



**Brian Wilson, PhD, Princess Margaret Cancer Centre, University of Toronto, Canada**

**Bio:**

Brian Wilson is a Senior Research Scientist at Princess Margaret Cancer Centre and Professor of Medical Biophysics, Faculty of Medicine, University of Toronto. He has worked in biophotonics since the early 1980's, having been trained originally in high-energy physics before transitioning to biomedical physics, initially in radiation therapy and medical imaging. He has authored some 400 peer-reviewed papers, mostly in diagnostic and therapeutic applications of optics, and more recently also nanotechnology, in cancer management. This work has been recognized by several international awards. He has worked with over 30 companies in the past 25 years and has co-founded two spin-off companies in optical bio-imaging. His core expertise is in optical biophysics and the development of novel biotechnologies and their translation to clinical practice through commercialization.



**Presentation Title:**

*Challenges in Clinical Translation Of Biophotonics Technologies, Exemplified by Optical Spectroscopy/Spectral Imaging*

**Abstract:**

Following the initial concept for any new biophotonics technique, instrument or material, there are many challenges in their translation into real clinical tools. These include: funding for R&D and commercialization; development of bench-top instrumentation or testable materials; preclinical testing; clinical prototyping; toxicology and scale-up; clinical trials; prototype-to-product conversion; regulatory approvals; commercialization (manufacturing, sales & marketing, customer support and service); and finally clinical adoption and dissemination, possibly in the face of rapidly evolving competing technologies. In this presentation these issues will be illustrated by examples from the many forms of optical spectroscopy and spectral imaging that are under development, recognizing that, although there are many unmet clinical needs that these technologies could address, few have yet been adopted into routine clinical practice, often because of failure to overcome one or more of these challenges. Many of challenges are, of course, common to other classes of biomedical technology beyond optics.