

Thursday, June 13, 2019  
7:30 a.m. – 5:00 p.m.  
University of Michigan  
W.K. Kellogg Eye Center

## 35th Annual Research Day



**KELLOGG EYE CENTER**  
MICHIGAN MEDICINE



# *35th Annual Research Day*

## *Program Goals*

At the 35th Annual Research Day, you will hear about the latest findings from research under way at the University of Michigan Kellogg Eye Center. Kellogg fellows, postdocs, medical students and residents will present papers based on their most recent clinical and basic science research. A brief question and answer session will follow each presentation..

## *Target Audience*

The program is designed for medical students, physicians, scientists, and allied health professionals in the field of ophthalmology.

## *Educational Objectives*

Upon completion of this activity, participants will understand and implement:

- Current research findings in their daily practice
- Diagnostic and treatment options for ocular diseases and conditions
- Evaluation and management of patients with ocular disease
- Development of research and presentation skills

## *Accreditation*

The University of Michigan Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The University of Michigan Medical School designates this live activity for a maximum of 6.5 AMA PRA Category 1 Credit(s)<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## *Planning Committee*

**Patrice E. Fort, PhD, MS**

Course Co-Director

**Shahzad I. Mian, MD**

Course Co-Director

**Julie M. Rosenthal, MD**

Course Co-Director



# Research Day Conference Schedule

## THURSDAY, JUNE 13, 2019

7:30 Registration and Continental Breakfast

8:00 Welcome and Announcements  
**Patrice E. Fort, PhD, MS**

## INTERNATIONAL, NEURO, PLASTICS AND ONCOLOGY

**Moderator: Terry Smith, MD**

8:10 Complications of Ventriculo-peritoneal  
Shunt for Idiopathic Intracranial  
Hypertension

**Anthony Brune, DO**  
Research Mentor:  
Jonathan Trobe, MD

8:20 Vismodegib Treatment Leaves  
Behind Gli1 Positive Micro-tumors Despite  
Complete Clinical Response in Orbital  
Basal Cell Carcinoma

**Shelby Unsworth, PhD**  
Research Mentor:  
Alon Kahana, MD, PhD

8:30 Genomic Analysis of a Rare Case of  
Bilateral Vitreoretinal T Cell Lymphoma  
Reveals Copy Number Alterations but a  
Scarcity of Mutations in Common Cancer-  
related Genes

**Andi Cani, MS**  
Research Mentor:  
Rajesh Rao, MD

8:40 Normative Anthropometric Periocular  
Measurements Among Ethiopians and  
the Major Ethiopian Ethnic Groups:  
A Collaborative Study

**Curtis Heisel, BS**  
Research Mentor:  
Christine Nelson, MD, FACS

8:50 Basic Eye Care Provider Training  
In a Low-Resource Setting

**Erik Sweet, MD**  
Research Mentor:  
Manjool Shah, MD

9:00 **BREAK**

## CORNEA AND LOW VISION

**Moderator: David Antonetti, PhD**

9:20 Functioning and Vision-Related Quality of  
Life in Severe Peripheral Field Loss Due to  
Retinitis Pigmentosa: A Mixed Methods Study

**Ryan Lange, MD**  
Research Mentor:  
Joshua Ehrlich, MD, MPH

9:30 Impact of Scleral Contact Lens Use  
on Rate of Corneal Transplantation for  
Keratoconus

**Jennifer Ling, MD**  
Research Mentor:  
Maria Woodward, MD, MS

9:40 One Year Outcomes of Eye Bank Prepared  
Pre-stripped, Pre-stained, and Pre-loaded  
Descemet's Membrane Endothelial  
Keratoplasty (p3DMEK)

**Nathan Liles, MD, MPH**  
Research Mentor:  
Shahzad Mian, MD

9:50 10-Year Outcomes for a Cohort of Patients  
Undergoing Keratoplasty

**Amy Tong, MD**  
Research Mentor:  
Maria Woodward, MD, MS

10:00 Cornea Medication Adherence Survey

**Sarah Michelson, MD**  
Research Mentor:  
Maria Woodward, MD, MS



# Research Day Conference Schedule

## DIGITAL POSTER SESSION

PEDIATRIC OPHTHALMOLOGY CLINIC  
10:20 – 11:20 AM

### EXAM ROOMS 2 – 10

Room 2 Removal of Suture-Induced Corneal Neovascularization In Rabbits Using Concurrently Applied Nanosecond Laser Pulses and Ultrasound

