if (in their opinion) the event is related to the treatment or not. In this case, 4 of 7 were considered by the investigator to be related to treatment.

**[0060]** The upper limit of normal PCWP in children is 10-12 mm Hg and 15 mm Hg in adults. In INOT22, a baseline PCWP value was not included as exclusion criteria. However, after the surprising and unexpected identification of SAEs in the early tested patients, it was determined that patients with pre-existing LVD had an increased risk of experiencing an AE or SAE upon administration (e.g., worsening of left ventricular function due to the increased flow of blood through the lungs). Accordingly, the protocol for INOT22 was thereafter amended to exclude patients with a baseline PCWP greater than 20 mm Hg after one patient experienced acute circulatory collapse and died during the study. The value "20 mm Hg" was selected to avoid enrollment of a pediatric population with LVD such that they would be most likely at-risk for these SAEs.

**[0061]** SAEs were collected from the start of study treatment until hospital discharge or 12 hours, whichever occurred sooner. Three SAEs were reported during the study period, and a total of 7 SAEs were reported. Three of these were fatal SAEs and 4 were nonfatal (one of which led to study discontinuation). In addition, one non-serious AE also lead to

discontinuation. A list of subjects who died, discontinued or experienced an SAE is provided in Table 7 below.

**Table 7: Subjects that died, discontinued or experienced SAEs**

<b>Patient number</b>	<b>AE</b>	<b>Serious?</b>	<b>Fatal?</b>	<b>Discontinued treatment?</b>
01020	Desaturation (hypoxia)	No	No	Yes
02002	Pulmonary edema	Yes	No	No
04001	Hypotension and cardiac arrest	Yes	Yes	No
04003	Hypotension and ECG changes	Yes	No	Yes
04008	Hypotension and hypoxemia	Yes	Yes	No
05002	Hypoxia and bradycardia (also pulmonary edema)	Yes	Yes	No
07003	Cardiac arrest	Yes	No	No
17001	Hypoxia	Yes	No	No

**[0062]** Two of the 3 fatal SAEs were deemed related to therapy. All 4 non-fatal SAEs were also considered related to therapy. The numbers of patients and events were too small to determine whether risk for SAEs differed by treatment, diagnosis, age, gender or race. At least two patients developed signs of pulmonary edema (subjects 05002 and 02002). This is of interest because pulmonary edema has previously been reported with the use of iNO in patients with LVD, and may be related to decreasing PVRI and overfilling of the left atrium. (Hayward CS et al., 1996, Inhaled Nitric Oxide in Cardiac Failure: Vascular Versus Ventricular Effects, *J Cardiovascular Pharmacology* 27:80-85; Bocchi EA et al., 1994, Inhaled Nitric Oxide Leading to Pulmonary Edema in Stable Severe Heart Failure, *Am J Cardiology* 74:70-72; and, Semigran MJ et al., 1994, Hemodynamic Effects of Inhaled Nitric Oxide in Heart Failure, *J Am Coll Cardiology* 24:982-988).

**[0063]** Although the SAE rate is within range for this population, it appears that patients with the most elevated PCWP at baseline had a disproportionately high number of these events. (Bocchi EA et al., 1994; Semigran MJ et al., 1994).

**[0064]** In the INOT22 study, 10 of the total 134 patients had a baseline PCWP  $\geq$  18 mm Hg (7.5%), of which 3 subjects (04001, 02002 and 04003) had a SAE or were prematurely discontinued from the study (30%), compared to 6.5% for the entire cohort.

**[0065]** Although there were very few significant AEs in the INOT22 study, these events are consistent with the expected physiologic changes in patients with severe LVD. The events also corroborate prior observations that iNO is rapidly acting, selective for the pulmonary vasculature, and well-tolerated in most patients. The actual incidence of acute LVD during acute ventricular failure (AVT) is unknown. However, it is reasonable to expect that a significant number of patients are at-risk for an increased incidence of SAEs upon iNO treatment based upon the nature of the underlying nature of the illness, i.e., pulmonary hypertension and cardiovascular disease more generally. Thus, it would be advantageous to have physicians identify these patients prior to beginning iNO treatment, so that the physicians are alerted to this possible outcome.

**[0066]** Benefits and Risks Conclusions. The INOT22 study was designed to demonstrate the physiologic effects of iNO in a well defined cohort of children (i.e., intended patient population) with pulmonary hypertension using a high concentration, 80 ppm, of iNO, i.e., one that would be expected to have the maximal pharmacodynamic effect. INOT22 was the largest and most rigorous pharmacodynamic study of iNO conducted to date, and it confirms a number of prior observations, such as iNO's being rapidly acting, selective for the pulmonary vasculature, and well-tolerated in most patients.

**[0067]** It is also acknowledged that rapidly decreasing the PVR may be undesirable and even dangerous in patients with concomitant LVD. In the INOT22 study, the overall numbers of SAEs and fatal SAEs are within the expected range for patients with this degree of cardiopulmonary disease. The overall rate is 7/124 (5.6%), which is closely comparable to the rate of 6% recently reported in a very similar cohort of patients. (Taylor CJ et al., 2007, Risk of cardiac catheterization under anaesthesia in children with pulmonary hypertension, *Br J Anaesth* 98(5):657-61). Thus, the overall rate of SAEs would seem to be more closely related to the underlying severity of illness of the patients rather than to the treatments given during this study.

**[0068]** The INOT22 study results demonstrate that patients who had pre-existing LVD may experience an increased rate of SAEs (e.g., pulmonary edema). During the course of the study, the protocol was amended to exclude patients with a PCWP > 20 mmHg. The benefit/risk of using iNO in patients with clinically significant LVD should be evaluated on a

case by case basis. A reduction in left ventricular afterload may perhaps be applied to minimize the occurrence of pulmonary edema.



We claim:

1. A method of reducing the risk of occurrence of pulmonary edema associated with a medical treatment comprising inhalation of 20 ppm nitric oxide gas, said method comprising:
  - (a) performing echocardiography to identify a term or near-term neonate patient in need of 20 ppm inhaled nitric oxide treatment for hypoxic respiratory failure, wherein the patient is not dependent on right-to-left shunting of blood;
  - (b) determining that the patient identified in (a) has left ventricular dysfunction consistent with a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide; and
  - (c) excluding the patient from inhaled nitric oxide treatment, based on the determination that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.
2. The method of claim 1, wherein the determination in (b) comprises performing echocardiography.
3. The method of claim 1, wherein the patient's left ventricular dysfunction is attributable to congenital heart disease.
4. The method of claim 1, wherein the patient is determined to be at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide, and the patient is excluded from inhaled nitric oxide treatment based on the determination that the patient has left ventricular dysfunction and so is at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide.
5. The method of claim 4, wherein the patient's left ventricular dysfunction is attributable to congenital heart disease.

6. A method of treatment comprising:
  - (a) performing echocardiography to identify a plurality of term or near-term neonate patients who are in need of 20 ppm inhaled nitric oxide treatment for hypoxic respiratory failure, wherein the patients are not dependent on right-to-left shunting of blood;
  - (b) determining that a first patient of the plurality has left ventricular dysfunction consistent with a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide;
  - (c) determining that a second patient of the plurality does not have left ventricular dysfunction;
  - (d) administering the 20 ppm inhaled nitric oxide treatment to the second patient; and
  - (e) excluding the first patient from treatment with inhaled nitric oxide, based on the determination that the first patient has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.
7. The method of claim 6, wherein the second patient has congenital heart disease.
8. The method of claim 6, wherein the left ventricular dysfunction of the first patient is attributable to congenital heart disease.
9. The method of claim 6, wherein the first patient is determined to be at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide, and the first patient is excluded from inhaled nitric oxide treatment based on the determination that the first patient has left ventricular dysfunction and so is at particular risk not only of pulmonary edema, but also other serious adverse events, upon treatment with inhaled nitric oxide.
10. The method of claim 9, wherein the left ventricular dysfunction of the first patient is attributable to congenital heart disease.
11. The method of claim 6, wherein determining that the first patient of the plurality has pre-existing left ventricular dysfunction and the second patient of the plurality does not have

pre-existing left ventricular dysfunction comprises performing echocardiography on the first and second patients.

12. A method of reducing the risk of occurrence of pulmonary edema associated with a medical treatment comprising inhalation of 20 ppm nitric oxide gas, said method comprising:

(a) performing echocardiography to identify a term or near-term neonate patient in need of 20 ppm inhaled nitric oxide treatment for hypoxic respiratory failure, wherein the patient is not dependent on right-to-left shunting of blood;

(b) determining that the patient identified in (a) has left ventricular dysfunction consistent with a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide; and

(c) excluding the patient from inhaled nitric oxide treatment, or, despite the patient's ongoing need for treatment for hypoxic respiratory failure, discontinuing the treatment after it has begun, the exclusion or discontinuation being based on the determination that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.

13. The method of claim 12, wherein the determination in (b) comprises performing echocardiography.

14. The method of claim 12, wherein the left ventricular dysfunction is attributable to congenital heart disease.

15. The method of claim 12, wherein the patient is determined to be at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide, and the patient is excluded from inhaled nitric oxide treatment, or, despite the patient's ongoing need for treatment for hypoxic respiratory failure, the patient's treatment with inhaled nitric oxide is discontinued after it was begun, the exclusion or discontinuation being based on the determination that the patient has left ventricular dysfunction and so is at particular risk not only of pulmonary edema, but also other serious adverse events, upon treatment with inhaled nitric oxide.

16. The method of claim 15, wherein the left ventricular dysfunction of the patient is attributable to congenital heart disease.

17. The method of claim 13, wherein the left ventricular dysfunction of the patient is attributable to congenital heart disease.

18. The method of claim 13, wherein the patient is determined to be at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide, and the patient is excluded from inhaled nitric oxide treatment, or, despite the patient's ongoing need for treatment for hypoxic respiratory failure, the patient's treatment with inhaled nitric oxide is discontinued after it was begun, the exclusion or discontinuation being based on the determination that the patient has pre-existing left ventricular dysfunction and so is at particular risk not only of pulmonary edema, but also other serious adverse events, upon treatment with inhaled nitric oxide.

19. The method of claim 18, wherein the left ventricular dysfunction of the patient is attributable to congenital heart disease.

20. A method of treatment comprising:

(a) performing echocardiography to identify a plurality of term or near-term neonate patients who are in need of 20 ppm inhaled nitric oxide treatment for hypoxic respiratory failure, wherein the patients are not dependent on right-to-left shunting of blood;

(b) determining that a first patient of the plurality has left ventricular dysfunction consistent with a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide;

(c) determining that a second patient of the plurality does not have left ventricular dysfunction;

(d) administering the 20 ppm inhaled nitric oxide treatment to the second patient; and

(e) excluding the first patient from treatment with inhaled nitric oxide, or, despite the first patient's ongoing need for treatment for hypoxic respiratory failure, discontinuing the first patient's treatment with inhaled nitric oxide after it was begun, the exclusion or discontinuation

being based on the determination that the first patient has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.

21. The method of claim 20, wherein the second patient has congenital heart disease.

22. The method of claim 20, wherein the left ventricular dysfunction of the first patient is attributable to congenital heart disease.

23. The method of claim 20, wherein the first patient is determined to be at particular risk not only of pulmonary edema, but also of other serious adverse events, upon treatment with inhaled nitric oxide, and the first patient is excluded from inhaled nitric oxide treatment, or, despite the first patient's ongoing need for treatment for hypoxic respiratory failure, the first patient's treatment with inhaled nitric oxide is discontinued after it was begun, the exclusion or discontinuation being based on the determination that the first patient has left ventricular dysfunction and so is at particular risk not only of pulmonary edema, but also other serious adverse events, upon treatment with inhaled nitric oxide.

24. The method of claim 23, wherein the left ventricular dysfunction of the first patient is attributable to congenital heart disease.

25. The method of claim 20, wherein determining that the first patient of the plurality has pre-existing left ventricular dysfunction and the second patient of the plurality does not have pre-existing left ventricular dysfunction comprises performing echocardiography on the first and second patients.

ABSTRACT

Disclosed are methods of reducing the risk of occurrence of pulmonary edema associated with a medical treatment comprising inhalation of nitric oxide gas.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

<b>Title of Invention</b>	<b>METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS</b>
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As the below named inventor, I hereby declare that:

This declaration is directed to:  The attached application, or  
 United States application or PCT international application number \_\_\_\_\_  
 filed on \_\_\_\_\_

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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**LEGAL NAME OF INVENTOR**

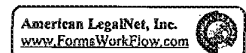
Inventor: James S. Baldassarre Date (Optional): October 8, 2012

Signature: *[Handwritten Signature]*

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

<b>Title of Invention</b>	<b>METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS</b>
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As the below named inventor, I hereby declare that:

This declaration is directed to:  The attached application, or  
 United States application or PCT international application number \_\_\_\_\_  
 filed on \_\_\_\_\_

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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**LEGAL NAME OF INVENTOR**

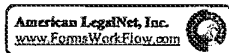
Inventor: Ralf Roskamp Date (Optional): Oct 8, 2012

Signature: *R. Roskamp*

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>				
<b>Filing Date:</b>				
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
Utility application filing	1011	1	390	390
Utility Search Fee	1111	1	620	620
Utility Examination Fee	1311	1	250	250
Request for Prioritized Examination	1817	1	4800	4800
<b>Pages:</b>				
<b>Claims:</b>				
Claims in excess of 20	1202	5	62	310
Independent claims in excess of 3	1201	1	250	250

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous-Filing:</b>				
Publ. Fee- early, voluntary, or normal	1504	1	300	300
Processing Fee, except for Provis. apps	1808	1	130	130
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>7050</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	13983256
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Paul Stovenour
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	15-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	14:05:17
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$7050
RAM confirmation Number	296
Deposit Account	061050
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Application Data Sheet	ADS26047_0003007.pdf	1395726 22700d1fae4e3b21b12065f70f882b73874a7073	no	6
<b>Warnings:</b>					
<b>Information:</b>					
2	TrackOne Request	request26047_0003007.pdf	138070 3d73011c86ed699340ca91f11ac4519dd92c1174	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Transmittal of New Application	PAPltr26047_0003007.pdf	94354 19da8fba88dfb756090da9d3b6b5ffcc2a80e3d8	no	2
<b>Warnings:</b>					
<b>Information:</b>					
4		application_26047_0003007.pdf	222813 775c9aa3b04e36a165ee88040d12943fbfa32ffe	yes	28
<b>Multipart Description/PDF files in .zip description</b>					
		<b>Document Description</b>	<b>Start</b>	<b>End</b>	
		Specification	1	22	
		Claims	23	27	
		Abstract	28	28	
<b>Warnings:</b>					
<b>Information:</b>					
5	Power of Attorney	powerstatement260470003007.pdf	112728 7850c96ae3c151ac2af97b308326251476999534	no	3
<b>Warnings:</b>					
<b>Information:</b>					
6	Oath or Declaration filed	baldassarreedec.pdf	74851 30cc84f4c75ced9e7e938b9be345a9fc9585c5e3	no	1
<b>Warnings:</b>					
<b>Information:</b>					
7	Oath or Declaration filed	rosskampdec.pdf	72791 97c78668eaab5541c69bdfbdeabf1d53bab257c45	no	1
<b>Warnings:</b>					
<b>Information:</b>					

8	Fee Worksheet (SB06)	fee-info.pdf	42843 <small>0542de14b02dfbb74e37f2b1e310a04ba225a2ec</small>	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			2154176		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	26047-0003007
		Application Number	
Title of Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

**Secrecy Order 37 CFR 5.2**

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

**Inventor Information:**

<b>Inventor 1</b>					<input type="button" value="Remove"/>
<b>Legal Name</b>					
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	James	S.	Baldassarre		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	Doylestown	<b>State/Province</b>	PA	<b>Country of Residence <sup>i</sup></b>	US
<b>Mailing Address of Inventor:</b>					
<b>Address 1</b>	145 Pebble Woods Drive				
<b>Address 2</b>					
<b>City</b>	Doylestown	<b>State/Province</b>	PA		
<b>Postal Code</b>	18901	<b>Country <sup>i</sup></b>	US		
<b>Inventor 2</b>					<input type="button" value="Remove"/>
<b>Legal Name</b>					
<b>Prefix</b>	<b>Given Name</b>	<b>Middle Name</b>	<b>Family Name</b>	<b>Suffix</b>	
	Ralf		Rosskamp		
<b>Residence Information (Select One)</b> <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
<b>City</b>	Chester	<b>State/Province</b>	NJ	<b>Country of Residence <sup>i</sup></b>	US
<b>Mailing Address of Inventor:</b>					
<b>Address 1</b>	1 Byron Court				
<b>Address 2</b>					
<b>City</b>	Chester	<b>State/Province</b>	NJ		
<b>Postal Code</b>	07930	<b>Country <sup>i</sup></b>	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button.					<input type="button" value="Add"/>

**Correspondence Information:**

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).
--

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	26047-0003007
		Application Number	
Title of Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		

<input type="checkbox"/> An Address is being provided for the correspondence information of this application.			
Customer Number	94169		
Email Address		<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

**Application Information:**

Title of the Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		
Attorney Docket Number	26047-0003007	Small Entity Status Claimed	<input type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

**Publication Information:**

<input type="checkbox"/> Request Early Publication (Fee required at time of Request 37 CFR 1.219)
<input type="checkbox"/> <b>Request Not to Publish.</b> I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application <b>has not and will not</b> be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

**Representative Information:**

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer number will be used for the Representative Information during processing.			
Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number	94169		

**Domestic Benefit/National Stage Information:**

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.			
Prior Application Status	Pending	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	12821041	2010-06-22

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	26047-0003007
		Application Number	
Title of Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		
Prior Application Status	Abandoned	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12821041	Continuation of	12494598	2009-06-30
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the <b>Add</b> button.			<input type="button" value="Add"/>

### Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).			
			<input type="button" value="Remove"/>
Application Number	Country <sup>i</sup>	Filing Date (YYYY-MM-DD)	Priority Claimed
			<input type="radio"/> Yes <input type="radio"/> No
Additional Foreign Priority Data may be generated within this form by selecting the <b>Add</b> button.			<input type="button" value="Add"/>

### Authorization to Permit Access:

<input type="checkbox"/> Authorization to Permit Access to the Instant Application by the Participating Offices
<p>If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.</p> <p>In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.</p> <p>In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.</p>

### Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Application Data Sheet 37 CFR 1.76</b>	Attorney Docket Number	26047-0003007
	Application Number	
Title of Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas	

<b>Applicant 1</b>			
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
<input type="button" value="Remove"/>			
<input checked="" type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117		
<input type="radio"/> Person to whom the inventor is obligated to assign.	<input type="radio"/> Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/>			
If the Assignee is an Organization check here. <input checked="" type="checkbox"/>			
Organization Name	INO Therapeutics LLC		
<b>Mailing Address Information:</b>			
Address 1	Perryville III Corporate Park		
Address 2	53 Frontage Road, 3rd Floor		
City	Hampton	State/Province	NJ
Country	US	Postal Code	08827-9001
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>			

<b>Signature:</b>				<input type="button" value="Remove"/>	
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/Janis K. Fraser/		Date (YYYY-MM-DD)	2012-10-15	
First Name	Janis	Last Name	Fraser	Registration Number	34819
Additional Signature may be generated within this form by selecting the Add button. <input type="button" value="Add"/>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	26047-0003007
		Application Number	
Title of Invention	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION  
UNDER 37 CFR 1.102(e) (Page 1 of 1)**

First Named Inventor:	James S. Baldassarre	Nonprovisional Application Number (if known):	
Title of Invention:	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas		

**APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.**

1. The processing fee set forth in 37 CFR 1.17(i), the prioritized examination fee set forth in 37 CFR 1.17(c), and if not already paid, the publication fee set forth in 37 CFR 1.18(d) have been filed with the request. The basic filing fee, search fee, examination fee, and any required excess claims and application size fees are filed with the request or have been already been paid.
2. The application contains or is amended to contain no more than four independent claims and no more than thirty total claims, and no multiple dependent claims.
3. The applicable box is checked below:

**I.  Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)**

- i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.  
---OR---
- (b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
- ii. An executed oath or declaration under 37 CFR 1.63 is filed with the application.

**II.  Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)**

- i. A request for continued examination has been filed with, or prior to, this form,
- ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
- iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
- iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
- v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Janis K. Fraser/	Date October 15, 2012
Name Janis K. Fraser, Ph.D., J.D. (Print/Typed)	Practitioner Registration Number 34,819
<b>Note:</b> Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature. If necessary, submit multiple forms for more than one signature, see below*.	
<input checked="" type="checkbox"/> *Total of <u>1</u> forms are submitted.	

22918990.doc

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

Practitioners associated with the Customer Number: 94169

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name Registration	Number	Name Registration	Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

The address associated with Customer Number: 94169

OR

<input type="checkbox"/> Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

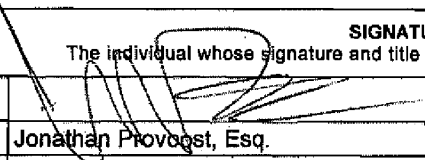
Assignee Name and Address:

INO Therapeutics LLC  
 Perryville III, Corporate Park  
 53 Frontage Road, 3<sup>rd</sup> Floor  
 Hampton, NJ 08827-9001

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	Sept 28, 2012
Name	Jonathan Provoost, Esq.	Telephone	908 238 6392
Title	Associate General Counsel		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: INO Therapeutics LLC

Application No./Patent No.: unknown Filed/Issue Date: October 15, 2012

Titled: METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

INO Therapeutics LLC, a corporation  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of the option 1, 2, 3 or 4 below):

- 1.  The assignee of the entire right, title, and interest.
- 2.  An assignee of less than the entire right, title and interest (check applicable box):
  - The extent (by percentage) of its ownership interest is \_\_\_\_\_. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
  - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

[Empty box for additional statement]

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

- 3.  The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

[Empty box for additional statement]

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

- 4.  The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of the options A or B below):

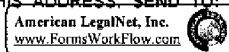
- A.  An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
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Inventors: James S. Baldassarre

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The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Janis K. Fraser/  
Signature

October 15, 2012  
Date

Janis K. Fraser, Ph.D., J.D.  
Printed or Typed Name

Attorney for assignee  
Reg. No. 34,819  
Title

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

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	3	20090029371		2009-01-29	Elliot	
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
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	Attorney Docket Number	26047-0003007

1	Adatia et al., "Inhaled Nitric Oxide and Hemodynamic Evaluation of Patients With Pulmonary Hypertension Before Transplantation," Journal of the American College of Cardiology, Elsevier, New York, NY, Vol. 25, No. 7, page 1663, June 1, 1995	<input type="checkbox"/>
2	Advances in Pulmonary Hypertension, Vol. 7(4), pages 1-418, Winter 2008-2009 (entire issue)	<input type="checkbox"/>
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4	Argenziano et al., "Inhaled Nitric Oxide is not a Myocardial Depressant in a Porcine Model of Heart Failure," The Journal of Thoracic and Cardiovascular Surgery, Vol. 115, pages 700-704 (1998)	<input type="checkbox"/>
5	Atz et al., "Combined Effects of Nitric Oxide and Oxygen During Acute Pulmonary Vasodilator Testing," Journal of the American College of Cardiology (JACC), Vol. 33, No. 3, pages 813-819 (1999)	<input type="checkbox"/>
6	Atz et al., "Inhaled nitric oxide in the neonate with cardiac disease," Seminars in Perinatology, Vol. 21(5), pages 441-455 (1997)	<input type="checkbox"/>
7	AU 2009202685 Office Action dated 06/17/10 (3 pages)	<input type="checkbox"/>
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9	Azeka et al., "Effects of Low Doses of Inhaled Nitric Oxide Combined with Oxygen for the Evaluation of Pulmonary Vascular Reactivity in Patients with Pulmonary Hypertension," Pediatric Cardiol., Vol. 23, pages 20-26 (2002)	<input type="checkbox"/>
10	Barrington et al., "Inhaled Nitric Oxide for Preterm Infants: A Systematic Review," Pediatrics, Vol. 120; pages 1088-1099, DOI: 10.1542/peds (2007)	<input type="checkbox"/>
11	Barst et al., "Nitric Oxide in Combination with Oxygen versus Either Oxygen Alone or Nitric Oxide Alone for Acute Vasodilator Testing in Children with Pulmonary Hypertension: A Multicenter, Randomized Study," INO Therapeutics/ Ikaria, Baltimore Convention Center, May 3, 2009, 2 pages, Abstract, downloaded 7/2/2009 from <a href="http://127.0.0.1:9080/PAS09A1/view.y?nu=PAS09L1_1507">http://127.0.0.1:9080/PAS09A1/view.y?nu=PAS09L1_1507</a>	<input type="checkbox"/>

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12	Barst et al., "Vasodilator Testing with Nitric Oxide and/or Oxygen in Pediatric Pulmonary Hypertension," Received: 14 September 2009 / Accepted: 19 January 2010 Springer Science+Business Media, LLC 2010, 9 pages	<input type="checkbox"/>
13	Beggs et al., "Cardiac Failure in Children," 17th Expert Committee on the Selection and Use of Essential Medicines, Geneva, March 2009, 31 pages	<input type="checkbox"/>
14	Beghetti et al., "Inhaled nitric oxide can cause severe systemic hypotension," Journal of Pediatrics, page 844 (1997)	<input type="checkbox"/>
15	Beghetti et al., "Inhaled nitric oxide and congenital cardiac disease," Cardiol. Young, Vol. 11, pages 142-152 (2001)	<input type="checkbox"/>
16	Behera et al., "Nesiritide Improves Hemodynamics in Children with Dilated Cardiomyopathy: A Pilot Study," Pediatr. Cardiol., Vol. 30, pages 26-34 (2009)	<input type="checkbox"/>
17	Bhagavan et al., "Potential role of ubiquinone (coenzyme Q10) in pediatric cardiomyopathy," Clinical Nutrition, Vol. 24, pages 331-338 (2005)	<input type="checkbox"/>
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19	Bin-Nun et al., "Role of iNO in the modulation of pulmonary vascular resistance," Journal of Perinatology, Vol. 28, pages S84-S92 (2008)	<input type="checkbox"/>
20	Bland, "Pulmonary vascular dysfunction in preterm lambs with chronic lung disease," Am J Physical Lung Cell Mol. Physiol., Vol. 285: L76-L85 ( 2003)	<input type="checkbox"/>
21	Bloch et al., Cardiovasc. Res. 2007, "Inhaled NO as a therapeutic agent," Vol. 75(2), pages 339-348 (July 15, 2007)	<input type="checkbox"/>
22	Bocchi et al., "Inhaled Nitric Oxide Leading to Pulmonary Edema in Stable Severe Heart Failure," The American Journal of Cardiology, Vol. 74, pages 70-72 (1994)	<input type="checkbox"/>

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23	Bolooki, Clinical Application of the Intra-Aortic Balloon Pump, 3rd Ed., pages 252-253 (1998)	<input type="checkbox"/>
24	Branson, "Inhaled Nitric Oxide in Adults, The Science Journal of the American Association for Respiratory Care 1997 Open Forum Abstracts," December 7, 1997, 2 pages, retrieved at << <a href="http://www.rcjournal.com/abstracts/1997?id=A00000929">http://www.rcjournal.com/abstracts/1997?id=A00000929</a> >> on 12/22/2010	<input type="checkbox"/>
25	Braunwald, Heart Failure, chapter 233 of Harrison's Principles of Internal Medicine, 14th Edition, pages 1287-1291 and 1360 (1998)	<input type="checkbox"/>
26	Bublik et al., "Pediatric cardiomyopathy as a chronic disease: A perspective on comprehensive care programs, Progress in Pediatric," Pediatric Cardiology, Vol. 25, pages 103-111 (2008)	<input type="checkbox"/>
27	Budts et al., "Residual pulmonary vasoreactivity to inhaled nitric oxide in patients with severe obstructive pulmonary hypertension and Eisenmenger syndrome," Heart, Vol. 86, pages 553-558 (2001)	<input type="checkbox"/>
28	Canadian Office Action mailed May 31, 2011 for Canadian Patent Application No. 2671029, a counterpart foreign application of US application no. 12/494,598	<input type="checkbox"/>
29	Clark et al., "Low-Dose Nitric Oxide Therapy for Persistent Pulmonary Hypertension: 1-Year Follow-up," Journal of Perinatology, Vol. 23, pages 300-303 (2003)	<input type="checkbox"/>
30	Clark et al., "Low-Dose Nitric Oxide Therapy for Persistent Pulmonary Hypertension of the Newborn," New England Journal of Medicine, Vol. 342, No. 7, pages 469-474 (2000)	<input type="checkbox"/>
31	Cockrill et al., "Comparison of the Effects of Nitric Oxide, Nitroprusside, and Nifedipine on Hemodynamics and Right Ventricular Contractibility in Patients With Chronic Pulmonary Hypertension," CHEST, Vol. 119, No. 1, pages 128-136 (2001)	<input type="checkbox"/>
32	Comparison of Supplemental Oxygen and Nitric Oxide for Inhalation in the Evaluation of the Reactivity of the Pulmonary Vasculature During Acute Pulmonary Vasodilator Testing, <a href="http://clinicaltrials.gov/archive/NCT00626028/2009_01_12">http://clinicaltrials.gov/archive/NCT00626028/2009_01_12</a> January 12, 2009	<input type="checkbox"/>
33	Cornfield et al., "Randomized, Controlled Trial of Low-dose Inhaled Nitric Oxide in the Treatment of Term and Near-term Infants With Respiratory Failure and Pulmonary Hypertension," Pediatrics, Vol. 104, No. 5, pages 1089-1094 (1999)	<input type="checkbox"/>

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34	Cox et al., "Factors Associated with Establishing a Causal Diagnosis for Children with Cardiomyopathy," Pediatrics, Vol. 118, No 4, pages 1519-1531 (2006)	<input type="checkbox"/>
35	Cujec et al., "Inhaled Nitric Oxide Reduction in Systolic Pulmonary Artery Pressure in Less in Patients with Decreased Left Ventricular Ejection Fraction," Canadian Journal of Cardiology, Vol. 13(9), pages 816-824 (1997)	<input type="checkbox"/>
36	Cuthbertson et al., "UK guidelines for the use of inhaled nitric oxide therapy in adults ICUs," Intensive Care Med., Vol. 23, Springer-Verlag, pages 1212-1218 (1997)	<input type="checkbox"/>
37	Davidson et al., "Inhaled nitric oxide for the early treatment of persistent pulmonary hypertension of the term newborn: a randomized, double-masked, placebo-controlled, dose-response, multicenter study," PEDIATRICS, Vol. 101 (3 Pt 1), pages 325-34 (1998)	<input type="checkbox"/>
38	Davidson et al., "Safety of Withdrawing Inhaled Nitric Oxide Therapy in Persistent Pulmonary Hypertension of the Newborn," Pediatrics, Vol. 104, No. 2, pages 231-236 (1999)	<input type="checkbox"/>
39	Day et al., "Pulmonary Vasodilatory Effects of 12 and 60 Parts Per Million Inhaled Nitric Oxide in Children with Ventricular Septal Defect," The American Journal of Cardiology, Vol. 75, pages 196-198 (1995)	<input type="checkbox"/>
40	Definition of Contraindication on Medicine.net.com; <a href="http://www.medterms.com/script/main/art.asp?articlekey=17824">http://www.medterms.com/script/main/art.asp?articlekey=17824</a> ; retrieved 3/14/2011; 2 pages	<input type="checkbox"/>
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42	Dickstein et al., "A Theoretic Analysis of the Effect of Pulmonary Vasodilation on Pulmonary Venous Pressure: Implications for Inhaled Nitric Oxide Therapy," The Journal of Heart and Lung Transplant, pages 715-721 (1996)	<input type="checkbox"/>
43	Dorland, "The American Illustrated Medical Dictionary," 7th edition, W.B. Saunders Company, page 113 (1914)	<input type="checkbox"/>
44	Dorling, "Neurodevelopmental outcome following Nitric Oxide Therapy for Persistent Pulmonary Hypertension in Term Newborn Infants," Neonatal Intensive Care Unit, Leicester Royal Infirmary, 8/8/2003, modified 11/12/2003, 3 pages	<input type="checkbox"/>

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	Art Unit		
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	Attorney Docket Number		26047-0003007

45	Douwes et al., "The Maze of Vasodilator Response Criteria," Published online: 26 November 2010, <i>Pediatr. Cardiol.</i> , Vol. 32, pages 245-246 (2011)	<input type="checkbox"/>
46	Ehrenkranz, "Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure," <i>The Neonatal Inhaled Nitric Oxide Study Group</i> , <i>N. Engl. J. Med.</i> , Vol. 336, No. 9, pages 597-605 (1997)	<input type="checkbox"/>
47	<a href="http://www.cc.nih.gov/ccmd/clinical_services.html">http://www.cc.nih.gov/ccmd/clinical_services.html</a> , page last updated May 19, 2011	<input type="checkbox"/>
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Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-16
Name/Print	Janis K. Fraser	Registration Number	34819

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<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	16-OCT-2012
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Applicant : James S. Baldassarre et al.                      Art Unit : Unknown  
Serial No. : 13/651,660    Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

FIRST INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed SB-08 form. Under 35 USC §120, this application relies on the earlier filing date of application serial number 12/821,041. The listed references are either U.S. patents or US patent application publications, or were submitted or otherwise made of record in application serial no. 12/821,041, so are not provided with this filing.

This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 16, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
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Nancy Bechet

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

1	Elbl et al., "Long-term serial echocardiographic examination of late anthracycline cardiotoxicity and its prevention by dexrazoxane in paediatric patients," Eur. J. Pediatr., Vol. 164, pages 678-684 (2005)	<input type="checkbox"/>
2	EP 09251949 Office Action dated 10/11/2010, 5 pages	<input type="checkbox"/>
3	Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), NCT00005773 at ClinicalTrials.gov (2008)	<input type="checkbox"/>
4	European Patent Office minutes of oral proceedings in EP 09 251 949.5, with allowable claims (7 pages), dated May 23, 2012	<input type="checkbox"/>
5	Fauci et al., Harrison's Principles of Internal Medicine, pages 1287-1291 and 1360, 12th edition, McGraw Hill (1998)	<input type="checkbox"/>
6	Federal Regulations 21 CFR Part 312, << <a href="http://www.gcrc.uci.edu/rsa/aer.cfm">http://www.gcrc.uci.edu/rsa/aer.cfm</a> >>	<input type="checkbox"/>
7	Ferguson et al., "Inhaled nitric oxide for hypoxemic respiratory failure: Passing bad gas?," Canadian Medical Association Journal, Vol. 162 (1), pages 85-86 (2000)	<input type="checkbox"/>
8	Field, "Neonatal Ventilation With Inhaled Nitric Oxide Versus Ventilatory Support Without Inhaled Nitric Oxide for Preterm Infants With Severe Respiratory Failure: The INNOVO Multicentre Randomised Controlled Trial (ISRCTN 17821339)," Pediatrics Journal, Vol. 115, pages 926-936 (2005) DOI: 10.1542/peds.2004-1209	<input type="checkbox"/>
9	Figure from Dr. Green's presentation given 1/10/11; 1 page	<input type="checkbox"/>
10	Findlay, "Paradoxical Haemodynamic Response to Inhaled Nitric Oxide," International Journal of Intensive Care GB, Vol 5, No. 4, pages 134-139 (1998)	<input type="checkbox"/>
11	Finer et al., "Randomized, Prospective Study of Low-Dose Versus High-Dose Inhaled Nitric Oxide in the Neonate With Hypoxic Respiratory Failure," Pediatrics, Vol. 108, No. 4, pages 949-955 (2001)	<input type="checkbox"/>

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	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

12	Fraisse et al., "Acute pulmonary hypertension in infants and children: cGMP-related drugs," Pediatric Crit. Care Med., Vol 11, No. 2 (Suppl.), 4 pages (2010)	<input type="checkbox"/>
13	Fraisse et al., "Doppler echocardiographic predictors of outcome in newborns with persistent pulmonary hypertension," Cardiol Young. Vol. 14(3), pages 277-83 (2004)	<input type="checkbox"/>
14	Green, "Patent Ductus Ateriosus Demonstrating Shunting of Blood," Figure from presentation given 1/10/2011	<input type="checkbox"/>
15	Greenough, "Inhaled nitric oxide in the neonatal period", Expert Opinion on Investigational Drugs, Ashley Publications Ltd., pages 1601-1609 pages (2000)	<input type="checkbox"/>
16	Guidelines for Industry: Clinical Safety Data Management, <<www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidance/ucm073087.pdf>>, March 1995, 17 pages	<input type="checkbox"/>
17	Haddad et al., "Use of inhaled nitric oxide perioperatively and in intensive care patients," Anesthesiology, Vol. 92, pages 1821-1825 (2000)	<input type="checkbox"/>
18	Hare et al., "Influence of Inhaled Nitric Oxide on Systemic Flow and Ventricular Filling Pressure in Patients Receiving Mechanical Circulatory Assistance," Circulation, Vol. 95, pages 2250-2253 (1997)	<input type="checkbox"/>
19	Hayward et al., "Effect of Inhaled Nitric Oxide on Normal Human Left Ventricular Function," JACC, Vol. 30, No. 1, pages 49-56 (1997)	<input type="checkbox"/>
20	Hayward et al., "Inhaled Nitric Oxide in Cardiac Failure: Vascular Versus Ventricular Effects," Journal of Cardiovascular Pharmacology, Vol. 27, pages 80-85, ABSTRACT ONLY (1996)	<input type="checkbox"/>
21	Hayward et al., "Left Ventricular Chamber Function During Inhaled Nitric Oxide in Patients with Dilated Cardiomyopathy," J. Cardiovascular Pharmacology, Vol. 34, Iss. 5, pages 749-754, ABSTRACT (1999)	<input type="checkbox"/>
22	Hayward et al., "Inhaled nitric oxide in cardiology practice," Cardiovascular Research, Vol. 43, pages 628-638 (1999)	<input type="checkbox"/>

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23	Headrick, "Hemodynamic monitoring of the critically ill neonate," J. Perinat. Neonatal Nurs., Vol 5(4), pages 58-67 (1992)	<input type="checkbox"/>
24	Henrichsen et al., "Inhaled Nitric Oxide Can Cause Severe Systemic Hypotension," Journal of Pediatrics, Mosby-Year Book, St. Louis, MO, Vol. 129, No. 1, page 183 (1996)	<input type="checkbox"/>
25	Huddleston, "Indications for heart transplantation in children," Progress in Pediatric Cardiology, Vol. 26, pages 3-9 (2009)	<input type="checkbox"/>
26	Husten, "Dronedarone is Less Effective, But Safer Than Amiodarone in Atrial Fibrillation," page 3, (2009) <a href="http://www.npci.org.uk/blog/?p=778">http://www.npci.org.uk/blog/?p=778</a>	<input type="checkbox"/>
27	Hurford et al., "Nitric Oxide," Biology and Pathobiology, Academic Press, Chapter 56, pages 931-945 (2000)	<input type="checkbox"/>
28	Ichinose et al., "Inhaled Nitric Oxide - A Selective Pulmonary Vasodilator: Current Uses and Therapeutic Potential," Circulation, Vol. 109, pages 3106-3111 (2004)	<input type="checkbox"/>
29	Inglessis et al., "Does inhaled nitric oxide support the hemodynamic of spontaneous breathing patients with cardiogenic shock related to right ventricular myocardial infarction? Reply," JACC, Vol. 45, No. 6, pages 965-966 (2005)	<input type="checkbox"/>
30	Inglessis et al., "Hemodynamic effects of inhaled nitric oxide in right ventricular myocardial infarction and cardiogenic shock," JACC, Vol. 44, No. 4, pages 793-798 (2004)	<input type="checkbox"/>
31	Baldassarre, "Inhaled Nitric Oxide (INO) in Hypoxic Respiratory Failure, Study description, study sponsored by INO Therapeutics," ClinicalTrials.gov Identifier NCT00922532, 4 pages (2009)	<input type="checkbox"/>
32	"Inhaled Nitric Oxide and Hypoxic Respiratory Failure in Infants With Congenital Diaphragmatic Hernia," The Neonatal Inhaled Nitric Oxide Study Group (NINOS), Pediatrics, Vol. 99, No. 6, pages 838-845 (1997)	<input type="checkbox"/>
33	Inhaled Nitric Oxide by Oxygen Hood in Neonates, from ClinicalTrials.gov, NCT00732537, 08/08/2008	<input type="checkbox"/>

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34	Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure," The Neonatal Inhaled Nitric Oxide Study Group, N. Engl. J. Med., Vol. 336, No. 9, pages 597-605 (1997)	<input type="checkbox"/>
35	Inhaled Nitric Oxide in Neonates with Elevated A-a DO2 Gradients Not Requiring Mechanical Ventilation, from ClinicalTrials.gov archive, NCT00041548, 06/23/2005, 2 pages	<input type="checkbox"/>
36	INO Therapeutics, "Comparison of Inhaled Nitric Oxide and Oxygen in Patient Reactivity during Acute Pulmonary Vasodilator Testing," downloaded from clinicaltrials.gov on April 23, 2012; first received on February 20, 2008; last updated on October 18, 2010	<input type="checkbox"/>
37	INO Therapeutics, LLC, "INOflo for Inhalation 800ppm," package leaflet, 2010	<input type="checkbox"/>
38	INO Therapeutics, NCT00041548 at ClinicalTrials.gov (2005)	<input type="checkbox"/>
39	INO Therapeutics, NCT00551642 at ClinicalTrials.gov (2007)	<input type="checkbox"/>
40	INOMax (nitric oxide) for inhalation 100 and 800 ppm (parts per million), drug label insert, 2007, 2 pages	<input type="checkbox"/>
41	Ivy et al., "Dipyridamole attenuates rebound pulmonary hypertension after inhaled nitric oxide withdrawal in postoperative congenital heart disease," J. Thorac. Cardiovasc. Surg.; Vol. 115, pages 875-882 (1998)	<input type="checkbox"/>
42	James et al., "Treatment of heart failure in children," Current Pediatrics, Vol. 15, 539-548 (2005)	<input type="checkbox"/>
43	JP 2009157623 Office Action dated 02/15/2011, 3 pages	<input type="checkbox"/>
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	Art Unit		
	Examiner Name		
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45	JP 2009157623 Office Action dated 07/30/2010, 6 pages	<input type="checkbox"/>
46	JP 2009157623 Office Action response filed 06/18/2010, 37 pages (no translation)	<input type="checkbox"/>
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48	JP 2009157623 response filed 11/30/2010, 58 pages	<input type="checkbox"/>
49	Kay et al., "Congestive heart failure in pediatric patients," From the Department of Pediatrics, Duke University Medical Center, by Mosby, Inc., 6 pages (2001)	<input type="checkbox"/>
50	Kazerooni et al., "Cardiopulmonary Imaging," Lippincott Williams & Wilkins, pages 234-235 (2 pages) (2004)	<input type="checkbox"/>

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	Filing Date	2012-10-15
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Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-17
Name/Print	Janis K. Fraser	Registration Number	34819

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<b>EFS ID:</b>	14002613
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	17-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	09:26:16
<b>Application Type:</b>	Utility under 35 USC 111(a)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al. Art Unit : Unknown  
Serial No. : 13/651,660 Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

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SECOND INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed SB-08 form. Under 35 USC §120, this application relies on the earlier filing date of application serial number 12/821,041. Copies of the listed references are on record in application serial no. 12/821,041, so are not provided with this filing.

