

*University of Iowa Department of Ophthalmology and Visual Sciences
Presentations and Posters at ARVO 2019*

Saturday, April 27

8 AM - 4:30 PM. *Michael Abramoff, Michael Chiang, Daniel SW Ting, Tien Wong, Rajat Agrawal, Susan Orr, Arthur Shedden.* **Artificial Intelligence – from benchtop to bedside.** Education Course. Location: West 211

8:20 AM - 8:35 AM. *Michael Abramoff.* **General Introduction on AI in healthcare. Importance of differentiating different types of AI, including autonomous and assistive, as well as the implications for patient safety, efficacy, and clinical implementation.** Education Course. Location: West 211

9:05 AM – 9:20 AM. *James Folk.* **How does AI fit in with current eye practices in the United States.** Education Course. Location: West 211

Sunday, April 28

8 AM - 9:45 AM. *Kyungmoo Lee, Honghai Zhang, Zhihui Guo, Andreas Whale, Hrvoje Bogunovic, Bianca Gerendas, Ursula Schmidt-Erfurth, Michael Abramoff, Milan Sonka.* **Fast and memory-efficient Just-enough interaction for retinal layer segmentation in OCT in layer-disrupting pathology.** Poster # A0564. Location: West Exhibition Hall

3 PM - 4:45 PM. *Kelly Mulfaul, Joseph Giacalone, Kathleen Chirco, Shemin Zeng, Allison Songstad, Dalylz Ochoa, Jeaneen Andorf, Heather Daggett, Edwin Stone, Budd Tucker, Robert Mullins.* **Choroidal Endothelial cells synthesize CFH locally to protect against complement mediated injury.** Poster # A0347. Location:

3 PM - 4:45 PM. *Elliott Sohn, Chunhua Jiao, Xiuying Liu, Weize Sun, Robert Mullins.* **Visualization of mouse choroidal and retinal vasculature using fluorescent tomato lectin perfusion.** Poster # A0355. Location: West Exhibition Hall

3 PM - 4:45 PM. *Robert Mullins (moderator), Baerbel Rohrer (moderator).* **AMD Pathogenic Mechanisms.** Poster Range: A0321 - A0350. Location: West Exhibition Hall

Monday, April 29

8:15 AM - 10 AM. *Christopher Fortenbach, Steven Whitmore, Ian Han.* **Spectral-Domain Optical Coherence Tomography Analysis of Retinal Layers in Autoimmune Retinopathy.** Poster # A0354. Location: West Exhibition Hall

8:15 AM - 10 AM. *Stephanie Lynch, James Folk, Michael Abramoff.* **Autonomous artificial intelligence (AI) reliably detects diabetic retinopathy.** Poster # A0221. Location: West Exhibition Hall

8:15 AM - 10 AM. *Krunalkumar Ramanbhai Patel, Gary Lee, Mary Durbin, Michael Wall, Paul Artes, John Flanagan.* **Deep neural network based glaucoma detection using RNFL thickness map.** Poster # A0154. Location: West Exhibition Hall

8:15 AM - 10 AM. *Mohammad Shafkat Islam, Jui-Kai Wang, Samuel Johnson, Matthew Thurtell, Randy Kardon, Mona Garvin.* **Deep Learning Based Retinal Blood Vessel Segmentation of Multiple Optical Coherence Tomography En-Face Images in Cases of Optic Disc Swelling.** Poster # A0194. Location: West Exhibition Hall

8:45 AM - 9 AM. *Oliver Gramlich, Alexander Brown, Kyle Gonsalves, Randy Kardon.* **Inhibition of Hif1 Signaling and Increased Lipid Metabolism are Associated with Retinal Ganglion Cell Protection in a Mouse Model of Multiple Sclerosis.** Paper # 1395. Location: West 221/222

9 AM - 9:15 AM. *Robert Mullins, Elliott Sohn, Miles Flamme-Wiese, Meagan Luse, Austin Reutzel, Budd Tucker, Edwin Stone.* **Choroidal vascular changes in early and advanced AMD: relationship with ARMS2 genotype.** Paper # 1342. Location: East 11/12