**Yixin Yu, MD**

Research Mentor:  
Yannis Paulus, MD

Room 3 Accuracy of Natural Language Processing to Extract Quantitative Data for Microbial Keratitis from the Electronic Health Record

**Nenita Maganti, BS**

Research Mentor:  
Maria Woodward, MD, MS

Room 4 Relationships Between Patient-Reported Outcomes and Findings on Visual Acuity Testing, Perimetry, and Optical Coherence Tomography for Patients with Glaucoma

**Lorraine Provencher, MD**

Research Mentor:  
Joshua Stein, MD, MS

Room 5 Automating Continuous Practice Improvement: An Assessment of Clinic Policy Change on Patient Wait Time

**Roman Krivochenitser, MD**

Research Mentor:  
Paula Anne Newman-Casey, MD, MS

Room 6 Personality Type Impact on Glaucoma Medication Adherence

**Carin Rojas, MD**

Research Mentor:  
Paula Anne Newman-Casey, MD, MS

Room 7 Reduction in Receipt of Mammography to Screen for Breast Cancer Among Visually Impaired Women Versus Those Without Visual Impairment

**Annie Wu, MD**

Research Mentor:  
Joshua Stein, MD, MS

Room 8 Quantification of Diabetic Retinopathy-Associated Non-perfusion and Neovascularization on Ultra-wide-field Fluorescein Angiography and Assessment of the Impact of Age, Sex, Race, and Type of Diabetes Mellitus

**Michael Aaberg, BA**

Research Mentor:  
Yannis Paulus, MD

Room 9 Traumatic Open-Globe Injuries and Endophthalmitis - A 17-Year Retrospective Review

**Michael Huvard, MD**

Research Mentor:  
David Zacks, MD, PhD

Room 10 Dual Protective Action of AlphaA-Crystallin on Retinal Glial and Neuronal Cells During Metabolic Stress

**Nath Madhu, PhD**

Research Mentor:  
Patrice Fort, PhD

# Research Day Conference Schedule

## GLAUCOMA

*Moderator:* **Lindsey De Lott, MD**

11:30 Psychosocial Predictors of Glaucoma Medication Adherence

**Mariam Salman, BA**

Research Mentor:

Paula Anne Newman-Casey, MD, MS

11:40 Post-Operative Complications and the Incidence of Glaucoma in Eyes With and Without Pseudoexfoliation: Aravind Pseudoexfoliation Study 5 Year Results

**Emily Schehle, MD**

Research Mentor:

Alan Robin, MD

11:50 Does Targeted iStent Placement Reduce Post-Surgical Intraocular Pressure Lowering Medication Burden?

**Megan Tuohy, MD**

Research Mentor:

Manjool Shah, MD

12:00 Glaucoma Knowledge and Attitudes Among Ethiopians in a Tertiary Eye Care Center

**Philip Garza, MD, MSc**

Research Mentor:

Scott Lawrence, MD

12:10 **Lunch**

## KEYNOTE SPEAKER

1:10 PM

## CORNEAL NERVE IN HEALTH AND DISEASE



**Mark I. Rosenblatt, MD, PhD, MBA**

Executive Dean and Professor of Ophthalmology  
Illinois Lions/Charles I. Young Chair  
University of Illinois College of Medicine

Dr. Rosenblatt is a corneal surgeon and a highly accomplished physician-scientist, with a National Institutes of Health sponsored research program exploring mechanisms to regenerate corneal nerves following corneal injury. His primary focus is innovation and the translation of basic discoveries in the laboratory into relevant therapies for patients.

Dr. Rosenblatt has made significant contributions to our understanding of corneal nerve regeneration, as well as the establishment of innovative models for investigating corneal nerves. Dr. Rosenblatt expanded his research program to not only include regenerative issues related to corneal nerves, but also to regeneration of the ocular surface. He is currently exploring novel ways to promote trans-differentiation of skin stem cells into corneal epithelial stem cells for the treatment of corneal epithelial stem cell deficiency.





