

John L. Smith, Ph.D.
NIVG Consulting, LLC
9042 NW Murdock St.
Portland, OR 97229

PROFESSIONAL EXPERIENCE

Consultant (Principal, NIVG Consulting, LLC 2015-Present) 1998-2004, 2006-Present

Independent consultant in the areas of analytical chemistry, clinical chemistry, blood glucose monitoring, noninvasive blood measurements, grape growing, winemaking, patent prosecution and litigation. Performed technological evaluations for invasive and noninvasive monitoring of blood glucose. I have consulted for more than 50 blood glucose companies or their investors. Qualified in U.S. Federal Court as an expert witness in the fields of Clinical Chemistry, Blood Glucose Monitoring, Cholesterol Testing, Dry Chemistry Test Strip Technology and the Chemistry of Wine. I have participated as an expert witness in patent infringement litigation, including consulting, expert reports, depositions, and court testimony in Markman hearings, arbitrations, bench trials, jury trials, Inter Partes Reviews, and International Trade Commission actions in 29 separate engagements.

Fovioptics, Inc. Santa Clara, CA 2003-2006

Consultant 2003-2004
President and CEO 2004-2005
Sr. VP and Chief Technical Officer 2005-2006
Exited retirement to become early-stage CEO for a startup company developing a noninvasive glucose monitor. Obtained Series B financing (\$4.35M), relocated company to Santa Clara from Lexington, KY, completed feasibility and proof of principle studies, hired professional CEO and professional staff, assisted in obtaining Series C financing (\$19.7M). Returned over \$17M to investors when the technology was found not to be commercially viable.

LifeScan, Inc. (Johnson & Johnson) Milpitas, CA 1987-1998

Vice President and Chief Scientific Officer 1995-1998
Worldwide Vice President, R, D & E 1994-1995
Vice President, R, D & E 1987-1994
Responsible for the invention, research and development of novel technology for the world market leader in blood glucose monitoring. Directed the activities of 180 professionals in applied and advanced research and in product development. Conducted fundamental research into noninvasive techniques for measurement of blood glucose, both in-house and through research contracts worldwide. Evaluated over 100 technologies intended for noninvasive measurement of blood glucose. Managed research and development efforts for new products and technology to enable diversification of LifeScan's product line. Responsible for the establishment and maintenance of LifeScan's patent portfolio, and liaison with corporate and outside counsel for all patent infringement litigation. Retired in 1998.

Baker Instruments Corporation Allentown, PA 1984-1987

Vice President, R, D & E - Responsible for entire development process, from conception to pilot production of new instruments for clinical chemistry and hematology; development and implementation of new analytical procedures, improved clinical methods, and reagent formulations. Directed the activities of 30 professionals including engineers, chemists, and scientists from technician to Ph.D. level. Responsible for

kits, allergy research, and novel immunoassay techniques. Budget responsibility for \$4.5 million annual expense budget, including administration of research contracts. Planning, scheduling and cost estimation for new projects.

Technicon Instruments Corporation (now Siemens) Tarrytown, NY

1978-1984

Staff Systems Engineer (1978-1982) - Directed a research and engineering group to extract revenue-producing products from proprietary but unexploited technology. Developed fundamentals which led to the development of the RA-1000 Analyzer, led the team that developed the Chem-1 Analyzer.

Director, Decentralized Testing Technology (1982-1984) - Responsibility for about fifty percent of the Applied Research program, including semiconductor biosensors, dry chemistry technology, and colorimetric methods for sodium and potassium. Technical member of negotiating team to develop a joint venture with a major Japanese chemistry company. Extensive contact with and administration of academic research programs and contract research projects.

Princeton Applied Research Corporation (EG&G) Princeton, NJ

1974-1978

Manager, Product Development - Directed a group of 14 engineers in the development of electrochemical analytical instruments for research, quality control, corrosion and chromatography. Inventor of the static mercury drop electrode which allowed significant increases in sensitivity of electrochemical analysis. Developed the first microprocessor-controlled electroanalytical instrument and wrote the assembly-language software for the user interface, calculation and presentation of results.

Union Carbide Corporation Tarrytown, NY

1970-1974

Analytical Chemist - Developed methods and performed analysis for organic functional groups, trace metals, silicones, and polymers for research support, competitive products, and customer technical support.

Additional Full-time Positions Held Prior to or During Graduate School:

Hospital laboratory chemist and computer systems analyst; supervisor of raw material quality control for a pharmaceutical company; chief technician for a feed and fertilizer analytical laboratory.

EDUCATION:

Ph.D. Analytical Chemistry, University of Illinois, Urbana, IL 1970. Thesis topic:

Analysis of Polymers via Photolysis-Gas Chromatography (R.S. Juvet)

B.S. Chemistry, Butler University, Indianapolis, IN 1966.

