Imaging the windows to the soul: eye researchers pursue “audacious” goal

May 1, 2015 MCW News - The Medical College of Wisconsin’s (MCW) Advanced Ocular Imaging Program (AOIP) has received a $4.4 million, five-year grant from the National Institutes of Health’s National Eye Institute (NEI) to participate in the NEI’s “Audacious Goals Initiative.” The initiative seeks to push the boundaries of vision science with the goal of regenerating neurons and neural connections in the eye.

Alfredo Dubra, PhD, assistant professor of ophthalmology at MCW and co-director of the AOIP; and Joseph Carroll, PhD, the Richard O. Schultz, MD / Ruth Works Professor in Ophthalmology and co-director of the AOIP, are co-principal investigators on this collaborative project. MCW serves as the lead institution which also involves investigators at the University of Pennsylvania, New York Eye & Ear Infirmary, University of California San Diego, University College London and University of Wisconsin Madison.

The overall goal of the project is to develop and disseminate transformative imaging technologies that overcome current barriers and will allow longitudinal, cellular-level resolution assessment of the structure and function of the retina.

“These technologies could be integrated into nearly all ophthalmic imaging devices and will positively impact our ability to diagnose and monitor retinal and neuro-ophthalmic disease on a cellular level, as well as assess therapies that aim to regenerate photoreceptors or retinal ganglion cells,” said Dr. Dubra.

Ultimately, the instrumentation developed through this project will enable diagnosis of retinal disease and monitoring of retinal structure and function with unprecedented sensitivity and resolution. The resulting technologies will be generalizable and broadly applicable to all retinal cell types, retinal diseases, and therapeutic strategies.