This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 17, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

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	First Named Inventor	Baldassarre		
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

1	Kieler-Jensen et al., "Inhaled nitric oxide in the evaluation of heart transplant candidates with elevated pulmonary vascular resistance", J. Heart Lung Transplant, Vol. 13, pages 366-375 (1994)	<input type="checkbox"/>
2	Kinsella et al., "Inhaled nitric oxide in premature neonates with severe hypoxaemic respiratory failure: a randomised controlled trial," The Lancet, Vol. 354, pages 1061-1065 (1999)	<input type="checkbox"/>
3	Konduri et al., "A Randomized Trial of Early Versus Standard Inhaled Nitric Oxide Therapy in Term and Near-Term Newborn Infants with Hypoxic Respiratory Failure," Pediatrics, Vol. 113 No. 3, pages 559-564 (2004)	<input type="checkbox"/>
4	Krasuski et al., "Inhaled Nitric Oxide Selectively Dilates Pulmonary Vasculature in Adult Patients With Pulmonary Hypertension, Irrespective of Etiology," Journal of the American College of Cardiology (JACC), Vol. 36, No. 7, pages 2204-2211 (2000)	<input type="checkbox"/>
5	Krohn, "Effect of inhaled nitric oxide on left ventricular and pulmonary vascular function," The Journal of Thoracic and Cardiovascular Surgery, Vol. 117(1), pages 195-196 (1999)	<input type="checkbox"/>
6	Kulik, "Inhaled nitric oxide in the management of congenital heart disease," Current Opinion in Cardiology, Vol. 11, pages 75-80 (1996)	<input type="checkbox"/>
7	Lavigne et al., "Cardiovascular Outcomes of Pediatric Seroreverters Perinatally Exposed to HAART," Cardiovascular Toxicology, Vol. 4, pages 187-197 (2004)	<input type="checkbox"/>
8	Letter of Acceptance for AU 2010202422, dated 10/7/2010	<input type="checkbox"/>
9	Letter of acceptance of AU application 2009202685, dated 08/10/2010, 3 pages	<input type="checkbox"/>
10	Lipschultz, "The effect of dexrazoxane on myocardial injury in doxorubicin-treated children with acute lymphoblastic leukemia," New England Journal of Medicine, Vol. 351, pages 145-153 (2004)	<input type="checkbox"/>
11	Lipschultz, "The incidence of pediatric cardiomyopathy in two regions of the United States," New England Journal of Medicine, April 24, 2003. << <a href="http://www.nejm.org/doi/full/10.1056/NEJMoa021715">http://www.nejm.org/doi/full/10.1056/NEJMoa021715</a> >>	<input type="checkbox"/>



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12	Lipshultz, "Ventricular dysfunction clinical research in infants, children and adolescents," Progress in Pediatric Cardiology, Vol. 12, pages 1-28 (2000)	<input type="checkbox"/>
13	Lipshultz, "Chronic Progressive Cardiac Dysfunction Years After Doxorubicin Therapy for Childhood Acute Lymphoblastic Leukemia," Journal of Clinical Oncology, Vol. 23, No 12, 8 pages (2005)	<input type="checkbox"/>
14	Lipshultz, "Clinical research directions in pediatric cardiology," Current Opinion in Pediatrics, Vol. 21, pages 585-593 (2009)	<input type="checkbox"/>
15	Lipshultz, "Establishing norms for echocardiographic measurement of cardiovascular structures and function in children," J. Appl. Physiol., Vol. 99, pages 386-388 (2005)	<input type="checkbox"/>
16	Lipshultz et al., "Cardiovascular status of infants and children of women infected with HIV-1 (P2C2 HIV): a cohort study," The Lancet, Vol. 360, pages 368-373 (2002)	<input type="checkbox"/>
17	Lipshultz et al., "Cardiovascular Trials in Long-Term Survivors of Childhood Cancer," Journal of Clinical Oncology, Vol. 22, Number 5, pages 769-773 (2004)	<input type="checkbox"/>
18	Lipshultz et al., "Long-Term Enalapril Therapy for Left Ventricular Dysfunction in Doxorubicin-Treated Survivors of Childhood Cancer," Journal of Clinical Oncology, Vol. 20, No 23, pages 4517-4522 (2002)	<input type="checkbox"/>
19	Lipshultz, "Frequency of clinically unsuspected myocardial injury at a children's hospital," American Heart Journal, Vol. 151, No 4, pages 916-922 (2006)	<input type="checkbox"/>
20	Loh et al., "Cardiovascular Effects of Inhaled Nitric Oxide in Patients with Left Ventricular Dysfunction," Circulation, Vol. 90, pages 2780-2785 (1994)	<input type="checkbox"/>
21	Macrae et al., "Inhaled nitric oxide therapy in neonates and children: reaching a European consensus," Intensive Care Med., Vol. 30, pages 372-380 (2004)	<input type="checkbox"/>
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23	Magee et al., "Comparison of Supplemental Oxygen and Nitric Oxide for Inhalation plus oxygen in the evaluation of the reactivity of the pulmonary vasculature during Acute Pulmonary Vasodilator Testing," 10/1/2004-10/31/2006, Research project description, 1 page, <a href="http://www.rbht.nhs.uk/research">http://www.rbht.nhs.uk/research</a>	<input type="checkbox"/>
24	Malloy, "Nitric Oxide Weaning, RT: For Decision Makers in Respiratory Care," <a href="http://rtmagazine.com/issues/articles/2000-12_05.asp">http://rtmagazine.com/issues/articles/2000-12_05.asp</a> , 3 pages, December 2000	<input type="checkbox"/>
25	Martinez et al., "Dermatological Cryosurgery in Primary Care with Dimethyl Ether Propane Spray in Comparison with Liquid Nitrogen," <i>Atencion Primaria</i> , Vol. 18, No. 5, pages 211 and 216 (1996)	<input type="checkbox"/>
26	Matsumoto et al., "Effect of Inhaled Nitric Oxide on Gas Exchange in Patients with Congestive Heart Failure," <i>Annals of Internal Medicine</i> , Vol. 130, No. 1, pages 40-44 (1999)	<input type="checkbox"/>
27	Meyler's Side Effects of Drugs: The International Encyclopedia of Adverse Drug Reactions and Interactions, Nitric Oxide, Fifteenth Edition, Elsevier B.V. (2006)	<input type="checkbox"/>
28	Michelakis et al., "Oral Sildenafil Is an Effective and Specific Pulmonary Vasodilator in Patients with Pulmonary Arterial Hypertension: Comparison with Inhaled Nitric Oxide," <i>Circulation</i> Vol. 105, pages 2398-2403 (2002)	<input type="checkbox"/>
29	Miller et al., "Nutrition in Pediatric Cardiomyopathy," <i>Prog. Pediatr. Cardiol.</i> Vol. 24(1), pages 59-71 (2007)	<input type="checkbox"/>
30	Mone, "Effects of Environmental Exposures on the Cardiovascular System: Prenatal Period Through Adolescence," <i>Pediatrics</i> . Vol. 113, No 4, pages 1058-1069 (2004)	<input type="checkbox"/>
31	Morales-Blanhir et al., "Clinical value of vasodilator test with inhaled nitric oxide for predicting long-term response to oral vasodilators in pulmonary hypertension," <i>Respiratory Medicine</i> , Vol. 98, pages 225-234 (2004)	<input type="checkbox"/>
32	Moss et al., "Moss and Adams' Heart Disease in Infants, Children, and Adolescents," <i>Coarctation of the Aorta</i> , Vol. 1, page 991 in part (2007)	<input type="checkbox"/>
33	Murray, "Angiotensin Converting Enzyme Inhibitory Peptides Derived from Food Proteins: Biochemistry, Bioactivity and Production," <i>Current Pharmaceutical Design</i> , pages 773-791 (2007)	<input type="checkbox"/>

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34	Murray et al., "Nitric Oxide and Septic Vascular Dysfunction," Anesth. Analg. Vol. 90, pages 89-101 (2000)	<input type="checkbox"/>
35	Natori et al., "Inhaled Nitric Oxide Modifies Left Ventricular Diastolic Stress in the Presence of Vasoactive Agents in Heart Failure," Am. J. Respir. Crit. Care Med, Vol. 167, pages 895-901 (2003)	<input type="checkbox"/>
36	NIH CC: Critical Care Services, <a href="http://www.cc.nih.gov/ccmd/clinical_services.html">http://www.cc.nih.gov/ccmd/clinical_services.html</a> ; retrieved 3/10/2011, 3 pages	<input type="checkbox"/>
37	"NIH Clinical Center 2 Critical Care Medicine Department Sample Rotations, Updated January 2007 << <a href="http://www.cc.nih.gov/ccmd/prof_opps/rotation.html">http://www.cc.nih.gov/ccmd/prof_opps/rotation.html</a> >>"	<input type="checkbox"/>
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45	Office Action Response for AU 2009202685 to 03/15/2010 OA, filed 06/08/2010 (16 pages)	<input type="checkbox"/>
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Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-22
Name/Print	Janis K. Fraser	Registration Number	34819

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<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	22-OCT-2012
<b>Filing Date:</b>	
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<b>Application Type:</b>	Utility under 35 USC 111(a)

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Applicant : James S. Baldassarre et al.                      Art Unit : Unknown  
Serial No. : 13/651,660    Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

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This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 22, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
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1	Ovodov et al., "Nitric Oxide: Clinical Applications," Seminars in Anesthesia, Saunders, CO, New York, NY, Vol 19, No. 2, pages 88-97 (2000)	<input type="checkbox"/>
2	Pazopanib Plus Lapatinib Compared to Lapatinib Alone in Subjects With Inflammatory Breast Cancer, page 4, ClinicalTrials.gov, << <a href="http://clinicaltrials.gov/ct2/show/NCT00558103">http://clinicaltrials.gov/ct2/show/NCT00558103</a> >> April 22, 2010	<input type="checkbox"/>
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7	Ricciardi et al., "Inhaled Nitric Oxide in Primary Pulmonary Hypertension: A Safe and Effective Agent for Predicting Response to Nifedipine," Journal of the American College of Cardiology (JACC,) Vol. 32, No. 4, pages 1068-1073 (1998)	<input type="checkbox"/>
8	Roberts, "Inhaled Nitric Oxide and Persistent Pulmonary Hypertension of the Newborn," The New England Journal of Medicine, Vol. 336, No 9, pages 605-610 (1997)	<input type="checkbox"/>
9	Roberts, "Nitric Oxide and the Lung," Marcel Dekker, Inc., New York, NY, pages 333-363 (1997)	<input type="checkbox"/>
10	Rosales et al., "Hemodynamic Effects Observed with Inhaled Nitric Oxide After Surgical Repair of Total Anomalous Pulmonary Venous Return," Pediatric Cardiology, Vol. 20, pages 224-226 (1999)	<input type="checkbox"/>
11	Rosenberg, "Inhaled nitric oxide in the premature infant with severe hypoxemic respiratory failure: A time for caution," The Journal of Pediatrics, Volume 133, Issue 6, pages 720-722 (1998)	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

12	Sadiq et al., "Inhaled Nitric Oxide in the Treatment of Moderate Persistent Pulmonary Hypertension of the Newborn: A Randomized Controlled, Multicenter Trial," Journal of Perinatology, Vol. 23, pages 98-103 (2003)	<input type="checkbox"/>
13	Search Report from EP 09251949 dated 05/10/10	<input type="checkbox"/>
14	Sehgal et al., "Experience with Inhaled Nitric Oxide Therapy in Hypoxic Respiratory Failure of the Newborn," Indian J. Chest Dis. Allied. Sci., Vol. 47, pages 245-249 (2005)	<input type="checkbox"/>
15	Semigran et al., "Hemodynamic Effects of Inhaled Nitric Oxide in Heart Failure," Journal of American College of Cardiology (JACC), Vol. 24, No. 4, pages 982-988 (1994)	<input type="checkbox"/>
16	Shapiro et al., "Diagnostic Dilemmas: Diastolic Heart Failure Causing Pulmonary Hypertension and Pulmonary Hypertension Causing Diastolic Dysfunction," Advances in Pulmonary Hypertension, Vol. 5(1), pages 13-20 (2006) <a href="http://www.phaonlineuniv.org/sites/default/files/spr_2006.pdf">http://www.phaonlineuniv.org/sites/default/files/spr_2006.pdf</a>	<input type="checkbox"/>
17	"Sibutramine-metformin Combination vs. Sibutramine and Metformin Monotherapy in Obese Patients, page 3, ClinicalTrials.gov, << <a href="http://clinicaltrials.gov/ct2/show/NCT00941382">http://clinicaltrials.gov/ct2/show/NCT00941382</a> >> Sponsored by Laboratorios Silanes S.A. de C.V. and Jorge González Canudas, July 15, 2009	<input type="checkbox"/>
18	Singh et al., "Nitric Oxide, the biological mediator of the decade: fact of fiction?," Eur. Respir. J. , Vol. 10, pages 699-707 (1997)	<input type="checkbox"/>
19	Smyth, "Inhaled nitric oxide treatment for preterm infants with hypoxic respiratory failure," Thorax, Vol. 55 (Suppl 1), pages S51-S55 (2000)	<input type="checkbox"/>
20	Somarriba et al., "Exercise rehabilitation in pediatric cardiomyopathy," Progress in Pediatric Cardiology, Vol. 25, pages 91-102 (2008)	<input type="checkbox"/>
21	Soto et al., "Cardiopulmonary Hemodynamics in Pulmonary Hypertension: Pressure Tracings, Waveforms, and More," Advances in Pulmonary Hypertension Winter, Vol. 7(4), pages 386-393 (2008)	<input type="checkbox"/>
22	Steinhorn et al., "Inhaled nitric oxide enhances oxygenation but not survival in infants with alveolar capillary dysplasia," The Journal of Pediatrics, pages 417-422 (1997)	<input type="checkbox"/>

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23	Steinhorn, "Persistent Pulmonary Hypertension in the Newborn and Infant", Vol. 1(2), pages 287-299 (1987) [downloaded from www. Emedicine.com on June 10, 2008]	<input type="checkbox"/>
24	Steinhorn, "Pulmonary Hypertension, Persistent-Newborn", Updated April 19, 2007, <a href="http://emedicine.medscape.com/article/898437-overview">http://emedicine.medscape.com/article/898437-overview</a>	<input type="checkbox"/>
25	Steudel et al., "Inhaled nitric oxide", Anesthesiology, Vol. 91, pages 1090-1121 (1999)	<input type="checkbox"/>
26	Strauss et al., "Pediatric Cardiomyopathy - A Long Way to Go", The New England Journal of Medicine, Vol. 348, no. 17, pages 1703-1705 (2003)	<input type="checkbox"/>
27	Toshniwal, et al., "Study of Comparative Effects of Oral Clonidine vs. Oral Diazepam Pre-Medication on the Extent and Duration of Sensory Blockade in Patients Undergoing Vaginal Hysterectomy Under Spinal Anaesthesia", Internet Journal of Anesthesiology (2009) << <a href="http://www.britannica.com/bps/additionalcontent/18/41575551/Study-of-Comparative-Effects-Oral-Clonidine-vs-Oral-Diazepam-Pre-Medication-on-the-Extent-and-Duration-of-Sensory-Blockade-in-Patients-Undergoing-Vaginal-Hysterectomy-Under-Spinal-Anaesthesia">http://www.britannica.com/bps/additionalcontent/18/41575551/Study-of-Comparative-Effects-Oral-Clonidine-vs-Oral-Diazepam-Pre-Medication-on-the-Extent-and-Duration-of-Sensory-Blockade-in-Patients-Undergoing-Vaginal-Hysterectomy-Under-Spinal-Anaesthesia</a> >>	<input type="checkbox"/>
28	The American Illustrated Medical Dictionary (Dorland, 7th ed., page 113) (1914)	<input type="checkbox"/>
29	The Effects of Nitric Oxide for Inhalation on the Development of Chronic Lung Disease in Pre-Term Infants, from ClinicalTrials.gov archive, NCT00551642, 10/30/2007, 3 pages	<input type="checkbox"/>
30	"The Encarta Webster's Dictionary of the English Language (2004) is the second edition of the Encarta World Dictionary, published 1999, << <a href="http://encarta.msn.com/encnet/features/dictionary/dictionaryhome.aspx">http://encarta.msn.com/encnet/features/dictionary/dictionaryhome.aspx</a> >>; used to look up the definitions of "precaution" and "exclusion"	<input type="checkbox"/>
31	The Neonatal Inhaled Nitric Oxide Study Group, The New England Journal of Medicine, Vol. 336(9), pages 597-604 (1997)	<input type="checkbox"/>
32	The NIH, Critical Care Therapy and Respiratory Care Section, Nitric Oxide Therapy, 13 pages (2000)	<input type="checkbox"/>
33	Towbin et al., "Incidence, Causes, and Outcomes of Dilated Cardiomyopathy in Children", JAMA, Vol. 296, No. 15, pages 1867-1876 (2006)	<input type="checkbox"/>

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34	Translated copy of the Japanese Office Action mailed February 15, 2011 for Japanese Patent Application No.2009-157623, a counterpart foreign application for US Patent Application No. 12/494,598	<input type="checkbox"/>
35	Troncy et al. "Inhaled nitric oxide: clinical applications, indications, and toxicology", Can. J. Anaesth, Vol. 44 (9), pages 972-988 (1997)	<input type="checkbox"/>
36	UCI General Clinical Research Center, Federal Regulations 21 CFR Part 312, << <a href="http://www.gcrc.uci.edu/rsa/aer.cfm">http://www.gcrc.uci.edu/rsa/aer.cfm</a> >>, retrieved 9/13/2010, 2 pages	<input type="checkbox"/>
37	University of Alabama, NCT00732537 at Clinicaltrials.gov (2008)	<input type="checkbox"/>
38	"Use of Inhaled Nitric Oxide", American Academy of Pediatrics - Committee on Fetus and Newborn, Pediatrics Vol. 106, No. 2, pages 344-345 (2000)	<input type="checkbox"/>
39	UTMB Respiratory Care Services, "Delivery of Inhaled Nitric Oxide Therapy through an Adult or Pediatric Nasal Cannula," 4 pages (2003)	<input type="checkbox"/>
40	van Dalen, "Treatment for Asymptomatic Anthracycline-Induced Cardiac Dysfunction in Childhood Cancer Survivors: The Need for Evidence," Journal of Clinical Oncology, Vol 21, No 17, pages 3375-3379 (2003)	<input type="checkbox"/>
41	Watson et al., "Clinical and Economic Effects of iNO in Premature Newborns With Respiratory Failure at 1 Year", Pediatrics, Vol. 124, pages 1333-1343 (2009)	<input type="checkbox"/>
42	Weinberger et al., "The Toxicology of Inhaled Nitric Oxide," Toxicological Sciences, Vol. 59, pages 5-16 (2001)	<input type="checkbox"/>
43	Weinberger et al., "Nitric Oxide in the lung: therapeutic and cellular mechanisms of action," Pharmacology & Therapeutics, Vol. 84, pages 401-411 (1999)	<input type="checkbox"/>
44	Wessel et al., "Improved Oxygenation in a Randomized Trial of Inhaled Nitric Oxide for Persistent Pulmonary Hypertension of the Newborn," Pediatrics, Vol. 100, No. 5, page E7 (1997)	<input type="checkbox"/>

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	Attorney Docket Number		26047-0003007

	45	Wessel et al., "Managing low cardiac output syndrome after congenital heart surgery," Crit. Care Med., Vol. 29(10) pages S220-S230 (2001)	<input type="checkbox"/>
	46	Wheeler et al., "The Central Nervous System in Pediatric Critical Illness and Injury," Pediatric Critical Care Medicine, Springer, page 278 (2007)	<input type="checkbox"/>
	47	Wilkinson et al., "Epidemiological and outcomes research in children with pediatric cardiomyopathy; discussions from the international workshop on primary and idiopathic cardiomyopathies in children," Progress in Pediatric Cardiology, Vol. 25, pages 23-25 (2008)	<input type="checkbox"/>
	48	Yoshida, "Well-illustrated Diagnostics and Treatment of Heart Failure," Professor of Kawasaki Medical University, cardiovascular internal medicine, Circulation, Up-to-Date Vol. 2, No. 4, pages 23-28 (2007)	<input type="checkbox"/>

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**EXAMINER SIGNATURE**

Examiner Signature	Date Considered
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-23
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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<b>EFS ID:</b>	14052102
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	23-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	13:18:40
<b>Application Type:</b>	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS_fourth_26047_0003007.pdf	63575 <small>144e93002bca32901080e0831cb9d45a3a0f51ef</small>	no	1

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al. Art Unit : Unknown  
Serial No. : 13/651,660 Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

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Commissioner for Patents  
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This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 23, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
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Signature  
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1	Ameduri et al., Heart Failure in Children, MED-Continuing Medical Education, University of Minnesota. 2009 July 29, (cited 2010 Nov 12); available from URL: <a href="http://www.cme.umn.edu/prod/groups/med/@pub/@med/@cme/documents/content/med_content_124593.pdf">http://www.cme.umn.edu/prod/groups/med/@pub/@med/@cme/documents/content/med_content_124593.pdf</a>	<input type="checkbox"/>
2	Konduri, "Early inhaled nitric oxide therapy for term and near-term newborn infants with hypoxic respiratory failure: neurodevelopmental follow-up," J. Pediatr. Vol. 150(3), pages 235-240, 240.e.1 (2007)	<input type="checkbox"/>
3	Barrington et al., "Inhaled nitric oxide for respiratory failure in preterm infants (review)," The Cochrane Collaboration, Wiley Publishers, 3 pages (2009)	<input type="checkbox"/>
4	Barst, Pediatr., "Vasodilator Testing with Nitric Oxide and/or Oxygen in Pediatric Pulmonary Hypertension," Cardiol., Vol. 31, pages 598-606 (2010)	<input type="checkbox"/>
5	Macrae, "Drug therapy in persistent pulmonary hypertension of the newborn," Semin. Neonatal, Vol. 2, pages 49-58 (1997)	<input type="checkbox"/>
6	Miller et al., "Guidelines for the safe administration of inhaled nitric oxide," Archives of Disease in Childhood, Vol. 10, pages F47-F49 (1994)	<input type="checkbox"/>

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	Attorney Docket Number	26047-0003007

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See attached certification statement.

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Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-24
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14061343
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	24-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	11:35:03
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS_26047_0003007_fifth.pdf	63557 <small>24aaa8b013fa91cca42aba0f4d8029abc6c918bc</small>	no	1

### Warnings:

### Information:

2	Information Disclosure Statement (IDS) Form (SB08)	SB08Numberfive260470003007.pdf	528478 <small>706acebf6fa20326968fae51cc2e605277d9c343</small>	no	4
<b>Warnings:</b>					
<b>Information:</b>					
<p>A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.</p>					
<b>Total Files Size (in bytes):</b>			592035		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : Unknown  
Serial No. : 13/651,660    Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

FIFTH INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed SB-08 form. Under 35 USC §120, this application relies on the earlier filing date of application serial number 12/821,041, filed on June 22, 2010. Copies of the listed references are on record in application serial no. 12/821,041, so are not provided with this filing.

This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 24, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

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I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.

October 24, 2012  
Date of Deposit or Transmission  
/Nancy Bechet/  
Signature  
Nancy Bechet  
Typed or Printed Name of Person Signing Certificate

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

<b>U.S.PATENTS</b>							Remove
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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

1	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/494, 598, mailed August 13, 2010 (26 pages)	<input type="checkbox"/>
2	U.S. Examiner Ernst V. Arnold, Notice of Abandonment in U.S. Serial No. 12/494, 598, mailed September 10, 2010 (2 pages)	<input type="checkbox"/>
3	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed September 23, 2010 (26 pages)	<input type="checkbox"/>
4	Lee & Hayes, Reply Amendment (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed October 1, 2010 (22 pages)	<input type="checkbox"/>
5	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed November 2, 2010 (25 pages)	<input type="checkbox"/>
6	Lee & Hayes, Reply Amendment (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed November 2, 2010, filed January 14, 2011 (12 pages)	<input type="checkbox"/>
7	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,866, mailed February 23, 2011 (2 pages)	<input type="checkbox"/>
8	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed March 1, 2011 (9 pages)	<input type="checkbox"/>
9	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed March 1, 2011 (5 pages)	<input type="checkbox"/>
10	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,866, mailed March 25, 2011 (3 pages)	<input type="checkbox"/>
11	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed November 2, 2010, filed May 2, 2011 (9 pages)	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

12	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed June 8, 2011 (32 pages)	<input type="checkbox"/>
13	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, August 24, 2011 (23 pages)	<input type="checkbox"/>
14	Fish & Richardson, P.C., Reply Brief in U.S. Serial No. 12/820,866 filed December 16, 2011 (21 pages)	<input type="checkbox"/>
15	Fish & Richardson, P.C., Supplement to Reply Brief in U.S. Serial No. 12/820,866 filed January 3, 2012 (3 pages)	<input type="checkbox"/>
16	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed August 17, 2010 (33 pages)	<input type="checkbox"/>
17	Lee & Hayes, Reply Amendment in U.S. Serial No. 12/820,980, mailed August 17, 2010, filed September 17, 2010 (25 pages)	<input type="checkbox"/>
18	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed October 28, 2010 (23 pages)	<input type="checkbox"/>
19	U.S. Examiner Ernst V. Arnold, Supplemental Office Action in U.S. Serial No. 12/820,980, mailed November 2, 2010 (4 pages)	<input type="checkbox"/>
20	Lee & Hayes, Reply after Final (Accelerated Exam-Transmittal Reply) in U.S. Serial No. 12/820,980, mailed November 2, 2010, filed November 12, 2010 (53 pages)	<input type="checkbox"/>
21	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,980, mailed November 29, 2010 (3 pages)	<input type="checkbox"/>
22	Lee & Hayes, Reply after Final (Accelerated Exam-Transmittal Reply) in U.S. Serial No. 12/820,980, mailed November 2, 2010, filed May 2, 2011 (23 pages)	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

23	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed June 10, 2011 (29 pages)	<input type="checkbox"/>
24	Lee & Hayes, Amendment in Reply to Office Action in U.S. Serial No. 12/820,980, mailed June 10, 2011, filed July 11, 2011 (115 pages)	<input type="checkbox"/>
25	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed September 9, 2011 (25 pages)	<input type="checkbox"/>
26	U.S. Examiner Ernst V. Arnold, Notice of Abandonment in U.S. Serial No. 12/820,980, mailed April 11, 2012 (2 pages)	<input type="checkbox"/>
27	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed August 13, 2010 (24 pages)	<input type="checkbox"/>
28	Lee & Hayes, Response to Office Action in U.S. Serial No. 12/821,020, mailed August 13, 2010, filed February 14, 2011 (18 pages)	<input type="checkbox"/>
29	Lee & Hayes, Supplemental Reply Amendment in U.S. Serial No. 12/821,020, filed April 12, 2011 (9 pages)	<input type="checkbox"/>
30	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed June 27, 2011 (28 pages)	<input type="checkbox"/>
31	Fish & Richardson, P.C., Amendment in Reply to Office Action, in U.S. Serial No. 12/821,020, mailed June 27, 2011, filed December 27, 2011 (31 pages)	<input type="checkbox"/>
32	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed January 31, 2012 (23 pages)	<input type="checkbox"/>
33	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed April 17, 2012 (4 pages)	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

34	Fish & Richardson, P.C., Statement of Substance of Interview and Comments on Examiner's Interview Summary, in U.S. Serial No. 12/821,020, filed April 23, 2012 (8 pages)	<input type="checkbox"/>
35	Fish & Richardson, P.C., Supplemental Amendment, in U.S. Serial No. 12/821,020, filed April 30, 2012 (10 pages)	<input type="checkbox"/>
36	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed June 15, 2012 (56 pages)	<input type="checkbox"/>
37	Fish & Richardson, P.C., Amendment in Reply, in U.S. Serial No. 12/821,020, mailed June 15, 2012, filed August 15, 2012 (15 pages)	<input type="checkbox"/>
38	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed August 17, 2010 (32 pages)	<input type="checkbox"/>
39	Lee & Hayes, Reply Amendment in U.S. Serial No. 12/821,041, mailed August 17, 2010, filed February 14, 2011 (28 pages)	<input type="checkbox"/>
40	Lee & Hayes, Supplemental Reply Amendment in U.S. Serial No. 12/821,041, mailed August 17, 2010, filed April 13, 2011 (9 pages)	<input type="checkbox"/>
41	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed June 27, 2011 (35 pages)	<input type="checkbox"/>
42	Fish & Richardson, P.C., Amendment in Reply to Office Action in U.S. Serial No. 12/821,041, mailed June 27, 2011, filed January 6, 2012 (155 pages)	<input type="checkbox"/>
43	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed February 10, 2012 (36 pages)	<input type="checkbox"/>
44	Fish & Richardson, P.C., in U.S. Serial No. 12/821,041, Supplemental Amendment and Remarks, filed May 11, 2012 (32 pages)	<input type="checkbox"/>



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

45	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed June 19, 2012 (61 pages)	<input type="checkbox"/>
46	Fish & Richardson, P.C., Amendment in Reply to Office Action, in U.S. Serial No. 12/821,041, mailed June 19, 2012, filed August 15, 2012 (17 pages)	<input type="checkbox"/>
47	Lee & Hayes Amendment in Reply to Office Action in U.S. Serial No. 12/820,866, mailed June 8, 2011, filed July 8, 2011 (23 pages)	<input type="checkbox"/>
48	Fish & Richardson, Brief on Appeal in U.S. Serial No. 12/820,866, filed October 4, 2011 (211 pages)	<input type="checkbox"/>
49	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed January 25, 2012 (4 pages)	<input type="checkbox"/>

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Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-26
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14084749
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	26-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	13:57:13
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	IDS26047_0003007.pdf	63422 3de336a72df1fc58f7eda214b1c8e426fca36e5a	no	1

### Warnings:

### Information:

2	Information Disclosure Statement (IDS) Form (SB08)	SB08Numbersix260470003007.pdf	613462 7510e441bf9d358fe5616d619dfa383eced9746c	no	8
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A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
3	Non Patent Literature	OA_12821020_081310.pdf	894542 7989673dca5e1921641abc2360c2290ad62c2a68	no	24
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5	Non Patent Literature	OA_12820866_092310.pdf	1000188 12d2d1158800b445a80538eed726d0b488c89cdf	no	26
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8	Non Patent Literature	RFOA_12820866_01142011.pdf	852700 55d628bb278224fbff07d014a438c95081d1560	no	12
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<b>Total Files Size (in bytes):</b>			86818937		

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**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

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**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : Unknown  
Serial No. : 13/651,660    Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SIXTH INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the enclosed SB-08 form. Copies of the documents are enclosed.

This statement is being filed within three months of the filing date of the application. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 26, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		26047-0003007

1	Fish & Richardson P.C., Supplemental Remarks in U.S. Serial No. 12/821,020, filed May 9, 2012 (22 pages)	<input type="checkbox"/>
2	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed January 25, 2012 (4 pages)	<input type="checkbox"/>
3	Fish & Richardson P.C., Statement of the Substance of the Interview and Comments on Examiner's Interview Summary, in U.S. Serial No. 12/821,020, mailed January 25, 2012, filed February 27, 2012 (7 pages)	<input type="checkbox"/>
4	U.S. Examiner Ernst V. Arnold, Examiner's Answer in U.S. Serial No. 12/820,866, mailed November 2, 2011 (27 pages)	<input type="checkbox"/>

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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	
	Examiner Name	
	Attorney Docket Number	26047-0003007

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-31
Name/Print	Janis K. Fraser	Registration Number	34819

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<b>EFS ID:</b>	14112856
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	31-OCT-2012
<b>Filing Date:</b>	
<b>Time Stamp:</b>	13:24:35
<b>Application Type:</b>	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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<b>Warnings:</b>					
<b>Information:</b>					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
3	Non Patent Literature	ExaminersAnswer_12820866_1022011.pdf	1011940 4b3612869bf8ff0b3e3da71b8e1b4c84e32c3813	no	27
<b>Warnings:</b>					
<b>Information:</b>					
4	Non Patent Literature	InterviewSummary_12821020_012512.pdf	199268 9475618bf5731c13e4852921908a58b46b255f8	no	4
<b>Warnings:</b>					
<b>Information:</b>					
5	Non Patent Literature	StatementInterview_12821020_022712.pdf	389578 d54b719e63cd15079ded44a78bca71c2620eb97	no	7
<b>Warnings:</b>					
<b>Information:</b>					
6	Non Patent Literature	Supplremarks_12821020_050912.pdf	391768 e4421be3807795850b9abf8ada9a1e78a95a255b	no	10
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			2668356		

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : Unknown  
Serial No. : 13/651,660    Examiner : Unknown  
Filed : October 15, 2012  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SEVENTH INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed SB-08 form. Copies of the references are enclosed.

This statement is being filed before the receipt of a first Office Action on the merits. Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 31, 2012

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

22921025.doc

CERTIFICATE OF (A) MAILING BY FIRST CLASS MAIL OR (B) TRANSMISSION  
I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.

October 31, 2012  
Date of Deposit or Transmission  
/Nancy Bechet/  
Signature  
Nancy Bechet

Typed or Printed Name of Person Signing Certificate

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875						Application or Docket Number 13/651,660				
<b>APPLICATION AS FILED - PART I</b>										
(Column 1)		(Column 2)		<b>SMALL ENTITY</b>		<b>OTHER THAN SMALL ENTITY</b>				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)	RATE(\$)	FEE(\$)				
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A	390				
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A	620				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A	250				
TOTAL CLAIMS (37 CFR 1.16(i))	25	minus 20 = *			x 62 =	310	OR			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = *			x 250 =	250				
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).					0.00				
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))						0.00				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL	1820				
<b>APPLICATION AS AMENDED - PART II</b>										
(Column 1)		(Column 2)		(Column 3)		<b>SMALL ENTITY</b>		<b>OTHER THAN SMALL ENTITY</b>		
<b>AMENDMENT A</b>	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)		
	Total (37 CFR 1.16(i))	*	**	=	x =		x =		OR	
	Independent (37 CFR 1.16(h))	*	***	=	x =		x =		OR	
	Application Size Fee (37 CFR 1.16(s))									OR
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									OR
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		OR	
<b>AMENDMENT B</b>	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)		
	Total (37 CFR 1.16(i))	*	**	=	x =		x =		OR	
	Independent (37 CFR 1.16(h))	*	***	=	x =		x =		OR	
	Application Size Fee (37 CFR 1.16(s))									OR
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									OR
					TOTAL ADD'L FEE		TOTAL ADD'L FEE		OR	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.</p>										



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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY.DOCKET.NO, TOT CLAIMS, IND CLAIMS. Row 1: 13/651,660, 10/15/2012, 3771, 2120, 26047-0003007, 25, 4

CONFIRMATION NO. 4656

94169
Fish & Richardson PC
P.O.Box 1022
minneapolis, MN 55440

FILING RECEIPT



Date Mailed: 11/05/2012

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections

Inventor(s)

James S. Baldassarre, Doylestown, PA;
Ralf Rosskamp, Chester, NJ;

Applicant(s)

INO THERAPEUTICS LLC, Hampton, NJ

Assignment For Published Patent Application

INO THERAPEUTICS LLC, Hampton, NJ

Power of Attorney: The patent practitioners associated with Customer Number 94169

Domestic Priority data as claimed by applicant

This application is a CON of 12/821,041 06/22/2010 PAT 8293284
which is a CON of 12/494,598 06/30/2009 ABN

Foreign Applications (You may be eligible to benefit from the Patent Prosecution Highway program at the USPTO. Please see http://www.uspto.gov for more information.)

