John M. Lindberg
Professor of Physics
Seattle Pacific University

EDUCATION

Ph.D.	Physics	Heriot Watt University, Edinburgh UK	1999
MS	Physics,	University of Washington, Seattle, WA	1986
BS	Physics,	North Park College, Chicago IL	1983
BA	Mathematics,	North Park College, Chicago IL	1983

PROFESSIONAL EXPERIENCE

SEATTLE PACIFIC UNIVERSITY, Seattle, WA 1999 - Present
Professor of Physics,

- Current responsibilities include teaching, advising and working with students on research. Current teaching responsibilities include the introductory physics classes. Other ongoing classes include the junior honors physics class, sophomore level modern physics, junior and senior level E&M and a senior level optics class.

ABBOTT LABORATORIES, Abbott Park, IL 1993 - 1999
Sr. Research Scientist

- Chief collaborator and project manager on joint collaboration with International University to investigate Photo-Acoustic Spectroscopy for non-invasive detection of blood glucose. This involves writing the technical specifications and milestones for the collaboration, working with the research team at the University to achieve the milestones, directing the research team at Abbott Laboratories and reporting on and presenting the status of the project to management.
- Led 8 person R&D team to develop and integrate state-of-the-art detection systems for the non-invasive detection of glucose. The systems included optics, mechanical design, electrical design and software.

ABBOTT RESEARCH INC., Bothell, WA 1990-1993

Optical Engineer

- Directed scientist and engineers from other companies contracted to design and develop production electro-optics assemblies.
- Designed, developed, wrote patent disclosure and received patent for novel Wavelength Division Multiplexer (WDM) system that performed at the state-of-the-art.

BOEING DEFENSE AND SPACE, Seattle, WA 1984-1990

Design and Development Engineer

- Developed, modeled, tested, wrote patent disclosure and received a patent for novel digital optical sensor concept that used integrated wave-guide fabrication technology.
- Analyzed and wrote software to model the optical transducer used in our design.

PUBLICATIONS AND PATENTS

US Patent # 4,906,837 — Multi-Channel Wave Guide Optical Sensor.
Issued: March 6, 1990

US Patent # 5,311,013 — Optical Fiber Distribution System For An Optical Fiber Sensor in a Luminescent Sensor System. Issued: May 10, 1998

US Patent # 5,748,308 — Programmable Standard for use in an Apparatus and Process for the Noninvasive Measurement of Optically Absorbing Compounds.
Issued: May 5, 1998

US Patent # 5,788,632 — Apparatus and Process for the Non-Invasive Measurement of Optically Active Compounds.
Issued: August 4, 1998

US Patent # 6,064,897 — Sensor Utilizing Raman Spectroscopy for Non-Invasive Monitoring of Analytes in Biological Fluid and Method of Use.
Issued: May 16, 2000

US Patent # 6,067,463 — Method and Apparatus for Non-Invasively Measuring the Amount of Glucose in Blood.
Issued: May 23, 2000

US Patent # 6,070,093 — Multiplexed Sensor and Method of Use.
Issued: May 30, 2000

US Patent # 6,403,944 — Multiplexed System for measuring a biological parameter by means of photoacoustic interaction.
Issued: June 11, 2002

US Patent # 6,567,678 — Multiplexed Sensor and Method of Use.
Issued: May 20, 2003

US Patent # 6,833,540 — System for measuring a biological parameter by means of a photoacoustic interaction.
Issued: December 21, 2004

John Lindberg: Characterization of Gallium Nitride (GaN) Blue LED's: Proceedings of Optical Engineering Midwest, 1995. SPIE Vol. 2622, P 366

H. S. Ashton, H. A. MacKenzie, J. Lindberg: Detection of blood glucose concentration by pulsed photoacoustics: Gordon Research Conference on Photoacoustic and Photothermal Phenomena, Poster, Oxford, 1997

H. A. MacKenzie, H. S. Ashton, Y. C. Shen, P. Rae, K. M. Quan, S. Spiers, *Blood Glucose Measurements by Photoacoustics*, Biomedical Optical Spectroscopy and Diagnostics / Therapeutic Laser Applications, OSA trends in Optics and Photonics Series (TOPS), Vol. 22, p156-159, 1998

H. A. MacKenzie, H. S. Ashton, Y. C Shen, J. Lindberg, P. Rea, K. M. Quan, S. Spiers: Blood Glucose Measurements by Photoacoustics: Bio Optics, Optical Society of America, 1998. Vol. 3 Number 1.

Anonymous reviewer for the April 1998 issue of IEEE journal LEOS on non-invasive blood glucose monitoring via optical methods.

H. A. MacKenzie, H. S. Ashton, S. Spiers, Y. Shen, S. S. Freeborn, J. Hannigan, J. Lindberg, and P. Rae: Advances in Photoacoustic Noninvasive Glucose Testing: Clin. Chem., Vol. 45, No. 9, p1587-1595, 1999.

H. S. Ashton, H. A. MacKenzie, P. Rae, Y. C. Shen, S. Spiers, J. Lindberg: Blood Glucose Measurements by Photoacoustics: Photoacoustic and Photothermal Phenomena, 10th International Conference, Rome, AIP conference proceedings 463, F. Scudieri, M. Bertolotti (eds.), p570-572, 1999

Y. C. Shen, H. A. MacKenzie, J. Lindberg, Z. H. Lu: Time-resolved photoacoustics for glucose concentration measurement: Theory and experiment. Proceeding of SPIE, Vol. 3863, 1999, p167-171

Y. Shen, Z. Lu, S. Spiers, H. A. MacKenzie, H. S. Ashton, J. Hannigan, S. S. Freeborn, J. Lindberg: Measurement of the optical adsorption coefficient of a liquid by use of a time-resolved photoacoustic technique: Applied Optics - Optical Technology and Biomedical Optics, Vol. 39, No. 22, p4007-4012, 2000

Michael G. Lowery, Shu-Jen Yeh, Brenda Calfin, Tao Doan, Eric B. Shain, Charles F. Hanna, Ronald Hohs, Stanislaw Kantor, John Lindberg, Omar S. Khalil. Noise sources in the correlation between blood glucose and temperature-induced localized reflectance of diabetic forearm skin, Proceeding of SPIE, Vol. xxxx 2006

Elaine Scott, John Lindberg; APPROPRIATE AND SUSTAINABLE ENGINEERING (ASE) CONCENTRATION; American Society for Engineering Education, Conference Proceedings AC 2009-2187