4 PM - 4:15 PM. *Ian Han, Christopher Fortenbach, Brice Critser, Edwin Stone.* **Analysis of Retinal Sublayer Thicknesses and Rates of Progressive Thinning in Stargardt Disease.** Paper # 2193. Location: East 8&15

4 PM - 5:45 PM. *Karam Alawa, Elaine Han, Mohamed Sayed, Alejandro Arboleda, Heather Durkee, Mariela Aguilar, Ryan Nolan, Richard Lee.* **Low-cost, smartphone based frequency doubling technology visual field testing using virtual reality.** Poster # A0645. Location: West Exhibition Hall

4 PM - 5:45 PM. *Alec Amram, Steven Whitmore, Christine Clavell, Lance Lyons, Alexander Rusakevich, Ian Han, James Folk, H Boldt, Karen Gehrs, Edwin Stone, Stephen Russell, Kyungmoo Lee, Michael Abramoff, Charles Wykoff, Elliott Sohn.* **Progressive Neurodegeneration in Macular Telangiectasia Type 2 (MacTel).** Poster # B0101. Location: West Exhibition Hall

4 PM - 5:45 PM. *Randy Kardon (moderator).* **Idiopathic Intracranial Hypertension Dementia and Neurodegenerative Disorders.** Poster Range: A0035 - A0055. Location: West Exhibition Hall

4 PM - 5:45 PM. *Chris Johnson (moderator), Christopher Bowd (moderator).* **Visual Fields, Psychophysics, and Electrophysiology.** Poster Range: A0602 - A0654. Location: West Exhibition Hall

4 PM - 5:45 PM. *Michael Wall, Ashwin Subramani, Luke Chong, Ramon Galindo, Andrew Turpin, Randy Kardon, Matthew Thurtell, Bailey Jane, Ivan Marin-Franch.* **Detection of Visual Loss in IIH with Static Automated Perimetry: Temporal Wedge Defects.** Poster # A0048. Location: West Exhibition Hall

7 PM - 9:30 PM. **Iowa Eye Reception @ ARVO 2019.** Location: Rogue Kitchen & Wetbar, Convention Centre Location, 200 Burrard Street. RSVP to Joe Schmidt, joe-schmidt@uiowa.edu.

Tuesday, April 30

8:45 AM - 10:30 AM. *Lin Cheng, Matthew Cring, Markus Kuehn.* **Modeling oculodentodigital dysplasia syndrome using human induced pluripotent stem cells.** Poster # A0049. Location: West Exhibition Hall

8:45 AM - 10:30 AM. *John Fingert, Carly van der Heide, Jessica Cooke, Ben Roos, Ankur Jain, Kathy Rodine, Robert Mullins, Budd Tucker.* **Clinical, molecular genetic, and functional analysis of a pedigree with a novel dominant optic atrophy mutation.** Poster # A0243. Location: West Exhibition Hall

8:45 AM - 10:30 AM. *Laura Bohrer, Jessica Cooke, Arwin Shrestha, Erin Burnight, Kristin Anfinson, Malia Collins, Robert Mullins, Edwin Stone, Kristan Worthington, Luke Wiley, Budd Tucker.* **Generation of rod- vs. cone-dominant patient-derived 3D retinal grafts for the treatment of retinal degenerative blindness.** Poster # A0042. Location: West Exhibition Hall

8:45 AM - 10:30 AM. *Matthew Miller, Jessica Fick, Jeremy Hoffmann, Jessica Penticoff, Robert Mullins, Edwin Stone, Budd Tucker.* **North Carolina Macular Dystrophy: Causes and Consequences of Gene Dysregulation.** Poster # A0033. Location: West Exhibition Hall

8:45 AM - 10:30 AM. *Jessica Cooke, Cathryn Cranston, Elizabeth Kennedy, Adam Deluca, S. Whitmore, Todd Scheetz, Robert Mullins, Edwin Stone, Budd Tucker.* **Variation in retinal differentiation capacity between patient derived hiPSC lines.** Poster # A0045. Location: West Exhibition Hall