If Required, Foreign Filing License Granted: 11/02/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 13/651,660

Projected Publication Date: 02/14/2013

Non-Publication Request: No

Early Publication Request: No

**Title**

Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas

**Preliminary Class**

128

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/651,660	10/15/2012	James S. Baldassarre	26047-0003007

**CONFIRMATION NO. 4656**

**POA ACCEPTANCE LETTER**

94169  
Fish & Richardson PC  
P.O.Box 1022  
minneapolis, MN 55440



Date Mailed: 11/05/2012

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/15/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/atesfai/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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MINNEAPOLIS MN 55440

**MAILED**  
**DEC 06 2012**  
**OFFICE OF PETITIONS**

Doc Code: TRACK1.GRANT

<b>Decision Granting Request for Prioritized Examination (Track I or After RCE)</b>	Application No.: 13/651,660
<p>1. THE REQUEST FILED <u>October 15, 2012</u> IS <b>GRANTED</b>.</p> <p>The above-identified application has met the requirements for prioritized examination</p> <p>A. <input checked="" type="checkbox"/> for an original nonprovisional application (Track I).</p> <p>B. <input type="checkbox"/> for an application undergoing continued examination (RCE).</p> <p>2. <b>The above-identified application will undergo prioritized examination.</b> The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:</p> <p>A. filing a <b><u>petition for extension of time</u></b> to extend the time period for filing a reply;</p> <p>B. filing an <b><u>amendment to amend the application to contain more than four independent claims, more than thirty total claims</u></b>, or a multiple dependent claim;</p> <p>C. filing a <b><u>request for continued examination</u></b>;</p> <p>D. filing a notice of appeal;</p> <p>E. filing a request for suspension of action;</p> <p>F. mailing of a notice of allowance;</p> <p>G. mailing of a final Office action;</p> <p>H. completion of examination as defined in 37 CFR 41.102; or</p> <p>I. abandonment of the application.</p> <p>Telephone inquiries with regard to this decision should be directed to Irvin Dingle at (571)272-3210, Office of Petitions.</p> <p>Irvin Dingle /Irvin Dingle/ [Signature]</p> <p>Petitions Examiner (Title)</p>	

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	3771
	Examiner Name	
	Attorney Docket Number	26047-0003007

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit	3771	
	Examiner Name		
	Attorney Docket Number	26047-0003007	

1	Fish & Richarson P.C., Express Abandonment in U.S. Serial No. 12/820,666 (1 page)	<input type="checkbox"/>
2	U.S. Examiner Ernst V. Arnold, Notice of Abandonment in U.S. Serial No. 12/820,866, mailed December 20, 2012 (2 pages)	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

**EXAMINER SIGNATURE**

Examiner Signature		Date Considered	
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**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	3771
	Examiner Name	
	Attorney Docket Number	26047-0003007

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-12-27
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14567379
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	27-DEC-2012
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	13:49:57
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
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### File Listing:

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1	Information Disclosure Statement (IDS) Form (SB08)	26047_0003007eighthIDS.pdf	612254 <small>76ff7e71ed292921e00be48cafc2429756c7f2</small>	no	4

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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/651,660 10/15/2012 James S. Baldassarre 26047-0003007 4656

94169 7590 01/11/2013
Fish & Richardson PC
P.O.Box 1022
minneapolis, MN 55440

EXAMINER

ARNOLD, ERNST V

ART UNIT PAPER NUMBER

1613

MAIL DATE DELIVERY MODE

01/11/2013

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



### **DETAILED ACTION**

Claims 1-30 are pending and under examination.

Please update the specification on page 1 to reflect the issuance of 12/821041 as US Patent 8293284.

#### ***Information Disclosure Statement***

The Examiner has considered all Information Disclosure Statements. The Examiner notes that on the IDS filed on 12/27/12, reference 1 is directed to 12/820666, which is believed to be a typo for 12/820866, and it has no mailing date. Due to the confusion over the application number, the Examiner has not considered the reference.

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed.

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Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over:

1. claims 1-29 of U.S. Patent No. 8282966. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed subject matter embraces or is embraced by the patented subject matter. The Patent discloses, for example, in claim 13:

13. A method of treatment comprising: 5
- (a) performing echocardiography to identify a plurality of children who are in need of 20 ppm inhaled nitric oxide treatment for pulmonary hypertension, wherein the children are not dependent on right-to-left shunting of blood; 10
  - (b) determining that a first child of the plurality has a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg and thus has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide; 15
  - (c) determining that a second child of the plurality does not have left ventricular dysfunction;
  - (d) administering the 20 ppm inhaled nitric oxide treatment to the second child; and 20
  - (e) excluding the first child from treatment with inhaled nitric oxide, based on the determination that the first child has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide. 25

While the patent

- does not expressly teach discontinuation of the treatment, such discretion is obvious to the artisan of inhaled nitric oxide technology due to the inherent physiological actions of NO and the need to look out for patient safety over any time period of administration. Consequently, the ordinary artisan would have recognized the obvious variation of the instant subject matter over the patented subject matter despite the slight changes in language.
2. claims 1-30 of U.S. Patent No. 8293284. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed subject matter embraces or is embraced by the patented subject matter. The Patent discloses, for example, in claim 13:

13. A method of treatment comprising:
- (a) performing echocardiography to identify a plurality of term or near-term neonate patients who are in need of 20 ppm inhaled nitric oxide treatment for pulmonary hypertension, wherein the patients are not dependent on right-to-left shunting of blood;
  - (b) determining that a first patient of the plurality has a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg and thus has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide;
  - (c) determining that a second patient of the plurality does not have left ventricular dysfunction;
  - (d) administering the 20 ppm inhaled nitric oxide treatment to the second patient; and
  - (e) excluding the first patient from treatment with inhaled nitric oxide, based on the determination that the first patient has left ventricular dysfunction, so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.

While the

patent does not expressly teach discontinuation of the treatment, such discretion is obvious to the artisan of inhaled nitric oxide technology due to the inherent physiological actions of NO and the need to look out for patient safety. Consequently, the ordinary artisan would have recognized the obvious variation of the instant subject matter over the patented subject matter despite the minor changes in language.

3. Claims 1-30 of copending application 13/683417. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instantly claimed subject matter embraces or is embraced by the copending subject matter. The copending application discloses, for example, in claim 1:

1. A method of treating patients who are candidates for inhaled nitric oxide treatment, which method reduces the risk that inhalation of nitric oxide gas will induce an increase in pulmonary capillary wedge pressure (PCWP) leading to pulmonary edema in neonatal patients with hypoxic respiratory failure, the method comprising:
  - (a) performing at least one diagnostic process to identify a plurality of term or near-term neonatal patients who have hypoxic respiratory failure and are candidates for 20 ppm inhaled nitric oxide treatment, wherein the patients are not dependent on right-to-left shunting of blood;
  - (b) determining that a first patient of the plurality does not have left ventricular dysfunction;
  - (c) determining that a second patient of the plurality has left ventricular dysfunction, so is at particular risk of increased PCWP leading to pulmonary edema upon treatment with inhaled nitric oxide;
  - (d) administering 20 ppm inhaled nitric oxide treatment to the first patient; and
  - (e) excluding the second patient from treatment with inhaled nitric oxide, based on the determination that the second patient has left ventricular dysfunction, so is at particular risk of increased PCWP leading to pulmonary edema upon treatment with inhaled nitric oxide.

While the copending application does not expressly teach discontinuation of the treatment, such discretion is obvious to the artisan of inhaled nitric oxide technology due to the inherent physiological actions of NO and the need to look out for patient safety. Consequently, the ordinary artisan would have recognized the obvious variation of the instant subject matter over the copending subject matter despite the minor changes in language.

### ***Conclusion***

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERNST ARNOLD whose telephone number is (571)272-8509. The examiner can normally be reached on M-F 7:15-4:45.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Kwon can be reached on 571-272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Ernst V Arnold/  
Primary Examiner, Art Unit 1613



## Inventor Information for 13/651660

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	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
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	Attorney Docket Number		26047-0003007	

1	Kieler-Jensen et al., "Inhaled nitric oxide in the evaluation of heart transplant candidates with elevated pulmonary vascular resistance", J. Heart Lung Transplant, Vol. 13, pages 366-375 (1994)	<input type="checkbox"/>
2	Kinsella et al., "Inhaled nitric oxide in premature neonates with severe hypoxaemic respiratory failure: a randomised controlled trial," The Lancet, Vol. 354, pages 1061-1065 (1999)	<input type="checkbox"/>
3	Konduri et al., "A Randomized Trial of Early Versus Standard Inhaled Nitric Oxide Therapy in Term and Near-Term Newborn Infants with Hypoxic Respiratory Failure," Pediatrics, Vol. 113 No. 3, pages 559-564 (2004)	<input type="checkbox"/>
4	Krasuski et al., "Inhaled Nitric Oxide Selectively Dilates Pulmonary Vasculature in Adult Patients With Pulmonary Hypertension, Irrespective of Etiology," Journal of the American College of Cardiology (JACC), Vol. 36, No. 7, pages 2204-2211 (2000)	<input type="checkbox"/>
5	Krohn, "Effect of inhaled nitric oxide on left ventricular and pulmonary vascular function," The Journal of Thoracic and Cardiovascular Surgery, Vol. 117(1), pages 195-196 (1999)	<input type="checkbox"/>
6	Kulik, "Inhaled nitric oxide in the management of congenital heart disease," Current Opinion in Cardiology, Vol. 11, pages 75-80 (1996)	<input type="checkbox"/>
7	Lavigne et al., "Cardiovascular Outcomes of Pediatric Seroreverters Perinatally Exposed to HAART," Cardiovascular Toxicology, Vol. 4, pages 187-197 (2004)	<input type="checkbox"/>
8	Letter of Acceptance for AU 2010202422, dated 10/7/2010	<input type="checkbox"/>
9	Letter of acceptance of AU application 2009202685, dated 08/10/2010, 3 pages	<input type="checkbox"/>
10	Lipschultz, "The effect of dexrazoxane on myocardial injury in doxorubicin-treated children with acute lymphoblastic leukemia," New England Journal of Medicine, Vol. 351, pages 145-153 (2004)	<input type="checkbox"/>
11	Lipschultz, "The incidence of pediatric cardiomyopathy in two regions of the United States," New England Journal of Medicine, April 24, 2003. << <a href="http://www.nejm.org/doi/full/10.1056/NEJMoa021715">http://www.nejm.org/doi/full/10.1056/NEJMoa021715</a> >>	<input type="checkbox"/>

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12	Lipshultz, "Ventricular dysfunction clinical research in infants, children and adolescents," Progress in Pediatric Cardiology, Vol. 12, pages 1-28 (2000)	<input type="checkbox"/>
13	Lipshultz, "Chronic Progressive Cardiac Dysfunction Years After Doxorubicin Therapy for Childhood Acute Lymphoblastic Leukemia," Journal of Clinical Oncology, Vol. 23, No 12, 8 pages (2005)	<input type="checkbox"/>
14	Lipshultz, "Clinical research directions in pediatric cardiology," Current Opinion in Pediatrics, Vol. 21, pages 585-593 (2009)	<input type="checkbox"/>
15	Lipshultz, "Establishing norms for echocardiographic measurement of cardiovascular structures and function in children," J. Appl. Physiol., Vol. 99, pages 386-388 (2005)	<input type="checkbox"/>
16	Lipshultz et al., "Cardiovascular status of infants and children of women infected with HIV-1 (P2C2 HIV): a cohort study," The Lancet, Vol. 360, pages 368-373 (2002)	<input type="checkbox"/>
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18	Lipshultz et al., "Long-Term Enalapril Therapy for Left Ventricular Dysfunction in Doxorubicin-Treated Survivors of Childhood Cancer," Journal of Clinical Oncology, Vol. 20, No 23, pages 4517-4522 (2002)	<input type="checkbox"/>
19	Lipshultz, "Frequency of clinically unsuspected myocardial injury at a children's hospital," American Heart Journal, Vol. 151, No 4, pages 916-922 (2006)	<input type="checkbox"/>
20	Loh et al., "Cardiovascular Effects of Inhaled Nitric Oxide in Patients with Left Ventricular Dsyfunction," Circulation, Vol. 90, pages 2780-2785 (1994)	<input type="checkbox"/>
21	Macrae et al., "Inhaled nitric oxide therapy in neonates and children: reaching a European consensus," Intensive Care Med., Vol. 30, pages 372-380 (2004)	<input type="checkbox"/>
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23	Magee et al., "Comparison of Supplemental Oxygen and Nitric Oxide for Inhalation plus oxygen in the evaluation of the reactivity of the pulmonary vasculature during Acute Pulmonary Vasodilator Testing," 10/1/2004-10/31/2006, Research project description, 1 page, <a href="http://www.rbht.nhs.uk/research">http://www.rbht.nhs.uk/research</a>	<input type="checkbox"/>
24	Malloy, "Nitric Oxide Weaning, RT: For Decision Makers in Respiratory Care," <a href="http://rtmagazine.com/issues/articles/2000-12_05.asp">http://rtmagazine.com/issues/articles/2000-12_05.asp</a> , 3 pages, December 2000	<input type="checkbox"/>
25	Martinez et al., "Dermatological Cryosurgery in Primary Care with Dimethyl Ether Propane Spray in Comparison with Liquid Nitrogen," <i>Atencion Primaria</i> , Vol. 18, No. 5, pages 211 and 216 (1996)	<input type="checkbox"/>
26	Matsumoto et al., "Effect of Inhaled Nitric Oxide on Gas Exchange in Patients with Congestive Heart Failure," <i>Annals of Internal Medicine</i> , Vol. 130, No. 1, pages 40-44 (1999)	<input type="checkbox"/>
27	Meyler's Side Effects of Drugs: The International Encyclopedia of Adverse Drug Reactions and Interactions, Nitric Oxide, Fifteenth Edition, Elsevier B.V. (2006)	<input type="checkbox"/>
28	Michelakis et al., "Oral Sildenafil Is an Effective and Specific Pulmonary Vasodilator in Patients with Pulmonary Arterial Hypertension: Comparison with Inhaled Nitric Oxide," <i>Circulation</i> Vol. 105, pages 2398-2403 (2002)	<input type="checkbox"/>
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30	Mone, "Effects of Environmental Exposures on the Cardiovascular System: Prenatal Period Through Adolescence," <i>Pediatrics</i> . Vol. 113, No 4, pages 1058-1069 (2004)	<input type="checkbox"/>
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32	Moss et al., "Moss and Adams' Heart Disease in Infants, Children, and Adolescents," <i>Coarctation of the Aorta</i> , Vol. 1, page 991 in part (2007)	<input type="checkbox"/>
33	Murray, "Angiotensin Converting Enzyme Inhibitory Peptides Derived from Food Proteins: Biochemistry, Bioactivity and Production," <i>Current Pharmaceutical Design</i> , pages 773-791 (2007)	<input type="checkbox"/>

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34	Murray et al., "Nitric Oxide and Septic Vascular Dysfunction," Anesth. Analg. Vol. 90, pages 89-101 (2000)	<input type="checkbox"/>
35	Natori et al., "Inhaled Nitric Oxide Modifies Left Ventricular Diastolic Stress in the Presence of Vasoactive Agents in Heart Failure," Am. J. Respir. Crit. Care Med, Vol. 167, pages 895-901 (2003)	<input type="checkbox"/>
36	NIH CC: Critical Care Services, <a href="http://www.cc.nih.gov/ccmd/clinical_services.html">http://www.cc.nih.gov/ccmd/clinical_services.html</a> ; retrieved 3/10/2011, 3 pages	<input type="checkbox"/>
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39	NIH Clinical Center, Department Policy and Procedure Manual for the Critical Care Therapy and Respiratory Care Section; Nitric Oxide Therapy, sections 3.1-3.1.2 & 5.2.3 (2000)	<input type="checkbox"/>
40	NIH Clinical Center 2 Critical Care Medicine Department Sample Rotations, Updated January 2007	<input type="checkbox"/>
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46	Office Action Response for JP2007157623 filed on 11/12/2009 (no English translation)	<input type="checkbox"/>
47	Office Action Response to AU 2010202422 OA dated 07/09/2010, response filed 09/01/2010	<input type="checkbox"/>
48	<a href="http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidance/ucm073087.pdf">www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidance/ucm073087.pdf</a> , March 1995	<input type="checkbox"/>

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**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-22
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**



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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Receipt date: 10/26/2012

13651660 - GALL:1613

Doc code: IDS

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	
	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		26047-0003007	

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	First Named Inventor	Baldassarre			
	Art Unit				
	Examiner Name				
	Attorney Docket Number		26047-0003007		

1	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/494, 598, mailed August 13, 2010 (26 pages)	<input type="checkbox"/>
2	U.S. Examiner Ernst V. Arnold, Notice of Abandonment in U.S. Serial No. 12/494, 598, mailed September 10, 2010 (2 pages)	<input type="checkbox"/>
3	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed September 23, 2010 (26 pages)	<input type="checkbox"/>
4	Lee & Hayes, Reply Amendment (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed October 1, 2010 (22 pages)	<input type="checkbox"/>
5	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed November 2, 2010 (25 pages)	<input type="checkbox"/>
6	Lee & Hayes, Reply Amendment (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed November 2, 2010, filed January 14, 2011 (12 pages)	<input type="checkbox"/>
7	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,866, mailed February 23, 2011 (2 pages)	<input type="checkbox"/>
8	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed March 1, 2011 (9 pages)	<input type="checkbox"/>
9	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed September 23, 2010, filed March 1, 2011 (5 pages)	<input type="checkbox"/>
10	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,866, mailed March 25, 2011 (3 pages)	<input type="checkbox"/>
11	Lee & Hayes, Reply After Final (Accelerated Exam-Transmittal Amendment/Reply) in U.S. Serial No. 12/820,866 mailed November 2, 2010, filed May 2, 2011 (9 pages)	<input type="checkbox"/>

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12	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, mailed June 8, 2011 (32 pages)	<input type="checkbox"/>
13	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,866, August 24, 2011 (23 pages)	<input type="checkbox"/>
14	Fish & Richardson, P.C., Reply Brief in U.S. Serial No. 12/820,866 filed December 16, 2011 (21 pages)	<input type="checkbox"/>
15	Fish & Richardson, P.C., Supplement to Reply Brief in U.S. Serial No. 12/820,866 filed January 3, 2012 (3 pages)	<input type="checkbox"/>
16	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed August 17, 2010 (33 pages)	<input type="checkbox"/>
17	Lee & Hayes, Reply Amendment in U.S. Serial No. 12/820,980, mailed August 17, 2010, filed September 17, 2010 (25 pages)	<input type="checkbox"/>
18	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed October 28, 2010 (23 pages)	<input type="checkbox"/>
19	U.S. Examiner Ernst V. Arnold, Supplemental Office Action in U.S. Serial No. 12/820,980, mailed November 2, 2010 (4 pages)	<input type="checkbox"/>
20	Lee & Hayes, Reply after Final (Accelerated Exam-Transmittal Reply) in U.S. Serial No. 12/820,980, mailed November 2, 2010, filed November 12, 2010 (53 pages)	<input type="checkbox"/>
21	U.S. Examiner Ernst V. Arnold, Advisory Action in U.S. Serial No. 12/820,980, mailed November 29, 2010 (3 pages)	<input type="checkbox"/>
22	Lee & Hayes, Reply after Final (Accelerated Exam-Transmittal Reply) in U.S. Serial No. 12/820,980, mailed November 2, 2010, filed May 2, 2011 (23 pages)	<input type="checkbox"/>

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23	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed June 10, 2011 (29 pages)	<input type="checkbox"/>
24	Lee & Hayes, Amendment in Reply to Office Action in U.S. Serial No. 12/820,980, mailed June 10, 2011, filed July 11, 2011 (115 pages)	<input type="checkbox"/>
25	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/820,980, mailed September 9, 2011 (25 pages)	<input type="checkbox"/>
26	U.S. Examiner Ernst V. Arnold, Notice of Abandonment in U.S. Serial No. 12/820,980, mailed April 11, 2012 (2 pages)	<input type="checkbox"/>
27	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed August 13, 2010 (24 pages)	<input type="checkbox"/>
28	Lee & Hayes, Response to Office Action in U.S. Serial No. 12/821,020, mailed August 13, 2010, filed February 14, 2011 (18 pages)	<input type="checkbox"/>
29	Lee & Hayes, Supplemental Reply Amendment in U.S. Serial No. 12/821,020, filed April 12, 2011 (9 pages)	<input type="checkbox"/>
30	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed June 27, 2011 (28 pages)	<input type="checkbox"/>
31	Fish & Richardson, P.C., Amendment in Reply to Office Action, in U.S. Serial No. 12/821,020, mailed June 27, 2011, filed December 27, 2011 (31 pages)	<input type="checkbox"/>
32	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed January 31, 2012 (23 pages)	<input type="checkbox"/>
33	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed April 17, 2012 (4 pages)	<input type="checkbox"/>

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34	Fish & Richardson, P.C., Statement of Substance of Interview and Comments on Examiner's Interview Summary, in U.S. Serial No. 12/821,020, filed April 23, 2012 (8 pages)	<input type="checkbox"/>
35	Fish & Richardson, P.C., Supplemental Amendment, in U.S. Serial No. 12/821,020, filed April 30, 2012 (10 pages)	<input type="checkbox"/>
36	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,020, mailed June 15, 2012 (56 pages)	<input type="checkbox"/>
37	Fish & Richardson, P.C., Amendment in Reply, in U.S. Serial No. 12/821,020, mailed June 15, 2012, filed August 15, 2012 (15 pages)	<input type="checkbox"/>
38	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed August 17, 2010 (32 pages)	<input type="checkbox"/>
39	Lee & Hayes, Reply Amendment in U.S. Serial No. 12/821,041, mailed August 17, 2010, filed February 14, 2011 (28 pages)	<input type="checkbox"/>
40	Lee & Hayes, Supplemental Reply Amendment in U.S. Serial No. 12/821,041, mailed August 17, 2010, filed April 13, 2011 (9 pages)	<input type="checkbox"/>
41	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed June 27, 2011 (35 pages)	<input type="checkbox"/>
42	Fish & Richardson, P.C., Amendment in Reply to Office Action in U.S. Serial No. 12/821,041, mailed June 27, 2011, filed January 6, 2012 (155 pages)	<input type="checkbox"/>
43	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed February 10, 2012 (36 pages)	<input type="checkbox"/>
44	Fish & Richardson, P.C., in U.S. Serial No. 12/821,041, Supplemental Amendment and Remarks, filed May 11, 2012 (32 pages)	<input type="checkbox"/>

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45	U.S. Examiner Ernst V. Arnold, Office Action in U.S. Serial No. 12/821,041, mailed June 19, 2012 (61 pages)	<input type="checkbox"/>
46	Fish & Richardson, P.C., Amendment in Reply to Office Action, in U.S. Serial No. 12/821,041, mailed June 19, 2012, filed August 15, 2012 (17 pages)	<input type="checkbox"/>
47	Lee & Hayes Amendment in Reply to Office Action in U.S. Serial No. 12/820,866, mailed June 8, 2011, filed July 8, 2011 (23 pages)	<input type="checkbox"/>
48	Fish & Richardson, Brief on Appeal in U.S. Serial No. 12/820,866, filed October 4, 2011 (211 pages)	<input type="checkbox"/>
49	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed January 25, 2012 (4 pages)	<input type="checkbox"/>

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	Art Unit		
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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-26
Name/Print	Janis K. Fraser	Registration Number	34819

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1	Ameduri et al., Heart Failure in Children, MED-Continuing Medical Education, University of Minnesota. 2009 July 29, (cited 2010 Nov 12); available from URL: <a href="http://www.cme.umn.edu/prod/groups/med/@pub/@med/@cme/documents/content/med_content_124593.pdf">http://www.cme.umn.edu/prod/groups/med/@pub/@med/@cme/documents/content/med_content_124593.pdf</a>	<input type="checkbox"/>
2	Konduri, "Early inhaled nitric oxide therapy for term and near-term newborn infants with hypoxic respiratory failure: neurodevelopmental follow-up," J. Pediatr. Vol. 150(3), pages 235-240, 240.e.1 (2007)	<input type="checkbox"/>
3	Barrington et al., "Inhaled nitric oxide for respiratory failure in preterm infants (review)," The Cochrane Collaboration, Wiley Publishers, 3 pages (2009)	<input type="checkbox"/>
4	Barst, Pediatr., "Vasodilator Testing with Nitric Oxide and/or Oxygen in Pediatric Pulmonary Hypertension," Cardiol., Vol. 31, pages 598-606 (2010)	<input type="checkbox"/>
5	Macrae, "Drug therapy in persistent pulmonary hypertension of the newborn," Semin. Neonatal, Vol. 2, pages 49-58 (1997)	<input type="checkbox"/>
6	Miller et al., "Guidelines for the safe administration of inhaled nitric oxide," Archives of Disease in Childhood, Vol. 10, pages F47-F49 (1994)	<input type="checkbox"/>

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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660	13651660 - GAU: 1613
	Filing Date	2012-10-15	
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	26047-0003007	
	Receipt date: 10/24/2012		

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-24
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**


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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /E.A./

<b>Search Notes</b>  	<b>Application/Control No.</b>  13651660	<b>Applicant(s)/Patent Under Reexamination</b>  BALDASSARRE ET AL.
	<b>Examiner</b>  ERNST ARNOLD	<b>Art Unit</b>  1613

SEARCHED			
Class	Subclass	Date	Examiner
128	200.24 text limited	1/10/13	eva
424	718 text limited	1/10/13	eva
600	483-485 text limited	1/01/13	eva

SEARCH NOTES		
Search Notes	Date	Examiner
inventor/assignee name EAST/PALM	1/10/13	eva
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SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
13/651,660	10/15/2012	424	1613	26047-0003007		
<b>APPLICANTS</b> James S. Baldassarre, Doylestown, PA; Ralf Rosskamp, Chester, NJ; INO THERAPEUTICS LLC, Hampton, NJ <b>** CONTINUING DATA *****</b> This application is a CON of 12/821,041 06/22/2010 PAT 8,293,284 which is a CON of 12/494,598 06/30/2009 ABN <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 11/02/2012						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and Acknowledged <u>/ERNST V ARNOLD/</u> <small>Examiner's Signature</small>		<input type="checkbox"/> Met after Allowance <small>Initials</small>	<b>STATE OR COUNTRY</b> PA	<b>SHEETS DRAWINGS</b> 0	<b>TOTAL CLAIMS</b> 25	<b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> Fish & Richardson PC P.O.Box 1022 Minneapolis, MN 55440 UNITED STATES						
<b>TITLE</b> Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas						
<b>FILING FEE RECEIVED</b> 2120	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		



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13651660 - GALL:1613

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	Attorney Docket Number		26047-0003007		

1	Ovodov et al., "Nitric Oxide: Clinical Applications," Seminars in Anesthesia, Saunders, CO, New York, NY, Vol 19, No. 2, pages 88-97 (2000)	<input type="checkbox"/>
2	Pazopanib Plus Lapatinib Compared to Lapatinib Alone in Subjects With Inflammatory Breast Cancer, page 4, ClinicalTrials.gov, << <a href="http://clinicaltrials.gov/ct2/show/NCT00558103">http://clinicaltrials.gov/ct2/show/NCT00558103</a> >> April 22, 2010	<input type="checkbox"/>
3	PCT/US2010/038652 Search Report dated 07/29/2010, 16 pages	<input type="checkbox"/>
4	Pepke-Zaba et al., "Inhaled nitric oxide as a cause of selective pulmonary vasodilation in pulmonary hypertension," The Lancet, Vol. 338, pages 1173-1174 (1991)	<input type="checkbox"/>
5	Ratnasamy et al., "Associations between neurohormonal and inflammatory activation and heart failure in children," American Heart Journal, pages 527-533 (2008)	<input type="checkbox"/>
6	Response filed 08/18/2010 to EP Search Report dated 05/10/10 for EP09251949	<input type="checkbox"/>
7	Ricciardi et al., "Inhaled Nitric Oxide in Primary Pulmonary Hypertension: A Safe and Effective Agent for Predicting Response to Nifedipine," Journal of the American College of Cardiology (JACC,) Vol. 32, No. 4, pages 1068-1073 (1998)	<input type="checkbox"/>
8	Roberts, "Inhaled Nitric Oxide and Persistent Pulmonary Hypertension of the Newborn," The New England Journal of Medicine, Vol. 336, No 9, pages 605-610 (1997)	<input type="checkbox"/>
9	Roberts, "Nitric Oxide and the Lung," Marcel Dekker, Inc., New York, NY, pages 333-363 (1997)	<input type="checkbox"/>
10	Rosales et al., "Hemodynamic Effects Observed with Inhaled Nitric Oxide After Surgical Repair of Total Anomalous Pulmonary Venous Return," Pediatric Cardiology, Vol. 20, pages 224-226 (1999)	<input type="checkbox"/>
11	Rosenberg, "Inhaled nitric oxide in the premature infant with severe hypoxemic respiratory failure: A time for caution," The Journal of Pediatrics, Volume 133, Issue 6, pages 720-722 (1998)	<input type="checkbox"/>

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12	Sadiq et al., "Inhaled Nitric Oxide in the Treatment of Moderate Persistent Pulmonary Hypertension of the Newborn: A Randomized Controlled, Multicenter Trial," Journal of Perinatology, Vol. 23, pages 98-103 (2003)	<input type="checkbox"/>
13	Search Report from EP 09251949 dated 05/10/10	<input type="checkbox"/>
14	Sehgal et al., "Experience with Inhaled Nitric Oxide Therapy in Hypoxic Respiratory Failure of the Newborn," Indian J. Chest Dis. Allied. Sci., Vol. 47, pages 245-249 (2005)	<input type="checkbox"/>
15	Semigran et al., "Hemodynamic Effects of Inhaled Nitric Oxide in Heart Failure," Journal of American College of Cardiology (JACC), Vol. 24, No. 4, pages 982-988 (1994)	<input type="checkbox"/>
16	Shapiro et al., "Diagnostic Dilemmas: Diastolic Heart Failure Causing Pulmonary Hypertension and Pulmonary Hypertension Causing Diastolic Dysfunction," Advances in Pulmonary Hypertension, Vol. 5(1), pages 13-20 (2006) <a href="http://www.phaonlineuniv.org/sites/default/files/spr_2006.pdf">http://www.phaonlineuniv.org/sites/default/files/spr_2006.pdf</a>	<input type="checkbox"/>
17	"Sibutramine-metformin Combination vs. Sibutramine and Metformin Monotherapy in Obese Patients, page 3, ClinicalTrials.gov, << <a href="http://clinicaltrials.gov/ct2/show/NCT00941382">http://clinicaltrials.gov/ct2/show/NCT00941382</a> >> Sponsored by Laboratorios Silanes S.A. de C.V. and Jorge González Canudas, July 15, 2009	<input type="checkbox"/>
18	Singh et al., "Nitric Oxide, the biological mediator of the decade: fact of fiction?," Eur. Respir. J. , Vol. 10, pages 699-707 (1997)	<input type="checkbox"/>
19	Smyth, "Inhaled nitric oxide treatment for preterm infants with hypoxic respiratory failure," Thorax, Vol. 55 (Suppl 1), pages S51-S55 (2000)	<input type="checkbox"/>
20	Somarriba et al., "Exercise rehabilitation in pediatric cardiomyopathy," Progress in Pediatric Cardiology, Vol. 25, pages 91-102 (2008)	<input type="checkbox"/>
21	Soto et al., "Cardiopulmonary Hemodynamics in Pulmonary Hypertension: Pressure Tracings, Waveforms, and More," Advances in Pulmonary Hypertension Winter, Vol. 7(4), pages 386-393 (2008)	<input type="checkbox"/>
22	Steinhorn et al., "Inhaled nitric oxide enhances oxygenation but not survival in infants with alveolar capillary dysplasia," The Journal of Pediatrics, pages 417-422 (1997)	<input type="checkbox"/>

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23	Steinhorn, "Persistent Pulmonary Hypertension in the Newborn and Infant", Vol. 1(2), pages 287-299 (1987) [downloaded from www. Emedicine.com on June 10, 2008	<input type="checkbox"/>
24	Steinhorn, "Pulmonary Hypertension, Persistent-Newborn", Updated April 19, 2007, <a href="http://emedicine.medscape.com/article/898437-overview">http://emedicine.medscape.com/article/898437-overview</a>	<input type="checkbox"/>
25	Steudel et al., "Inhaled nitric oxide", Anesthesiology, Vol. 91, pages 1090-1121 (1999)	<input type="checkbox"/>
26	Strauss et al., "Pediatric Cardiomyopathy - A Long Way to Go", The New England Journal of Medicine, Vol. 348, no. 17, pages 1703-1705 (2003)	<input type="checkbox"/>
27	Toshniwal, et al., "Study of Comparative Effects of Oral Clonidine vs. Oral Diazepam Pre-Medication on the Extent and Duration of Sensory Blockade in Patients Undergoing Vaginal Hysterectomy Under Spinal Anaesthesia", Internet Journal of Anesthesiology (2009) << <a href="http://www.britannica.com/bps/additionalcontent/18/41575551/Study-of-Comparative-Effects-Oral-Clonidine-vs-Oral-Diazepam-Pre-Medication-on-the-Extent-and-Duration-of-Sensory-Blockade-in-Patients-Undergoing-Vaginal-Hysterectomy-Under-Spinal-Anaesthesia">http://www.britannica.com/bps/additionalcontent/18/41575551/Study-of-Comparative-Effects-Oral-Clonidine-vs-Oral-Diazepam-Pre-Medication-on-the-Extent-and-Duration-of-Sensory-Blockade-in-Patients-Undergoing-Vaginal-Hysterectomy-Under-Spinal-Anaesthesia</a> >>	<input type="checkbox"/>
28	The American Illustrated Medical Dictionary (Dorland, 7th ed., page 113) (1914)	<input type="checkbox"/>
29	The Effects of Nitric Oxide for Inhalation on the Development of Chronic Lung Disease in Pre-Term Infants, from ClinicalTrials.gov archive, NCT00551642, 10/30/2007, 3 pages	<input type="checkbox"/>
30	"The Encarta Webster's Dictionary of the English Language (2004) is the second edition of the Encarta World Dictionary, published 1999, << <a href="http://encarta.msn.com/encnet/features/dictionary/dictionaryhome.aspx">http://encarta.msn.com/encnet/features/dictionary/dictionaryhome.aspx</a> >>; used to look up the definitions of "precaution" and "exclusion"	<input type="checkbox"/>
31	The Neonatal Inhaled Nitric Oxide Study Group, The New England Journal of Medicine, Vol. 336(9), pages 597-604 (1997)	<input type="checkbox"/>
32	The NIH, Critical Care Therapy and Respiratory Care Section, Nitric Oxide Therapy, 13 pages (2000)	<input type="checkbox"/>
33	Towbin et al., "Incidence, Causes, and Outcomes of Dilated Cardiomyopathy in Children", JAMA, Vol. 296, No. 15, pages 1867-1876 (2006)	<input type="checkbox"/>

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34	Translated copy of the Japanese Office Action mailed February 15, 2011 for Japanese Patent Application No.2009-157623, a counterpart foreign application for US Patent Application No. 12/494,598	<input type="checkbox"/>
35	Troncy et al. "Inhaled nitric oxide: clinical applications, indications, and toxicology", Can. J. Anaesth, Vol. 44 (9), pages 972-988 (1997)	<input type="checkbox"/>
36	UCI General Clinical Research Center, Federal Regulations 21 CFR Part 312, << <a href="http://www.gcrc.uci.edu/rsa/aer.cfm">http://www.gcrc.uci.edu/rsa/aer.cfm</a> >>, retrieved 9/13/2010, 2 pages	<input type="checkbox"/>
37	University of Alabama, NCT00732537 at Clinicaltrials.gov (2008)	<input type="checkbox"/>
38	"Use of Inhaled Nitric Oxide", American Academy of Pediatrics - Committee on Fetus and Newborn, Pediatrics Vol. 106, No. 2, pages 344-345 (2000)	<input type="checkbox"/>
39	UTMB Respiratory Care Services, "Delivery of Inhaled Nitric Oxide Therapy through an Adult or Pediatric Nasal Cannula," 4 pages (2003)	<input type="checkbox"/>
40	van Dalen, "Treatment for Asymptomatic Anthracycline-Induced Cardiac Dysfunction in Childhood Cancer Survivors: The Need for Evidence," Journal of Clinical Oncology, Vol 21, No 17, pages 3375-3379 (2003)	<input type="checkbox"/>
41	Watson et al., "Clinical and Economic Effects of iNO in Premature Newborns With Respiratory Failure at 1 Year", Pediatrics, Vol. 124, pages 1333-1343 (2009)	<input type="checkbox"/>
42	Weinberger et al., "The Toxicology of Inhaled Nitric Oxide," Toxicological Sciences, Vol. 59, pages 5-16 (2001)	<input type="checkbox"/>
43	Weinberger et al., "Nitric Oxide in the lung: therapeutic and cellular mechanisms of action," Pharmacology & Therapeutics, Vol. 84, pages 401-411 (1999)	<input type="checkbox"/>
44	Wessel et al., "Improved Oxygenation in a Randomized Trial of Inhaled Nitric Oxide for Persistent Pulmonary Hypertension of the Newborn," Pediatrics, Vol. 100, No. 5, page E7 (1997)	<input type="checkbox"/>

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45	Wessel et al., "Managing low cardiac output syndrome after congenital heart surgery," Crit. Care Med., Vol. 29(10) pages S220-S230 (2001)	<input type="checkbox"/>
46	Wheeler et al., "The Central Nervous System in Pediatric Critical Illness and Injury," Pediatric Critical Care Medicine, Springer, page 278 (2007)	<input type="checkbox"/>
47	Wilkinson et al., "Epidemiological and outcomes research in children with pediatric cardiomyopathy; discussions from the international workshop on primary and idiopathic cardiomyopathies in children," Progress in Pediatric Cardiology, Vol. 25, pages 23-25 (2008)	<input type="checkbox"/>
48	Yoshida, "Well-illustrated Diagnostics and Treatment of Heart Failure," Professor of Kawasaki Medical University, cardiovascular internal medicine, Circulation, Up-to-Date Vol. 2, No. 4, pages 23-28 (2007)	<input type="checkbox"/>

