

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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**WATSON LABORATORIES, INC.**

Petitioner

v.

**UNITED THERAPEUTICS CORP.**

Patent Owner

Patent No. 9,358,240

Issue Date: June 7, 2016

Title: TREPROSTINIL ADMINISTRATION BY INHALATION

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*Inter Partes* Review No. 2017-01621

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**DECLARATION OF AARON TRIPPE**

I, Aaron Trippe, hereby declare as follows:

1. I graduated with an A.B. in Computer Science and a certificate in Neuroscience from Princeton University in 2012. Upon graduation I was elected as a member of Sigma Xi, the Scientific Research Society. While attending Princeton, I worked in the lab of Dr. Naomi Leonard developing a multi-camera motion tracking system and conducted research on artificial neural networks under Dr. Ken Norman. From 2012 to 2015, I was employed by Elysium Digital, LLC, a technical litigation consulting company specializing in providing computer science and electrical engineering expertise in legal disputes involving intellectual property, computer forensics, and other high-tech subject matter. In 2015, Elysium Digital was acquired by the risk management company Stroz Friedberg, LLC. I am currently employed as a Manager in the Intellectual Property division of Stroz Friedberg, LLC. During my time at Elysium Digital and Stroz Friedberg, I have worked on over 100 technical matters involving computer forensics, computer networks, mobile applications, microprocessor technology, and other diverse fields within computer science. My CV and Biography are provided as Ex. 2107.

2. I am a paid consultant for United Therapeutics Corporation (“United Therapeutics”), the assignee of U.S. Patent No. 9,358,240 (“the ’240 patent”), in connection with IPR2017-01621. My compensation does not depend on the content of my opinions or the disposition of this proceeding.

3. At the request of United Therapeutics, I reviewed various archived Internet web pages available through the Wayback Machine, a tool provided by the Internet Archive. The statements in this declaration are made based on my review of those archived pages, my training and experience, and other materials I reviewed in connection with this matter. Specifically, I reviewed the Ex. 1014 (“Butler Affidavit”), Ex. 1009 (“Ventavis label”), Ex. 1042 (“Commission Decision”), Ex. 1043 (“EU Community Register”), Ex. 1044 (“Summary of Decisions”), Ex. 1051 (“European Commission – Homepage”), Ex. 1053 (“European Commission Exhibit”), and paragraphs 99 and 100 of Ex. 1002 (“Donovan Declaration”), all submitted in this matter by Watson Laboratories, Inc. (“Watson”). In addition, I reviewed public materials on the Internet Archive (such as the Internet Archive FAQ page at <http://archive.org/about/faqs.php>), Alexa Internet, and other relevant topics.

#### **I. BACKGROUND: CRAWLING, INDEXING, AND SEARCH**

4. The following paragraphs regarding crawling, indexing, and searching on the internet are applicable to the 2002-2006 timeframe, which I am advised is the relevant timeframe for the documents and webpages Watson has identified for this proceeding, even though some information may be presented in the present tense.

5. The Internet consists of a vast amount of unstructured data. Unlike a library, where documents are centrally sorted and indexed to facilitate searching, web pages are hosted by a wide variety of third parties and there is no universal way of organizing them. Search engines, such as Google, have attempted to solve this problem by locating Internet content and structuring it to allow for retrieval in response to user queries. Since at least the early 2000s, keyword search engines have been one of the main ways users locate information on the Internet, so much so that the verb “Google” has entered the English lexicon.

6. At a high level, most keyword search engines use a crawler-indexer architecture. A web crawler navigates from website to website by following hyperlinks, a process called crawling or spidering. It feeds information (*e.g.* textual content) about each identified site to an indexer, which builds an index. The index is an organized representation of the crawled content (or a subset of the crawled content) that facilitates fast identification of websites for keyword queries. Search engines also employ ranking algorithms, which rank the responses to a query based on various indicators, such as number of keyword hits, indicators of website popularity (such as the number of incoming links), word relevance rankings, etc.

7. Web crawlers can be operated independently of indexers, and thus used for other purposes than user-facing search engines. One example of this is the



crawler operated by the Internet Archive’s Wayback Machine, which uses it for locating and saving website content in order to create an archive of websites as they existed at a particular point in time. Alexa Internet operated a crawler starting in the 1990s that performed a similar function as the Wayback Machine crawler, and in some instances the information archived by Alexa Internet is provided to the Internet Archive for storage in its archive of website content.<sup>1 2</sup> The archiving of a web page does not require or imply the indexing of a page for search by a search engine. Archived pages can simply be maintained in connection with a given URL and any relevant metadata, such as the date the page was archived, such as in the case of the Wayback Machine of the Internet Archive. As a result, while words or phrases may be present throughout a website that has been crawled by the Internet Archive or Alexa Internet, that does not mean such words or phrases are searchable

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<sup>1</sup> Ex. 2118 is a true and correct copy of Kalev Leetaru, “The Internet Archive Turns 20: A Behind The Scenes Look At Archiving The Web,” retrieved from <https://www.forbes.com/sites/kalevleetaru/2016/01/18/the-internet-archive-turns-20-a-behind-the-scenes-look-at-archiving-the-web/#1a67d0fc82e0>, accessed on June 19, 2018.

<sup>2</sup> Ex. 2119 is a true and correct copy of the webpage “Alexa Crawls,” retrieved from <https://archive.org/details/alexacrawls>, accessed on June 19, 2018.

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