9 AM - 9:15 AM. *Markus Kuehn, Oliver Gramlich, Neal Heuss, Cheyanne Godwin, Dale Gregerson.* **T and B Lymphocyte Deficiency in RAG1 Mice Decreases Retinal Ganglion Cell Loss in Experimental Glaucoma.** Paper # 2849. Location: ARVO Ballroom

10:15 AM - 10:30 AM. *Wesley Goar, Carly van der Heide, Benjamin Roos, Wallace Alward, Young Kwon, Michael Anderson, Val Sheffield, Todd Scheetz, John Fingert.* **Exome-based Investigation of the Genetic Basis of Pigment Dispersion Syndrome.** Paper Session: 2836. Location: West 217-219

11:45 AM - 1:30 PM. *Luke Wiley, Emily Kaalberg, Chunhua Jiao, Robert Mullins, Edwin Stone, Budd Tucker, Ian Han.* **Characterizing the immune response to helper-dependent adenovirus in the rat retina.** Poster # A0179. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Poppy Datta, Brandon Hendrickson, Seongjin Seo.* **Effective arrest of retinal degeneration depends on the timing of gene restoration in a BBS17 mouse model.** Poster # A0165. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Yahila Permeswaran, Jui-Kai Wang, Randy Kardon, Mona Garvin.* **An En-Face OCT Registration Approach for Locating the Center of Bruch's Membrane Opening in Longitudinal Papilledema Cases.** Poster # B0007. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Jessica Skeie, Benjamin Aldrich, Anna Wilcox, Gregory Schmidt, Cynthia Reed, Mark Greiner.* **Metabolic Optimization of Endothelial Keratoplasty Graft Tissue with Coenzyme Q10.** Poster # B0502. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Samuel Johnson, Mohammad Shafkat Islam, Jui-Kai Wang, Thurtell Matthew, Randy Kardon, Mona Garvin.* **Deep-Learning-Based Estimation of Regional Volumetric Information from 2D Fundus Photography in Cases of Optic Disc Swelling.** Poster # B0011. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Ajay Kuriyan, Elliott Sohn (moderators).* **DME anti-VEGF I.** Poster Range: B0148 - B0178. Location: West Exhibition Hall

11:45 AM - 1:30 PM. *Arlene Drack (moderator).* **Neuro-Ophthalmology: Genetics and Investigational modalities.** Poster Range: B0001 - B0019. Location: West Exhibition Hall

2:45 PM - 4:30 PM. *Seongjin Seo, Poppy Datta, Brandon Hendrickson.* **Loss of CEP290 causes accumulation of inner segment plasma membrane proteins in the outer segment.** Poster # A0479. Location: West Exhibition Hall

2:45 PM - 4:30 PM. *Nicole Tatro, Ian Andrews, Terry Braun, Stephen Russell*. **Navigation Assistance From the Low-Vision Enhancement Optoelectronic (LEO) Belt**. Poster # B0075. Location: West Exhibition Hall

2:45 PM - 4:30 PM. *Jessica Skeie (moderator)*. **Corneal Development and Cell Differentiation**. Poster Range: B0466 – B0475. Location: West Exhibition Hall

Wednesday, May 1

8:15 AM - 10 AM. *Sally Ong, Marguerite Linz, Ian Han, Adrienne Scott*. **Examination of Retinal Thickness, Vessel Density and Foveal Avascular Zone Size Using Optical Coherence Tomography Angiography (OCTA) in Children with Sickle Cell Disease**. Poster # A0553. Location: West Exhibition Hall

9:45 AM - 10 AM. *Brittni Scruggs, Sajag Bhattarai, Ioana Cherascu, Megan Helms, Adisa Salesevic, Joseph Laird, Sheila Baker, Budd Tucker, Arlene Drack*. **AAV2/4-RS1 gene therapy in the retinoschisin knockout mouse model of X-linked retinoschisis**. Paper Session #4212. Location: Room East 8&15

10:15 AM - 12 PM. *Kent Small, Benjamin Bakall, Edwin Stone, Robert Wiggins, Nitin Udar, Steven Agemy, Fadi Shaya*. **Best Disease is a Phenocopy of North Carolina Macular Dystrophy (NCMD / MCDR1)**. Poster # A0504. Location: West Exhibition Hall

