VISION SCIENCES CENTER

Upcoming Colloquium Presentations

There will be a break in VSC seminars for the summer.
Please see the ARVO schedule on page 2.
We begin again in September with:

September 6, 2017, 4pm

José-Alain Sahel, MD
Chairman, Department of Ophthalmology
The Eye and Ear Foundation Endowed Chair
University of Pittsburgh School of Medicine
http://ophthalmology.medicine.pitt.edu/

September 13, 2017, 4pm

Bart Borghuis, PhD
Assistant Professor
Department of Anatomical Sciences
& Neurobiology

http://retina.anatomy.upenn.edu/~bart/B_Sci/B_scientific.html

Recent Grant Awards

Ms. Samiyyah Sledge, a Ph.D. candidate in the Department of Physiology and Biophysics, is working on her dissertation with Douglas Borchman, Ph.D. Ms. Sledge was recently awarded a supplement to Dr. Borchman's NIH/National Eye Institute grant. Her research focuses on the mechanisms that underlie Dry Eye Disease.

About the colloquium and newsletter:

We want to hear news about your lab and research for our Visual Sciences Center bi-monthly newsletter. This lets us highlight your research, as well as seminars in Vision Sciences. Please send us information about new research initiatives, outside speakers of interest and any grant awards. Let us know when new people join your lab or department

The Visual Science Seminar Series (VSSS) is taking off for both the month of May because of the upcoming ARVO meeting and the rest of the summer. We will begin to meet again in September on the second Wednesday of the month in the DOVS basement conference room of the KY Lions Eye Center.

If you know of others that would like to be a part of the Center, please have them send us an email.

Contact us.

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erin.moody@louisville.edu

Grant updates

Samiyyah Sledge, BS & Douglas Borchman (DOVS)
National Institute of Health
"Tear Film Lipid Compositional, Structural, Functional, Relationships, and Dry Eye"

Brian Ceresa, PhD (PI) and Henry Kaplan, MD (MPI)
T35EY026509-01A1
Summer Vision Sciences Training Program

Presentations from the UofL Vision Science Center Members at ARVO

Sunday, May 7

"Usher Syndrome Protein, CIB2, is Essential for Murine Retinal Sensory Cells Maintenance and Function"
Saumil Sethna, Patrick A. Scott, Arnaud Giese, Mary A. Johnson, Saima Riazuddin, Steven L. Bernstein, Maureen A. McCall, Zubair Ahmed
8:30-10:15am

"MCP-1 Disrupts Morphologic and Functional Barrier Properties of Polarized Retinal Pigment Eepithelium"
Hidetaka Noma, Kevin McDonald, Masahiko Shimura, Shigeo Tamiya
1:30 – 3:15pm

"Inhibition of Recurrent Experimental Autoimmune Uveitis by Blockade of the Receptor for Advanced Glycation end pPoducts (RAGE)"
Juan Yuan, Tong Xiao, Yuan Zhao, Deming Sun, Henry J. Kaplan, Hui Shao
1:30 – 3:15pm

"Yap1 is Required for Maintaining Adult RPE Differentiation"
Qiutang Li, Patrick Scott, Eric Vukmanic, Lei Xue, Doug Dean, Henry Kaplan, Qingxian Lu
3:15 - 5:00pm

Monday, May 8

"Comparison of Non-Mydriatic Fundus Imaging Methods for Screening of Retinal Pathology in an Internal Medicine Practice"
Mehreen Adhi, Fabiana D Silva, Richard Lang, Raul Seballos, Roxanne Sukol, Steven Feinleib, Rishi P Singh
11:00 to 12:45pm

"Role of Epithelial-mesenchymal Transition in Proliferative Vitreoretinopathy"
Shigeo Tamiya, Henry Kaplan
1:00 – 2:30pm

Tuesday, May 9

"Distinct Glycine Receptor Subunit Composition across Retinal Ganglion Cell Types"
Ian S. Pyle, Chi Zhang, Maureen McCall
8:30 – 10:15am

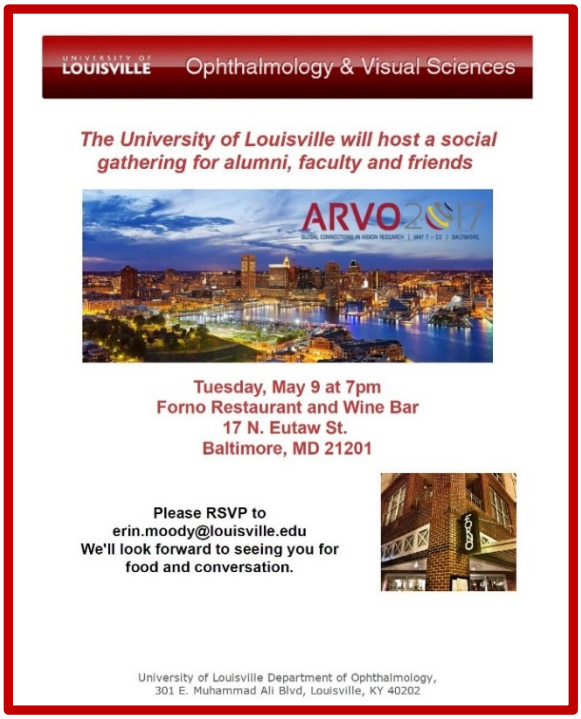
"Biochemical Analysis of Potential c-Cbl Antagonists Identified through an in Silico Screen"
Brian Ceresa
8:30 – 10:15am