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Examiner Signature	/Ernst Arnold/	Date Considered	01/10/2013
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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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13651660 - GALL:1613

Doc code: IDS

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	First Named Inventor	Baldassarre		
	Art Unit			
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1	Fish & Richardson P.C., Supplemental Remarks in U.S. Serial No. 12/821,020, filed May 9, 2012 (22 pages)	<input type="checkbox"/>
2	U.S. Examiner Ernst V. Arnold, Interview Summary in U.S. Serial No. 12/821,020, mailed January 25, 2012 (4 pages)	<input type="checkbox"/>
3	Fish & Richardson P.C., Statement of the Substance of the Interview and Comments on Examiner's Interview Summary, in U.S. Serial No. 12/821,020, mailed January 25, 2012, filed February 27, 2012 (7 pages)	<input type="checkbox"/>
4	U.S. Examiner Ernst V. Arnold, Examiner's Answer in U.S. Serial No. 12/820,866, mailed November 2, 2011 (27 pages)	<input type="checkbox"/>

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**CERTIFICATION STATEMENT**

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-31
Name/Print	Janis K. Fraser	Registration Number	34819

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1	Elbl et al., "Long-term serial echocardiographic examination of late anthracycline cardiotoxicity and its prevention by dexrazoxane in paediatric patients," Eur. J. Pediatr., Vol. 164, pages 678-684 (2005)	<input type="checkbox"/>
2	EP 09251949 Office Action dated 10/11/2010, 5 pages	<input type="checkbox"/>
3	Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), NCT00005773 at ClinicalTrials.gov (2008)	<input type="checkbox"/>
4	European Patent Office minutes of oral proceedings in EP 09 251 949.5, with allowable claims (7 pages), dated May 23, 2012	<input type="checkbox"/>
5	Fauci et al., Harrison's Principles of Internal Medicine, pages 1287-1291 and 1360, 12th edition, McGraw Hill (1998)	<input type="checkbox"/>
6	Federal Regulations 21 CFR Part 312, << <a href="http://www.gcrc.uci.edu/rsa/aer.cfm">http://www.gcrc.uci.edu/rsa/aer.cfm</a> >>	<input type="checkbox"/>
7	Ferguson et al., "Inhaled nitric oxide for hypoxemic respiratory failure: Passing bad gas?," Canadian Medical Association Journal, Vol. 162 (1), pages 85-86 (2000)	<input type="checkbox"/>
8	Field, "Neonatal Ventilation With Inhaled Nitric Oxide Versus Ventilatory Support Without Inhaled Nitric Oxide for Preterm Infants With Severe Respiratory Failure: The INNOVO Multicentre Randomised Controlled Trial (ISRCTN 17821339)," Pediatrics Journal, Vol. 115, pages 926-936 (2005) DOI: 10.1542/peds.2004-1209	<input type="checkbox"/>
9	Figure from Dr. Green's presentation given 1/10/11; 1 page	<input type="checkbox"/>
10	Findlay, "Paradoxical Haemodynamic Response to Inhaled Nitric Oxide," International Journal of Intensive Care GB, Vol 5, No. 4, pages 134-139 (1998)	<input type="checkbox"/>
11	Finer et al., "Randomized, Prospective Study of Low-Dose Versus High-Dose Inhaled Nitric Oxide in the Neonate With Hypoxic Respiratory Failure," Pediatrics, Vol. 108, No. 4, pages 949-955 (2001)	<input type="checkbox"/>

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12	Fraisse et al., "Acute pulmonary hypertension in infants and children: cGMP-related drugs," Pediatric Crit. Care Med., Vol 11, No. 2 (Suppl.), 4 pages (2010)	<input type="checkbox"/>
13	Fraisse et al., "Doppler echocardiographic predictors of outcome in newborns with persistent pulmonary hypertension," Cardiol Young. Vol. 14(3), pages 277-83 (2004)	<input type="checkbox"/>
14	Green, "Patent Ductus Ateriosus Demonstrating Shunting of Blood," Figure from presentation given 1/10/2011	<input type="checkbox"/>
15	Greenough, "Inhaled nitric oxide in the neonatal period", Expert Opinion on Investigational Drugs, Ashley Publications Ltd., pages 1601-1609 pages (2000)	<input type="checkbox"/>
16	Guidelines for Industry: Clinical Safety Data Management, <<www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidance/ucm073087.pdf>>, March 1995, 17 pages	<input type="checkbox"/>
17	Haddad et al., "Use of inhaled nitric oxide perioperatively and in intensive care patients," Anesthesiology, Vol. 92, pages 1821-1825 (2000)	<input type="checkbox"/>
18	Hare et al., 'Influence of Inhaled Nitric Oxide on Systemic Flow and Ventricular Filling Pressure in Patients Receiving Mechanical Circulatory Assistance," Circulation, Vol. 95, pages 2250-2253 (1997)	<input type="checkbox"/>
19	Hayward et al., "Effect of Inhaled Nitric Oxide on Normal Human Left Ventricular Function," JACC, Vol. 30, No. 1, pages 49-56 (1997)	<input type="checkbox"/>
20	Hayward et al., "Inhaled Nitric Oxide in Cardiac Failure: Vascular Versus Ventricular Effects," Journal of Cardiovascular Pharmacology, Vol. 27, pages 80-85, ABSTRACT ONLY (1996)	<input type="checkbox"/>
21	Hayward et al., "Left Ventricular Chamber Function During Inhaled Nitric Oxide in Patients with Dilated Cardiomyopathy," J. Cardiovascular Pharmacology, Vol. 34, Iss. 5, pages 749-754, ABSTRACT (1999)	<input type="checkbox"/>
22	Hayward et al., "Inhaled nitric oxide in cardiology practice," Cardiovascular Research, Vol. 43, pages 628-638 (1999)	<input type="checkbox"/>

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23	Headrick, "Hemodynamic monitoring of the critically ill neonate," J. Perinat. Neonatal Nurs., Vol 5(4), pages 58-67 (1992)	<input type="checkbox"/>
24	Henrichsen et al., "Inhaled Nitric Oxide Can Cause Severe Systemic Hypotension," Journal of Pediatrics, Mosby-Year Book, St. Louis, MO, Vol. 129, No. 1, page 183 (1996)	<input type="checkbox"/>
25	Huddleston, "Indications for heart transplantation in children," Progress in Pediatric Cardiology, Vol. 26, pages 3-9 (2009)	<input type="checkbox"/>
26	Husten, "Dronedarone is Less Effective, But Safer Than Amiodarone in Atrial Fibrillation," page 3, (2009) <a href="http://www.npci.org.uk/blog/?p=778">http://www.npci.org.uk/blog/?p=778</a>	<input type="checkbox"/>
27	Hurford et al., "Nitric Oxide," Biology and Pathobiology, Academic Press, Chapter 56, pages 931-945 (2000)	<input type="checkbox"/>
28	Ichinose et al., "Inhaled Nitric Oxide - A Selective Pulmonary Vasodilator: Current Uses and Therapeutic Potential," Circulation, Vol. 109, pages 3106-3111 (2004)	<input type="checkbox"/>
29	Inglessis et al., "Does inhaled nitric oxide support the hemodynamic of spontaneous breathing patients with cardiogenic shock related to right ventricular myocardial infarction? Reply," JACC, Vol. 45, No. 6, pages 965-966 (2005)	<input type="checkbox"/>
30	Inglessis et al., "Hemodynamic effects of inhaled nitric oxide in right ventricular myocardial infarction and cardiogenic shock," JACC, Vol. 44, No. 4, pages 793-798 (2004)	<input type="checkbox"/>
31	Baldassarre, "Inhaled Nitric Oxide (INO) in Hypoxic Respiratory Failure, Study description, study sponsored by INO Therapeutics," ClinicalTrials.gov Identifier NCT00922532, 4 pages (2009)	<input type="checkbox"/>
32	"Inhaled Nitric Oxide and Hypoxic Respiratory Failure in Infants With Congenital Diaphragmatic Hernia," The Neonatal Inhaled Nitric Oxide Study Group (NINOS), Pediatrics, Vol. 99, No. 6, pages 838-845 (1997)	<input type="checkbox"/>
33	Inhaled Nitric Oxide by Oxygen Hood in Neonates, from ClinicalTrials.gov, NCT00732537, 08/08/2008	<input type="checkbox"/>



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34	Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure," The Neonatal Inhaled Nitric Oxide Study Group, N. Engl. J. Med., Vol. 336, No. 9, pages 597-605 (1997)	<input type="checkbox"/>
35	Inhaled Nitric Oxide in Neonates with Elevated A-a DO2 Gradients Not Requiring Mechanical Ventilation, from ClinicalTrials.gov archive, NCT00041548, 06/23/2005, 2 pages	<input type="checkbox"/>
36	INO Therapeutics, "Comparison of Inhaled Nitric Oxide and Oxygen in Patient Reactivity during Acute Pulmonary Vasodilator Testing," downloaded from clinicaltrials.gov on April 23, 2012; first received on February 20, 2008; last updated on October 18, 2010	<input type="checkbox"/>
37	INO Therapeutics, LLC, "INOflo for Inhalation 800ppm," package leaflet, 2010	<input type="checkbox"/>
38	INO Therapeutics, NCT00041548 at ClinicalTrials.gov (2005)	<input type="checkbox"/>
39	INO Therapeutics, NCT00551642 at ClinicalTrials.gov (2007)	<input type="checkbox"/>
40	INOMax (nitric oxide) for inhalation 100 and 800 ppm (parts per million), drug label insert, 2007, 2 pages	<input type="checkbox"/>
41	Ivy et al., "Dipyridamole attenuates rebound pulmonary hypertension after inhaled nitric oxide withdrawal in postoperative congenital heart disease," J. Thorac. Cardiovasc. Surg.; Vol. 115, pages 875-882 (1998)	<input type="checkbox"/>
42	James et al., "Treatment of heart failure in children," Current Pediatrics, Vol. 15, 539-548 (2005)	<input type="checkbox"/>
43	JP 2009157623 Office Action dated 02/15/2011, 3 pages	<input type="checkbox"/>
44	JP 2009157623 Office Action dated 02/23/2010, 3 pages	<input type="checkbox"/>

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45	JP 2009157623 Office Action dated 07/30/2010, 6 pages	<input type="checkbox"/>
46	JP 2009157623 Office Action response filed 06/18/2010, 37 pages (no translation)	<input type="checkbox"/>
47	JP 2009157623 request for accelerated exam filed 01/15/2010 (60 pages)	<input type="checkbox"/>
48	JP 2009157623 response filed 11/30/2010, 58 pages	<input type="checkbox"/>
49	Kay et al., "Congestive heart failure in pediatric patients," From the Department of Pediatrics, Duke University Medical Center, by Mosby, Inc., 6 pages (2001)	<input type="checkbox"/>
50	Kazerooni et al., "Cardiopulmonary Imaging," Lippincott Williams & Wilkins, pages 234-235 (2 pages) (2004)	<input type="checkbox"/>

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Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-17
Name/Print	Janis K. Fraser	Registration Number	34819

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Receipt date: 12/27/2012

13651660 - GALL:1613

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	
	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
	Art Unit	3771		
	Examiner Name			
	Attorney Docket Number	26047-0003007		

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	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
	Art Unit	3771		
	Examiner Name			
	Attorney Docket Number	26047-0003007		

1	<del>Fish &amp; Richardson P.C., Express Abandonment in U.S. Serial No. 12/820,666 (1 page)</del>	<input type="checkbox"/>
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	Filing Date	2012-10-15	
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	Art Unit	3771	
	Examiner Name		
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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-12-27
Name/Print	Janis K. Fraser	Registration Number	34819

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L2	0	(600/483-485.ccls. and ((inhale or inhaled) with ((nitric adj oxide) or NO)) and (left with (ventricular or ventricle)) and (hypoxic or hypoxia)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/10 09:24
L3	19	(424/718.ccls. and ((inhale or inhaled) with ((nitric adj oxide) or NO)) and (left with (ventricular or ventricle)) and (hypoxic or hypoxia)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/10 09:25
L4	13	I3 and (neonatal or preterm or infant or baby or babies or premie or premature)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/10 09:28
L5	1	"5904938".pn. and (neonatal or preterm or infant or baby or babies or premie or premature)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/10 09:30

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	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
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	1	5873359		1999-02-23	Zapol et al.	
	2	6063407		2000-05-16	Zapol et al.	
	3	6601580		2003-08-05	Bloch et al.	
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	1	20040106954		2004-06-03	Whitehurst et al.	
	2	20090018136		2009-01-15	Oppenheimer et al.	

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	First Named Inventor	Baldassarre			
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	3	20090029371		2009-01-29	Elliot	
	4	20090149541		2009-06-11	Stark et al.	
	5	20090176772		2009-07-09	Blackburn et al.	

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	1	EP1682672	EP		2006-07-26			<input type="checkbox"/>
	2	WO2005004884	WO		2005-01-20			<input type="checkbox"/>
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	First Named Inventor	Baldassarre			
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	Attorney Docket Number		26047-0003007		

1	Adatia et al., "Inhaled Nitric Oxide and Hemodynamic Evaluation of Patients With Pulmonary Hypertension Before Transplantation," Journal of the American College of Cardiology, Elsevier, New York, NY, Vol. 25, No. 7, page 1663, June 1, 1995	<input type="checkbox"/>
2	Advances in Pulmonary Hypertension, Vol. 7(4), pages 1-418, Winter 2008-2009 (entire issue)	<input type="checkbox"/>
3	Al-Alaiyan et al., "Inhaled nitric oxide in persistent pulmonary hypertension of the newborn refractory to high-frequency ventilation," Crit. Care, Vol. 3, No. 1, pages 7-10 (1999)	<input type="checkbox"/>
4	Argenziano et al., "Inhaled Nitric Oxide is not a Myocardial Depressant in a Porcine Model of Heart Failure," The Journal of Thoracic and Cardiovascular Surgery, Vol. 115, pages 700-704 (1998)	<input type="checkbox"/>
5	Atz et al., "Combined Effects of Nitric Oxide and Oxygen During Acute Pulmonary Vasodilator Testing," Journal of the American College of Cardiology (JACC), Vol. 33, No. 3, pages 813-819 (1999)	<input type="checkbox"/>
6	Atz et al., "Inhaled nitric oxide in the neonate with cardiac disease," Seminars in Perinatology, Vol. 21(5), pages 441-455 (1997)	<input type="checkbox"/>
7	AU 2009202685 Office Action dated 06/17/10 (3 pages)	<input type="checkbox"/>
8	AU 2009202685 Office Action Response dated 07/29/2010, 19 pages	<input type="checkbox"/>
9	Azeka et al., "Effects of Low Doses of Inhaled Nitric Oxide Combined with Oxygen for the Evaluation of Pulmonary Vascular Reactivity in Patients with Pulmonary Hypertension," Pediatric Cardiol., Vol. 23, pages 20-26 (2002)	<input type="checkbox"/>
10	Barrington et al., "Inhaled Nitric Oxide for Preterm Infants: A Systematic Review," Pediatrics, Vol. 120; pages 1088-1099, DOI: 10.1542/peds (2007)	<input type="checkbox"/>
11	Barst et al., "Nitric Oxide in Combination with Oxygen versus Either Oxygen Alone or Nitric Oxide Alone for Acute Vasodilator Testing in Children with Pulmonary Hypertension: A Multicenter, Randomized Study," INO Therapeutics/ Ikaria, Baltimore Convention Center, May 3, 2009, 2 pages, Abstract, downloaded 7/2/2009 from <a href="http://127.0.0.1:9080/PAS09A1/view.y?nu=PAS09L1_1507">http://127.0.0.1:9080/PAS09A1/view.y?nu=PAS09L1_1507</a>	<input type="checkbox"/>

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	Examiner Name				
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12	Barst et al., "Vasodilator Testing with Nitric Oxide and/or Oxygen in Pediatric Pulmonary Hypertension," Received: 14 September 2009 / Accepted: 19 January 2010 Springer Science+Business Media, LLC 2010, 9 pages	<input type="checkbox"/>
13	Beggs et al., "Cardiac Failure in Children," 17th Expert Committee on the Selection and Use of Essential Medicines, Geneva, March 2009, 31 pages	<input type="checkbox"/>
14	Beghetti et al., "Inhaled nitric oxide can cause severe systemic hypotension," Journal of Pediatrics, page 844 (1997)	<input type="checkbox"/>
15	Beghetti et al., "Inhaled nitric oxide and congenital cardiac disease," Cardiol. Young, Vol. 11, pages 142-152 (2001)	<input type="checkbox"/>
16	Behera et al., "Nesiritide Improves Hemodynamics in Children with Dilated Cardiomyopathy: A Pilot Study," Pediatr. Cardiol., Vol. 30, pages 26-34 (2009)	<input type="checkbox"/>
17	Bhagavan et al., "Potential role of ubiquinone (coenzyme Q10) in pediatric cardiomyopathy," Clinical Nutrition, Vol. 24, pages 331-338 (2005)	<input type="checkbox"/>
18	Bichel et al., "Successful weaning from cardiopulmonary bypass after cardiac surgery using inhaled nitric oxide", Pediatric Anaesthesia, Vol. 7, pages 335-339 (1997)	<input type="checkbox"/>
19	Bin-Nun et al., "Role of iNO in the modulation of pulmonary vascular resistance," Journal of Perinatology, Vol. 28, pages S84-S92 (2008)	<input type="checkbox"/>
20	Bland, "Pulmonary vascular dysfunction in preterm lambs with chronic lung disease," Am J Physical Lung Cell Mol. Physiol., Vol. 285: L76-L85 ( 2003)	<input type="checkbox"/>
21	Bloch et al., Cardiovasc. Res. 2007, "Inhaled NO as a therapeutic agent," Vol. 75(2), pages 339-348 (July 15, 2007)	<input type="checkbox"/>
22	Bocchi et al., "Inhaled Nitric Oxide Leading to Pulmonary Edema in Stable Severe Heart Failure," The American Journal of Cardiology, Vol. 74, pages 70-72 (1994)	<input type="checkbox"/>

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23	Bolooki, Clinical Application of the Intra-Aortic Balloon Pump, 3rd Ed., pages 252-253 (1998)	<input type="checkbox"/>
24	Branson, "Inhaled Nitric Oxide in Adults, The Science Journal of the American Association for Respiratory Care 1997 Open Forum Abstracts," December 7, 1997, 2 pages, retrieved at << <a href="http://www.rcjournal.com/abstracts/1997/?id=A00000929">http://www.rcjournal.com/abstracts/1997/?id=A00000929</a> >> on 12/22/2010	<input type="checkbox"/>
25	Braunwald, Heart Failure, chapter 233 of Harrison's Principles of Internal Medicine, 14th Edition, pages 1287-1291 and 1360 (1998)	<input type="checkbox"/>
26	Bublik et al., "Pediatric cardiomyopathy as a chronic disease: A perspective on comprehensive care programs, Progress in Pediatric," Pediatric Cardiology, Vol. 25, pages 103-111 (2008)	<input type="checkbox"/>
27	Budts et al., "Residual pulmonary vasoreactivity to inhaled nitric oxide in patients with severe obstructive pulmonary hypertension and Eisenmenger syndrome," Heart, Vol. 86, pages 553-558 (2001)	<input type="checkbox"/>
28	Canadian Office Action mailed May 31, 2011 for Canadian Patent Application No. 2671029, a counterpart foreign application of US application no. 12/494,598	<input type="checkbox"/>
29	Clark et al., "Low-Dose Nitric Oxide Therapy for Persistent Pulmonary Hypertension: 1-Year Follow-up," Journal of Perinatology, Vol. 23, pages 300-303 (2003)	<input type="checkbox"/>
30	Clark et al., "Low-Dose Nitric Oxide Therapy for Persistent Pulmonary Hypertension of the Newborn," New England Journal of Medicine, Vol. 342, No. 7, pages 469-474 (2000)	<input type="checkbox"/>
31	Cockrill et al., "Comparison of the Effects of Nitric Oxide, Nitroprusside, and Nifedipine on Hemodynamics and Right Ventricular Contractibility in Patients With Chronic Pulmonary Hypertension," CHEST, Vol. 119, No. 1, pages 128-136 (2001)	<input type="checkbox"/>
32	Comparison of Supplemental Oxygen and Nitric Oxide for Inhalation in the Evaluation of the Reactivity of the Pulmonary Vasculature During Acute Pulmonary Vasodilator Testing, <a href="http://clinicaltrials.gov/archive/NCT00626028/2009_01_12">http://clinicaltrials.gov/archive/NCT00626028/2009_01_12</a> January 12, 2009	<input type="checkbox"/>
33	Cornfield et al., "Randomized, Controlled Trial of Low-dose Inhaled Nitric Oxide in the Treatment of Term and Near-term Infants With Respiratory Failure and Pulmonary Hypertension," Pediatrics, Vol. 104, No. 5, pages 1089-1094 (1999)	<input type="checkbox"/>

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34	Cox et al., "Factors Associated with Establishing a Causal Diagnosis for Children with Cardiomyopathy," Pediatrics, Vol. 118, No 4, pages 1519-1531 (2006)	<input type="checkbox"/>
35	Cujec et al., "Inhaled Nitric Oxide Reduction in Systolic Pulmonary Artery Pressure in Less in Patients with Decreased Left Ventricular Ejection Fraction," Canadian Journal of Cardiology, Vol. 13(9), pages 816-824 (1997)	<input type="checkbox"/>
36	Cuthbertson et al., "UK guidelines for the use of inhaled nitric oxide therapy in adults ICUs," Intensive Care Med., Vol. 23, Springer-Verlag, pages 1212-1218 (1997)	<input type="checkbox"/>
37	Davidson et al., "Inhaled nitric oxide for the early treatment of persistent pulmonary hypertension of the term newborn: a randomized, double-masked, placebo-controlled, dose-response, multicenter study," PEDIATRICS, Vol. 101 (3 Pt 1), pages 325-34 (1998)	<input type="checkbox"/>
38	Davidson et al., "Safety of Withdrawing Inhaled Nitric Oxide Therapy in Persistent Pulmonary Hypertension of the Newborn," Pediatrics, Vol. 104, No. 2, pages 231-236 (1999)	<input type="checkbox"/>
39	Day et al., "Pulmonary Vasodilatory Effects of 12 and 60 Parts Per Million Inhaled Nitric Oxide in Children with Ventricular Septal Defect," The American Journal of Cardiology, Vol. 75, pages 196-198 (1995)	<input type="checkbox"/>
40	Definition of Contraindication on Medicine.net.com; <a href="http://www.medterms.com/script/main/art.asp?articlekey=17824">http://www.medterms.com/script/main/art.asp?articlekey=17824</a> ; retrieved 3/14/2011; 2 pages	<input type="checkbox"/>
41	Delivery of Inhaled Nitric Oxide Therapy through an Adult or Pediatric Nasal Cannula, Reference: UTMB RESPIRATORY CARE SERVICES Reviewed: 05/31/05	<input type="checkbox"/>
42	Dickstein et al., "A Theoretic Analysis of the Effect of Pulmonary Vasodilation on Pulmonary Venous Pressure: Implications for Inhaled Nitric Oxide Therapy," The Journal of Heart and Lung Transplant, pages 715-721 (1996)	<input type="checkbox"/>
43	Dorland, "The American Illustrated Medical Dictionary," 7th edition, W.B. Saunders Company, page 113 (1914)	<input type="checkbox"/>
44	Dorling, "Neurodevelopmental outcome following Nitric Oxide Therapy for Persistent Pulmonary Hypertension in Term Newborn Infants," Neonatal Intensive Care Unit, Leicester Royal Infirmary, 8/8/2003, modified 11/12/2003, 3 pages	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	13651660 - GAU: 1613	
	Filing Date		2012-10-15		
	First Named Inventor	Baldassarre			
	Art Unit				
	Examiner Name				
	Attorney Docket Number		26047-0003007		

45	Douwes et al., "The Maze of Vasodilator Response Criteria," Published online: 26 November 2010, <i>Pediatr. Cardiol.</i> , Vol. 32, pages 245-246 (2011)	<input type="checkbox"/>
46	Ehrenkranz, "Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure," <i>The Neonatal Inhaled Nitric Oxide Study Group</i> , <i>N. Engl. J. Med.</i> , Vol. 336, No. 9, pages 597-605 (1997)	<input type="checkbox"/>
47	<a href="http://www.cc.nih.gov/ccmd/clinical_services.html">http://www.cc.nih.gov/ccmd/clinical_services.html</a> , page last updated May 19, 2011	<input type="checkbox"/>
48	<a href="http://www.medterms.com/script/main/art.asp?articlekey=17824">http://www.medterms.com/script/main/art.asp?articlekey=17824</a> , Definition of Contraindication, last Editorial Review March 19, 2012	<input type="checkbox"/>
49		<input type="checkbox"/>
50		<input type="checkbox"/>

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**EXAMINER SIGNATURE**

Examiner Signature	/Ernst Arnold/	Date Considered	01/10/2013
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660	13651660 - GAU: 1613
	Filing Date	2012-10-15	
	First Named Inventor	Baldassarre	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	26047-0003007	
	Receipt date: 10/16/2012		

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-16
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

**Privacy Act Statement**

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /E.A./

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Serial No. : 13/651,660    Examiner : Ernst V. Arnold  
Filed : October 15, 2012    Conf. No. : 4656  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TERMINAL DISCLAIMER UNDER 37 C.F.R. §§ 3.73(b) AND 1.321(c)

Pursuant to 37 C.F.R. § 3.73(b), INO THERAPEUTICS LLC, a corporation, certifies that it is the assignee of the entire right, title, and interest in the present application (a 100% ownership interest) by virtue of a chain of title from the inventors of the present patent application to the current assignee as shown below:

1. From James S. Baldassarre and Ralf Rosskamp to Ikaria Holdings, Inc. The document was recorded in the Patent and Trademark Office at Reel 029128, Frame 0675.
2. From Ikaria Holdings, Inc. to Ikaria, Inc. A copy of the document is attached.
3. From Ikaria, Inc. to INO Therapeutics LLC. The document was recorded in the Patent and Trademark Office at Reel 029129, Frame 0201.

To the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned is empowered to act on behalf of the assignee.

Pursuant to 37 C.F.R. § 1.321(c), and to obviate a double patenting rejection, the assignee identified above hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application that would extend beyond the expiration date of the full statutory term of U.S. Patent No. 8,282,966. The assignee hereby agrees that any

CERTIFICATE OF (A) MAILING BY FIRST CLASS MAIL OR (B) TRANSMISSION  
I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.

January 16, 2013

\_\_\_\_\_  
Date of Deposit or Transmission

/Nancy Bechet/  
\_\_\_\_\_  
Signature

Nancy Bechet  
\_\_\_\_\_  
Typed or Printed Name of Person Signing Certificate

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 2

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

patent granted on the instant application shall be enforceable only for and during such period that it is commonly owned with U.S. Patent No. 8,282,966.

The assignee identified above does not disclaim any terminal part of any patent granted on the present application that would extend to the expiration date of the full statutory term of U.S. Patent No. 8,282,966 in the event that U.S. Patent No. 8,282,966 later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. § 1.321, has all claims cancelled by a reexamination certificate, is reissued, or is otherwise terminated prior to expiration of its full statutory term. The full statutory term of any patent includes any term adjustment as defined in 35 U.S.C. § 154 and § 173. Assignee herein does not disclaim or otherwise affect any part of U.S. Patent No. 8,282,966.

This disclaimer runs with any patent granted on the present application and is binding upon the grantee, its successors or assigns.

The fee of \$160 is being paid concurrently under 37 C.F.R. § 1.20(d). Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 15, 2013

/Janis K. Fraser/

Janis K. Fraser, Ph.D., J.D.

Reg. No. 34,819

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Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

22967523.doc

# Delaware

PAGE 1

*The First State*

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "IKARIA HOLDINGS, INC.", CHANGING ITS NAME FROM "IKARIA HOLDINGS, INC." TO "IKARIA, INC.", FILED IN THIS OFFICE ON THE SEVENTH DAY OF MAY, A.D. 2010, AT 12:36 O'CLOCK P.M.

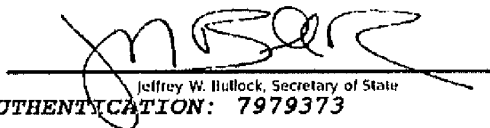
A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4196771 8100

100477026

You may verify this certificate online  
at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)



  
Jeffrey W. Bullock, Secretary of State  
AUTHENTICATION: 7979373

DATE: 05-07-10

RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKARIA HOLDINGS, INC.  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)

ARTICLE I  
NAME

The name of the Corporation is Ikaria, Inc. (the "Corporation").

ARTICLE II  
REGISTERED OFFICE AND AGENT

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

ARTICLE III  
PURPOSE

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

ARTICLE IV  
CAPITAL STOCK

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated

"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.



ARTICLE VII  
PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred" and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

ARTICLE VIII  
SERIES A PREFERRED STOCK

SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,

custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value

by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any



Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(c) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other

than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the

record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

#### SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) *Optional Conversion.* Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(c)(ii) of this Article IX.

(ii) *Automatic Conversion upon Initial Public Offering.* In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date hereof, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with



Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price

pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the

Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(c) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) or this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full

shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.



(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office of any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE XI BOARD OF DIRECTORS

#### SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

#### SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

#### SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

#### SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

#### SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws of the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation.

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws of the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

ARTICLE XIV  
NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

ARTICLE XV  
PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

ARTICLE XVI  
DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

"Additional Shares" has the meaning set forth in Section 6(b)(ii) of Article VIII.

"Applicable Series of the Series C Preferred Stock" means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

"Approved Options" means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation's 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

"Arbiter" shall have the meaning ascribed to such term in the definition of "Fair Market Value."

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.

"Fair Market Value" means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term "Closing Price", on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System ("Nasdaq") (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number or votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an "Arbiter") selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

"Initial Public Offering" means the first public offering of shares of Common Stock.

"Investor Stockholders Agreement" means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

"Issuance Date" means March 28, 2007.

"Junior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

"Liquidation" has the meaning set forth in Section 4(a) of Article VIII.

"Liquidation Preference" means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

"Nasdaq" has the meaning set forth in the definition of "Fair Market Value".



"Parity Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

"Person" means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

"Preferred Stock Purchase Agreement" means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

"Requisite Approval" means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

"Senior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

"Series A Transaction" has the meaning set forth in Section 6(c)(i) of Article VIII.

"Series B Transaction" has the meaning set forth in Section 6(c)(i) of Article IX.

"Stated Value" means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

"Subsidiary" of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

"Trading Day" means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

/s/ Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary



**RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKARIA HOLDINGS, INC.  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)**

**ARTICLE I  
NAME**

The name of the Corporation is Ikaria, Inc. (the "Corporation").

**ARTICLE II  
REGISTERED OFFICE AND AGENT**

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

**ARTICLE III  
PURPOSE**

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

**ARTICLE IV  
CAPITAL STOCK**

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated

"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share or Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.

## ARTICLE VII PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred") and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

## ARTICLE VIII SERIES A PREFERRED STOCK

### SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

### SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,



custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets or the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value

by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any

Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other



than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the

record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

#### SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) *Optional Conversion.* Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article IX.

(ii) *Automatic Conversion upon Initial Public Offering.* In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date herefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with

Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares or Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price



pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the

Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(c) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full

shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office or any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE XI BOARD OF DIRECTORS



## SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

## SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

## SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

## SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

## SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws or the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation,

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws or the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

#### ARTICLE XIV NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

#### ARTICLE XV PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

#### ARTICLE XVI DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

"Additional Shares" has the meaning set forth in Section 6(b)(ii) of Article VIII.

"Applicable Series of the Series C Preferred Stock" means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

"Approved Options" means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation's 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

"Arbiter" shall have the meaning ascribed to such term in the definition of "Fair Market Value."

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.

"Fair Market Value" means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term "Closing Price", on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System ("Nasdaq") (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number or votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an "Arbiter") selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

"Initial Public Offering" means the first public offering of shares of Common Stock.

"Investor Stockholders Agreement" means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

"Issuance Date" means March 28, 2007.

“Junior Securities” means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

“Liquidation” has the meaning set forth in Section 4(a) of Article VIII.

“Liquidation Preference” means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

“Nasdaq” has the meaning set forth in the definition of “Fair Market Value”.

**"Parity Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

**"Person"** means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

**"Preferred Stock Purchase Agreement"** means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

**"Requisite Approval"** means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

**"Senior Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

“Series A Transaction” has the meaning set forth in Section 6(c)(i) of Article VIII.

“Series B Transaction” has the meaning set forth in Section 6(c)(i) of Article IX.

“Stated Value” means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

“Subsidiary” of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

“Trading Day” means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary



## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Statutory or terminal disclaimer	1814	1	160	160
<b>Total in USD (\$)</b>				<b>160</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14716884
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	16-JAN-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	16:13:58
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$160
RAM confirmation Number	3080
Deposit Account	061050
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Terminal Disclaimer Filed	termdisc_0003007_8282966.pdf	3747621 b752cc9604dce01e8a2b94c7913ed65c979cd35	no	78
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	29953 3aaaa4fb2b030637a4cbff8c70cc2995defc157a	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			3777574		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Serial No. : 13/651,660    Examiner : Ernst V. Arnold  
Filed : October 15, 2012    Conf. No. : 4656  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TERMINAL DISCLAIMER UNDER 37 C.F.R. §§ 3.73(b) AND 1.321(c)

Pursuant to 37 C.F.R. § 3.73(b), INO THERAPEUTICS LLC, a corporation, certifies that it is the assignee of the entire right, title, and interest in the present application (a 100% ownership interest) by virtue of a chain of title from the inventors of the present patent application to the current assignee as shown below:

1. From James S. Baldassarre and Ralf Rosskamp to Ikaria Holdings, Inc. The document was recorded in the Patent and Trademark Office at Reel 029128, Frame 0675.
2. From Ikaria Holdings, Inc. to Ikaria, Inc. A copy of the document is attached.
3. From Ikaria, Inc. to INO Therapeutics LLC. The document was recorded in the Patent and Trademark Office at Reel 029129, Frame 0201.

To the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned is empowered to act on behalf of the assignee.

Pursuant to 37 C.F.R. § 1.321(c), and to obviate a double patenting rejection, the assignee identified above hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application that would extend beyond the expiration

CERTIFICATE OF (A) MAILING BY FIRST CLASS MAIL OR (B) TRANSMISSION  
I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.

January 16, 2013

Date of Deposit or Transmission

Nancy Bechet

Signature

Nancy Bechet

Typed or Printed Name of Person Signing Certificate

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 2

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

date of the full statutory term of U.S. Patent No. 8,293,284. The assignee hereby agrees that any patent granted on the instant application shall be enforceable only for and during such period that it is commonly owned with U.S. Patent No. 8,293,284.

The assignee identified above does not disclaim any terminal part of any patent granted on the present application that would extend to the expiration date of the full statutory term of U.S. Patent No. 8,293,284 in the event that U.S. Patent No. 8,293,284 later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. § 1.321, has all claims cancelled by a reexamination certificate, is reissued, or is otherwise terminated prior to expiration of its full statutory term. The full statutory term of any patent includes any term adjustment as defined in 35 U.S.C. § 154 and § 173. Assignee herein does not disclaim or otherwise affect any part of U.S. Patent No. 8,293,284.

This disclaimer runs with any patent granted on the present application and is binding upon the grantee, its successors or assigns.

The fee of \$160 is being paid concurrently under 37 C.F.R. § 1.20(d). Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 15, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

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# Delaware

PAGE 1

*The First State*

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "IKARIA HOLDINGS, INC.", CHANGING ITS NAME FROM "IKARIA HOLDINGS, INC." TO "IKARIA, INC.", FILED IN THIS OFFICE ON THE SEVENTH DAY OF MAY, A.D. 2010, AT 12:36 O'CLOCK P.M.

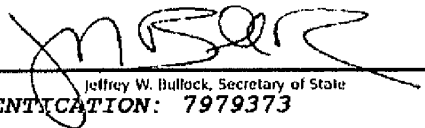
A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4196771 8100

100477026

You may verify this certificate online  
at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)



  
Jeffrey W. Bullock, Secretary of State  
AUTHENTICATION: 7979373

DATE: 05-07-10

RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKARIA HOLDINGS, INC.  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)

ARTICLE I  
NAME

The name of the Corporation is Ikaria, Inc. (the "Corporation").

ARTICLE II  
REGISTERED OFFICE AND AGENT

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

ARTICLE III  
PURPOSE

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

ARTICLE IV  
CAPITAL STOCK

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated "Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated



"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.

ARTICLE VII  
PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred") and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

ARTICLE VIII  
SERIES A PREFERRED STOCK

SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,

custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets or the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value

by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:



(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any

Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other

than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the



record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

#### SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) *Optional Conversion.* Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(c)(i) of this Article IX.

(ii) *Automatic Conversion upon Initial Public Offering.* In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date herefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with

Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price

pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(i) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the

Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) or this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full



shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office of any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE XI BOARD OF DIRECTORS

#### SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

#### SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

#### SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

#### SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

#### SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws of the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation.

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws of the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

#### ARTICLE XIV NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

#### ARTICLE XV PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

#### ARTICLE XVI DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

“Additional Shares” has the meaning set forth in Section 6(b)(ii) of Article VIII.

“Applicable Series of the Series C Preferred Stock” means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

“Approved Options” means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation’s 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

“Arbiter” shall have the meaning ascribed to such term in the definition of “Fair Market Value.”

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.



"Fair Market Value" means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term "Closing Price", on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System ("Nasdaq") (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number or votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an "Arbiter") selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

"Initial Public Offering" means the first public offering of shares of Common Stock.

"Investor Stockholders Agreement" means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

"Issuance Date" means March 28, 2007.

"Junior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

"Liquidation" has the meaning set forth in Section 4(a) of Article VIII.

"Liquidation Preference" means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

"Nasdaq" has the meaning set forth in the definition of "Fair Market Value".

"Parity Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

"Person" means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

"Preferred Stock Purchase Agreement" means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

"Requisite Approval" means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

"Senior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

"Series A Transaction" has the meaning set forth in Section 6(c)(i) of Article VIII.

"Series B Transaction" has the meaning set forth in Section 6(c)(i) of Article IX.

"Stated Value" means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

"Subsidiary" of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

"Trading Day" means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

/s/ Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary



**RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKARIA HOLDINGS, INC.  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)**

**ARTICLE I  
NAME**

The name of the Corporation is Ikaria, Inc. (the "Corporation").

**ARTICLE II  
REGISTERED OFFICE AND AGENT**

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

**ARTICLE III  
PURPOSE**

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

**ARTICLE IV  
CAPITAL STOCK**

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated

"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share or Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.



ARTICLE VII  
PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred") and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

ARTICLE VIII  
SERIES A PREFERRED STOCK

SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,

custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets or the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value

by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any



Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other

than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the

record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

## SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) *Optional Conversion.* Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(c)(ii) of this Article IX.