U.S. PATENTS (most with foreign counterparts):

- 4,142,944 Apparatus and Method for Effluent Stream Analysis (Liquid Chromatography Detector)
- 4,260,467 Static Mercury Drop Electrode (Analytical system for electrochemistry)
- 4,422,773 Apparatus and Method for the Non-Invasive Mixing of a Flowing Stream (mixing coil for blood analyzers)
- 4,515,753 Integral Reagent Dispenser (Reagent Container for Technicon Chem-1)
- 4,602,995 Liquid Level Adjusting and Filtering Device (Sample tube for blood serum)
- 4,853,336 Apparatus for Random-Access Continuous-Flow Analysis (Technicon Chem-1 system)
- 5,526,120 Test Strip with an Asymmetrical End Insuring Correct Insertion for Measuring (SureStep Blood Glucose Test Strip)
- 5,753,452 Reagent Test Strip for Blood Glucose Determination (One Touch Test Strip)
- 5,972,294 Reagent test strip for determination of blood glucose (One Touch Test Strip)

Measurement Using Collision Computing
 9,448,165 Systems and Methods for Control of Illumination or Radiation Collection for Blood Glucose and Other Analyte Detection and Measurement Using Collision Computing
 9,453,794 Systems and Methods for Blood Glucose and Other Analyte Detection and Measurement Using Collision Computing
 9,459,201 Systems and Methods for Noninvasive Blood Glucose and Other Analyte Detection and Measurement Using Collision Computing
 9,459,202 Systems and Methods for Collision Computing For Detection and Noninvasive Measurement of Blood Glucose and Other Substances and Events
 9,459,203 Systems and Methods for Generating and Using Projector Curve Sets for Universal Calibration for Noninvasive Blood Glucose and Other Measurements
 9,554,738 Spectroscopic Tomography Systems and Methods for Noninvasive Detection and Measurement of Analytes Using Collision Computing
 9,610,018 Systems and Methods for Measurement of Heart Rate and other Heart-Related Characteristics from Photoplethysmographic (PPG) Signals Using Collision Computing

PUBLISHED U.S. PATENT APPLICATIONS:

20050010091A1: Non-invasive measurement of blood glucose using retinal imaging (use of regeneration rate of visual pigments in the retina to measure blood glucose), and continuations 20050245796A1, US20060020184A1, US20050267344A1, 20050267343A1

SCIENTIFIC PUBLICATIONS

John L. Smith and Benjamin T. Williams, “Interface for the Technicon SMA 12/60 Autoanalyzer with the Linc-8 Labcom System,” DECUS Proceedings Spring 1969, 325- 329 (1969).
 Richard S. Juvet, Jr., John L. S. Smith, and Kuang-Pang Li, “Polymer Identification and Quantitative Determination of Additives by Photolysis-Gas Chromatography,” Anal. Chem. 44, 49-56 (1972).
 John Smith, Dario Svenjak, John Turrell, and Dan Vlastelica, “An Innovative Technology for ‘Random-Access’ Sampling,” Clinical Chemistry 28, 1867-1872 (1982).
 John L. Smith, Mark J. Rice, “Why Have So Many Intravascular Glucose Monitoring Devices Failed?” J Diabetes Sci Technol July 2015 9: 782-791, doi:10.1177/1932296815587013.
 Yafen Liang, John L. Smith, Mark J. Rice, “Emerging Technologies: Let’s Not Jump the Gun,” Anesth Analg, 124:3 1372 (2017)
 Rice, Mark J, John L. Smith, Douglas B. Coursin, “Glucose Measurement in the ICU: Regulatory Intersects Reality,” Critical Care Medicine: April 2017 - Volume 45 - Issue 4 - p 741–743.
 Rice, Mark J.; Smith, John L.; Coursin, Douglas B. “The authors reply” Critical Care Medicine. 45(11):e1188-e1189, November 2017.
 Book: John L. Smith, *The Pursuit of Noninvasive Glucose: “Hunting the Deceitful Turkey” (6th Edition, 2018)*. <https://www.nivglucose.com/>

MEMBERSHIPS AND ASSOCIATIONS:

American Chemical Society	1964 - present
Greiner Instruments Scientific Advisory Board, Langenthal, Switzerland	1986 - 1987
Adjunct Professor of Chemistry, San José State University	1991 - 1997
El Dorado Winery Association	1993-2012
Fair Play Winery Association (President, 2000-2001)	1997-2012
El Dorado County Agricultural Commission:	2009-2014

OTHER ACTIVITIES

Founder and founding winemaker, Oakstone Winery, Inc. and Obscurity Cellars, Fair Play, CA.

Owner, Paso Vista Vineyard, Fair Play, CA.

Instructor, San José State University: Advanced Analytical Chemistry, Patents in Chemistry, and The Chemistry of Wine (uncompensated appointment).

United Way Campaigns—Company and community chairman.

Pioneer Fire Protection District—long-range planning committee, ordinance committee, hosted 30 firefighter fund-raising events.