

**“Vision science: *From
Biophotonics and Organoids to
Surgical AI*”**

Friday, January 20th, 2023
12:00 – 1:00 p.m.

McDonnell Douglas Auditorium



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Ph.D.**

UCI Ophthalmology

Abstract: My lab investigates four areas of translational vision science: advanced imaging to discover new clinical endpoints for treatments in retinal degeneration, cell replacement therapy, AI-assisted surgery, and advanced ultrasonography methods for imaging the human eye. I will first discuss 2-photon imaging and how we are using it to study human retinal tissues. I will then discuss retinal transplantation using stem cell-derived tissues and how we are developing microfluidic devices and 2-photon imaging to standardize retinal organoid manufacturing. In the second half of the talk I will share our progress in developing AI models to assist with retinal surgery and tools that we have developed to enable 3D imaging of the whole human eye.

Biography: Andrew Browne earned a bachelor’s degree in Electrical Engineering at The Ohio State University prior to matriculating to the MD/PhD program at the University of Cincinnati. He completed a PhD in Electrical Engineering and medical doctorate in 2011. His PhD training was grounded in BioMicro Electrical Mechanical Systems (BioMEMS) for point-of-care diagnostics and oncolytic virus engineering as a tool to screen for various cancers. He completed an internship at Cambridge Hospital in 2012, residency in ophthalmology at University of Southern California in 2015 and vitreoretinal surgery fellowship at Cleveland Clinic in 2017. He has been on faculty at UCI since 2017.