(ii) *Automatic Conversion upon Initial Public Offering.* In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date herefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with



Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares or Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price

pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the

Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full

shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.



(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office or any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE XI BOARD OF DIRECTORS

## SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

## SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

## SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

## SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

## SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws or the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation,

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws or the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

#### ARTICLE XIV NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

#### ARTICLE XV PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

#### ARTICLE XVI DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

“Additional Shares” has the meaning set forth in Section 6(b)(ii) of Article VIII.

“Applicable Series of the Series C Preferred Stock” means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

“Approved Options” means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation’s 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

“Arbiter” shall have the meaning ascribed to such term in the definition of “Fair Market Value.”

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.

**"Fair Market Value"** means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term "Closing Price", on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System ("Nasdaq") (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number or votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an "Arbiter") selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

**"Initial Public Offering"** means the first public offering of shares of Common Stock.

**"Investor Stockholders Agreement"** means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

**"Issuance Date"** means March 28, 2007.

“Junior Securities” means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

“Liquidation” has the meaning set forth in Section 4(a) of Article VIII.

“Liquidation Preference” means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

“Nasdaq” has the meaning set forth in the definition of “Fair Market Value”.



**"Parity Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

**"Person"** means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

**"Preferred Stock Purchase Agreement"** means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

**"Requisite Approval"** means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

**"Senior Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

"Series A Transaction" has the meaning set forth in Section 6(c)(i) of Article VIII.

"Series B Transaction" has the meaning set forth in Section 6(c)(i) of Article IX.

"Stated Value" means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

"Subsidiary" of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

"Trading Day" means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Statutory or terminal disclaimer	1814	1	160	160
<b>Total in USD (\$)</b>				<b>160</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14716986
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	16-JAN-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	16:17:31
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$160
RAM confirmation Number	3171
Deposit Account	061050
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Terminal Disclaimer Filed	termdis_0003007_8293284.pdf	3743693 43fe36dfa96cd5e8f8a6649b9a96e60380533850	no	78
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	29954 81cc3fbbb75ee2d27064b60a08859047231ed092	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			3773647		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Serial No. : 13/651,660    Examiner : Ernst V. Arnold  
Filed : October 15, 2012    Conf. No. : 4656  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TERMINAL DISCLAIMER UNDER 37 C.F.R. §§ 3.73(b) AND 1.321(c)

Pursuant to 37 C.F.R. § 3.73(b), INO THERAPEUTICS LLC, a corporation, certifies that it is the assignee of the entire right, title, and interest in the present application (a 100% ownership interest) by virtue of a chain of title from the inventors of the present patent application to the current assignee as shown below:

1. From James S. Baldassarre and Ralf Rosskamp to Ikaria Holdings, Inc. The document was recorded in the Patent and Trademark Office at Reel 029128, Frame 0675.
2. From Ikaria Holdings, Inc. to Ikaria, Inc. A copy of the document is attached.
3. From Ikaria, Inc. to INO Therapeutics LLC. The document was recorded in the Patent and Trademark Office at Reel 029129, Frame 0201.

To the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned is empowered to act on behalf of the assignee.

Pursuant to 37 C.F.R. § 1.321(c), and to obviate a double patenting rejection, the assignee identified above hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application that would extend beyond the expiration

CERTIFICATE OF (A) MAILING BY FIRST CLASS MAIL OR (B) TRANSMISSION  
I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.  
January 16, 2013  
Date of Deposit or Transmission  
/Nancy Bechet/  
Signature  
Nancy Bechet  
Typed or Printed Name of Person Signing Certificate

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 2

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

date of the full statutory term of the patent that issues from U.S. application no. 13/683,417. The assignee hereby agrees that any patent granted on the instant application shall be enforceable only for and during such period that it is commonly owned with the patent that issues from U.S. application no. 13/683,417.

The assignee identified above does not disclaim any terminal part of any patent granted on the present application that would extend to the expiration date of the full statutory term of the patent that issues from U.S. application no. 13/683,417 in the event that the latter patent later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. § 1.321, has all claims cancelled by a reexamination certificate, is reissued, or is otherwise terminated prior to expiration of its full statutory term. The full statutory term of any patent includes any term adjustment as defined in 35 U.S.C. § 154 and § 173. Assignee herein does not disclaim or otherwise affect any part of the patent that issues from U.S. application no. 13/683,417.

This disclaimer runs with any patent granted on the present application and is binding upon the grantee, its successors or assigns.

The fee of \$160 is being paid concurrently under 37 C.F.R. § 1.20(d). Apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 15, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

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# Delaware

PAGE 1

*The First State*

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "IKARIA HOLDINGS, INC.", CHANGING ITS NAME FROM "IKARIA HOLDINGS, INC." TO "IKARIA, INC.", FILED IN THIS OFFICE ON THE SEVENTH DAY OF MAY, A.D. 2010, AT 12:36 O'CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4196771 8100

100477026

You may verify this certificate online  
at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)



  
Jeffrey W. Bullock, Secretary of State  
AUTHENTICATION: 7979373

DATE: 05-07-10

RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
IKARIA HOLDINGS, INC.  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)

ARTICLE I  
NAME

The name of the Corporation is Ikaria, Inc. (the "Corporation").

ARTICLE II  
REGISTERED OFFICE AND AGENT

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

ARTICLE III  
PURPOSE

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

ARTICLE IV  
CAPITAL STOCK

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated

"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.

ARTICLE VII  
PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred") and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

ARTICLE VIII  
SERIES A PREFERRED STOCK

SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,

custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets or the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value



by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any

Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other

than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.



## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the

record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

#### SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(c)(ii) of this Article IX.

(ii) Automatic Conversion upon Initial Public Offering. In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date herefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with

Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price

pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the



Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full

shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office of any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of any one or more series.

### ARTICLE XI BOARD OF DIRECTORS

#### SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

#### SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

#### SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

#### SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

#### SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws of the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation.

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws or the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.



Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

#### ARTICLE XIV NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

#### ARTICLE XV PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

#### ARTICLE XVI DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

“Additional Shares” has the meaning set forth in Section 6(b)(ii) of Article VIII.

“Applicable Series of the Series C Preferred Stock” means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

“Approved Options” means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation’s 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

“Arbiter” shall have the meaning ascribed to such term in the definition of “Fair Market Value.”

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.

"Fair Market Value" means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term "Closing Price", on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System ("Nasdaq") (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an "Arbiter") selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation's written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

"Initial Public Offering" means the first public offering of shares of Common Stock.

"Investor Stockholders Agreement" means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

"Issuance Date" means March 28, 2007.

"Junior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

"Liquidation" has the meaning set forth in Section 4(a) of Article VIII.

"Liquidation Preference" means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

"Nasdaq" has the meaning set forth in the definition of "Fair Market Value".

"Parity Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

"Person" means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

"Preferred Stock Purchase Agreement" means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

"Requisite Approval" means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

"Senior Securities" means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

"Series A Transaction" has the meaning set forth in Section 6(c)(i) of Article VIII.

"Series B Transaction" has the meaning set forth in Section 6(c)(i) of Article IX.

"Stated Value" means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

"Subsidiary" of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

"Trading Day" means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

/s/ Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary



**RESTATED**  
**CERTIFICATE OF INCORPORATION**  
**OF**  
**IKARIA HOLDINGS, INC.**  
(Originally incorporated as ITL Holdings, Inc. on August 18, 2006)

**ARTICLE I**  
**NAME**

The name of the Corporation is Ikaria, Inc. (the "Corporation").

**ARTICLE II**  
**REGISTERED OFFICE AND AGENT**

The address of the Corporation's registered office in the State of Delaware is Corporation Service Company, 2711 Centerville Road, Suite 400, City of Wilmington 19808, County of New Castle. The name of its registered agent at such address is Corporation Service Company.

**ARTICLE III**  
**PURPOSE**

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (the "DGCL").

**ARTICLE IV**  
**CAPITAL STOCK**

The total number of shares of all classes of capital stock which the Corporation shall have authority to issue is two hundred thirteen million, four hundred two thousand, six hundred (213,402,600) shares, of which:

One hundred twenty five million (125,000,000) shares, par value \$0.01 per share, shall be shares of common stock, of which one hundred ten million (110,000,000) shares shall be designated "Voting Common Stock" (the "Voting Common Stock") and fifteen million (15,000,000) shares shall be designated Non-Voting Common Stock" (the "Non-Voting Common Stock"); and

Eighty-eight million, four hundred two thousand, six hundred (88,402,600) shares, par value \$0.01 per share, shall be shares of preferred stock (the "Preferred Stock"), of which eleven million, four hundred twenty-one thousand, three hundred (11,421,300) shares shall be designated "Series A Convertible Preferred Stock"; seventy-six million, nine hundred eighty thousand, nine hundred (76,980,900) shares shall be designated "Series B Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-1 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated



"Series C-2 Non-Convertible Preferred Stock"; one hundred (100) shares shall be designated "Series C-3 Non-Convertible Preferred Stock"; and one hundred (100) shares shall be designated "Series C-4 Non-Convertible Preferred Stock".

## ARTICLE V VOTING COMMON STOCK

### SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share of Voting Common Stock and with each share of Non-Voting Common Stock.

### SECTION 2. DIVIDENDS.

(a) Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Voting Common Stock and Non-Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

(b) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Voting Common Stock into a greater or lesser number of shares of Voting Common Stock unless a comparable adjustment is at the same time being made to the Non-Voting Common Stock.

### SECTION 3. VOTING RIGHTS.

At every annual or special meeting of stockholders of the Corporation, each holder of Voting Common Stock shall be entitled to cast one vote for each share of Voting Common Stock standing in such holder's name on the stock transfer records of the Corporation; provided, however, that, except as otherwise required by law, holders of Voting Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate of Incorporation (including any certificate of designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled to vote thereon, either separately or together with the holders of one or more other such series, pursuant to this Certificate of Incorporation (including pursuant to any certificate of designation relating to any series of Preferred Stock).

## ARTICLE VI NON-VOTING COMMON STOCK

## SECTION 1. GENERAL.

Except as otherwise required by law or as expressly provided in this Certificate of Incorporation, each share of Non-Voting Common Stock shall have the same powers, rights and privileges and shall rank equally, share ratably and be identical in all respects as to all matters, with each other share or Non-Voting Common Stock and with each share of Voting Common Stock.

## SECTION 2. DIVIDENDS.

Subject to the rights of the holders of Preferred Stock and to the other provisions of this Certificate of Incorporation, holders of Non-Voting Common Stock and Voting Common Stock shall be entitled to receive equally, on a per share basis, such dividends and other distributions in cash, securities or other property of the Corporation as may be declared thereon by the Board of Directors from time to time out of assets or funds of the Corporation legally available therefor.

## SECTION 3. VOTING RIGHTS.

The holders of Non-Voting Common Stock shall not be entitled to any voting rights except as required by law.

## SECTION 4. CONVERSION.

(a) In the event there shall occur an Initial Public Offering, then, immediately prior to the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Non-Voting Common Stock, each outstanding share of Non-Voting Common Stock shall automatically be converted into one fully paid and non-assessable share of Voting Common Stock.

(b) The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Non-Voting Common Stock, such number of its authorized but unissued shares of Voting Common Stock as will be sufficient to permit the conversion of all outstanding shares of Non-Voting Common Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Non-Voting Common Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(c) The Corporation shall not effect a subdivision, combination or reclassification of the outstanding shares of Non-Voting Common Stock into a greater or lesser number of shares of Non-Voting Common Stock unless a comparable adjustment is at the same time being made to the Voting Common Stock.

## ARTICLE VII PREFERRED STOCK

The Board of Directors is authorized, subject to limitations prescribed by law, to provide by resolution or resolutions for the issuance of shares of Preferred Stock in one or more series, to establish the number of shares to be included in each such series, and to fix the voting powers (if any), designations, powers, preferences, and relative, participating, optional or other rights, if any, of the shares of each such series, and any qualifications, limitations or restrictions thereof. The rights, preferences and restrictions granted to and imposed on the Series A Convertible Preferred Stock, par value \$0.01 per share ("Series A Preferred Stock"), and the Series B Convertible Preferred Stock, par value \$0.01 per share ("Series B Preferred Stock") are set forth below in Articles VIII and IX, respectively. The rights, preferences and restrictions granted to and imposed on the Series C-1 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-1 Preferred"), the Series C-2 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-2 Preferred"), the Series C-3 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-3 Preferred"), and the Series C-4 Non-Convertible Preferred Stock, par value \$0.01 per share ("C-4 Preferred" and, together with the C-1 Preferred, C-2 Preferred and C-3 Preferred, "Series C Preferred Stock") are set forth below in Article X.

## ARTICLE VIII SERIES A PREFERRED STOCK

### SECTION 1. RANK.

The Series A Preferred Stock shall, with respect to (i) payment of dividends and distributions and (ii) rights upon any Liquidation (each of clauses (i) and (ii), an "Attribute"), rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series A Preferred Stock shall rank on a parity with the Series B Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank junior to the Series B Preferred Stock but senior to the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

### SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series A Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend

or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series B Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article VIII, and other than dividends and distributions payable in shares of Series B Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series A Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series B Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series A Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series B Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series B Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series A Preferred Stock on account of the portion of such dividend or distribution on the Series B Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article VIII is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment term as for) the dividends or distribution on the Series B Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series A Preferred Stock or the Series B Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series A Preferred Stock by reason of a dividend or distribution payable with respect to the Series B Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series A Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event the Corporation shall (i) commence a voluntary case under the federal bankruptcy laws or any other applicable federal or state bankruptcy, insolvency or similar law, (ii) consent to the entry of an order for relief in an involuntary case under any law referenced in clause (i) above or consent to the appointment of a receiver, liquidator, assignee,

custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, (iii) make a general assignment for the benefit of its creditors, (iv) admit in writing its inability to pay its debts generally as they become due, (v) have a court of competent jurisdiction enter an order or decree, which has not been withdrawn, dismissed or reversed, that is for relief against the Corporation in an involuntary case under any law referenced in clause (i) above or to appoint a receiver, liquidator, assignee, custodian, trustee, or other similar official, of the Corporation or of any substantial part of its property, and any such order or decree remains unstayed and in effect for 60 consecutive days, or (vi) otherwise liquidate, dissolve or wind up (any such event, together with any event described in the final sentence of this Section 4(a), but subject to the proviso therein, a "Liquidation"), each holder of shares of Series A Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series A Preferred Stock held by such holder equal to the Liquidation Preference. For purposes of this Certificate of Incorporation, the sale, conveyance, exchange, lease, transfer or other disposition of all or substantially all of the property or assets of the Corporation or the consolidation or merger of the Corporation with or into one or more other entities (other than a wholly owned Subsidiary of the Corporation) shall be deemed to be a Liquidation; provided that any transaction in which the stockholders of the Corporation immediately prior to such transaction own shares representing more than 50% of the voting power of the outstanding shares of the surviving or acquiring corporation following the transaction (taking into account only capital stock of the Corporation held by such stockholders prior to the transaction) shall not be deemed to be a Liquidation.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series A Preferred Stock unless and until the liquidation preferences payable with respect to the Series B Preferred Stock and any other securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series A Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series A Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series A Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series A Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series A Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series A Preferred Stock as such shall have no right or claim to any of the remaining assets or the Corporation.

(d) Without limiting the voting rights of any holder of Series A Preferred Stock, the holders of shares of the Series A Preferred Stock shall be entitled to receive at least 10

Business Days prior written notice of any Liquidation, and may convert their Series A Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article VIII.

#### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series A Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series A Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock could be converted in accordance with Section 6 of this Article VIII as of the record date for the vote or consent which is being taken. The holders of the Series A Preferred Stock, the holders of the Series B Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series A Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series A Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series A Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series A Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series A Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series A Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section I of this Article VIII as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series A Preferred Stock into Voting Common Stock) the total number of authorized shares of Series A Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article VIII, each holder of shares of Series A Preferred Stock shall have one vote for each share held,

#### SECTION 6. CONVERSION,

(a) Terms of Conversion.

(i) Optional Conversion. Each share of Series A Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value

by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series A Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article VIII.

(ii) *Automatic Conversion Upon Initial Public Offering.* In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of Article IX, then, concurrently with and effective upon such conversion of the Series B Preferred Stock, without any further action by the Corporation or the holders of shares of Series A Preferred Stock, each then outstanding share of Series A Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series A Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series A Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series A Preferred Stock written notice of the results of the vote referred to in Section 6(a)(ii) of Article IX within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series A Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date therefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Common Stock or Convertible Securities (collectively, "Additional Shares") without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion

Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article VIII) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:



(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article VIII, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article VIII, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(D) With respect to any Convertible Securities issued prior to the issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article VIII, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only

the number of shares of Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article VIII.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article VIII to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article VIII. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article VIII shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article VIII shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article VIII), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any

Person (including any group that is deemed to be a Person) (each of the foregoing being referred to as a "Series A Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series A Preferred Stock then outstanding shall thereafter be convertible into, in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series A Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series A Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series A Preferred Stock was convertible immediately prior to the consummation of such Series A Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series A Transaction); provided that if the Series A Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, however, that, in any Series A transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article VIII (it being understood that where both Section 4 of this Article VIII and this Section 6(c) are applicable to a Series A Transaction, the Corporation shall give each holder of the Series A Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article VIII or to receive, upon conversion of the Series A Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series A Transaction as to the rights and interest thereafter of the holder of shares of Series A Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series A Preferred Stock. The Corporation shall not effect any such Series A Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series A Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series A Transactions. The Corporation shall give written notice to the holders of Series A Preferred Stock at least 20 Business Days prior to the date on which any Series A Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series A Preferred Stock to convert the Series A Preferred Stock or to vote their shares of Series A Preferred Stock in connection with a Series A Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series A Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series A Preferred Stock, at their respective addresses as the same shall appear in the Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series A Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series A Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series A Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series A Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series A Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series A Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series A Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series A Preferred Stock is to be made in connection with an Initial Public Offering (subject to the provisions of Section 6(a)(ii) of this Article VIII), a Series A Transaction or a similar transaction affecting the Corporation (other

than a tender or exchange offer), the conversion of any shares of Series A Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series A Preferred Stock shall have the right to tender (or submit for exchange) shares of Series A Preferred Stock in such a manner so as to preserve the status of such shares as Series A Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series A Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series A Preferred Stock not so converted shall be returned to the holder as Series A Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series A Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series A Preferred Stock in any manner which interferes with the timely conversion of Series A Preferred Stock.

(v) In the event of an automatic conversion of the Series A Preferred Stock pursuant to Section 6(a)(ii) of this Article VIII, each holder of shares of Series A Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series A Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article VIII, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII. All shares of Voting Common Stock issuable upon conversion of the Series A Preferred Stock shall be issued without charge to the holders of Series A Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the initial Public Offering, so that, upon the consummation of the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article VIII, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series A Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of

such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series A Preferred Stock are deemed to have been converted. If more than one share of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series A Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series A Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series A Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series A Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system on which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series A Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series A Preferred Stock,

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series A Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE IX SERIES B PREFERRED STOCK

#### SECTION 1. RANK.

The Series B Preferred Stock shall, with respect to each Attribute, rank (i) senior to all securities that are Junior Securities with respect to such Attribute, (ii) on a parity with all securities that are Parity Securities with respect to such Attribute and (iii) junior to all securities that are Senior Securities with respect to such Attribute. The Series B Preferred Stock shall rank on a parity with the Series A Preferred Stock and the Common Stock with respect to dividends and distributions and shall rank senior to the Series A Preferred Stock, the Series C Preferred Stock and the Common Stock with respect to rights upon any Liquidation.

## SECTION 2. DIVIDENDS AND DISTRIBUTIONS.

(a) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Common Stock unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Common Stock shall be paid, out of funds legally available therefor, dividends in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends or distribution that such holder would have received had the Series B Preferred Stock been converted into Voting Common Stock immediately prior to the record date of such dividend or distribution on the Common Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Common Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Common Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Common Stock established by the Board of Directors.

(b) No dividends shall be paid, and no other distribution shall be made, on or with respect to the Series A Preferred Stock (other than dividends declared and paid or distributions made by reason of a dividend or distribution with respect to the Common Stock, which shall be governed by Section 2(a) of this Article IX, and other than dividends and distributions payable in shares of Series A Preferred Stock, which shall be governed by the proviso below) unless and until the holders of the Series B Preferred Stock as of the record date established by the Board of Directors for such dividend or distribution on the Series A Preferred Stock shall be paid, out of funds legally available therefor, dividends in respect of each share of Series B Preferred Stock in an amount (whether in the form of cash, securities or other property) equal to the amount (and in the form) of the dividends paid or distribution made with respect to a share of the Series A Preferred Stock; provided, however, that if the Corporation declares and pays a dividend or makes a distribution on the Series A Preferred Stock consisting in whole or in part of Common Stock or Convertible Securities, then no such dividend or distribution shall be payable in respect of the Series B Preferred Stock on account of the portion of such dividend or distribution on the Series A Preferred Stock payable in Common Stock or Convertible Securities, to the extent that an anti-dilution adjustment under Section 6(b)(i) of this Article IX is required to be made and is made in connection with such dividend or distribution. Any such dividends or distribution shall be payable on the same payment date as the payment date for (and otherwise on the same payment terms as for) the dividends or distribution on the Series A Preferred Stock established by the Board of Directors.

(c) If, after the Issuance Date, the Series B Preferred Stock or the Series A Preferred Stock is subdivided, combined or reclassified into a greater or lesser number of shares without a corresponding action being taken with respect to the other series of Preferred Stock, then any dividend or distribution payable with respect to the Series B Preferred Stock by reason of a dividend or distribution payable with respect to the Series A Preferred Stock shall be appropriately adjusted.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series B Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such shares.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of the Series B Preferred Stock shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of Series B Preferred Stock held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of Series B Preferred Stock unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series B Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series B Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then such shares of Series B Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series B Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of the Series B Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of the Series B Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights of any holder of Series B Preferred Stock, the holders of shares of the Series B Preferred Stock shall be entitled to receive at least 10 Business Days prior written notice of any Liquidation, and may convert their Series B Preferred Stock at any time prior to any such Liquidation in accordance with Section 6 of this Article IX

### SECTION 5. VOTING RIGHTS.

(a) General. Each holder of Series B Preferred Stock shall have full voting rights and powers, and shall be entitled to vote on all matters put to a vote or consent of stockholders of the Corporation, with each share of Series B Preferred Stock having the number of votes equal to the number of shares of Voting Common Stock into which such share of Series B Preferred Stock could be converted in accordance with Section 6 of this Article IX as of the



record date for the vote or consent which is being taken. The holders of the Series B Preferred Stock, the holders of the Series A Preferred Stock and the holders of Voting Common Stock (and any other class or series of capital stock entitled to vote together with the Voting Common Stock) shall vote together as a single class on all matters submitted to a vote of the stockholders of the Corporation, except as required by law or by the Certificate of Incorporation or by any certificate of designations of the Corporation from time to time in effect. Holders of Series B Preferred Stock shall be entitled to notice of all stockholders meetings in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Series B Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of Series B Preferred Stock, voting as a single class:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of Series B Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of Series B Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series B Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the last sentence of Section 1 of this Article IX as in effect on the Issuance Date); or

(ii) increase or decrease (other than by conversion of the Series B Preferred Stock into Voting Common Stock) the total number of authorized shares of Series B Preferred Stock.

(c) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to Section 5(b) of this Article IX, each holder of shares of Series B Preferred Stock shall have one vote for each share held.

#### SECTION 6. CONVERSION.

(a) Terms of Conversion.

(i) *Optional Conversion.* Each share of Series B Preferred Stock shall be convertible, at the option of the holder thereof, at any time, and from time to time, on the terms and conditions set forth in this Section 6, into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to the holder of any shares of Series B Preferred Stock being converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock surrendered for conversion for which the record date is a date prior to the date on which the conversion is effective pursuant to Section 6(e)(ii) of this Article IX.

(ii) *Automatic Conversion upon Initial Public Offering.* In the event there shall occur an Initial Public Offering, then, at least 30 days prior to the effective date of the registration statement relating to the Initial Public Offering, there shall be submitted to a vote of

the holders of the Series B Preferred Stock as to whether all of the outstanding shares of Series B Preferred Stock shall be converted into shares of Voting Common Stock immediately prior to the consummation of the Initial Public Offering. If the holders of at least 75% of the outstanding shares of Series B Preferred Stock vote in favor thereof, then, effective immediately prior to (but contingent upon) the consummation of the Initial Public Offering, without any further action by the Corporation or the holders of shares of Series B Preferred Stock, each then outstanding share of Series B Preferred Stock shall automatically be converted into a number of fully paid and non-assessable shares of Voting Common Stock equal to the quotient obtained by dividing (x) the Stated Value by (y) the Conversion Price in effect on the date of such conversion. In addition, upon such conversion, the Corporation shall pay to each holder of any shares of Series B Preferred Stock so converted, out of funds legally available therefor, an amount in cash equal to any declared but unpaid dividends on the shares of Series B Preferred Stock so converted for which the record date is a date prior to the date on which the Initial Public Offering is consummated. The Corporation shall give each holder of Series B Preferred Stock written notice of the results of the vote referred to in this Section 6(a)(ii) within five Business Days after the date the vote is taken.

(b) Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(i) *Stock Dividends, Splits, etc.* In case the Corporation shall, at any time or from time to time after the Issuance Date, (A) declare a dividend or make a distribution on the outstanding shares of Common Stock or Convertible Securities, in either case, in shares of Common Stock, or (B) effect a subdivision, combination, consolidation or reclassification of the outstanding shares of Common Stock into a greater or lesser number of shares of Common Stock (without a comparable adjustment being made to the Series B Preferred Stock), then, and in each such case, the Conversion Price in effect immediately prior to such event or the record date herefor, whichever is earlier, shall be adjusted by multiplying such Conversion Price by a fraction of which (x) the numerator is the number of shares of Common Stock that were outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such event and (y) the denominator is the number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately after such event. An adjustment made pursuant to this Section 6(b)(i) shall become effective (x) in the case of any such dividend or distribution, immediately after the close of business on the date for the determination of holders of shares of Common Stock entitled to receive such dividend or distribution, or (y) in the case of any such subdivision, combination or reclassification, at the close of business on the day upon which such corporate action becomes effective.

(ii) *Issuances of Additional Shares.* In case the Corporation shall at any time or from time to time after the Issuance Date issue any Additional Shares without consideration or for a consideration per share (or having a conversion, exchange or exercise price per share) less than the Conversion Price in effect immediately prior to such issuance, then, and in each such case, the Conversion Price in effect immediately prior to such issuance shall be reduced to an amount determined by multiplying the Conversion Price in effect immediately prior to such issuance by a fraction of which (x) the numerator is the sum of (i) the product of (A) the number of shares of Common Stock outstanding (as determined in accordance with

Section 6(b)(vi) of this Article IX) immediately prior to such issuance multiplied by (B) the Conversion Price in effect immediately prior to such issuance and (ii) the aggregate consideration received by the Corporation for the total number of shares of Common Stock so issued (or, in the case of Convertible Securities, the aggregate consideration received by the Corporation for the total amount of Convertible Securities so issued plus the aggregate consideration receivable by the Corporation for the Common Stock into or for which the Convertible Securities are convertible, exercisable or exchangeable), and (y) the denominator is the product of (i) the sum of (A) the total number of shares of Common Stock outstanding (as determined in accordance with Section 6(b)(vi) of this Article IX) immediately prior to such issuance and (B) the number of additional shares of Common Stock so issued (or into or for which the Convertible Securities may be converted, exercised or exchanged), multiplied by (ii) the Conversion Price in effect immediately prior to such issuance. An adjustment made pursuant to this Section 6(b)(ii) shall be made on the next Business Day following the date on which any such issuance is made and shall be effective retroactively to the close of business on the date of such issuance. Notwithstanding the foregoing, no adjustment shall be made pursuant to this Section 6(b)(ii) in connection with any Excluded Issuances.

(iii) *General.* For the purposes of any adjustment of the Conversion Price pursuant to Section 6(b)(ii) of this Article IX, the following provisions shall be applicable:

(1) In the case of the issuance of Common Stock or Convertible Securities for cash in a public offering or private placement, the aggregate consideration shall be deemed to be the amount of cash paid before deducting any discounts, commissions or placement fees payable by the Corporation to any underwriter or placement agent in connection with the issuance thereof.

(2) In the case of the issuance of Common Stock for a consideration in whole or in part other than cash, the value of the non-cash consideration received shall be the Fair Market Value of such non-cash consideration.

(3) Subparagraph (2) notwithstanding, in the case of the issuance of Additional Shares to the owners of the non-surviving entity in connection with any merger in which the Corporation is the surviving corporation, the amount of consideration therefor shall be deemed to be the Fair Market Value of such portion of the net assets and business of the non-surviving entity as is attributable to such Additional Shares.

(4) If Common Stock is sold as a unit with other securities, the aggregate consideration received for such Common Stock shall be deemed to be net of the Fair Market Value of such other securities.

(5) In the case of the issuance of Convertible Securities:

(A) The aggregate maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent reduction of such number) deliverable upon conversion of or in exchange for, or upon the exercise of, such Convertible Securities and subsequent conversion, exchange or exercise thereof shall be deemed to have been issued at the time such Convertible

Securities were issued and for a consideration equal to the consideration received by the Corporation for any such Convertible Securities, plus the minimum amount of consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent increase of consideration), if any, to be received by the Corporation upon the conversion, exercise or exchange of such Convertible Securities; provided, however, that if in the case of Convertible Securities, the minimum amount of such consideration cannot be ascertained, but is a function of anti-dilution or similar protective clauses, the Corporation shall be deemed to receive the minimum amount of consideration without reference to such clause;

(B) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price previously has been made pursuant to Section 6(b)(ii) of this Article IX, upon any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, the applicable Conversion Price shall forthwith be readjusted retroactively to give effect to such increase or decrease;

(C) With respect to any Convertible Securities issued after the Issuance Date for which an adjustment to the Conversion Price has previously not been made pursuant to Section 6(b)(ii) of this Article IX, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(D) With respect to any Convertible Securities issued prior to the Issuance Date, if there is any increase in the number of shares of Common Stock deliverable upon exercise, conversion or exchange of, or a decrease in the exercise price of, such Convertible Securities other than a change resulting from the anti-dilution provisions thereof, such Convertible Securities shall be treated as if they had been cancelled and reissued and an adjustment to the Conversion Price with respect to such deemed issuance shall be made pursuant to Section 6(b)(ii) of this Article IX, if applicable;

(E) No further adjustment of the Conversion Price adjusted upon the issuance of any such Convertible Securities shall be made as a result of the actual issuance of Common Stock upon the exercise, conversion or exchange of any such Convertible Securities; and

(F) On the expiration or termination of any Convertible Securities, the Conversion Price shall forthwith be recalculated to such Conversion Price as would have been calculated had the adjustment been made upon the basis of the issuance of only the number of shares or Common Stock actually issued upon the exercise, conversion or exchange of such Convertible Securities (but taking into account other adjustments (or potential adjustments) made following the time of issuance of such Convertible Securities).

(iv) *Rights Distributions.* No adjustment of the Conversion Price

pursuant to Section 6(b)(ii) of this Article IX shall be made as the result of the adoption of a plan commonly referred to as a "Stockholders' Rights Plan" which provides for the issuance of rights to acquire shares of capital stock of the Corporation upon the occurrence of some event that is not within the control of the rights holders, or the issuance of rights under such plan; provided, however, that the issuance of capital stock of the Corporation pursuant to such rights shall require adjustment to the Conversion Price pursuant to Section 6(b)(ii) of this Article IX.

(v) *Calculations.* All calculations of the Conversion Price shall be made to the nearest four decimal places. Anything in Section 6(b) of this Article IX to the contrary notwithstanding, in no event shall the then current Conversion Price be increased as a result of any calculation made at any time pursuant to Section 6(b)(ii) of this Article IX. No adjustment to the Conversion Price pursuant to Section 6(b) of this Article IX shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this Section 6(b)(v) are not required to be made shall be carried forward and taken into account in any subsequent adjustment.

(vi) *Outstanding Shares.* The number of shares of Common Stock at any time outstanding shall include all shares of Common Stock outstanding at such time and any shares of Common Stock issuable upon conversion or exercise of or in exchange for any Convertible Securities to the extent any such Convertible Securities are (i) convertible, exercisable or exchangeable at such time and (ii) convertible, exercisable, or exchangeable at a price that is less than the Fair Market Value of a share of Common Stock issuable upon such conversion, exercise or exchange at such time. The number of shares of Common Stock at any time outstanding shall not include any shares of Common Stock then owned or held by or for the account of the Corporation or any Subsidiary of the Corporation, and the disposition of any shares owned or held by the Corporation or any Subsidiary of the Corporation to any Person other than the Corporation or any Subsidiary of the Corporation shall be considered an issuance or sale of Common Stock.

(vii) *Successive Adjustments.* Successive adjustments in the Conversion Price shall be made, without duplication, whenever any event specified in Section 6(b)(i) or Section 6(b)(ii) of this Article IX shall occur.

(c) Reorganization, Consolidation, Merger, Asset Sale.

(i) In case of any capital reorganization or reclassification of outstanding shares of Common Stock (other than a reclassification covered by Section 6(b) of this Article IX), or in case of any consolidation or merger of the Corporation with or into another Person, or in case of any sale, lease, exchange, transfer, conveyance or other disposition (other than by way of merger or consolidation) of all or substantially all of the Corporation's assets, on a consolidated basis, in one transaction or a series of related transactions, to any Person (including any group that is deemed to be a Person) (each or the foregoing being referred to as a "Series B Transaction"), in each case which is effected in such a manner that the holders of Common Stock are entitled to receive (either directly or upon subsequent liquidation) stock or other securities or property (including cash) with respect to or in exchange for Common Stock, then each share of Series B Preferred Stock then outstanding shall thereafter be convertible into,

in lieu of the Voting Common Stock issuable upon such conversion prior to the consummation of such Series B Transaction, the kind and amount of shares of stock and other securities and property (including cash) receivable upon the consummation of such Series B Transaction by a holder of that number of shares of Voting Common Stock into which one share of Series B Preferred Stock was convertible immediately prior to the consummation of such Series B Transaction (including, on a pro rata basis, the cash, securities or property received by holders of Common Stock in any tender or exchange offer that is a step in such Series B Transaction); provided that if the Series B Preferred Stock becomes convertible into property, then such conversion shall be out of funds legally available therefor; and provided, further, that, in any Series B Transaction where a holder effectuates a conversion pursuant to this Section 6(c), such holder shall not be entitled to receive any payment of Liquidation Preference pursuant to Section 4 of this Article IX (it being understood that where both Section 4 of this Article IX and this Section 6(c) are applicable to a Series B Transaction, the Corporation shall give each holder of the Series B Preferred Stock the right to elect whether to receive the Liquidation Preference pursuant to Section 4 of this Article IX or to receive, upon conversion of the Series B Preferred Stock, the kind and amount of shares of stock and other securities and property referred to in the immediately preceding sentence). In any such case, the Corporation or the Person formed by the consolidation or resulting from the merger or which acquires such assets or which acquires the Corporation's shares, as the case may be, shall make appropriate provisions in its certificate of incorporation or other constituent document and in the definitive transaction documents relating to the Series B Transaction as to the rights and interest thereafter of the holder of shares of Series B Preferred Stock, to the end that the provisions set forth herein (including provisions with respect to changes in and other adjustments of the number of shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock and the Conversion Price) shall thereafter be applicable in relation to any shares of stock or other securities or other property deliverable upon the conversion of the shares of Series B Preferred Stock. The Corporation shall not effect any such Series B Transaction unless prior to or simultaneously with the consummation thereof the surviving corporation or purchaser, as the case may be, shall assume by written instrument the obligation to deliver to each holder of shares of Series B Preferred Stock such shares of stock, securities or other property as, in accordance with the foregoing provisions, such holder is entitled to receive, and shall have delivered such assumption agreement to such holder. In case securities or property other than Common Stock shall be issuable or deliverable upon conversion as aforesaid, then all references to Common Stock in this Section 6 shall be deemed to apply, so far as appropriate and as nearly as may be, to such other securities or property. The provisions of this Section 6(c) shall similarly apply to successive Series B Transactions. The Corporation shall give written notice to the holders of Series B Preferred Stock at least 20 Business Days prior to the date on which any Series B Transaction or similar transaction affecting the Corporation shall take place.

(ii) Nothing contained in this Section 6(c) shall limit the rights of holders of the Series B Preferred Stock to convert the Series B Preferred Stock or to vote their shares of Series B Preferred Stock in connection with a Series B Transaction.

(d) Reports. Whenever the number of shares of Voting Common Stock into which each share of Series B Preferred Stock is convertible is adjusted as provided in this Section 6, the Corporation shall promptly mail to the holders of record of the outstanding shares of Series B Preferred Stock, at their respective addresses as the same shall appear in the

Corporation's transfer books, a certificate signed by an executive officer of the Corporation stating that the number of shares of Voting Common Stock into which the shares of Series B Preferred Stock are convertible has been adjusted (setting forth in reasonable detail and certifying the calculation of such adjustment), the new number of shares of Voting Common Stock (or describing the new stock, securities, cash or other property) into which each share of Series B Preferred Stock is convertible as a result of such adjustment, a brief statement of the facts requiring such adjustment and when such adjustment became effective.

(e) Conversion Procedures.

(i) The holder of any shares of Series B Preferred Stock may exercise its right to convert any or all such outstanding shares into shares of Voting Common Stock at any time by surrendering for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, a certificate or certificates representing the shares of Series B Preferred Stock to be converted, duly endorsed in blank, accompanied by a written notice stating that such holder elects to convert all or a specified number of such shares in accordance with the provisions of this Section 6.

(ii) As promptly as practicable, and in any event within two Business Days after the surrender of such certificate or certificates and the receipt of such notice relating thereto, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which the holder of shares of Series B Preferred Stock so converted shall be entitled, (y) if less than the full number of shares of Series B Preferred Stock evidenced by the surrendered certificate or certificates are being converted, a new certificate or certificates for the number of shares evidenced by such surrendered certificate or certificates less the number of shares converted and (z) payment of all amounts to which a holder is entitled pursuant to Sections 6(a)(i) and 6(f) of this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made at the close of business on the date of receipt of such notice and of such surrender of the certificate or certificates representing the shares of Series B Preferred Stock to be converted so that the rights of the holder thereof as to the shares being converted shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(i) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(iii) If a conversion of Series B Preferred Stock is to be made in connection with an Initial Public Offering (subject to Section 6(a)(ii) of this Article IX), a Series B Transaction or a similar transaction affecting the Corporation (other than a tender or exchange offer), the conversion of any shares of Series B Preferred Stock may, at the election of the holder thereof, be conditioned upon the consummation of such transaction, in which case such conversion shall not be deemed to be effective until such transaction has been consummated. In connection with any tender or exchange offer for shares of Common Stock, holders of Series B

Preferred Stock shall have the right to tender (or submit for exchange) shares of Series B Preferred Stock in such a manner so as to preserve the status of such shares as Series B Preferred Stock until immediately prior to such time as shares of Common Stock are to be purchased (or exchanged) pursuant to such offer, at which time that portion of the shares of Series B Preferred Stock so tendered (or submitted for exchange) which is convertible into the number of shares of Voting Common Stock to be purchased (or exchanged) pursuant to such offer shall be automatically converted into the appropriate number of shares of Voting Common Stock. Any shares of Series B Preferred Stock not so converted shall be returned to the holder as Series B Preferred Stock.

