



Dennis Matthews, PhD, University of California (Davis), USA

Bio:

Dennis Matthews, Ph.D., is the Emeritus Director of the NSF Center for Biophotonics Science and Technology, and the previous Associate Director for Biomedical Technology for the Integrated Cancer Center at the University of California at Davis. He is an emeritus professor in the UC Davis Department of Neurological Surgery and a member of the Biomedical Engineering, Applied Sciences and Clinical Sciences Graduate Groups. He is also a previous Program Leader and Division Leader at Lawrence Livermore National Laboratory. He is the cofounder and Chief Scientist of the Tahoe institute for Rural Healthcare Research, the Univ of CA Biophotonics Alliance and the Biophotonics4Life Worldwide Consortium. He is also the sole proprietor of LifeLight Resources LLC, a biophotonics-based consulting company. He has also recently become the Chief Science and Operations Officer in a radar-based heart monitoring startup company called Cardiac Motion LLC. While he is credited for inventing and developing x-ray wavelength lasers at Lawrence Livermore National Laboratory, Dr. Matthews' continuing interest is in the translation and commercialization of new physical science and engineering technologies for grand challenges in medicine and the life sciences. His current interests are in developing optical, RF and x-ray technologies for disease diagnosis and treatment. He is a Fellow of the American Physical Society, the Society of Photo and Industrial Engineers and the Optical Society of America. He has more than 290 publications and >30 patents and is the co-editor of the Journal of Biophotonics. Dr. Matthews is credited for raising more than \$225M in grant and investor funds in his career, helping create 14 startup companies.



Presentation Title:

The Long Road to Commercialising a Personal Blood Count Monitor

Abstract:

We have been developing an optical-imaging-based portable/personal blood count monitor for a number of years in collaboration with the Tahoe Institute for Rural Health Research (TIRHR.COM). Technologically, this has been relatively straight forward. We have obtained excellent results from a benchtop early-stage prototype that compare very favorably to the "gold standard" clinical laboratory blood analysis systems. I will only briefly describe these results as they have been published elsewhere (1,2). However, we are already or soon will be facing the difficult hurdles of raising investment capital, paying for costly IP protection, facing high profile competition, keeping potential manufacturing costs down, obtaining regulatory approvals and determining the most appropriate market entry pathway; to name just a few of the issues. In my talk, I will describe our efforts to date and plans going forward as a type of case study or lessons learned in what's going well, what's not and where to get help in overcoming the hurdles. As is the case with many of the biophotonics technologies we develop in our field, it's a challenging but worthwhile endeavor to go from early concept to product introduction and adoption.