THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE

Department of
Biomedical Informatics

Precision Medicine for Glaucoma

Abstract: Dr. Sayoko E. Moroi will introduce precision medicine for glaucoma. She will explain the disease/phenotypes and treatments, and then talk about the epidemiology of glaucoma and the rates of blindness.

In the second part of this talk, Dr. Xiaoyi Raymond Gao will cover some practical aspects of advancing to precision medicine using polygenetic risk scores (PRSs) for primary open-angle glaucoma as an example. He will show results from several datasets, including large-scale simulation and UK Biobank (a cohort of half a million individuals), and provide potential clinical utility of PRSs.

About the Speakers: Dr. Moroi is a board-certified and glaucoma fellowship-trained ophthalmologist. She is the chair of the Department of Ophthalmology & Visual Sciences at The Ohio State University. She has published on diverse topics that include pharmacology, glaucoma, genetics surgical outcomes, health services research, and public health topics. She is one of the senior editors and contributing author for the upcoming 7th edition Shields' Textbook of Glaucoma. Her research focuses on three broad areas of precision medicine, technology, and interdisciplinary neurosensory mechanisms of falls. Her goal in precision medicine is to discover genetic markers that drive intraocular pressure variation and those that predict response to glaucoma medications. Her goal in technology applications, such as head-mounted display augmented reality, is to enhance vision. Her goal in neurosensory mechanisms is to mitigate falls by understanding the complex interplay between vision, balance and the aging musculoskeletal system on mobility. Through team-based research, Dr. Moroi's hope is to prevent glaucoma-related blindness by improving glaucoma treatment outcomes.

Dr. Gao is a statistical geneticist with a PhD in Bioinformatics-Statistics. He is currently an associate professor in the departments of Ophthalmology & Visual Sciences and Biomedical Informatics, and the Division of Human Genetics at The Ohio State University. His research interests include vision disorders, statistical genetics, genetic epidemiology, and human genetics. His lab utilizes biomedical big data and machine learning. His research goals are to advance our understanding of the genetic architecture of complex diseases/traits and to improve our ability to predict disease, target prevention to high-risk individuals, and tailor treatment based on individual genomic differences. He is the editor of the Elsevier book titled Genetics and Genomics of Eye Disease: Advancing to Precision Medicine.

Sayoko Moroi, MD, PhD & Raymond Gao, PhD
Friday, March 6th, 11:00am-12:00pm
B050 James

Pizza will be provided