(iv) The Corporation shall not close its books against the transfer of Series B Preferred Stock or of Voting Common Stock issued or issuable upon conversion of Series B Preferred Stock in any manner which interferes with the timely conversion of Series B Preferred Stock.

(v) In the event of an automatic conversion of the Series B Preferred Stock pursuant to Section 6(a)(ii) of this Article IX, each holder of shares of Series B Preferred Stock shall surrender for such purpose to the Corporation, at its principal office or at such other office or agency maintained by the Corporation for that purpose, the certificate or certificates representing the shares of Series B Preferred Stock held by such holder, duly endorsed in blank. As promptly as practicable after the surrender of such certificate or certificates and consummation of the Initial Public Offering, and, provided that such holder has effected such surrender at least 10 Business Days following the receipt by it of the notice referred to in Section 6(a)(ii) of this Article IX, in sufficient time to allow such holder to participate in the Initial Public Offering, if such holder is participating, the Corporation shall deliver or cause to be delivered (x) certificates (which shall bear legends, if appropriate) registered in the name of such holder representing the number of shares of Voting Common Stock to which such holder shall be entitled, and (y) payment of all amounts to which such holder is entitled pursuant to Sections 6(a)(ii) and 6(f) or this Article IX. All shares of Voting Common Stock issuable upon conversion of the Series B Preferred Stock shall be issued without charge to the holders of Series B Preferred Stock and upon issuance shall be fully paid and non-assessable, free and clear of all taxes, liens, charges and encumbrances created, in each case, by the Corporation with respect to the issuance thereof. Such conversion shall be deemed to have been made immediately prior to (but contingent upon) the consummation of the Initial Public Offering, so that, upon the consummation or the Initial Public Offering, the rights of the holder thereof shall cease except for the right to receive shares of Voting Common Stock and any payment of amounts due pursuant to Sections 6(a)(ii) and 6(f) of this Article IX, and the Person entitled to receive the shares of Voting Common Stock shall be treated for all purposes as having become the record holder of such shares of Voting Common Stock at such time.

(f) Fractional Shares. In connection with the conversion of any shares of Series B Preferred Stock pursuant to this Section 6, no fractions of shares of Voting Common Stock shall be issued, but in lieu thereof the Corporation shall pay a cash adjustment in respect of such fractional interest in an amount equal to such fractional interest multiplied by the Fair Market Value of a share of Voting Common Stock on the day on which such shares of Series B Preferred Stock are deemed to have been converted. If more than one share of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full



shares of Voting Common Stock issuable upon conversion thereof shall be computed on the basis of the total number of shares of Series B Preferred Stock so surrendered.

(g) Reservation of Shares. The Corporation shall at all times reserve and keep available, free from liens, charges and security interests and not subject to any preemptive rights, for issuance upon conversion of the Series B Preferred Stock, such number of its authorized but unissued shares of Voting Common Stock as will from time to time be sufficient to permit the conversion of all outstanding shares of Series B Preferred Stock, and shall take or cause to be taken all action required to increase the authorized number of shares of Voting Common Stock if necessary to permit the conversion of all outstanding shares of Series B Preferred Stock and to ensure that the shares of Voting Common Stock may be issued without violation of any applicable law or regulation or of any requirement of any securities exchange or inter-dealer quotation system of which the shares of Voting Common Stock may be listed or traded.

(h) Certain Events. If any event occurs as to which the foregoing provisions of this Section 6 are not strictly applicable or, if strictly applicable, would not, in the good faith judgment of the Board of Directors, fairly protect the conversion rights of the Series B Preferred Stock in accordance with the essential intent and principles of such provisions, then the Board of Directors shall make such adjustments in the application of such provisions, in accordance with such essential intent and principles, as shall be reasonably necessary, in the good faith opinion of the Board of Directors, to protect such conversion rights as aforesaid, but in no event shall any such adjustment have the effect of increasing the Conversion Price, or otherwise adversely affect the holders of Series B Preferred Stock.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series B Preferred Stock converted, purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of anyone or more series.

### ARTICLE X SERIES C PREFERRED STOCK

#### SECTION 1. RANK.

The Series C Preferred Stock shall rank senior to the Common Stock, but junior to the Series A Preferred Stock, the Series B Preferred Stock and all other capital stock of the Corporation, with respect to rights on Liquidation. The C-1 Preferred, the C-2 Preferred, the C-3 Preferred and the C-4 Preferred shall rank on parity with one another with respect to rights on Liquidation.

#### SECTION 2. DIVIDENDS.

The Series C Preferred Stock shall not be entitled to receive any dividends from the Corporation.

### SECTION 3. REDEMPTION.

The Corporation shall have no right to redeem any shares of Series C Preferred Stock, nor shall any holder thereof have the right to require the Corporation to redeem any such share.

### SECTION 4. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) In the event of a Liquidation, each holder of shares of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred shall be entitled to receive out of assets of the Corporation available for distribution to its stockholders, in preference to any distribution to holders of securities that are Junior Securities with respect to a Liquidation, an amount of cash with respect to each share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred held by such holder equal to the Liquidation Preference.

(b) No payment of the Liquidation Preference shall be made with respect to any share of C-1 Preferred, C-2 Preferred, C-3 Preferred or C-4 Preferred unless and until the liquidation preferences payable with respect to any securities that are Senior Securities with respect to payments upon a Liquidation shall have been paid in full. No full preferential payment on account of any Liquidation shall be made with respect to any class of securities that are Parity Securities with respect to payments upon a Liquidation unless the Liquidation Preference in respect of each share of Series C Preferred Stock shall likewise be paid at the same time in connection with such Liquidation. If, upon any Liquidation, after the distribution of the liquidation preferences to any securities that are Senior Securities with respect to payments upon a Liquidation, the assets of the Corporation are not sufficient to pay in full the Liquidation Preference payable with respect to all of the outstanding shares of Series C Preferred Stock and the full liquidation payments payable with respect to any outstanding securities that are Parity Securities with respect to payments upon a Liquidation, then all such shares of Series C Preferred Stock and such Parity Securities shall share ratably in such distribution of assets in accordance with the full respective preferential payments that would be payable on such shares of Series C Preferred Stock and such Parity Securities if all amounts payable thereon were payable in full.

(c) After the payment to the holders of shares of Series C Preferred Stock of the full amount of any liquidating distribution to which they are entitled under this Section 4, the holders of Series C Preferred Stock as such shall have no right or claim to any of the remaining assets of the Corporation.

(d) Without limiting the voting rights, if any, of any holder of Series C Preferred Stock, the Corporation shall give the holders of the Series C Preferred Stock written notice at least 10 Business Days prior to the date on which the Corporation closes its books or takes a record, with respect to any Liquidation.

### SECTION 5. VOTING RIGHTS.

(a) General. No holder of Series C Preferred Stock shall be entitled to any voting rights, except as hereinafter provided in this Section 5 or as required by law. Holders of Series C Preferred Stock shall be entitled to notice of all stockholders meetings to the extent provided by, and in accordance with the procedures set forth in the Corporation's bylaws.

(b) Voting Rights for Directors.

(i) The holders of C-1 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors a total of three individuals (the "C-1 Directors"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-1 Directors.

(ii) The holders of C-2 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-2 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-2 Director.

(iii) The holders of C-3 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-3 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-3 Director.

(iv) The holders of C-4 Preferred, voting separately as a class, shall be entitled to elect to the Board of Directors one individual (the "C-4 Director"), with all other stockholders of the Corporation specifically denied the right to nominate and elect the C-4 Director.

(c) Voting With Respect to Certain Matters. In addition to any matters requiring a separate vote of the Applicable Series of the Series C Preferred Stock under applicable law, the Corporation shall not, without the prior written consent or approval of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock:

(i) amend, repeal, or change the rights, preferences or privileges of the shares of the Applicable Series of the Series C Preferred Stock (as in effect on the Issuance Date) in any manner that would affect adversely the shares of the Applicable Series of the Series C Preferred Stock in a manner different from the effect on shares of the other classes or series of capital stock of the Corporation (including maintaining the seniority of the Series C Preferred Stock over certain other classes or series of capital stock of the Corporation, as set forth in the first sentence of Section 1 of this Article X as in effect on the Issuance Date); or

(ii) increase or decrease the total number of authorized shares of the Applicable Series of the Series C Preferred Stock.

(d) Election Procedures.

(i) The right of the respective holders of the Applicable Series of the Series C Preferred Stock to elect directors as described in Section 5(b) of this Article X (including without limitation to fill any vacancy occurring in the office of any director elected pursuant to Section 5(b) of this Article X) may be exercised either at a special meeting of the holders of the Applicable Series of the Series C Preferred Stock, at any annual meeting of stockholders of the Corporation held for the purpose of electing directors, or by the written consent of the holders of the Applicable Series of the Series C Preferred Stock acting without a

meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware. The term of office of any director elected by the holders of the Applicable Series of the Series C Preferred Stock pursuant to Section 5(b) of this Article X shall terminate upon the election of his or her successor or upon his or her earlier death, resignation or removal as provided by Section 5(d)(ii) of this Article X.

(ii) Notwithstanding anything contained in the Certificate of Incorporation or bylaws of the Corporation, any director so elected pursuant to Section 5(b) of this Article X may be removed without cause only by the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected. The right of the holders of the Applicable Series of the Series C Preferred Stock to remove directors without cause may be exercised at any special meeting of such holders or by a written consent of such holders acting without a meeting pursuant to Section 228 of the General Corporation Law of the State of Delaware.

(iii) In case of a vacancy occurring in the office of any director so elected pursuant to Section 5(b) of this Article X, for whatever reason, the holders of the Applicable Series of the Series C Preferred Stock with respect to which such director was elected may elect a successor to hold office for the unexpired term of such director or, if the vacancy is in the office of a C-1 Director, such vacancy may be filled by a majority of the other C-1 Directors (or by the sole C-1 Director) then in office.

(iv) All actions taken by the holders of the Applicable Series of the Series C Preferred Stock under this Section 5 shall be taken by the affirmative vote, or by written consent, of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock.

(e) Number of Votes Per Share. In connection with any right to vote as a single class pursuant to this Section 5, or on any matter required by law, each holder of shares of the Applicable Series of the Series C Preferred Stock shall have one vote for each share held.

#### SECTION 6. NO CONVERSION.

The shares of Series C Preferred Stock shall not be convertible into Common Stock or any other security of the Corporation.

#### SECTION 7. REACQUIRED SHARES.

Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall have the status of authorized but unissued shares of Preferred Stock of the Corporation, without designation as to series, subject to reissuance by the Board of Directors as shares of any one or more series.

### ARTICLE XI BOARD OF DIRECTORS

## SECTION 1. MANAGEMENT.

The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The Board of Directors may exercise all such authority and powers of the Corporation and do all such lawful acts and things as are not by statute or this Certificate of Incorporation directed or required to be exercised or done by the stockholders.

## SECTION 2. NUMBER OF DIRECTORS.

The number of directors of the Corporation shall initially be fixed by the Board of Directors at not more than 10. The number of directors of the Corporation shall be fixed from time to time exclusively by the Board of Directors as set forth in this Section 2. The Board of Directors may, by resolution of the Board of Directors, (i) decrease the number of directors comprising the Board of Directors, but not below the number of directors then in office and not below the number that would prevent the holders of any Applicable Series of the Series C Preferred Stock from electing their Designated Director or Designated Directors, and (ii) increase the number of directors comprising the Board of Directors, in each case by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors.

## SECTION 3. NEWLY-CREATED DIRECTORSHIPS AND VACANCIES.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, newly created directorships resulting from any increase in the number of directors or any vacancies in the Board of Directors resulting from death, resignation, removal from office or any other cause shall, unless otherwise required by law or resolution of the Board of Directors, be filled only by the Board of Directors by the vote of a majority of the Designated Directors elected by the holders of the C-1 Preferred and the vote of a majority of the other members of the Board of Directors. A director elected to fill a newly created directorship or other vacancy shall hold office until such director's successor has been duly elected or until his or her earlier death, resignation or removal as provided in this Certificate of Incorporation.

## SECTION 4. REMOVAL OF DIRECTORS.

Subject to the rights of the holders of the Series C Preferred Stock or any other series of Preferred Stock then outstanding, any director may be removed, with or without cause, from office at any time by the affirmative vote of the holders of a majority of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters all which the holders of Voting Common Stock are entitled to vote, voting together as a single class; provided, however, that any Designated Director may only be removed without cause by the vote of the holders of more than 50% of the issued and outstanding shares of the Applicable Series of the Series C Preferred Stock, voting as a separate class.

## SECTION 5. WRITTEN BALLOT NOT REQUIRED.

Elections of directors need not be by written ballot unless the bylaws of the

Corporation shall otherwise provide.

#### SECTION 6. BYLAWS.

The Board of Directors is expressly authorized to adopt, amend or repeal the bylaws or the Corporation. Any bylaws made by the directors under the powers conferred hereby may be amended or repealed by the Board of Directors or by the stockholders of the Corporation. The stockholders shall also have power to adopt, amend or repeal the bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of capital stock of the Corporation required by law, by this Certificate of Incorporation or by the bylaws, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a single class, shall be required to adopt, amend or repeal any provision of the bylaws of the Corporation,

#### ARTICLE XII LIMITATION OF LIABILITY; INDEMNIFICATION

A director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director; provided, however, that the foregoing shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL or (iv) for any transaction from which the director derived an improper personal benefit. If the DGCL is hereafter amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

The Corporation shall, to the fullest extent permitted by applicable law, indemnify and advance expenses to each director and officer of the Corporation. The Corporation may indemnify and advance expenses to each employee and agent of the Corporation, and any other Person whom the Corporation is authorized to indemnify under the provisions of the DGCL, as provided in the bylaws or the Corporation.

Any amendment, repeal or modification of the foregoing provisions of this Article XII shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing all the time of, or increase the liability of any director, officer or other agent of the Corporation with respect to any acts or omissions of such director, officer or other agent occurring prior to, such amendment, repeal or modification.

#### ARTICLE XIII AMENDMENT

The Corporation reserves the right to amend, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation.

Notwithstanding any other provision of this Certificate of Incorporation or the bylaws of the Corporation, and notwithstanding the fact that a lesser percentage or separate class vote may be specified by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, but in addition to any affirmative vote of the holders of any particular class or series of the capital stock required by law, this Certificate of Incorporation, the bylaws of the Corporation or otherwise, the affirmative vote of the holders of more than 50% of the voting power of the issued and outstanding shares of Voting Common Stock and the issued and outstanding shares of Preferred Stock entitled to vote generally with the Voting Common Stock on all matters on which the holders of Voting Common Stock are entitled to vote, voting together as a class, shall be required to adopt any provision inconsistent with, or to amend or repeal any provision of, Articles XII or XIII of this Certificate of Incorporation.

#### ARTICLE XIV NO IMPAIRMENT

The Corporation will not amend its Certificate of Incorporation or reorganize, transfer assets, consolidate, merge, dissolve, or voluntarily effect any other transaction, the sole purpose of which is to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Corporation.

#### ARTICLE XV PROPERTY OF STOCKHOLDERS

Except as otherwise provided by applicable law, the private property or assets of the stockholders of the Corporation shall not to any extent whatsoever be subject to the payment of the debts of the Corporation.

#### ARTICLE XVI DEFINITIONS; HEADINGS

(a) For the purposes of this Certificate of Incorporation, the following definitions shall apply:

"Additional Shares" has the meaning set forth in Section 6(b)(ii) of Article VIII.

"Applicable Series of the Series C Preferred Stock" means the C-1 Preferred, the C-2 Preferred, the C-3 Preferred or the C-4 Preferred, as applicable.

"Approved Options" means (1) options to purchase up to 8,058,834 shares of Common Stock granted under the Corporation's 2007 Stock Option Plan as in effect on the Issuance Date (or as such Plan may be amended upon receipt of the Requisite Approval), which grants received the Requisite Approval, and (2) any options to purchase or other rights to acquire shares of Common Stock granted under any other equity incentive plan, the adoption of which received the Requisite Approval and which grants received the Requisite Approval.

"Arbiter" shall have the meaning ascribed to such term in the definition of "Fair Market Value."

"Attribute" has the meaning set forth in Section I of Article VIII.

"Beneficially Owned" shall mean beneficially owned as determined in accordance with Securities Exchange Act Rule 13d-3.

"Board of Directors" means the Board of Directors of the Corporation.

"Business Day" means any day other than a Saturday, Sunday, or a day on which commercial banks in the City of New York are authorized or obligated by law or executive order to close.

"Certificate of Incorporation" means the Certificate of Incorporation of the Corporation, as amended from time to time.

"Closing Price" has the meaning set forth in the definition of "Fair Market Value."

"Common Stock" means the Voting Common Stock and the Non-Voting Common Stock or either of them.

"Conversion Price" means, with respect to the Series A Preferred Stock, \$1.00, subject to adjustment as provided in Section 6 of Article VIII, and, with respect to the Series B Preferred Stock, \$4.6346, subject to adjustment as provided in Section 6 of Article IX.

"Convertible Securities" means (i) any options or warrants to purchase or other rights to acquire Common Stock, (ii) any securities by their terms convertible into, or exercisable or exchangeable for, Common Stock (directly or indirectly) and (iii) any options or warrants to purchase or other rights to acquire any such convertible, exercisable or exchangeable securities.

"Designated Director" means a member of the Board of Directors that was elected exclusively by the vote of one of the Applicable Series of the Series C Preferred Stock.

"Excluded Issuances" means the issuance of any shares of Common Stock or Convertible Securities (whether treasury shares or newly issued shares) (1) pursuant to a dividend or distribution on, or a subdivision, combination or reclassification of, the outstanding shares of Common Stock which, in the case of the Series A Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article VIII, and, in the case of the Series B Preferred Stock, requires an adjustment in the Conversion Price pursuant to Section 6(b)(i) of Article IX, (2) upon the exercise or conversion of any Convertible Securities issued on, or outstanding as of, the Issuance Date, including the Series A Preferred Stock and the Series B Preferred Stock, except, in the case of the Series A Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article VIII and, in the case of the Series B Preferred Stock, as contemplated by Section 6(b)(iii)(5)(D) of Article IX, (3) pursuant to the grant or exercise of any Approved Options, (4) as consideration for the acquisition by the Corporation of another business entity or interest therein (including a joint venture or strategic alliance) by merger, stock purchase, purchase of substantially all the assets or other business combination or investment, in each case, which received the Requisite Approval, or (5) pursuant to Section 2.3 of the Preferred Stock Purchase Agreement.



**“Fair Market Value”** means, with respect to any security as of any date, if such security is listed or traded in a manner referred to below, an amount equal to the average of the daily Closing Prices on the twenty consecutive Trading Days immediately preceding such date. As used in this Certificate of Incorporation, the term “Closing Price”, on any day, shall mean the last reported sales price on such day or, in the event no such sale takes place on such day, the average of the closing bid and asked prices, in each case on the New York Stock Exchange or, if such security is not then listed or admitted to trading on such exchange, on the principal national securities exchange on which such security is listed or admitted to trading, or, if such security is not listed or admitted to trading on any such exchange, the average of the highest reported bid and lowest reported asked prices as furnished by the National Association of Securities Dealers through the National Association of Securities Dealers Automated Quotation System (“Nasdaq”) (or a similar organization if Nasdaq is no longer reporting such information). If such security is not listed and traded in a manner that the pricing information referred to above is available for the period required hereunder, or with respect to an asset other than a security (and other than cash which shall be valued at its face amount), the Fair Market Value of such security or asset shall be determined by mutual agreement between the Corporation (acting through the Board of Directors) and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the Series B Preferred Stock (considered as a single class, with each share of Series A Preferred Stock and each share of Series B Preferred Stock having the number or votes equal to the number of shares of Voting Common Stock into which such share of Series A Preferred Stock or Series B Preferred Stock, as applicable, may be converted) or, if the parties are unable to agree within 10 Business Days following the Corporation’s written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then as determined by an independent investment banking firm or valuation firm (an “Arbiter”) selected by mutual agreement between the Corporation and the holders of a majority of the outstanding shares of Series A Preferred Stock and the holders of a majority of the outstanding shares of Series B Preferred Stock (determined as set forth above) (or, if the parties are unable to agree on an Arbiter within 10 Business Days of the Corporation’s written request to the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock that agreement thereon be reached, then by an Arbiter selected by the New York City office of the American Arbitration Association) (with the Corporation, on the one hand, and the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, on the other hand, each bearing one half of the fees and expenses of the Arbiter). Notwithstanding the foregoing, the determination of the Fair Market Value of a share of Voting Common Stock for purposes of Section 6(f) of Article VIII or Section 6(f) of Article IX, as applicable, shall be made by the Board of Directors, which determination shall be final and binding.

**“Initial Public Offering”** means the first public offering of shares of Common Stock.

**“Investor Stockholders Agreement”** means the Investor Stockholders Agreement, dated March 28, 2007, by and among the Corporation, the holders of the Series A Preferred Stock and the holders of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Investor Stockholders Agreement will be made available without charge to any stockholder upon request.

**“Issuance Date”** means March 28, 2007.

“Junior Securities” means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series A Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series B Preferred Stock, or which does not specify its rank, with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank junior to the Series C Preferred Stock with respect to the distribution of assets upon Liquidation.

This definition of Junior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Junior Securities.

“Liquidation” has the meaning set forth in Section 4(a) of Article VIII.

“Liquidation Preference” means:

(1) with respect to a share of Series A Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series A Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series A Preferred Stock if all outstanding shares of Series A Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article VIII;

(2) with respect to a share of Series B Preferred Stock, the greater of (x) the sum of (i) the Stated Value plus (ii) an amount, if any, equal to the aggregate of any dividends declared but not yet paid on such share of Series B Preferred Stock and (y) the amount that would be payable in the Liquidation in respect of the Voting Common Stock issuable upon conversion of such share of Series B Preferred Stock if all outstanding shares of Series B Preferred Stock were converted into Voting Common Stock immediately prior to the Liquidation in accordance with Section 6 of Article IX; and

(3) with respect to a share of Series C Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Applicable Series of the Series C Preferred Stock).

“Nasdaq” has the meaning set forth in the definition of “Fair Market Value”.

**"Parity Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series B Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank on a parity with the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Parity Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Parity Securities.

**"Person"** means an individual, partnership, corporation, limited liability company or partnership, unincorporated organization, trust or joint venture, or a governmental agency or political subdivision thereof or other entity of any kind.

**"Preferred Stock Purchase Agreement"** means the Preferred Stock Purchase Agreement, dated as of February 22, 2007, by and among the Corporation, Ikaria, Inc. and purchasers of the Series B Preferred Stock, as such agreement may be amended from time to time as provided in such agreement. A copy of the Preferred Stock Purchase Agreement will be made available without charge to any stockholder upon request.

**"Requisite Approval"** means the approval of the Board of Directors and, if required by one or more of Sections 4.1, 4.2, 4.3, 4.4 and 4.5 of the Investor Stockholders Agreement, the approval or approvals set forth in the applicable Section or Sections of the Investor Stockholders Agreement.

**"Senior Securities"** means:

(1) with respect to the Series A Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series A Preferred Stock with respect to one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation;

(2) with respect to the Series B Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series B Preferred Stock with respect to

one or both of the following Attributes: (i) payment of dividends and distributions and (ii) the distribution of assets upon any Liquidation; and

(3) with respect to the Series C Preferred Stock, each class or series of capital stock of the Corporation now or hereafter authorized, issued or outstanding which by its terms expressly provides that it will rank senior to the Series C Preferred Stock with respect to the distribution of assets upon any Liquidation.

This definition of Senior Securities shall include any Convertible Securities exercisable or exchangeable for or convertible into any Senior Securities.

"Series A Transaction" has the meaning set forth in Section 6(c)(i) of Article VIII.

"Series B Transaction" has the meaning set forth in Section 6(c)(i) of Article IX.

"Stated Value" means, with respect to a share of Series A Preferred Stock, \$1.00 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series A Preferred Stock) and, with respect to a share of Series B Preferred Stock, \$4.6346 (as adjusted for any split, subdivision, combination, consolidation, recapitalization or similar event with respect to the Series B Preferred Stock).

"Subsidiary" of any Person means any corporation or other entity of which a majority of the voting power of the voting equity securities or equity interest is owned, directly or indirectly, by such Person.

"Trading Day" means a day on which the principal national securities exchange on which the Common Stock is quoted, listed or admitted to trading is open for the transaction of business.

(b) The headings of the sections, paragraphs, subparagraphs, clauses and sub-clauses included in this Certificate of Incorporation are for convenience of reference only and shall not define, limit or affect any of the provisions hereof.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of the Certificate of Incorporation of this Corporation, and which has been duly adopted in accordance with Sections 242 and 245 of the Delaware General Corporation Law, has been executed by its duly authorized officer this 7th day of May, 2010.

IKARIA HOLDINGS, INC.

Matthew M. Bennett

Name: Matthew M. Bennett

Title: Senior Vice President and Secretary

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Statutory or terminal disclaimer	1814	1	160	160
<b>Total in USD (\$)</b>				<b>160</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14717073
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Nancy Bechet
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	16-JAN-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	16:20:53
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$160
RAM confirmation Number	3260
Deposit Account	061050
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Terminal Disclaimer Filed	termdis_0003007_13683417.pdf	3744804 2c92ef5df4290f8e6948878849c85a052ddc30ea	no	78
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	29955 eb2b8777d54f0de26bad9566710ced49573c65cb	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			3774759		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Serial No. : 13/651,660    Examiner : Ernst V. Arnold  
Filed : October 15, 2012    Conf. No. : 4656  
Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

**Mail Stop Amendment**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT IN REPLY TO ACTION OF JANUARY 11, 2013

This application is under Prioritized Examination (Track 1). The following amendment and remarks are submitted in response to the Office action mailed January 11, 2013. Applicants also submit an Information Disclosure Statement with the necessary fee.

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 4

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

Amendment to the Specification

Replace the paragraph beginning at page 1, paragraph [0001], with the following amended paragraph:

**[0001]** This application is a continuation of and claims priority to U.S. Patent Application Serial No. 12/821,041, filed on June 22, 2010, now U.S. Patent No. 8,293,284, which claims priority to U.S. Patent Application Serial No. 12/494,598, filed on June 30, 2009 and now abandoned. The contents of both prior applications are incorporated herein by reference.

### REMARKS

Claims 1-25<sup>1</sup> are pending and under examination. No amendments to the claims are presently proposed.

The specification has been amended as requested on page 2 of the Office action, to reflect the issuance of US Patent Application no. 12/821,041 as US Patent No. 8,293,284.

The Office action at page 2 notes that, in the Information Disclosure Statement filed on 12/27/12, reference 1 refers to "12/820666," which the Examiner correctly interprets as intended to be 12/820866. Applicants apologize for the typographical error. The correct reference is listed in the Information Disclosure Statement newly submitted with this Reply. As a correct copy of the reference was previously provided with the Information Disclosure Statement filed on 12/27/12, Applicants presume it is unnecessary to supply another copy. The Examiner is asked to consider all of the references listed in the Information Disclosure Statement submitted with this Reply.

The Office action rejected claims 1-25 on the ground of nonstatutory double patenting over the claims of US Patent Nos. 8,282,966 and 8,293,284, and also over the claims of co-pending application 13/683,417. This is the sole ground of rejection described in the Office action. Without acquiescing in the basis for the rejection, Applicants have on today's date filed three terminal disclaimers and their applicable fees in the present application, each terminal disclaimer respectively referencing one of the three cited patents/co-pending application. Applicants submit that the terminal disclaimers are sufficient to overcome the rejections. Allowance of the claims is therefore respectfully requested.

If any issues remain, the Examiner is asked to telephone the undersigned to discuss.

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<sup>1</sup> Not claims 1-30, as stated in the Office action at page 2.

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 4 of 4

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

No fee is believed due. Apply any necessary charges or credits to Deposit  
Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 16, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

22968794.doc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Serial No. : 13/651,660    Examiner : Ernst V. Arnold  
Filed : October 15, 2012    Conf. No. : 5655  
Title : Methods of Reducing the Risk of Occurrence of Pulmonary Edema Associated with  
         Inhalation of Nitric Oxide Gas

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

NINTH INFORMATION DISCLOSURE STATEMENT

Please consider the documents listed on the enclosed SB-08 form. As a copy of the single non-patent literature document listed there was provided as Ref. 1 with the Information Disclosure Statement filed December 27, 2012, no copy is provided with this submission. Applicants will supply another copy if needed.

The following related U.S. applications and patents are brought to the Examiner's attention. Applicants presume that the Examiner (who is handling all of the listed applications) has access to the prosecution documents in each case through the Office's database. Applicants will supply copies of any such prosecution documents upon request.

12/494,598, filed June 30, 2009 (abandoned)  
12/820,866, filed June 22, 2010 (abandoned)  
12/820,980, filed June 22, 2010 (abandoned)  
12/821,020, filed June 22, 2010 (issued as U.S. Patent No. 8,282,966)  
12/821,041, filed June 22, 2010 (issued as U.S. Patent No. 8,293,284)  
13/683,236, filed November 21, 2012 (pending)  
13/683,417, filed November 21, 2012 (pending)  
13/683,444, filed November 21, 2012 (pending)

Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 2

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

This statement is being filed after a first Office Action on the merits, but before receipt of a Final Office Action or a Notice of Allowance. Apply \$180 in payment of the late submission fee of §1.17(p) and any other necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: January 16, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

22963050.doc

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5558083		1996-09-24	Bathe et al.	
	2	5651358		1997-07-29	Briend et al.	
	3	6142147		2000-11-07	Head et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

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U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020185126		2002-12-12	Krebs	
	2	20030131848		2003-07-17	Stenzler	

If you wish to add additional U.S. Published Application citation information please click the Add button.

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FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	
	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
	Art Unit	1613		
	Examiner Name	Ernst V. Arnold		
	Attorney Docket Number	26047-0003007		

	1								<input type="checkbox"/>
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If you wish to add additional Foreign Patent Document citation information please click the Add button **Add**

**NON-PATENT LITERATURE DOCUMENTS** Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
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	1	Fish & Richardson P.C., Express Abandonment in U.S. Serial No. 12/820,866 (1 page), filed December 3, 2012	<input type="checkbox"/>
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If you wish to add additional non-patent literature document citation information please click the Add button **Add**

**EXAMINER SIGNATURE**

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2013-01-16
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Lisa Gray			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Submission- Information Disclosure Stmt	1806	1	180	180
<b>Total in USD (\$)</b>				<b>180</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14720832
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Lisa Gray
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	16-JAN-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	21:46:42
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	8901
Deposit Account	061050
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1		26047-0003007reply.pdf	83151 fcedc4a0cd41fc706e05e78e85a6f3bdec2052b1	yes	4
<b>Multipart Description/PDF files in .zip description</b>					
		<b>Document Description</b>	<b>Start</b>		<b>End</b>
		Amendment/Req. Reconsideration-After Non-Final Reject	1		1
		Specification	2		2
		Applicant Arguments/Remarks Made in an Amendment	3		4
<b>Warnings:</b>					
<b>Information:</b>					
2	Transmittal Letter	26047-0003007ids.pdf	63183 8a1e4d6c3c2fd791bb8843285a2b50bd29cfa602	no	2
<b>Warnings:</b>					
<b>Information:</b>					
3	Information Disclosure Statement (IDS) Form (SB08)	26047-0003007sb08.pdf	612382 0824fb2ecba7e84c5d95762c3d09060aa61b8d3d	no	4
<b>Warnings:</b>					
<b>Information:</b>					
4	Fee Worksheet (SB06)	fee-info.pdf	30220 b25d686a2eed6578c0128d2e55f0cfd3d06d08da	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			788936		

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**


Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875				Application or Docket Number <b>13/651,660</b>		Filing Date <b>10/15/2012</b>		<input type="checkbox"/> To be Mailed			
<b>APPLICATION AS FILED – PART I</b>								<b>OTHER THAN</b>			
(Column 1)		(Column 2)		SMALL ENTITY <input type="checkbox"/>		OR		SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)				
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A			N/A					
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (j), or (m))</small>	N/A	N/A	N/A			N/A					
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(c), (p), or (q))</small>	N/A	N/A	N/A			N/A					
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	minus 20 =	*	X \$ =			X \$ =					
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =			X \$ =					
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).										
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>											
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL					
<b>APPLICATION AS AMENDED – PART II</b>								<b>OTHER THAN</b>			
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR		SMALL ENTITY	
<b>AMENDMENT</b>	<b>01/16/2013</b>	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)	
	Total <small>(37 CFR 1.16(j))</small>	* 25	Minus	** 25	= 0	X \$ =		OR	X \$62=	0	
	Independent <small>(37 CFR 1.16(h))</small>	* 4	Minus	***4	= 0	X \$ =		OR	X \$250=	0	
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>								OR		
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>								OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	<b>0</b>	
<b>AMENDMENT</b>		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)	
	Total <small>(37 CFR 1.16(j))</small>	*	Minus	**	=	X \$ =		OR	X \$ =		
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	X \$ =		OR	X \$ =		
	<input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>								OR		
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>								OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.                  ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".                  *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".                  The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>											
						Legal Instrument Examiner: /STELLA LITTLE/					

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



<b>Application Number</b> 	<b>Application/Control No.</b> 13/651,660	<b>Applicant(s)/Patent under Reexamination</b> BALDASSARRE ET AL.

<b>Document Code - DISQ</b>	<b>Internal Document – DO NOT MAIL</b>
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<b>TERMINAL DISCLAIMER</b>	<input checked="" type="checkbox"/> <b>APPROVED</b>	<input type="checkbox"/> <b>DISAPPROVED</b>
Date Filed : 1/16/13	<b>This patent is subject to a Terminal Disclaimer</b>	

**Approved/Disapproved by:**

Felicia D. Roberts - 3 TDs approved with this filing date:

1. 8,282,966
2. 8,293,284
3. 13/683,417



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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NOTICE OF ALLOWANCE AND FEE(S) DUE

94169 7590 02/04/2013
Fish & Richardson PC
P.O.Box 1022
minneapolis, MN 55440

EXAMINER

ARNOLD, ERNST V

ART UNIT PAPER NUMBER

1613

DATE MAILED: 02/04/2013

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
13/651,660 10/15/2012 James S. Baldassarre 26047-0003007 4656

TITLE OF INVENTION: Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas

Table with 7 columns: APPLN. TYPE, SMALL ENTITY, ISSUE FEE DUE, PUBLICATION FEE DUE, PREV. PAID ISSUE FEE, TOTAL FEE(S) DUE, DATE DUE
nonprovisional NO \$1770 \$0 \$0 \$1770 05/06/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

94169                      7590                      02/04/2013  
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 Minneapolis, MN 55440

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/651,660	10/15/2012	James S. Baldassarre	26047-0003007	4656

TITLE OF INVENTION: Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1770	\$0	\$0	\$1770	05/06/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
ARNOLD, ERNST V	1613	424-718000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev. 03-02 or more recent) attached. <b>Use of a Customer Number is required.</b></p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are submitted:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s): (<b>Please first reapply any previously paid issue fee shown above</b>)</p> <p><input type="checkbox"/> A check is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
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5. **Change in Entity Status** (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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EXAMINER

ARNOLD, ERNST V

ART UNIT PAPER NUMBER

1613

DATE MAILED: 02/04/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	13/651,660	BALDASSARRE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ERNST ARNOLD	1613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 1/16/13.
2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3.  The allowed claim(s) is/are 1-25. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_ .
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in **ABANDONMENT** of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Examiner's Amendment/Comment                             |
| 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date <u>10/17/12, 1/16/13</u> | 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                            | 7. <input type="checkbox"/> Other ____.  |
| 4. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____ .  |  |

/Ernst V Arnold/  
Primary Examiner, Art Unit 1613

### **DETAILED ACTION**

Claims 1-25 are pending and under examination.

#### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 1/16/13 was filed after the mailing date of the Office Action on 1/11/13. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Please note that no date was supplied for reference #6 (Federal Regulations 21 CFR Part 312) on the IDS filed 10/17/12 and the URL provided was not functional to determine the date on the website so the Examiner provided the date on which that document was filed in the instant case.