# Research Day Conference Schedule

## COMPREHENSIVE AND RETINA PART 1

*Moderator:* **Yannis Paulus, MD**

- 1:40    Uncorrected Refractive Error and Barriers to Eyeglass Uptake in Southeastern Michigan

**Olivia Killeen, MD**

Research Mentor:  
Maria Woodward, MD, MS

- 1:50    Refining Metrics for Assessing the Quality of Care of Patients Undergoing Cataract Surgery for Use in Big Data Analyses

**Eric Weinlander, MD**

Research Mentor:  
Joshua Stein, MD, MS

- 2:00    Health Disparities in Chronic Non-Infectious Uveitis

**Gabrielle Lacy, BS**

Research Mentor:  
K. Thiran Jayasundera, MD

- 2:10    Multimodal Photoacoustic Microscopy and Optical Coherence Tomography for the Detection of Retinal/Choroidal Neovascularization in Living Rabbits

**Phuc Nguyen, PhD**

Research Mentor:  
Yannis Paulus, MD

- 2:20    The Neuroprotective Role of HK2 in Photoreceptor Survival

**Eric Weh, PhD**

Research Mentor:  
Cagri Besirli, MD, PhD

- 2:30    Role of Ocular Antihypertensive Medications in Development and Progression of Age-Related Macular Degeneration

**Emily Eton, MD**

Research Mentor:  
Cagri Besirli, MD, PhD

- 2:40    Characterizing the Role for Pentosan Polysulfate (Elmiron) in the Pathogenesis of a Novel Pigmentary Retinopathy

**Stephen Armenti, MD, PhD**

Research Mentor:  
Julie Rosenthal, MD

- 2:50    Characteristics and Natural History of Lamellar Macular Holes: A Quantitative Analysis

**Rohan Jalalizadeh, MD**

Research Mentor:  
Mark Johnson, MD

# Research Day Conference Schedule

## DIGITAL POSTER SESSION

### PEDIATRIC OPHTHALMOLOGY CLINIC

3:10 – 4:10 PM

- Room 2 Functional Characterization of Recombinant aA-crystallins as Potential Therapeutics for Neurodegeneration-associated Dll1 Death in Diabetic Retinopathy

**Ashutosh Phadte, PhD**

Research Mentor:

Patrice Fort, PhD

- Room 3 Surgical Outcomes of Glaucoma Associated with Axenfeld-Rieger Syndrome

**Emily Zepeda, MD**

Research Mentor:

Brenda Bohnsack MD PhD

- Room 4 Review of Outcomes After Dacryocystorhinostomy

**Jara Crear, MD**

Research Mentor:

Christine Nelson, MD

- Room 5 Giant Internal Limiting Membrane Breaks Associated With Epiretinal Membranes: A Retrospective Review of Clinical Characteristics

**Robert Hyde, MD, PhD**

Research Mentor:

Mark Johnson, MD

- Room 6 Targeted Imaging of Laser-induced Choroidal Neovascularization in Mice with RGD-conjugated Nanoparticles

**Wen Fan, MD**

Research Mentor:

Yannis Paulus, MD

- Room 7 Ex Vivo Live Cell Imaging of Outer Segment Traffic in Mouse Photoreceptor Cells

**Jorge Martínez-Márquez, PhD**

Research Mentor:

Jillian Pearing, PhD

- Room 8 Smartphone-based, Rapid, Wide-field Fundus Photography for Diagnosis of Pediatric Retinal Diseases

**Tapan Patel, MD, PhD**

Research Mentor:

Yannis Paulus, MD

- Room 9 Optical Coherence Tomography and B-Scan Ultrasonography In the Diagnosis and Management of Conjunctival Lesions

**Honeylen Maryl Teo, MD**

Research Mentor:

Hakan Demirci, MD

- Room 10 Wide-Field OCT Imaging of Peripheral Exudative Hemorrhagic Chorioretinopathy

**Alexander Weiss, MD**

Research Mentor:

Hakan Demirci, MD

- Room 11 Surgical Management of Large Angle Exotropia

**Mary Lim, MD**

Research Mentors:

Steven Archer, MD

Monte Del Monte, MD



# *Research Day Conference Schedule*

## **RETINA PART 2**

*Moderator:* **Jillian Pearring, PhD**

- 4:20 Potential Cancer Therapy for Activation of Metabolic Enzyme Pyruvate Kinase Muscle Isozyme 2, Pkm2, Provides Photoreceptor Neuroprotection

**Thomas Wubben, MD, PhD**

Research Mentor:  
Cagri Besirli, MD, PhD

- 4:30 Use of a Conjoint Analysis Survey To Understand Patient Preferences In Potential Ocular Stem Cell Therapies

**Peter Zhao, MD**

Research Mentor:  
Rajesh Rao, MD

- 4:40 Patient Mutations Reveal the Arl3 Requirements for Lipidated Protein Trafficking to the Outer Segment of

