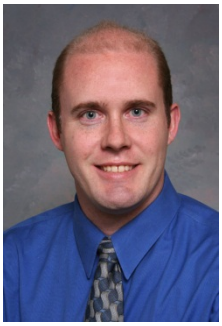
Clinical Application of Adaptive Optics Retinal Imaging Incubator Meeting Hosts



Joseph Carroll, Ph.D.
Dr. Joseph Carroll is the Co-Director of the Advanced Ocular Imaging Program in the Department of Ophthalmology at the Medical College of Wisconsin. He received his B.S. degree from the University of Wisconsin at Green Bay in 1997 and completed his Ph.D. at the Medical College of Wisconsin in 2002. He did a postdoctoral fellowship at the University of Rochester before returning to the Medical College of Wisconsin in 2006, where he is currently an Associate Professor in the Departments of Ophthalmology, Biophysics, and Cell Biology, Neurobiology & Anatomy. He serves as an Associate Editor for *Biomedical Optics Express*, and is the current Chair of the Vision and Color Division of the Optical Society of America. He has published over 40 peer-reviewed publications. He has received research awards from the Karl Kirchgessner Foundation, the E. Matilda Ziegler Foundation for the Blind, Research to Prevent Blindness, Foundation Fighting Blindness, and the ALCON Research Institute. His primary research interests are structure-function relationships in the human visual system, with an emphasis on utilizing high-resolution retinal imaging tools to study inherited retinal degenerations.

Jacque L. Duncan, M.D.
Dr. Jacque L. Duncan, Professor of Clinical Ophthalmology, is the Director of the Retinal Degenerations Clinic at the University of California, San Francisco. She graduated from Stanford University, followed by medical school, internship and ophthalmology residency at the University of California, San Francisco. Dr. Duncan completed a medical retina fellowship focused on patients with inherited retinal degenerations and age-related macular degeneration at the University of Pennsylvania, working with Drs. Samuel G. Jacobson and Stuart Fine. She joined the ophthalmology faculty at UCSF in 2000. Dr. Duncan has expertise and interest in developing imaging technologies to evaluate disease progression in eyes with photoreceptor and the efficacy of emerging therapies. In collaboration with Austin Roorda, Ph.D., Professor at the University of California, Berkeley School of Optometry, she has studied cone photoreceptors in the eyes of patients with AMD and many different types of inherited retinal degenerations.

Meeting Hosts

Matthew McMahon, Ph.D.
Dr. Matthew McMahon completed his graduate studies in retinal structure, function, and visual perception at the University of California, San Diego and performed postdoctoral research in primate retinal physiology at the University of Washington. He then served as Senior Principal Scientist for Second Sight Medical Products for 5 years. In 2009, Dr. McMahon moved to Capitol Hill as an AAAS Science and Technology Policy Fellow for the Senate Committee on Commerce, Science, and Transportation. He then served as professional staff on the House Science and Technology Committee, where he oversaw innovation, manufacturing, technology transfer, and bioscience policy. In his role at the National Eye Institute, Dr. McMahon facilitates translational research activities and participates in inter-agency initiatives. He is also responsible for identifying emerging opportunities to advance small molecules, gene- and cell-based therapies, medical devices, and other novel therapeutics through public-private partnering with the pharmaceutical and biotechnology industries.

David R. Williams, Ph.D.
Dr. David R. Williams received his Ph.D. from the University of California, San Diego in 1979. He was a postdoctoral fellow at Bell Laboratories, Murray Hill in 1980 and joined the University of Rochester in 1981, where he has an appointment in the Institute of Optics as well as in the departments of Brain and Cognitive Sciences, Biomedical Engineering, and Ophthalmology. He is currently William G. Allyn Professor of Medical Optics. Since 1991, Williams has served as Director of Rochester's Center for Visual Science, an interdisciplinary research program of 32 faculty interested in the mechanisms of human vision. In 2011, he was appointed Dean for Research of Arts, Science and Engineering where he is responsible for maximizing opportunities for faculty research and scholarship, including the development of partnerships with industry and government as well as other academic institutions. Williams' research marshals optical technology to address questions about the fundamental limits of human vision. His research team demonstrated the first closed-loop adaptive optics system for the eye, showing that vision can be improved beyond that provided by conventional spectacles. This work lead to wavefront-guided refractive surgery used in more than half the refractive surgical procedures conducted worldwide today. More recently, his group has been deploying adaptive optics and other advanced imaging technologies to study the normal and diseased retina, obtaining microscopic images with unprecedented resolution in the living eye. Williams is a Fellow of the Optical Society of America, the American Association for the Advancement of Science, and the Association for Research in Vision and Ophthalmology. Awards he has received include the OSA Edgar G. Tillyer Award in 1998, the Association for Research in Vision and Ophthalmology's Friedenwald Award in 2006, the Bressler Prize from the Jewish Guild for the Blind in 2007, and the Champalimaud Vision Award in 2012.