#### ***Terminal Disclaimer***

The terminal disclaimers filed on 1/16/13 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of copending application 13/683417 and US Patents 8282966 and 8293284 have been reviewed and is accepted. The terminal disclaimers have been recorded. The rejections are accordingly withdrawn.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance: Applicant's amendments have overcome the rejections of record. The instantly claimed subject matter is free of the art. See US Patents 8282966 and 8293284 for a complete rationale.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Claims 1-25 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERNST ARNOLD whose telephone number is (571)272-8509. The examiner can normally be reached on M-F 7:15-4:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Kwon can be reached on 571-272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ernst V Arnold/  
Primary Examiner, Art Unit 1613

## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"8282966".pn.	USPAT	OR	OFF	2013/01/26 10:14
L5	9	((424/718.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/26 10:24
L6	0	((600/483-485.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/26 10:25
L7	4	((128/200.24.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2013/01/26 10:25

1/ 26/ 2013 10:28:29 AM

C:\Users\earnold\Documents\EAST\Workspaces\13651660.wsp

Receipt date: 01/16/2013

13651660 - GALL: 1613

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	5558083		1996-09-24	Bathe et al.	
	2	5651358		1997-07-29	Briend et al.	
	3	6142147		2000-11-07	Head et al.	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020185126		2002-12-12	Krebs	
	2	20030131848		2003-07-17	Stenzler	

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FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	13651660 - GAU: 1613
	Filing Date		2012-10-15	
	First Named Inventor	Baldassarre		
	Art Unit	1613		
	Examiner Name	Ernst V. Arnold		
	Attorney Docket Number	26047-0003007		

	1							<input type="checkbox"/>
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**NON-PATENT LITERATURE DOCUMENTS** Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
/E.A./	1	Fish & Richardson P.C., Express Abandonment in U.S. Serial No. 12/620,866 (1 page), filed December 3, 2012	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

**EXAMINER SIGNATURE**

Examiner Signature	/Ernst Arnold/	Date Considered	01/29/2013
--------------------	----------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>Receipt date: 01/16/2013</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660	13651660 - GAU: 1613
	Filing Date	2012-10-15	
	First Named Inventor	Baldassarre	
	Art Unit	1613	
	Examiner Name	Ernst V. Arnold	
	Attorney Docket Number	26047-0003007	

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2013-01-16
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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## Inventor Information for 13/651660

Inventor Name	City	State/Country
BALDASSARRE, JAMES S.	DOYLESTOWN	PENNSYLVANIA
ROSSKAMP, RALE	CHESTER	NEW JERSEY
INO THERAPEUTICS L.L.C.	HAMPTON	NEW JERSEY

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<b>Search Notes</b>  	<b>Application/Control No.</b>  13651660	<b>Applicant(s)/Patent Under Reexamination</b>  BALDASSARRE ET AL.
	<b>Examiner</b>  ERNST ARNOLD	<b>Art Unit</b>  1613

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Class	Subclass	Date	Examiner
128	200.24 text limited	1/10/13	eva
424	718 text limited	1/10/13	eva
600	483-485 text limited	1/01/13	eva

SEARCH NOTES		
Search Notes	Date	Examiner
inventor/assignee name EAST/PALM	1/10/13	eva
EAST all databases	1/10/13	eva
search update EAST all databases	1/26/13	eva


INTERFERENCE SEARCH			
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<b>Issue Classification</b> 	<b>Application/Control No.</b> 13651660	<b>Applicant(s)/Patent Under Reexamination</b> BALDASSARRE ET AL.
	<b>Examiner</b> ERNST ARNOLD	<b>Art Unit</b> 1613

<input checked="" type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA				<input checked="" type="checkbox"/> T.D.				<input type="checkbox"/> R.1.47			
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NONE		<b>Total Claims Allowed:</b>	
(Assistant Examiner)	(Date)	25	
/ERNST ARNOLD/ Primary Examiner.Art Unit 1613	1/26/13	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	none

<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  13651660	<b>Applicant(s)/Patent Under Reexamination</b>  BALDASSARRE ET AL.
	<b>Examiner</b>  ERNST ARNOLD	<b>Art Unit</b>  1613

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

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CLAIM		DATE									
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## EAST Search History

## EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	0	(600/483-485.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema).clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2013/01/26 10:21
L3	2	(128/200.24.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema).clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2013/01/26 10:21
L4	4	(424/718.ccls. and ((baby or neonate or newborn or neonatal) and ((nitric adj oxide) or (nitrogen adj monoxide)) and (left with (ventrical or ventricular)) and edema).clm.)	US-PGPUB; USPAT; UPAD	OR	ON	2013/01/26 10:21

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SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.	
13/651,660	10/15/2012	424	1613	26047-0003007	
<b>APPLICANTS</b> James S. Baldassarre, Doylestown, PA; Ralf Rosskamp, Chester, NJ; INO THERAPEUTICS LLC, Hampton, NJ <b>** CONTINUING DATA *****</b> This application is a CON of 12/821,041 06/22/2010 PAT 8,293,284 which is a CON of 12/494,598 06/30/2009 ABN <b>** FOREIGN APPLICATIONS *****</b> <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **</b> 11/02/2012					
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and Acknowledged <u>/ERNST V ARNOLD/</u> <small>Examiner's Signature</small>	<input type="checkbox"/> Met after Allowance <small>Initials</small>	<b>STATE OR COUNTRY</b> PA	<b>SHEETS DRAWINGS</b> 0	<b>TOTAL CLAIMS</b> 25	<b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> Fish & Richardson PC P.O.Box 1022 Minneapolis, MN 55440 UNITED STATES					
<b>TITLE</b> Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas					
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13651660 - GALL:1613

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	Filing Date		2012-10-15	
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1	Elbl et al., "Long-term serial echocardiographic examination of late anthracycline cardiotoxicity and its prevention by dexrazoxane in paediatric patients," Eur. J. Pediatr., Vol. 164, pages 678-684 (2005)	<input type="checkbox"/>
2	EP 09251949 Office Action dated 10/11/2010, 5 pages	<input type="checkbox"/>
3	Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), NCT00005773 at ClinicalTrials.gov (2008)	<input type="checkbox"/>
4	European Patent Office minutes of oral proceedings in EP 09 251 949.5, with allowable claims (7 pages), dated May 23, 2012	<input type="checkbox"/>
5	Fauci et al., Harrison's Principles of Internal Medicine, pages 1287-1291 and 1360, 12th edition, McGraw Hill (1998)	<input type="checkbox"/>
6	Federal Regulations 21 CFR Part 312, << <a href="http://www.gcrc.uci.edu/rsa/aer.cfm">http://www.gcrc.uci.edu/rsa/aer.cfm</a> >> 10/17/12 /EA/	<input type="checkbox"/>
7	Ferguson et al., "Inhaled nitric oxide for hypoxemic respiratory failure: Passing bad gas?," Canadian Medical Association Journal, Vol. 162 (1), pages 85-86 (2000)	<input type="checkbox"/>
8	Field, "Neonatal Ventilation With Inhaled Nitric Oxide Versus Ventilatory Support Without Inhaled Nitric Oxide for Preterm Infants With Severe Respiratory Failure: The INNOVO Multicentre Randomised Controlled Trial (ISRCTN 17821339)," Pediatrics Journal, Vol. 115, pages 926-936 (2005) DOI: 10.1542/peds.2004-1209	<input type="checkbox"/>
9	Figure from Dr. Green's presentation given 1/10/11; 1 page	<input type="checkbox"/>
10	Findlay, "Paradoxical Haemodynamic Response to Inhaled Nitric Oxide," International Journal of Intensive Care GB, Vol 5, No. 4, pages 134-139 (1998)	<input type="checkbox"/>
11	Finer et al., "Randomized, Prospective Study of Low-Dose Versus High-Dose Inhaled Nitric Oxide in the Neonate With Hypoxic Respiratory Failure," Pediatrics, Vol. 108, No. 4, pages 949-955 (2001)	<input type="checkbox"/>



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	Filing Date	2012-10-15		
	First Named Inventor	Baldassarre		
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12	Fraisse et al., "Acute pulmonary hypertension in infants and children: cGMP-related drugs," Pediatric Crit. Care Med., Vol 11, No. 2 (Suppl.), 4 pages (2010)	<input type="checkbox"/>
13	Fraisse et al., "Doppler echocardiographic predictors of outcome in newborns with persistent pulmonary hypertension," Cardiol Young. Vol. 14(3), pages 277-83 (2004)	<input type="checkbox"/>
14	Green, "Patent Ductus Ateriosus Demonstrating Shunting of Blood," Figure from presentation given 1/10/2011	<input type="checkbox"/>
15	Greenough, "Inhaled nitric oxide in the neonatal period", Expert Opinion on Investigational Drugs, Ashley Publications Ltd., pages 1601-1609 pages (2000)	<input type="checkbox"/>
16	Guidelines for Industry: Clinical Safety Data Management, <<www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidance/ucm073087.pdf>>, March 1995, 17 pages	<input type="checkbox"/>
17	Haddad et al., "Use of inhaled nitric oxide perioperatively and in intensive care patients," Anesthesiology, Vol. 92, pages 1821-1825 (2000)	<input type="checkbox"/>
18	Hare et al., "Influence of Inhaled Nitric Oxide on Systemic Flow and Ventricular Filling Pressure in Patients Receiving Mechanical Circulatory Assistance," Circulation, Vol. 95, pages 2250-2253 (1997)	<input type="checkbox"/>
19	Hayward et al., "Effect of Inhaled Nitric Oxide on Normal Human Left Ventricular Function," JACC, Vol. 30, No. 1, pages 49-56 (1997)	<input type="checkbox"/>
20	Hayward et al., "Inhaled Nitric Oxide in Cardiac Failure: Vascular Versus Ventricular Effects," Journal of Cardiovascular Pharmacology, Vol. 27, pages 80-85, ABSTRACT ONLY (1996)	<input type="checkbox"/>
21	Hayward et al., "Left Ventricular Chamber Function During Inhaled Nitric Oxide in Patients with Dilated Cardiomyopathy," J. Cardiovascular Pharmacology, Vol. 34, Iss. 5, pages 749-754, ABSTRACT (1999)	<input type="checkbox"/>
22	Hayward et al., "Inhaled nitric oxide in cardiology practice," Cardiovascular Research, Vol. 43, pages 628-638 (1999)	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	13651660 - GAU: 1613	
	Filing Date		2012-10-15		
	First Named Inventor	Baldassarre			
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23	Headrick, "Hemodynamic monitoring of the critically ill neonate," J. Perinat. Neonatal Nurs., Vol 5(4), pages 58-67 (1992)	<input type="checkbox"/>
24	Henrichsen et al., "Inhaled Nitric Oxide Can Cause Severe Systemic Hypotension," Journal of Pediatrics, Mosby-Year Book, St. Louis, MO, Vol. 129, No. 1, page 183 (1996)	<input type="checkbox"/>
25	Huddleston, "Indications for heart transplantation in children," Progress in Pediatric Cardiology, Vol. 26, pages 3-9 (2009)	<input type="checkbox"/>
26	Husten, "Dronedarone is Less Effective, But Safer Than Amiodarone in Atrial Fibrillation," page 3, (2009) <a href="http://www.npci.org.uk/blog/?p=778">http://www.npci.org.uk/blog/?p=778</a>	<input type="checkbox"/>
27	Hurford et al., "Nitric Oxide," Biology and Pathobiology, Academic Press, Chapter 56, pages 931-945 (2000)	<input type="checkbox"/>
28	Ichinose et al., "Inhaled Nitric Oxide - A Selective Pulmonary Vasodilator: Current Uses and Therapeutic Potential," Circulation, Vol. 109, pages 3106-3111 (2004)	<input type="checkbox"/>
29	Inglessis et al., "Does inhaled nitric oxide support the hemodynamic of spontaneous breathing patients with cardiogenic shock related to right ventricular myocardial infarction? Reply," JACC, Vol. 45, No. 6, pages 965-966 (2005)	<input type="checkbox"/>
30	Inglessis et al., "Hemodynamic effects of inhaled nitric oxide in right ventricular myocardial infarction and cardiogenic shock," JACC, Vol. 44, No. 4, pages 793-798 (2004)	<input type="checkbox"/>
31	Baldassarre, "Inhaled Nitric Oxide (INO) in Hypoxic Respiratory Failure, Study description, study sponsored by INO Therapeutics," ClinicalTrials.gov Identifier NCT00922532, 4 pages (2009)	<input type="checkbox"/>
32	"Inhaled Nitric Oxide and Hypoxic Respiratory Failure in Infants With Congenital Diaphragmatic Hernia," The Neonatal Inhaled Nitric Oxide Study Group (NINOS), Pediatrics, Vol. 99, No. 6, pages 838-845 (1997)	<input type="checkbox"/>
33	Inhaled Nitric Oxide by Oxygen Hood in Neonates, from ClinicalTrials.gov, NCT00732537, 08/08/2008	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	13651660 - GAU: 1613	
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	Art Unit				
	Examiner Name				
	Attorney Docket Number		26047-0003007		

34	Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure," The Neonatal Inhaled Nitric Oxide Study Group, N. Engl. J. Med., Vol. 336, No. 9, pages 597-605 (1997)	<input type="checkbox"/>
35	Inhaled Nitric Oxide in Neonates with Elevated A-a DO2 Gradients Not Requiring Mechanical Ventilation, from ClinicalTrials.gov archive, NCT00041548, 06/23/2005, 2 pages	<input type="checkbox"/>
36	INO Therapeutics, "Comparison of Inhaled Nitric Oxide and Oxygen in Patient Reactivity during Acute Pulmonary Vasodilator Testing," downloaded from clinicaltrials.gov on April 23, 2012; first received on February 20, 2008; last updated on October 18, 2010	<input type="checkbox"/>
37	INO Therapeutics, LLC, "INOflo for Inhalation 800ppm," package leaflet, 2010	<input type="checkbox"/>
38	INO Therapeutics, NCT00041548 at ClinicalTrials.gov (2005)	<input type="checkbox"/>
39	INO Therapeutics, NCT00551642 at ClinicalTrials.gov (2007)	<input type="checkbox"/>
40	INOMax (nitric oxide) for inhalation 100 and 800 ppm (parts per million), drug label insert, 2007, 2 pages	<input type="checkbox"/>
41	Ivy et al., "Dipyridamole attenuates rebound pulmonary hypertension after inhaled nitric oxide withdrawal in postoperative congenital heart disease," J. Thorac. Cardiovasc. Surg.; Vol. 115, pages 875-882 (1998)	<input type="checkbox"/>
42	James et al., "Treatment of heart failure in children," Current Pediatrics, Vol. 15, 539-548 (2005)	<input type="checkbox"/>
43	JP 2009157623 Office Action dated 02/15/2011, 3 pages	<input type="checkbox"/>
44	JP 2009157623 Office Action dated 02/23/2010, 3 pages	<input type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660	13651660 - GAU: 1613	
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	Attorney Docket Number		26047-0003007		

45	JP 2009157623 Office Action dated 07/30/2010, 6 pages	<input type="checkbox"/>
46	JP 2009157623 Office Action response filed 06/18/2010, 37 pages (no translation)	<input type="checkbox"/>
47	JP 2009157623 request for accelerated exam filed 01/15/2010 (60 pages)	<input type="checkbox"/>
48	JP 2009157623 response filed 11/30/2010, 58 pages	<input type="checkbox"/>
49	Kay et al., "Congestive heart failure in pediatric patients," From the Department of Pediatrics, Duke University Medical Center, by Mosby, Inc., 6 pages (2001)	<input type="checkbox"/>
50	Kazerooni et al., "Cardiopulmonary Imaging," Lippincott Williams & Wilkins, pages 234-235 (2 pages) (2004)	<input type="checkbox"/>

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	Filing Date	2012-10-15	
	First Named Inventor	Baldassarre	
	Art Unit		
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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2012-10-17
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

**Privacy Act Statement**

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /E.A./



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (13/651,660), FILING OR 371(C) DATE (10/15/2012), FIRST NAMED APPLICANT (James S. Baldassarre), ATTY. DOCKET NO./TITLE (26047-0003007)

CONFIRMATION NO. 4656

PUBLICATION NOTICE

94169
Fish & Richardson PC
P.O.Box 1022
minneapolis, MN 55440



Title:Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas

Publication No.US-2013-0040000-A1
Publication Date:02/14/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

**PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

94169                      7590                      02/04/2013

FISH & RICHARDSON P.C.  
 P.O. BOX 1022  
 MINNEAPOLIS, MN 55440-1022

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/651,660	10/15/2012	James S. Baldassarre	26047-0003007	4656

TITLE OF INVENTION: METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1770	\$0		\$1770	05/06/13

EXAMINER	ART UNIT	CLASS-SUBCLASS
ARNOLD, ERNST V.	1613	424-718000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list  
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 Fish & Richardson P.C.  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: INO Therapeutics LLC  
 (B) RESIDENCE: (CITY and STATE OR COUNTRY) Hampton, NJ

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:

Issue Fee  
 Publication Fee (No small entity discount permitted)  
 Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s):

A check in the amount of the fee(s) is enclosed.  
 Payment by credit card. Form PTO-2038 is attached.  
 The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number 06-1050

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Janis K. Fraser/

Date February 15, 2013

Typed or printed name Janis K. Fraser, Ph.D., J.D.

Registration No. 34,819



## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Lisa Gray			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl issue fee	1501	1	1770	1770
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1770</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14977551
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Lisa Gray
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	15-FEB-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	20:05:20
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1770
RAM confirmation Number	6617
Deposit Account	061050
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Transmittal Letter	26047-0003007response.pdf	66815 d2961537dca8dcb21563720a5bc34ccb3a4d4f4f	no	2
<b>Warnings:</b>					
<b>Information:</b>					
2	Issue Fee Payment (PTO-85B)	26047-0003007issuefee.pdf	106877 5cb62130d9756547e2f5532cdb2014efc1a4a8c8	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Fee Worksheet (SB06)	fee-info.pdf	29889 d77c2c7e18da8d5004f49b60bec24f4e6dc3c50	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				203581	
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					



Applicant : James S. Baldassarre et al.  
Serial No. : 13/651,660  
Filed : October 15, 2012  
Page : 2 of 2

Attorney's Docket No.: 26047-0003007 / 3000-US-  
0008CON5

The required fee of \$1770 is being paid with this filing. Apply any other necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: February 15, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

22981554.doc



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., ISSUE DATE, PATENT NO., ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 13/651,660, 04/02/2013, 8409631, 26047-0003007, 4656

94169 7590 03/13/2013
Fish & Richardson PC
P.O.Box 1022
minneapolis, MN 55440

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

James S. Baldassarre, Doylestown, PA;
Ralf Roskamp, Chester, NJ;
INO THERAPEUTICS LLC, Hampton, NJ

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<p style="text-align: center;"><b>Request for Continued Examination (RCE) Transmittal</b></p> <p>Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450</p>	Application Number	13/651,660
	Filing Date	October 15, 2012
	First Named Inventor	James S. Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

- a.  Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i.  Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
- ii.  Other \_\_\_\_\_
- b.  Enclosed
- i.  Amendment/Reply
- ii.  Affidavit(s)/ Declaration(s)
- iii.  Information Disclosure Statement (IDS)
- iv.  Other Petition to Withdraw from Issuance, SB-09, four references

2. **Miscellaneous**

Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a

- a.  period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b.  Other \_\_\_\_\_

3. **Fees**

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

The Director is hereby authorized to charge the following fees any underpayment of fees or credit any overpayments to

- a.  Deposit Account No. 06-1050.
- i.  RCE fee required under 37 CFR 1.17(e)
- ii.  Extension of time fee (37 CFR 1.136 and 1.17)
- iii.  Other any deficiencies
- b.  Check in the amount of \$ \_\_\_\_\_ enclosed
- c.  Payment by credit card (Form PTO-2038 enclosed)

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.****SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

Signature	/Janis K. Fraser/	Date	March 26, 2013
Name (Print/Type)	Janis K. Fraser, Ph.D., J.D.	Registration No.	34,819

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: James S. Baldassarre et al.	Art Unit	: 1613
Patent No.	: 8,409,631	Examiner	: Ernst V. Arnold
Issue Date	: April 2, 2013	Conf. No.	: 4656
Serial No.	: 13/651,660		
Filed	: October 15, 2012		
Title	: METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS		

MAIL STOP 313 (c)  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PETITION UNDER 37 CFR 1.313(c)

**URGENT: PATENT TO ISSUE APRIL 2, 2013**

Applicant hereby petitions under §1.313(c)(2) for the withdrawal of this application from issue to permit consideration of an Information Disclosure Statement. The issue fee was paid on February 15, 2013.

A request for continued examination (RCE), form PTO SB-08 (IDS), and form PTO SB-09 (Certification and Request for Consideration of an Information Disclosure Statement Filed after Payment of the Issue Fee under the QPIDS Pilot Program) are being filed at this time, with the necessary fees. The RCE is intended to continue this application upon the grant of this petition and the decision of the Office to reopen prosecution.

The petition fee required by 1.17(h) is being paid with this petition. Apply that and any other necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: March 26, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

23006903.doc

CERTIFICATE OF (A) MAILING BY FIRST CLASS MAIL OR (B) TRANSMISSION  
I hereby certify under 37 CFR §1.8(a) that this correspondence is either (A) addressed as set out in 37 CFR §1.1(a) and being deposited with the United States Postal Service as first class mail with sufficient postage, or (B) being transmitted by facsimile in accordance with 37 CFR § 1.6(d) or via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4), on the date indicated below.

March 27, 2013  
Date of Deposit or Transmission  
/Nancy Bechet/  
Signature  
Nancy Bechet

Typed or Printed Name of Person Signing Certificate

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Timothy A. French/Elizabeth Doherty			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
Petition fee- 37 CFR 1.17(h) (Group III)	1464	1	140	140
Request for Continued Examination	1801	1	1200	1200
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>1340</b>



## UNITED STATES PATENT AND TRADEMARK OFFICE

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Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

Decision Date: March 27, 2013

In re Application of:

James Baldassarre

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No: 13651660

Filed: 15-Oct-2012

Attorney Docket No: 26047-0003007

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed March 27, 2013, to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

**Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.**

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 1613 for processing of the request for continuing examination under 37 CFR 1.114.

Office of Petitions

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	15362553
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Timothy A. French/Elizabeth Doherty
<b>Filer Authorized By:</b>	Timothy A. French
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	27-MAR-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	12:36:07
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1340
RAM confirmation Number	12088
Deposit Account	061050
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Petition automatically granted by EFS	petition-request.pdf	31561 877f088710b3ea36c01e2c2fff70b4fc16176f3	no	2
<b>Warnings:</b>					
<b>Information:</b>					
2	Quick Path Information Disclosure Statement	quickpathIDS26047_0003007.pdf	48198 1a69fda4275e2c60cf243ce8d18267db163c3d57	no	2
<b>Warnings:</b>					
<b>Information:</b>					
3	Other Reference-Patent/App/Search documents	ProtesfromRobic.pdf	4045370 71dac14d1a3a2144bc6a44cf1cf443eab3845bb5	no	42
<b>Warnings:</b>					
<b>Information:</b>					
4	Other Reference-Patent/App/Search documents	frenchreferencereRobic.pdf	1977230 fbaec21df4931a598f7288dbd51164b412ba129c	no	18
<b>Warnings:</b>					
<b>Information:</b>					
5	Other Reference-Patent/App/Search documents	ProtestfromTorys.pdf	5472823 bc698fdff486086b7423fa407bacfc85db66f109	no	36
<b>Warnings:</b>					
<b>Information:</b>					
6	Other Reference-Patent/App/Search documents	HessreferenceforTorys.pdf	5441179 1c8127dddb4882c3e8f75112d9ac4bc38e0f2ab8	no	28
<b>Warnings:</b>					
<b>Information:</b>					
7	Information Disclosure Statement (IDS) Form (SB08)	SB08_26047_0003007.pdf	612465 c880cb9f565a499355bc434a927393a56f130e	no	4
<b>Warnings:</b>					
<b>Information:</b>					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
8	Request for Continued Examination (RCE)	RCE26047_0003007.pdf	143025 05e292e8ba4fbabb32d4b283b062e706ac4e01b9	no	1
<b>Warnings:</b>					
This is not a USPTO supplied RCE SB30 form.					
<b>Information:</b>					

9	Transmittal Letter	Petitiontowithdraw_26047_00 03007.pdf	66570 <small>6630418db9e9083f65f25f404e87c490a8942e3c</small>	no	1
<b>Warnings:</b>					
<b>Information:</b>					
10	Fee Worksheet (SB06)	fee-info.pdf	32198 <small>f0560deb1acc3368f47f40120ba281d91ef82f2</small>	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			17870619		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web		PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	<b>PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)</b>	
Application Number	13651660	
Filing Date	15-Oct-2012	
First Named Inventor	James Baldassarre	
Art Unit	1613	
Examiner Name	ERNST ARNOLD	
Attorney Docket Number	26047-0003007	
Title	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas	
<p>An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.</p> <p>APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).</p> <p>A grantable petition requires the following items:</p> <p>(1) Petition fee; and</p> <p>(2) One of the following reasons:</p> <p>(a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;</p> <p>(b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or</p> <p>(c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).</p>		
<p>Petition Fee</p> <p><input type="checkbox"/> Applicant claims SMALL ENTITY status. See 37 CFR 1.27.</p> <p><input type="checkbox"/> Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).</p> <p><input type="checkbox"/> Applicant(s) status remains as SMALL ENTITY.</p> <p><input checked="" type="checkbox"/> Applicant(s) status remains as other than SMALL ENTITY</p>		
Reason for withdrawal from issue		



- One or more claims are unpatentable
- Consideration of a request for continued examination (RCE) (List of Required Documents and Fees)
- Applicant hereby expressly abandons the instant application (any attorney/agent signing for this reason must have power of attorney pursuant to 37 CFR 1.32(b)).

RCE request, submission, and fee.

- I certify, in accordance with 37 CFR 1.4(d)(4) that :
- The RCE request ,submission, and fee have already been filed in the above-identified application on
  - Are attached.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

- An attorney or agent registered to practice before the Patent and Trademark Office who has been given power of attorney in this application.
- An attorney or agent registered to practice before the Patent and Trademark Office, acting in a representative capacity.
- A sole inventor
- A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors
- A joint inventor; all of whom are signing this e-petition
- The assignee of record of the entire interest that has properly made itself of record pursuant to 37 CFR 3.71

Signature	/timothy a. french/
Name	Timothy French
Registration Number	30175

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

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Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit	1613	
	Examiner Name	Ernst V. Arnold	
	Attorney Docket Number	26047-0003007	

1	Communication from Canadian Intellectual Property Office dated March 19, 2013, enclosing Protest from Robic regarding Canadian patent application no. 2,671,029 (42 pages)	<input type="checkbox"/>
2	Autorisation De Mise Sur Le Marche for VasoKINOX 450 ppm mole/mole issued by the Federal Agency for Drug and Medical Product (AFMPS or FAMPH) (BE 320336) dated 14/07/2008 (18 pages)	<input type="checkbox"/>
3	Communication from Canadian Intellectual Property Office dated March 19, 2013, enclosing Protest from TORYS LLP regarding Canadian patent application no. 2,671,029 (36 pages)	<input type="checkbox"/>
4	Hess, "Heliox and Inhaled Nitric Oxide", Mechanical Ventilation, Chapter 28 (2001), pages 454-480	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

**EXAMINER SIGNATURE**

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2013-03-26
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/651,660	10/15/2012	James S. Baldassarre	26047-0003007	4656

94169 7590 04/01/2013  
Fish & Richardson PC  
P.O.Box 1022  
minneapolis, MN 55440

EXAMINER

ARNOLD, ERNST V

ART UNIT	PAPER NUMBER
1613	

MAIL DATE	DELIVERY MODE
04/01/2013	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	13/651,660	BALDASSARRE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ERNST ARNOLD	1613	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 3/27/13.
2.  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
3.  The allowed claim(s) is/are 1-25. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_ .
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in **ABANDONMENT** of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Examiner's Amendment/Comment                  |
| 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date <u>3/27/13</u> | 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                  | 7. <input type="checkbox"/> Other ____.                                   |
| 4. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____ .                                      |   |

/Ernst V Arnold/  
Primary Examiner, Art Unit 1613



Receipt date: 03/27/2013

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	13651660
	Filing Date	2012-10-15
	First Named Inventor	Baldassarre
	Art Unit	1613
	Examiner Name	Ernst V. Arnold
	Attorney Docket Number	26047-0003007

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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.					T <sup>5</sup>	

<b>Receipt date: 03/27/2013</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit	1613	
	Examiner Name	Ernst V. Arnold	
	Attorney Docket Number	26047-0003007	

/E.A./	1	Communication from Canadian Intellectual Property Office dated March 19, 2013, enclosing Protest from Robic regarding Canadian patent application no. 2,671,029 (42 pages)	<input type="checkbox"/>
/E.A./	2	Autorisation De Mise Sur Le Marche for VasoKINOX 450 ppm mole/mole issued by the Federal Agency for Drug and Medical Product (AFMPS or FAMPH) (BE 320336) dated 14/07/2008 (18 pages)	<input type="checkbox"/>
/E.A./	3	Communication from Canadian Intellectual Property Office dated March 19, 2013, enclosing Protest from TORYS LLP regarding Canadian patent application no. 2,671,029 (36 pages)	<input type="checkbox"/>
/E.A./	4	Hess, "Heliox and Inhaled Nitric Oxide", Mechanical Ventilation, Chapter 28 (2001), pages 454-480	<input type="checkbox"/>

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**EXAMINER SIGNATURE**

Examiner Signature	/Ernst Arnold/	Date Considered	03/28/2013
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		13651660
	Filing Date		2012-10-15
	First Named Inventor	Baldassarre	
	Art Unit	1613	
	Examiner Name	Ernst V. Arnold	
	Attorney Docket Number	26047-0003007	

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Janis K. Fraser/	Date (YYYY-MM-DD)	2013-03-26
Name/Print	Janis K. Fraser	Registration Number	34819

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Receipt date: 03/27/2013

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	15362553
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Timothy A. French/Elizabeth Doherty
<b>Filer Authorized By:</b>	Timothy A. French
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	27-MAR-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	12:36:07
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1340
RAM confirmation Number	12088
Deposit Account	061050
Authorized User	

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660
<b>Filing Date:</b>	15-Oct-2012
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Filer:</b>	Timothy A. French/Elizabeth Doherty
<b>Attorney Docket Number:</b>	26047-0003007

Filed as Large Entity

### Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
Petition fee- 37 CFR 1.17(h) (Group III)	1464	1	140	140
Request for Continued Examination	1801	1	1200	1200

**Pages:**

**Claims:**

**Miscellaneous-Filing:**

Adjustment date: 04/03/2013 SDI RETAI 13651660  
 03/27/2013 INTERSU 00012000 061050  
 02 FC:1801 1200.00 CR

**Petition:**

**Patent-Appeals-and-Interference:**

**Post-Allowance-and-Post-Issuance:**

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

## PATENT WITHDRAWAL NOTICE

DATE WITHDRAWN

3/28/2013

WITHDRAWAL NUMBER

22271

The following application has been **WITHDRAWN** from the  
4/2/2013 issue.

SERIAL NO.

13/651,660

PATENT NUMBER

8,409,631

DRAWINGS

000

CLASS

424/718

TITLE

METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY EDEMA ASSOCIATED  
WITH INHALATION OF NITRIC OXIDE GAS

NAME AND ADDRESS

JAMES S. BALDASSARRE, ET AL  
DOYLESTOWN, PA

REASON FOR WITHDRAWAL

Office of Petitions granted applicant's request to withdraw patent from issue.  
AUTO-PETITION

APPROVED

/Kimberly Terrell/, Manager

Patent Publication Branch  
Office of Data Management



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., ISSUE DATE, PATENT NO., ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 13/651,660, 04/30/2013, 8431163, 26047-0003007, 4656
Row 2: 94169, 7590, 04/10/2013
Text: Fish & Richardson PC, P.O.Box 1022, minneapolis, MN 55440

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

James S. Baldassarre, Doylestown, PA;
Ralf Roskamp, Chester, NJ;
INO THERAPEUTICS LLC, Hampton, NJ

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



Staple  
Here  
Only

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 2

PATENT NO. : 8,431,163  
APPLICATION NO : 13/651,660  
DATED : APRIL 30, 2013  
INVENTOR(S) : JAMES S. BALDASSARRE AND RALF ROSSKAMP

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Page1, Col. 2, Line 5 (Other Publications), delete "faliure" and insert - - failure - -, therefor.

Page1, Col. 2, Line 31 (Other Publications), delete "ful1" and insert - - full - -, therefor.

Page 2, Col. 1, Line 2 (Other Publications), delete "Dsyfunction" and insert - - Dysfunction - -, therefor.

Page 2, Col. 1, Line 19 (Other Publications), delete "Atnecion" and insert - - Atencion - -, therefor.

Page 2, Col. 1, Line 49 (Other Publications), delete "Respir" and insert - - Respir. - -, therefor.

Page 2, Col. 2, Line 24 (Other Publications), delete "AmendmentJReply)" and insert - - Amendment/Reply) - -, therefor.

Page 2, Col. 2, Line 29 (Other Publications), delete "AmendmentJReply)" and insert - - Amendment/Reply) - -, therefor.

MAILING ADDRESS OF SENDER:

Janis K. Fraser, Ph.D., J.D.  
Fish & Richardson P.C.  
P.O. Box 1022  
Minneapolis, Minnesota 55440-1022

Staple  
Here  
Only

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 2 of 2

PATENT NO. : 8,431,163  
APPLICATION NO : 13/651,660  
DATED : APRIL 30, 2013  
INVENTOR(S) : JAMES S. BALDASSARRE AND RALF ROSSKAMP

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Page 3, Col. 1, Line 61 (Other Publications), delete "Aneshesia" and insert  
- - Anesthesia - -, therefor.

Page 3, Col. 1, Line 61 (Other Publications), delete "York,," and insert - - York, - -,  
therefor.

Page 3, Col. 2, Line 13 (Other Publications), delete "Anamolous" and insert  
- - Anomalous - -, therefor.

Page 3, Col. 2, Line 67 (Other Publications), delete "InterenetJournal" and insert  
- - Internet Journal - -, therefor.

Page 4, Col. 2, Line 52 (Other Publications), delete "dysfuction" and insert  
- - dysfunction - -, therefor.

Page 5, Col. 2, Line 20 (Other Publications), delete "Radomised" and insert  
- - Randomised - -, therefor.

Page 5, Col. 2, Line 35 (Other Publications), delete "Ateriosus" and insert  
- - Arteriosus - -, therefor

MAILING ADDRESS OF SENDER:

Janis K. Fraser, Ph.D., J.D.  
Fish & Richardson P.C.  
P.O. Box 1022  
Minneapolis, Minnesota 55440-1022

## Electronic Patent Application Fee Transmittal

<b>Application Number:</b>	13651660			
<b>Filing Date:</b>	15-Oct-2012			
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas			
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre			
<b>Filer:</b>	Janis K. Fraser/Rita Liston			
<b>Attorney Docket Number:</b>	26047-0003007			
Filed as Large Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Certificate of Correction	1811	1	100	100
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>100</b>

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	16263372
<b>Application Number:</b>	13651660
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4656
<b>Title of Invention:</b>	Methods of reducing the risk of occurrence of pulmonary edema associated with inhalation of nitric oxide gas
<b>First Named Inventor/Applicant Name:</b>	James S. Baldassarre
<b>Customer Number:</b>	94169
<b>Filer:</b>	Janis K. Fraser/Rita Liston
<b>Filer Authorized By:</b>	Janis K. Fraser
<b>Attorney Docket Number:</b>	26047-0003007
<b>Receipt Date:</b>	09-JUL-2013
<b>Filing Date:</b>	15-OCT-2012
<b>Time Stamp:</b>	14:23:23
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$100
RAM confirmation Number	666
Deposit Account	061050
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1		26047_0003007_Trans_COC.pdf	152838 91b1c9cbbd2e9830e6b7156ba7592b22a92463d7	yes	3
<b>Multipart Description/PDF files in .zip description</b>					
<b>Document Description</b>			<b>Start</b>	<b>End</b>	
Transmittal Letter			1	1	
Request for Certificate of Correction			2	3	
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	29944 fe1c5fb9df68af41fd8da5d964ca6714791fd59	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			182782		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : James S. Baldassarre et al.                      Art Unit : 1613  
Patent No. : 8,431,163    Examiner : Ernst V. Arnold  
Issue Date : April 30, 2013                                      Conf. No. : 4656  
Serial No. : 13/651,660  
Filed : October 15, 2012

Title : METHODS OF REDUCING THE RISK OF OCCURRENCE OF PULMONARY  
EDEMA ASSOCIATED WITH INHALATION OF NITRIC OXIDE GAS

Attention Certificate of Corrections Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF REQUEST FOR CERTIFICATE OF CORRECTION

Applicant hereby requests that a certificate of correction be issued for the above patent in accordance with the attached request.

One or more of the errors sought to be corrected were made by applicant. The fee of \$100 is being paid with this request. Apply any other necessary charges or credits to Deposit Account 06- 1050, referencing the above attorney docket number.

Respectfully submitted,

Date: July 9, 2013

/Janis K. Fraser/  
Janis K. Fraser, Ph.D., J.D.  
Reg. No. 34,819

Customer Number 94169  
Fish & Richardson P.C.  
Telephone: (617) 542-5070  
Facsimile: (877) 769-7945

23052231.doc

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 8,431,163 B2  
APPLICATION NO. : 13/651660  
DATED : April 30, 2013  
INVENTOR(S) : James S. Baldassarre and Ralf Roskamp

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page, Item (56)

Page 1, Col. 2, Line 5 (Other Publications), delete "faliure" and insert -- failure --, therefor.

Page 1, Col. 2, Line 31 (Other Publications), delete "ful1" and insert -- full --, therefor.

Page 2, Col. 1, Line 2 (Other Publications), delete "Dsyfunction" and insert  
-- Dysfunction --, therefor.

Page 2, Col. 1, Line 19 (Other Publications), delete "Atnecion" and insert -- Atencion --,  
therefor.

Page 2, Col. 1, Line 49 (Other Publications), delete "Respir" and insert -- Respir. --, therefor.

Page 2, Col. 2, Line 24 (Other Publications), delete "AmendmentJReply)" and insert  
-- Amendment/Reply) --, therefor.

Page 2, Col. 2, Line 29 (Other Publications), delete "AmendmentJReply)" and insert  
-- Amendment/Reply) --, therefor.

Page 3, Col. 1, Line 61 (Other Publications), delete "Aneshesia" and insert -- Anesthesia --, therefor.

Page 3, Col. 1, Line 61 (Other Publications), delete "York,," and insert -- York, --, therefor.

Page 3, Col. 2, Line 13 (Other Publications), delete "Anamolous" and insert  
-- Anomalous --, therefor.

Page 3, Col. 2, Line 67 (Other Publications), delete "InterenetJournal" and insert  
-- Internet Journal --, therefor.

Signed and Sealed this  
Thirteenth Day of August, 2013



Teresa Stanek Rea  
*Acting Director of the United States Patent and Trademark Office*



**CERTIFICATE OF CORRECTION (continued)**  
**U.S. Pat. No. 8,431,163 B2**

Page 2 of 2

Title Page, Item (56)

Page 4, Col. 2, Line 52 (Other Publications), delete “dysfuction” and insert  
-- dysfunction --, therefor.

Page 5, Col. 2, Line 20 (Other Publications), delete “Radomised” and insert  
-- Randomised --, therefor.

Page 5, Col. 2, Line 35 (Other Publications), delete “Ateriosus” and insert  
-- Arteriosus --, therefor.

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 2/19/2015	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF INO THERAPEUTICS LLC and IKARIA, INC.		DEFENDANT PRAXAIR DISTRIBUTION, INC. and PRAXAIR, INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8,282,966 B2	10/9/2012	INO Therapeutics LLC
2 8,293,284 B2	10/23/2012	INO Therapeutics LLC
3 8,431,163 B2	4/30/2013	INO Therapeutics LLC
4 8,795,741 B2	8/5/2014	INO Therapeutics LLC
5 8,846,112 B2	9/30/2014	INO Therapeutics LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

**ADDENDUM TO AO 120 (ADDITIONAL PATENTS)**

DOCKET NO.		DATE FILED 2/19/2015	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF INO THERAPEUTICS LLC and IKARIA, INC.		DEFENDANT PRAXAIR DISTRIBUTION, INC. and PRAXAIR, INC.	
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6	8,291,904 B2	10/23/2012	INO Therapeutics LLC
7	8,573,210 B2	11/5/2013	INO Therapeutics LLC
8	8,573,209 B2	11/5/2013	INO Therapeutics LLC
9	8,776,794 B2	7/15/2014	INO Therapeutics LLC
10	8,776,795 B2	7/15/2014	INO Therapeutics LLC

Trials@uspto.gov  
571.272.7822

Paper 12 (IPR2015-00522)  
Paper 12 (IPR2015-00524)  
Paper 12 (IPR2015-00525)  
Paper 12 (IPR2015-00526)  
Entered: July 29, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

PRAXAIR DISTRIBUTION, INC.,  
Petitioner,

v.

INO THERAPEUTICS, INC.,  
Patent Owner.

---

Case IPR2015-00522 (8,282,966 B2)  
Case IPR2015-00524 (8,293,284 B2)  
Case IPR2015-00525 (8,431,163 B2)  
Case IPR2015-00526 (8,795,741 B2)<sup>1</sup>

---

Before LORA M. GREEN, TINA E. HULSE, and ROBERT A. POLLOCK,  
*Administrative Patent Judges.*

HULSE, *Administrative Patent Judge.*

DECISION  
Denying Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

---

<sup>1</sup> This Decision addresses issues that are common to each of the above-referenced cases. We, therefore, issue a single Decision that has been entered in each case. The parties may use this style caption when filing a single paper in multiple proceedings, provided that such caption includes a footnote attesting that “the word-for-word identical paper is filed in each proceeding identified in the caption.”