**Amanda Travis, PhD**

Research Mentor:  
Jillian Pearring, PhD

- 4:50 Human Fetal Retinal Pigment Epithelium Is Uniquely Resistant to Lipofuscin Accumulation and Toxicity

**Jason Miller, MD, PhD**

Research Mentor:  
Debra Thompson, PhD

- 5:00 CLOSING REMARKS

**Paul P. Lee, MD, JD**



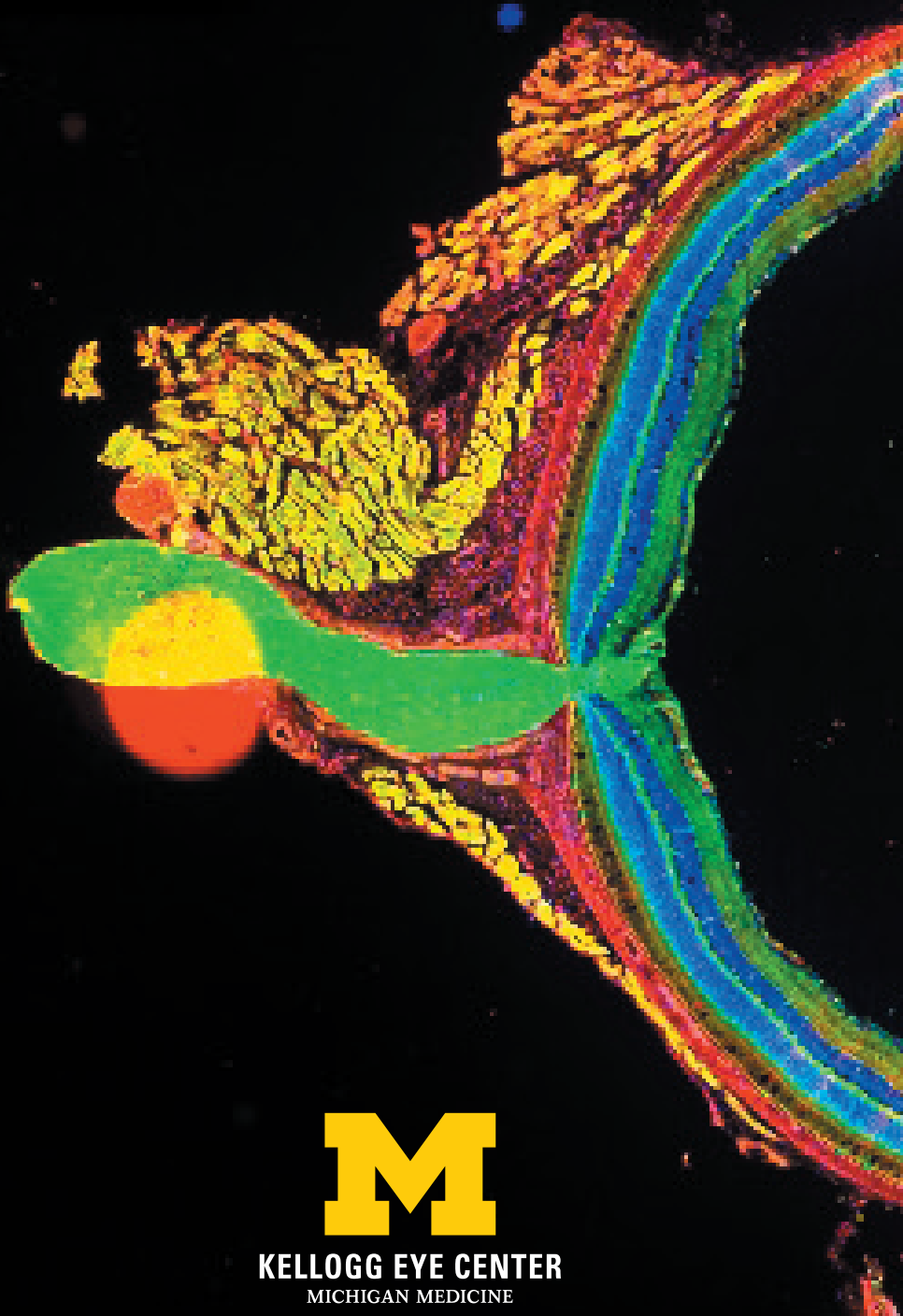
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