10:15 AM - 12 PM. *Nikolai Artemyev, Liping Yu, Ravi Yadav*. **Role of the TPR-domain of AIPL1 in its function as PDE6 chaperone**. Poster # A0253. Location: West Exhibition Hall

10:15 AM - 12 PM. *Donny Suh, Randy Kardon, Steven Laurie, Tonia Rex (moderators)*. **Optic Neuropathy**. Paper Session. Location: West 221/222

10:15 AM - 12 PM. *Lindy Brastrom, Soma Dash, C. Scott, Deborah Dawson, Salil Lachke, Diane Slusarski*. **RNA binding proteins in eye development: rbm24a regulates sox2 and leads to microphthalmia and visual processing defects in zebrafish**. Poster # A0273. Location: West Exhibition Hall

10:15 AM - 12 PM. *Stephen Russell, Albert Maguire, Jean Bennett, Paulo Falabella, Elliott Sohn, Vinit Mahajan, Daniel Chung, Kathleen Reape, Katherine High*. **Visual Function Questionnaire Responses in the Voretigene Neparvovec Phase 3 Trial**. Poster # A0378. Location: West Exhibition Hall

12:25 PM -12:40 PM. *Budd Tucker*. **Promise and Challenges of CRISPR for Curing Heritable Blindness**. Workshop Location: West 223/224

4 PM - 4:15 PM. *Christin Hanke-Gogokhia, Guillermo Lehmann, Yang Hu, Rohan Bareja, Micheal Ginsberg, Daniel Nolan, Alexandre Wojcinski, Robert Mullins, Gerard Luty, Olivier Elemento, Alexandra Joyner, Shahin Rafii, Ignacio Benedicto, Enrique Rodriguez-Boulan*. **Indian hedgehog (Ihh) secreted by adult choroid endothelial cells` regulates choroidal homeostasis and immune response**. Paper # 5238. Location: West 223/224

Thursday, May 2

8 AM - 9:45 AM. *Ankur Jain, Tasneem Sharma, Steven Whitmore, Todd Scheetz, Abbot Clark, Budd Tucker, John Fingert*. **Characterization of gene expression profiles of cultured human primary trabecular meshwork cells, transformed cell lines and human skin fibroblasts**. Poster # A0023. Location: West Exhibition Hall

8 AM - 9:45 AM. *Erin Burnight, Jessica Cooke, Darcey Klaahsen, Luan Streb, Louisa Affatigato, Robert Mullins, Edwin Stone, Budd Tucker.* **Development of a CRISPR dCas9-KRAB based strategy for treatment for dominant retinal degenerative blindness.** Poster # A0480. Location: West Exhibition Hall

8 AM - 9:45 AM. *Andrew Voigt, S. whitmore, Megan Riker, Katayoun Varzavand, Todd Scheetz, Edwin Stone, Budd Tucker, Robert Mullins.* **Transcriptional comparison of developing and developed human macular retina and RPE-choroid.** Poster # A0507. Location: West Exhibition Hall

8 AM - 9:45 AM. *Todd Scheetz, Andrew Voigt, Adam Deluca, Erin Burnight, S. whitmore, Budd Tucker, Edwin Stone, Robert Mullins.* **What makes the fovea so special?.** Poster # A0535. Location: West Exhibition Hall

10:15 AM - 10:30 AM. *Randy Kardon, Casey Gilmore, Johannes Ledolter, Alicia Fenske, Jan Full, Julie Nellis, Pieter Poolman, Mona Garvin, Jui-Kai Wang, Timothy Hendrickson, Kelvin Lim.* **Progressive Neurodegeneration of the Retinal Nerve Fiber Layer in Veterans with Mild Traumatic Brain Injury.** Paper # 6457 Location: West 221/222

10:15 AM - 12 PM. *Stephen Russell, Stephen Tsang (moderators).* **Advances in Retinal Gene Therapy and Stem Cells.** Paper Session. Location: East 8&15

12:15 PM - 1:45 PM. *Mitchell Dul, Allison McKendrick, Chris Johnson, Chota Matsumoto.* **Re-Engineering Clinical Perimetry.** SIG. Location: East 8&15