IPR2015-00522 (8,282,966 B2); IPR2015-00524 (8,293,284 B2);  
IPR2015-00525 (8,431,163 B2); IPR2015-00526 (8,795,741 B2)

## I. INTRODUCTION

Petitioner, Praxair Distribution, Inc., filed Petitions requesting an *inter partes* review of: (1) claims 1–29 of U.S. Patent No. 8,282,966 (“the ’966 patent”) (Ex. 1001, IPR2015-00522); (2) claims 1–30 of U.S. Patent No. 8,293,284 B2 (“the ’284 patent”) (Ex. 1001, IPR2015-00524); (3) claims 1–25 of U.S. Patent No. 8,431,163 B2 (“the ’163 patent”) (Ex. 1001, IPR2015-00525); and (4) claims 1–44 of U.S. Patent No. 8,795,741 B2 (“the ’741 patent”) (Ex. 1001, IPR2015-00526). Paper 1 (IPR2015-00522) (“-522 Pet.”).<sup>2</sup> Patent Owner, INO Therapeutics LLC, filed a Preliminary Response to each Petition. Paper 8 (IPR2015-00522) (“-522 Prelim. Resp.”).<sup>3</sup>

We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon considering the Petitions and Preliminary Responses, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing the unpatentability of any of the challenged claims in any of the proceedings. Accordingly, the Petition in each proceeding is *denied*.

---

<sup>2</sup> Petitioner filed Petitions as Paper 1 in each of the other proceedings. We refer to those Petitions as “-524 Pet.,” “-525 Pet.,” and “-526 Pet.”

<sup>3</sup> Patent Owner filed Preliminary Responses as Paper 8 in each of the other proceedings. We refer to those Preliminary Responses as “-524 Prelim. Resp.,” “-525 Prelim. Resp.,” and “-526 Prelim. Resp.”

IPR2015-00522 (8,282,966 B2); IPR2015-00524 (8,293,284 B2);  
IPR2015-00525 (8,431,163 B2); IPR2015-00526 (8,795,741 B2)

*A. Related Proceedings*

Petitioner states that it is not aware of any current litigation involving any of the involved patents. -522 Pet. 7.<sup>4</sup>

*B. The Involved Patents*

The involved patents are all related and share substantially the same Specification. The Specification discloses methods of reducing the risk of an adverse event, such as pulmonary edema, associated with treating a patient with inhaled nitric oxide gas (“iNO”). Ex. 1001, Abstract. Nitric oxide is a lung-specific vasodilator that significantly improves blood oxygenation and reduces the need for extracorporeal oxygenation. *Id.* at 3:33–42. INOmax®—nitric oxide for inhalation—is an FDA-approved drug for treatment of term and near term (>34 weeks gestation) neonates who have hypoxic respiratory failure associated with evidence of pulmonary hypertension, known as persistent pulmonary hypertension in the newborn (“PPHN”). *Id.* at 1:18–22, 6:23–29.

The Specification also describes the INOT22 Study, which was conducted, in part, to assess the safety and effectiveness of INOmax® in patients four weeks to eighteen years of age undergoing assessment of pulmonary hypertension. *Id.* at 9:18–30, 43–44. Initially, the study protocol did not include a baseline pulmonary capillary wedge pressure (“PCWP”) value as an exclusion criteria.<sup>5</sup> *Id.* at 12:25–26. During the study, at least

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<sup>4</sup> Petitioner makes similar arguments in its papers and cites similar evidence in each of the cases. Accordingly, citations to papers and exhibits in this Decision refer to those filed in IPR2015-00522, unless stated otherwise.

<sup>5</sup> PCWP provides an estimate of left atrial pressure, which may be used to diagnose the severity of left ventricular dysfunction and to measure pulmonary hypertension. Ex. 1001, 5:9–18.

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two patients developed signs of pulmonary edema. *Id.* at 13:2–3. The Specification states that “[t]his is of interest because pulmonary edema has previously been reported with the use of iNO in patients with LVD [left ventricular dysfunction], and may be related to decreasing PVR [pulmonary vascular resistance] and overfilling of the left atrium.” *Id.* at 13:3–6. The Specification further states that “after the surprising and unexpected identification of SAEs [serious adverse events] in the early tested patients, it was determined that patients with pre-existing LVD had an increased risk of experiencing an AE or SAE [such as pulmonary edema] upon administration.” *Id.* at 12:26–30, 13:62–64. The study protocol was amended to exclude patients with a baseline PCWP greater than 20 mmHg, which was selected to avoid enrolling children with LVD who “would be most likely at-risk for these SAEs.” *See id.* at 12:32–38.

### C. *Illustrative Claim*

Petitioner challenges: (1) claims 1–29 the ’966 patent (IPR2015-00522); (2) claims 1–30 of the ’284 patent (IPR2015-00524); (3) claims 1–25 of the ’163 patent (IPR2015-00525); and (4) claims 1–44 of the ’741 patent (IPR2015-00526). The challenged claims are all similar. Claim 1 of the ’966 patent is illustrative and is reproduced below:

1. A method of reducing the risk of occurrence of pulmonary edema associated with a medical treatment comprising inhalation of 20 ppm nitric oxide gas, said method comprising:

- (a) performing echocardiography to identify a child in need of 20 ppm inhaled nitric oxide treatment for pulmonary hypertension, wherein the child is not dependent on right-to-left shunting of blood;
- (b) determining that the child identified in (a) has a pulmonary capillary wedge pressure greater than or equal to 20 mm Hg and thus has left ventricular dysfunction, so

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is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide; and

- (c) excluding the child from inhaled nitric oxide treatment, based on the determination that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.

Common among almost all the independent claims of all the involved patents is a limitation like step (c) of claim 1 above, which excludes a patient from treatment with inhaled nitric oxide based on a determination that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide. *See* claims 1(c),<sup>6</sup> 6(c), 13(e), and 22(e) of the '966 patent (Ex. 1001, IPR2015-00522); claims 1(c), 6(c), 13(e), and 23(e) of the '284 patent (Ex. 1001, IPR2015-00524); claims 1(c) and 6(e) of the '163 patent (Ex. 1001, IPR2015-00525); claims 1(e) and 34(e) of the '741 patent (Ex. 1001, IPR2015-00526).

However, not all of the independent claims recite the exact language as claim 1(c) above. Certain claims recite excluding a patient from treatment with inhaled nitric oxide or, despite the patient's ongoing need for treatment for hypoxic respiratory failure, discontinuing treatment with inhaled nitric oxide after it has begun, where the exclusion or discontinuation is based on a determination that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide. *See* claims 12(c) and 20(e) of the '163 patent (Ex. 1001, IPR2015-00525); claims 9(e) and 37(e) of the '741 patent

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<sup>6</sup> For ease of reference, we refer to particular steps of particular claims, e.g., step (c) of claim 1, as "claim 1(c)."



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(Ex. 1001, IPR2015-00526). Additionally, claim 24 of the '741 patent recites “(d) determining that a second patient . . . has pre-existing left ventricular dysfunction, so is at particular risk of increased PCWP leading to pulmonary edema upon treatment with inhaled nitric oxide” and then “(e) administering a second treatment regimen to the second patient [determined to have LVD], wherein the second treatment regimen does not comprise either (i) administration of inhaled nitric oxide for 14 days or (ii) administration of inhaled nitric oxide until the second patient’s hypoxia has resolved.” Ex. 1001, claim 24 (IPR2015-00526).

Despite the differences in claim language, we interpret the above “exclusion limitations” to all require excluding a patient from inhaled nitric oxide treatment—either by never treating the patient or discontinuing treatment—after determining that the patient has left ventricular dysfunction and so is at particular risk of pulmonary edema upon treatment with inhaled nitric oxide.

*D. The Asserted Grounds of Unpatentability*

In IPR2015-00522, Petitioner challenges the patentability of claims 1–29 of the '966 patent on the following grounds (-522 Pet. 14–58):

References	Basis	Claims Challenged
Bernasconi, <sup>7</sup> INOmax label, <sup>8</sup> Loh, <sup>9</sup> and Goyal <sup>10</sup>	§ 103	1–3, 5–9, 11, 13–17, 20, 22–25, and 28

<sup>7</sup> A. Bernasconi and M. Beghetti, *Inhaled Nitric Oxide Applications in Paediatric Practice*, 4 IMAGES PAEDIATR. CARDIOL. 4–29 (2002) (Ex. 1004).

<sup>8</sup> Final Printed Labeling for INOmax<sup>TM</sup> (nitric oxide) for inhalation (Ex. 1014).

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References	Basis	Claims Challenged
Bernasconi, INOmax label, Loh, Goyal, and Macrae <sup>11</sup>	§ 103	4, 10, 12, 18, 19, 21, 26, 27, and 29
Ichinose, <sup>12</sup> Neonatal Group, <sup>13</sup> Macrae, Loh, Goyal, and Germann <sup>14</sup>	§ 103	1–29

In IPR2015-00524, Petitioner challenges the patentability of claims 1–30 of the '284 patent on the following grounds (-524 Pet. 12–56):

References	Basis	Claims Challenged
Bernasconi, INOmax label, Loh, and Goyal	§ 103	1–3, 5–9, 11, 13, 14, 16–18, 21, 23–27, and 29
Bernasconi, INOmax label, Loh, Goyal, and Macrae	§ 103	4, 10, 12, 15, 19, 20, 22, 28, and 30

<sup>9</sup> E. Loh et al., *Cardiovascular Effects of Inhaled Nitric Oxide in Patients with Left Ventricular Dysfunction*, 90 CIRCULATION 2780–85 (1994) (Ex. 1006).

<sup>10</sup> P. Goyal et al., *Efficacy of Nitroglycerin Inhalation in Reducing Pulmonary Arterial Hypertension in Children with Congenital Heart Disease*, 97 BRITISH J. ANESTHESIA 208–14 (2006) (Ex. 1007).

<sup>11</sup> D. J. Macrae et al., *Inhaled Nitric Oxide Therapy in Neonates and Children: Reaching a European Consensus*, 30 INTENSIVE CARE MED. 372–80 (2004) (Ex. 1008).

<sup>12</sup> F. Ichinose et al., *Inhaled Nitric Oxide: A Selective Pulmonary Vasodilator: Current Uses and Therapeutic Potential*, 109 CIRCULATION 3106–11 (2004) (Ex. 1009).

<sup>13</sup> The Neonatal Inhaled Nitric Oxide Study Group, *Inhaled Nitric Oxide in Full-Term and Nearly Full-Term Infants with Hypoxic Respiratory Failure*, 336 NEW ENG. J. MED. 597–604 (1997) (Ex. 1011).

<sup>14</sup> P. Germann et al., *Inhaled Nitric Oxide Therapy in Adults: European Expert Recommendations*, 31 INTENSIVE CARE MED. 1029–41 (2005) (Ex. 1010).

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References	Basis	Claims Challenged
Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann	§ 103	1–30

In IPR2015-00525, Petitioner challenges the patentability of claims 1–25 of the '163 patent on the following grounds (-525 Pet. 12–54):

References	Basis	Claims Challenged
Bernasconi, INOmax label, Loh, and Goyal	§ 103	1, 2, 4, 6, 7, 9, 11–13, 15, 18, 20, 21, 23, and 25
Bernasconi, INOmax label, Loh, Goyal, and Macrae	§ 103	3, 5, 8, 10, 14, 16, 17, 19, 22, and 24
Ichinose, Macrae, Germann, Neonatal Group, Loh, and Goyal	§ 103	1–25

In IPR2015-00526, Petitioner challenges the patentability of claims 1–44 of the '741 patent on the following grounds (-526 Pet. 13–60):

References	Basis	Claims Challenged
Bernasconi, Loh, and Goyal	§ 103	1, 2, 4, 6–14, 17–23, 31, 32, 34–35, 37–40, and 42–44
Bernasconi, Loh, INOmax label, Juliana, <sup>15</sup> and Goyal	§ 103	24–27, 29, 30, and 33
Bernasconi, Loh, Macrae, and Goyal	§ 103	3, 5, 15, 16, 36, and 41
Bernasconi, Loh, INOmax label, Juliana, Macrae, and Goyal	§ 103	28

<sup>15</sup> A. Juliana and F. Abbad, *Severe Persistent Pulmonary Hypertension of the Newborn in a Setting Where Limited Resources Exclude the Use of Inhaled Nitric Oxide: Successful Treatment with Sildenafil*, 164 EUR. J. PEDIATR. 626–29 (2005) (Ex. 1032, IPR2015-00526).

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IPR2015-00525 (8,431,163 B2); IPR2015-00526 (8,795,741 B2)

References	Basis	Claims Challenged
Ichinose, Neonatal Group, Macrae, Loh, Germann, and Goyal	§ 103	1–23, 31, 32, and 34–44
Ichinose, Neonatal Group, Macrae, Loh, INOmax label, Germann, and Goyal	§ 103	24–30 and 33

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable construction in light of the specification of the patent in which they appear. *See In re Cuozzo Speed Techs., LLC*, No. 2014-1301, 2015 WL 4097949, at \*5–\*8 (Fed. Cir. July 8, 2015); 37 C.F.R. § 42.100(b). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

#### 1. “child” and “children”

The term “child” or “children” appears in each of the independent claims of the ’966 patent and independent claims 34 and 37 of the ’741 patent. Ex. 1001, claims 1, 6, 13, and 22 (IPR2015-00522); Ex. 1001, claims 34 and 37 (IPR2015-00526).

Petitioner asserts that the Specification states that “the term ‘children’ (and variations thereof) *includes* those being around 4 weeks to 18 years of age.” -522 Pet. 10 (quoting Ex. 1001, 4:13–14). Given the word “includes,”

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Petitioner argues that the term “children” is not limited to children in that age range. Additionally, Petitioner notes that dependent claims 2 and 8 specify that “the child is a neonate,” therefore confirming that the age range for a “child” is broader than the range stated in the Specification. *Id.*

Patent Owner argues that the term “child” does not include human beings prior to birth. -522 Prelim. Resp. 21. Patent Owner also notes that the Specification defines adults as “those over 18 years of age.” *Id.* (quoting Ex. 1001, 4:15–16). Because the Specification defines patients who are over 18 years of age as adults, Patent Owner contends that the terms “child” and “children” should be construed to mean “humans from birth until 18 years of age.” *Id.* at 23.

We find Patent Owner’s arguments persuasive and determine that Patent Owner’s proposed construction is the broadest reasonable interpretation in light of the Specification.

.2. *“term or near-term neonate”*

The claim phrase “term or near-term neonate” appears in each of the independent claims of the ’284 patent and the ’163 patent. Ex. 1001, claims 1, 6, 13, and 23 (IPR2015-00524); Ex. 1001, claims 1, 6, 12, and 20 (IPR2015-00525). The phrase also appears in independent claims 1, 9, and 24 of the ’741 patent. Ex. 1001, claims 1, 9, and 24 (IPR2015-00526).

Petitioner does not offer a specific construction for this term. Patent Owner, however, relies on the Specification and medical dictionary definitions to assert the following constructions for the following terms: (1) “neonate” is “an infant aged 1 month or younger”; (2) “near-term” is “greater than around 34 weeks gestation”; and (3) “term” is “between around 37 and around 40 weeks gestation.” -524 Prelim. Resp. 21–22. Specifically, Patent Owner notes that the Specification states that “near term neonates”

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are those having achieved “> 34 weeks gestation.” *Id.* at 21 (citing -524 Ex. 1001, 6:27–28). Patent Owner also provides medical dictionary definitions for the term “infant” and “neonate” that are consistent with its proposed constructions. *Id.* (citing Ex. 2007, 967–68, 1288).

We find Patent Owner’s arguments persuasive and determine that Patent Owner’s proposed constructions are the broadest reasonable interpretation in light of the Specification. That is, we construe the phrase “term or near-term neonate” to mean “an infant aged 1 month or younger born between around 37 and 40 weeks gestation or greater than around 34 weeks gestation.”

*B. Obviousness of the '966 Patent, the '284 Patent, the '163 Patent, and certain of the '741 Patent Claims over Bernasconi, INOmax Label, Loh, and Goyal*

Petitioner asserts that each of the independent claims in the '966 patent, the '284 patent, and the '163 patent is unpatentable as obvious over Bernasconi, INOmax label, Loh, and Goyal. -522 Pet. 14–32. Petitioner also asserts that independent claims 1, 9, 34, and 37 of the '741 patent are unpatentable as obvious over Bernasconi, Loh, and Goyal. -526 Pet. 13–25. As support, Petitioner submits the testimony of Dr. Maurice Beghetti in each proceeding. Ex. 1002. Patent Owner opposes Petitioner’s assertions. *See, e.g.,* -522 Prelim. Resp. 35–50. We determine, on the current record, that Petitioner has not established a reasonable likelihood that it would prevail in showing any of those challenged claims is unpatentable as obvious over the cited prior art.

*1. Bernasconi (Ex. 1004)*

Bernasconi reviews the “delivery and monitoring aspects of inhaled nitric oxide, its potential toxic and side effects and its applications in several

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cardiopulmonary disorders in paediatrics.” Ex. 1004, Abstract; *see also* Title. Bernasconi states that “[d]ose response studies have been performed in persistent pulmonary hypertension of the newborn (PPHN)” and that “[t]he recommended dose by the FDA for the treatment of neonatal hypoxic respiratory failure is 20 ppm.” *Id.* at 3. Bernasconi also states that

PPHN is a syndrome associated with diverse neonatal cardiopulmonary disorders, which are characterised by a high pulmonary vascular resistance with right to left shunt of deoxygenated blood across the ductus arteriosus and/or the foramen ovale. The role of echocardiography to confirm the diagnosis and conduct therapy is therefore essential. Echocardiography also excludes structural congenital heart disease, which would contraindicate the use of iNO.

*Id.* at 8.

Bernasconi also teaches that iNO may lead to pulmonary edema in patients with LVD and, thus, emphasizes a need for “careful observation and intensive monitoring during [nitric oxide] inhalation” in patients with LVD.

*Id.*

## 2. *INOmax Label (Ex. 1014)*

INOmax label contains information provided to medical providers (Ex. 1014 at i) regarding approved iNO uses and contraindications (*id.* at 4, 6). In particular, the reference states that “INOmax, in conjunction with ventilatory support and other appropriate agents, is indicated for the treatment of term and near-term (>34 weeks) neonates with hypoxic respiratory failure associated with clinical or echocardiographic evidence of pulmonary hypertension, where it improves oxygenation and reduces the need for extracorporeal membrane oxygenation.” *Id.* at 4. INOmax label warns that the drug “should not be used in the treatment of neonates known to be dependent on right-to-left shunting of blood.” *Id.* INOmax label states

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that for “Pediatric Use[, n]itric oxide for inhalation has been studied in a neonatal population” (*id.* at 5) and recommends a dose of 20 ppm iNO for neonatal patients with hypoxic respiratory failure (*id.* at 6).

### 3. *Loh (Ex. 1006)*

Loh describes a study of the hemodynamic effects of a ten-minute inhalation of nitric oxide (80 ppm) in nineteen adult patients with moderate to severe heart failure due to LVD. Ex. 1006, 2780. Loh further describes measuring the PCWP in the patients studied. *Id.* at 2781.

### 4. *Goyal (Ex. 1007)*

Goyal describes a study of the efficacy of inhaled nitroglycerin in reducing pulmonary arterial hypertension in children with congenital heart disease. Ex. 1007, Abstract. During the study, PCWP was measured for all of the patients before and after treatment with inhaled nitroglycerin. *Id.* at 209.

### 5. *Analysis*

Petitioner argues that the combination of Bernasconi, INOmax label, Loh, and Goyal teaches or suggests each limitation of the independent claims in the '966 patent, the '284 patent, and the '163 patent. Petitioner also argues that the combination of Bernasconi, Loh, and Goyal teaches or suggests each limitation of independent claims 1, 9, 34, and 37 of the '741 patent. In particular, regarding the exclusion limitations of the claims, Petitioner asserts that Bernasconi discloses that patients with LVD treated with inhaled nitric oxide are at risk of pulmonary edema. -522 Pet. 27 (regarding independent claims 1 and 6 of the '966 patent) (citing Ex. 1004, 8; Ex. 1002 ¶ 38); *see also id.* at 32 (regarding independent claims 13 and 22 of the '966 patent). According to Petitioner, a person of ordinary skill in the art “would have known not to harm patients by administering iNO to



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patients at particular risk of developing pulmonary edema.” *Id.* at 27 (citing Ex. 1004, 8; Ex. 1002 ¶¶ 24, 34, 38). Petitioner then concludes that a person of ordinary skill in the art “would have known to exclude certain neonates identified as having LVD from iNO treatment.” *Id.* (citing Ex. 1004, 8; Ex. 1002 ¶ 38). Petitioner makes the same arguments with respect to the independent claims of the ’284 patent and the ’163 patent, and independent claims 1, 9, 34, and 37 of the ’741 patent. *See* -524 Pet. 25, 30; -525 Pet 23, 28; -526 Pet. 13–25.

We are not persuaded by Petitioner’s argument. Bernasconi teaches that there are “several reports of the negative effects of inhaled NO in patients with left ventricular dysfunction.” Ex. 1004, 8. Those negative effects include the risk of pulmonary edema. *Id.* But the Specification acknowledges that the risk of pulmonary edema was already known, stating “pulmonary edema has previously been reported with the use of iNO in patients with LVD.” Ex. 1001, 13:4–5. And, as Patent Owner notes, despite this knowledge in the art, Bernasconi does not conclude that patients should be excluded from inhaled nitric oxide treatment as a result of a determination that a patient has LVD, as required by the claims. *See* -522 Prelim. Resp. 41. Instead, Bernasconi merely cautions for the “need for careful observation and intensive monitoring *during* NO inhalation in patients with left ventricular failure, if left ventricular afterload is not lowered concomitantly.” *See* Ex. 1004, 8 (emphasis added). Thus, contrary to the claim language, Bernasconi teaches that iNO treatment may be given to patients with LVD, as long as those patients are monitored carefully during treatment.

We are also not persuaded that Petitioner has shown sufficiently that the teachings of Bernasconi would suggest to a person of ordinary skill in

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the art that *children* with LVD are at an increased risk of pulmonary edema and should, therefore, be excluded from treatment with inhaled nitric oxide. Petitioner's declarant, Dr. Beghetti—who is an author of Bernasconi—states that “the discussion of adverse effects of iNO on patients with LVD is applicable to all patients, including the ‘[n]eonates with hypoxaemic respiratory failure’ addressed in the ‘Inhaled nitric oxide applications’ section of *Bernasconi*.” Ex. 1002 ¶ 36. Dr. Beghetti continues, stating that “the risk of pulmonary oedema resulting from iNO therapy in patients with LVD is a risk in neonates and non-neonates alike.” *Id.* Finally, Dr. Beghetti concludes that after reading Bernasconi, evaluating the patient, and weighing the therapeutic benefits of iNO, “one skilled in the art would have understood that certain patients who have left ventricular dysfunction would be at risk of pulmonary oedema, even if not dependent on right-to-left shunting of blood, and should not be treated with inhaled NO.” *Id.* ¶ 38.

Dr. Beghetti, however, does not provide any objective support for his opinion that such patients “should not be treated with inhaled NO” (*id.*), particularly when Bernasconi itself taught that treatment with iNO was acceptable, as long as the patient is carefully monitored. We, therefore, do not give persuasive weight to Dr. Beghetti's unsupported opinion. *See* 37 C.F.R. § 42.65(a) (stating opinion testimony that does not disclose underlying facts or data “is entitled to little or no weight”); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (finding a lack of objective support for expert opinion “may render the testimony of little probative value in a validity determination”).

Moreover, Dr. Beghetti provides no persuasive support for his opinion that a person of ordinary skill in the art reading Bernasconi would understand that the risk of pulmonary edema from iNO therapy in patients

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with LVD “is a risk in neonates and non-neonates alike.” Ex. 1002 ¶ 36. In contrast, Patent Owner provides a number of prior art references that explain that LVD in adults is different than LVD in children, and that state “children are not simply little adults.” -522 Prelim. Resp. 30 (citing Ex. 2004, 2; Ex. 1017, 117; Ex. 2009, 1215; Ex. 2010, 5, 8; Ex. 2011, 544; Ex. 2006, 2).

The INOT22 study also provides compelling evidence that the claims are not obvious. As noted above, the Specification acknowledges that it was known in the art that iNO treatment in patients with LVD may cause pulmonary edema. Ex. 1001, 13:6–7. Nevertheless, those patients were not excluded from the original protocol of the study, which, according to the Specification, “was the largest and most rigorous pharmacodynamics study of iNO conducted to date.” *Id.* at 13:44–46. We find persuasive Patent Owner’s argument and evidence that, if it were obvious to a person of ordinary skill in the art to exclude children with LVD from treatment with iNO, the experts in the field who designed the study—including the named author of the Macrae reference relied on by Petitioner—would have excluded those children from the original protocol. -522 Prelim. Resp. 45, 34.

Finally, during prosecution of the involved patents, the applicants made many of the same arguments that Patent Owner makes in its Preliminary Responses. That is, the applicants argued that studies on adults with LVD, like that described in Loh, could not be extrapolated to results in children, because “LVD in children or neonates is ‘drastically different’ than LVD in adults.” -522 Prelim. Resp. 15–17 (citation omitted). The applicants also argued that the fact that children with LVD were not excluded from the original protocol of the INOT22 study is evidence of nonobviousness. *Id.* at 48. Petitioner, however, does not address any of

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these arguments in its Petition, despite including the file history as an exhibit. *See Ex. 1052.* Given the Examiner found these arguments persuasive and allowed the claims, we agree with Patent Owner that Petitioner and its declarant should have addressed these arguments in the Petitions to show a reasonable likelihood of success on the merits.

Accordingly, we find that Petitioner has failed to show sufficiently that the cited art teaches or suggests the exclusion limitation of the claims. Thus, after considering the parties' arguments and evidence, we are not persuaded that Petitioner has established a reasonable likelihood of success that it would prevail in showing any of the claims of the '966 patent, the '284 patent, and the '163 patent are unpatentable as obvious over Bernasconi, INOmax label, Loh, and Goyal, or that claims 1–23, 31, 32, and 34–44 of the '741 patent are unpatentable as obvious over Bernasconi, Loh, and Goyal.

*C. Obviousness of the '966 Patent, the '284 Patent, and the '163 Patent Claims over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann*

Relying on the testimony of Dr. Beghetti, Petitioner also asserts that each of the independent claims of the '966 patent, the '284 patent, and the '163 patent is unpatentable as obvious over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann. -522 Pet. 41–53. Patent Owner opposes Petitioner's assertion. -522 Prelim. Resp. 53–55. We determine, on the current record, that Petitioner has not established a reasonable likelihood that it would prevail in showing the cited references render any of those challenged claims obvious.

*1. Ichinose (Ex. 1009)*

Ichinose is a review article disclosing the uses and therapeutic potential of inhaled nitric oxide. Ex. 1009, 3106. Ichinose discusses the

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approval of iNO for the treatment of newborns with hypoxic respiratory failure associated with clinical or echocardiographic evidence of pulmonary hypertension. *Id.* at 3107–08. Ichinose also states that, although early studies of inhaled nitric oxide to treat pulmonary hypertension used concentrations of 5 to 80 ppm, it has since been recognized that concentrations greater than 20 ppm provide little additional therapeutic benefit in most patients. *Id.* at 3106. Ichinose further states that inhalation of low levels of nitric oxide appears to be safe, but that “it is important to be aware of the possibility that inhaled NO can produce pulmonary vasodilation and may overwhelm a failing [left ventricular], thereby producing pulmonary edema.” *Id.* at 3109.

## 2. *Neonatal Group (Ex. 1011)*

Neonatal Group describes the results of a randomized, multicenter study to determine whether inhaled nitric oxide would reduce mortality or the initiation of extracorporeal membrane oxygenation in infants with hypoxic respiratory failure. Ex. 1011, Abstract. The study found that nitric oxide therapy reduced the use of extracorporeal membrane oxygenation, but had no apparent effect on mortality in critically ill infants with hypoxic respiratory failure. *Id.*

## 3. *Macrae (Ex. 1008)*

Macrae discusses the use of inhaled nitric oxide in neonates and children with cardiorespiratory failure. Ex. 1008, Abstract. Macrae notes that studies of inhaled nitric oxide in term or near-term babies have used echocardiography to exclude patients with congenital heart disease as a cause of hypoxemia. *Id.* at 373–74. For example, Macrae states that inhaled nitric oxide may be harmful to babies with severe LVD with right-to-left ductal shunting. *Id.* at 374.

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#### 4. *Germann (Ex. 1010)*

Germann discloses the use of inhaled nitric oxide to treat acute respiratory failure and pulmonary hypertension in adults. Ex. 1010, Abstract. Germann also provides expert recommendations for the use of inhaled nitric oxide in adults. *Id.* For example, for patients with chronic left ventricular failure, Germann states that some studies report sudden development of pulmonary edema in patients with severe congestive heart failure who were treated with inhaled nitric oxide. *Id.* at 1033. Germann further states that inhaled nitric oxide may be dangerous in patients with LVD. *Id.*

#### 5. *Analysis*

Petitioner asserts that the combination of Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann teaches or suggests each limitation of each of the independent claims of the '966 patent, the '284 patent, and the '163 patent. In particular, for the exclusion limitation of the independent claims of the '966 patent, Petitioner asserts that a person of ordinary skill in the art would have known that “all patients with LVD, *whether or not* they depended on right-to-left shunting, were at risk of pulmonary edema if treated with iNO.” -522 Pet. 48 (citing Ex. 1009, 3109; Ex. 1002 ¶¶ 61, 67). Petitioner further argues that Ichinose discloses that patients with LVD treated with iNO are at risk of pulmonary edema. *Id.* (citing Ex. 1009, 3109). Moreover, Petitioner asserts that Germann discloses that “treating patients with LVD with iNO may be dangerous,” because Germann states that “[i]n the presence of left heart dysfunction it is increasingly recognised that iNO testing should be performed only after optimising heart failure therapy immediately prior to testing.” *Id.* at 48–49 (citing Ex. 1010, 1033; Ex. 1002 ¶ 67). Petitioner concludes that a person of ordinary skill in the art

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reading Ichinose and Germann would have understood that patients with LVD were at risk of pulmonary edema upon treatment with iNO and “would have evaluated the risks associated with iNO treatment and excluded the patients from iNO treatment.” *Id.* at 49 (citing Ex. 1002 ¶¶ 63, 65, 67, 72; Ex. 1009, 3109; Ex. 1010, 1033). Petitioner makes the same arguments with respect to the ’284 and ’163 patents. -524 Pet. 46–47, 50–51; -525 Pet. 40–41, 44–45.

Patent Owner asserts that both Ichinose and Germann relate to patient populations that are distinct from the claimed excluded group, and Petitioner does not explain why the teachings of those references would be applied by a person of ordinary skill in the art to the claimed excluded group. -522 Prelim. Resp. 54. For example, Patent Owner notes that Germann relates to inhaled nitric oxide therapy in adults, not children. *Id.* at 55; *see* Ex. 1010, Title, Abstract.

Patent Owner also notes that the reference cited by Ichinose as support for the risk of pulmonary edema, Beghetti (1997),<sup>16</sup> was a letter to the editor in response to a case study reported in Henrichsen.<sup>17</sup> Ex. 2004, 844. Henrichsen describes a baby with PPHN and LVD who developed systemic hypotension after exposure to inhaled nitric oxide. Ex. 1030, 183. That baby, however, was dependent on right-to-left shunting of blood, a condition which is expressly excluded from each of the claims. *See id.*; *see, e.g.*, Ex. 1001, claim 1 (performing echocardiography to identify a child in need of iNO “wherein the child is not dependent on right-to-left shunting of

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<sup>16</sup> M. Beghetti et al., Letter to the Editor, *Inhaled Nitric Oxide Can Cause Severe Systemic Hypotension*, 130 J. PEDIATR. 844 (1997) (Ex. 2004).

<sup>17</sup> T. Henrichsen et al., Letter to the Editor, *Inhaled Nitric Oxide Can Cause Severe Systemic Hypotension*, 129 J. PEDIATR. 183 (1996) (Ex. 1030).

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blood”). Moreover, when specifically discussing the treatment of newborns, Ichinose states “[l]arge clinical trials have demonstrated that NO inhalation is safe in the hypoxemic term newborn.” Ex. 1009, 3108.

After considering both parties’ arguments and evidence, we are not persuaded that Petitioner has shown sufficiently that the combination of Ichinose and Germann teaches or suggests the exclusion limitation of the claims, as Petitioner asserts. As explained above, we are not persuaded that Petitioner has shown sufficiently that a person of ordinary skill in the art would reasonably expect that children with LVD would be at risk of SAEs like pulmonary edema from iNO treatment. For example, we are not persuaded that a person of ordinary skill in the art would apply studies regarding iNO treatment in adults to treatment in children. We are, therefore, not persuaded that a person of ordinary skill in the art would apply Germann’s teachings for adult iNO treatment to the treatment of children. Similarly, we are not persuaded that a person of ordinary skill in the art would look to Ichinose and its observations with respect to a neonate dependent on right-to-left shunting of blood when such patients are excluded from the claimed methods. Finally, as explained above, we are persuaded by the fact that the experts in the field designing the INOT22 study did not exclude children with LVD from the original protocol.

Accordingly, after considering both parties’ arguments and evidence, we are not persuaded that Petitioner has shown a reasonable likelihood that it would prevail in showing that any of the claims of the ’966 patent, the ’284 patent, and the ’163 patent are unpatentable as obvious over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann.



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*D. Obviousness of Claims 1–23, 31, 32, and 34–44 of the '741 Patent over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann*

Petitioner asserts that claims 1–23, 31, 32, and 34–44 of the '741 patent are unpatentable over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann. -526 Pet. 39–54. Regarding the exclusion limitations of independent claims 1, 9, 34, and 37, Petitioner argues that Ichinose discloses that patients with LVD treated with iNO are at risk of pulmonary edema, and that Loh discloses that patients with LVD show an increased wedge pressure upon iNO treatment. *Id.* at 46 (citing Ex. 1009, 3109; Ex. 1006, 2780–81, Table 1). Petitioner further argues that because patients with LVD were at risk of increased wedge pressure and pulmonary edema from iNO treatment, a person of ordinary skill in the art reading Ichinose and Loh “would have considered the benefits and risks of treating such patients with iNO and would have excluded such patients from or discontinued iNO treatment if the risks outweighed the benefits.” *Id.*

Patent Owner asserts substantially the same arguments regarding Ichinose that it set forth with respect to the claims of the other involved patents. That is, it argues that Ichinose relates to a neonate dependent on right-to-left shunting of blood, which is “excluded from the '741 claims.” -526 Prelim. Resp. 56. Patent Owner also argues that Loh, which was considered by the Examiner during prosecution, is directed to adult patients and has nothing to do with children who have LVD. *Id.* at 43 (citing Ex. 1006, 2780).

After considering both parties' arguments and evidence, we are not persuaded that Petitioner has shown sufficiently that the cited prior art teaches or suggests the exclusion limitations of the claims. As an initial matter, we note that the '741 claims do not expressly exclude children

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dependent on right-to-left shunting of blood, as Patent Owner asserts.

Regardless, we find persuasive Patent Owner's argument that Petitioner has failed to establish why a person of ordinary skill in the art would apply Loh's teachings relating to adults to the treatment of children. We also find persuasive Patent Owner's argument that the INOT22 study is evidence of nonobviousness, as explained above. Because Petitioner failed to address persuasively either of these arguments—despite the fact that both were raised during prosecution—we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that claims 1–23, 31, 32, and 34–44 of the '741 patent are unpatentable over Ichinose, Neonatal Group, Macrae, Loh, Goyal, and Germann.

*E. Obviousness of Claims 24–30 and 33 of the '741 Patent over Bernasconi, INOmax Label, Loh, Juliana, and Goyal*

Petitioner asserts that claims 24–27, 29, 30, and 33 of the '741 patent are unpatentable over Bernasconi, INOmax label, Loh, Juliana, and Goyal. - 526 Pet. 54–60. Petitioner further asserts that claim 28, which depends from independent claim 24, is unpatentable over Bernasconi, INOmax label, Loh, Juliana, Macrae, and Goyal. *Id.* at 60. We determine that Petitioner has not established a reasonable likelihood that it would prevail on its assertions.

*1. Juliana (Ex. 1010)*

Juliana describes a case of a full-term neonate with severe PPHN. Ex. 1010, Abstract. Cardiac ultrasound confirmed a right-to-left shunt through an open arterial duct. *Id.* at 627. The patient was not treated with inhaled nitric oxide because of the high cost of the treatment, but was treated successfully with one dose of sildenafil. *Id.*

## 2. *Analysis*

As explained above, we interpret steps (d) and (e) of claim 24 as equivalent to the exclusion limitations of the other challenged claims. For the step of “determining that a second patient . . . has pre-existing left ventricular dysfunction, so is at particular risk of increased PCWP leading to pulmonary edema upon treatment with inhaled nitric oxide” of claim 24(d), Petitioner relies on its arguments with respect claim 1(c). -526 Pet. 34. That is, Petitioner argues that Bernasconi discloses that patients with LVD are at risk of pulmonary edema upon treatment with iNO. *Id.* at 20. Petitioner also argues that Loh discloses that patients with LVD have an increased wedge pressure upon iNO treatment, and that Goyal confirms that it was well known that wedge pressure could be measured in infants. *Id.* at 20–21. For step (e), “administering a second treatment regimen . . . wherein the second treatment regimen does not comprise either (i) administration of inhaled nitric oxide for 14 days or (ii) administration of inhaled nitric oxide until the second patient’s hypoxia has resolved,” Petitioner relies on Juliana’s disclosure that neonates with PPN can be treated with sildenafil instead of inhaled nitric oxide. *Id.* at 34 (citing Ex. 1032, Abstract, 627; Ex. 1002 ¶ 53). Petitioner then concludes that a person of ordinary skill in the art reading Juliana “would have understood to administer a treatment other than iNO, *i.e.*, sildenafil.” *Id.* at 34–35.

For the same reasons stated above, we are not persuaded that Petitioner has shown sufficiently that a person of ordinary skill in the art reading Bernasconi and Loh would reasonably expect neonates with LVD to be “at particular risk of increased PCWP leading to pulmonary edema upon treatment with inhaled nitric oxide,” as required by claim 24(d). Accordingly, we determine that Petitioner has not established a reasonable

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likelihood that it would prevail in showing that claims 24–30 and 33 of the '741 patent are unpatentable over the cited references.

### III. CONCLUSION

We conclude that Petitioner has not demonstrated a reasonable likelihood of prevailing on its assertions that claims 1–29 of the '966 patent; claims 1–30 of the '284 patent; claims 1–25 of the '163 patent; and claims 1–44 of the '741 patent are unpatentable as obvious.

### IV. ORDER

In consideration of the foregoing, it is hereby ordered that the Petitions in IPR2015-00522, IPR2015-00524, IPR2015-00525, and IPR2015-00526 are *denied*.

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