"Contact of Rod Outer Segment Tips with the RPE Triggers Glucose Transport from the RPE to Cone Photoreceptors for OS Synthesis and Function"
Wei Wang, Yongqi Liu, Henry J. Kaplan, Douglas C. Dean
11:00 – 12:45pm

"Neuroprotective Effects of Inhibitors of Acid-Sensing Ion Channels (ASIC) in Optic Nerve Crush Model in Rodents"
Adnan Dibas, Dorota Stankowska, Brett Mueller, Oku Hidehiro, Thomas Yorio
3:45 – 5:30pm

'Beyond the Retina: Central Visual Circuits'
Peter Campbell
3:45pm - 4:05pm

"Eye Dominance and Acuity are Independent in a Murine Model of Amblyopia"
Aaron McGee, PhD
5:05-5:25pm



Wednesday, May 10

"Different Characteristics Predict Good Visual Outcomes in Patients with CRVO vs BRVO; Hypertension is Associated with Good Outcome in CRVO but not BRVO"
Raafay Sophie, Ann Clark, Na Lu, Carlos Quezada Ruiz, Peter Campochiaro
11:00 – 12:45pm

"Modeling the Pattern Electroretinogram in Patients with Primary Open-angle Glaucoma"
Kate Godwin, Brett Mueller, Joern B. Soltau, Judith Mohay-Ambrus, Paul DeMarco
3:45 -5:30 pm

"Production and Characterization of a Sustained Release System of Dasatinib to Prevent Proliferative Vitreoretinopathy"
Shigeo Tamiya, Rajat Chauhan, Rayeanne Balgemann, Hidetaka Noma, Kevin McDonald, Henry Kaplan, Martin O'Toole
4:45 – 5:00pm

Thursday, May 11

"Wind Instruments: A Cause of Chronic Elevation of Intraocular Pressure in a pediatric population"
Brett Mueller, Rebecca Raj, Rahul Bhola
8:30 – 10:15am

"Assessment of Resident Training and Preparedness for Cataract Surgery"
Sidharth Puri, MD[1], Divya Srikumaran, MD[2], Christina Prescott, MD, PhD[2], Jing Tian, MA[3], MS, Shameema Sikder, MD[2], [1]Kentucky Lions Eye Center, University of Louisville, Louisville, Kentucky, [2]Wilmer Eye Institute, Johns Hopkins University School of Medicine, [3]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland, USA
Published in JCRS March 2017.

DOVS Grand Rounds

Friday, May 5, 2017, 7am-8am
Joern Soltau, MD, Associate Professor
Department of Ophthalmology
& Visual Sciences
"Glaucoma Trials Update"
http://www.louisvilleeyedocs.com/member/joern-b-soltau-m-d/clinical-faculty/

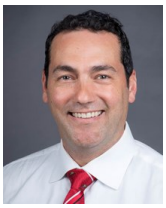
Friday, June 2, 2017, 7am-8am
Hilary Nickols, MD, PhD
Pathology Specialist, Norton Healthcare
Ocular Tumors

Recent Additions

Shunichiro Ueda, MD
Fellow in Dr. Shigeo Tamiya's lab
Department of Ophthalmology & Visual Sciences

Dr. Shunichiro Ueda board-certified ophthalmologist in Japan, with specialty in ocular oncology and vitreoretinal surgery. He has also been trained for pathological diagnosis and histological/immunohistological analyses of ocular samples. Dr. Ueda will be working with Dr. Shigeo Tamiya on his project on retinal fibrosis using the pig model for a year and a half.

In Case You Missed It!



Aaron McGee, PhD
Assistant Professor,
Department of Anatomical Sciences & Neurobiology
"Genetic dissection of plasticity required for recovery in murine amblyopia"
https://louisville.edu/medicine/departments/anatomy/facultylist/aaron-mcgee-phd

McGee Seminar Synopsis:
Amblyopia is a prevalent visual disorder caused by abnormal vision during childhood. Amblyopia, also known as 'lazy-eye', is characterized by enduring deficits in spatial vision including reduced acuity and depth perception. These changes cannot be explained by alterations in retinal function. A fundamental characteristic of amblyopia is that the onset of the disorder is confined to a sensitive or 'critical' period that ends in early adolescence. The prevailing view for the pathophysiology of amblyopia is that discordant vision between the two eyes uses neural plasticity within this critical period and exaggerates inputs from the unaffected eye at the expense of the impaired eye. The outcome of this competition results in impaired performance of the affected eye.

We emulate discordant vision by eye by lid suture (long-term monocular deprivation, LTMD) during a corresponding critical period in mice. This manipulation of visual input also alters the relative input from the two eyes and reduces visual acuity in eye with lid suture and abnormal visual input. We found that mice that lack a gene that encodes for the nogo-66 receptor 1 (ngr1) protein retain neural plasticity as adults. This means that they can recover from the defects imposed by lid suture and as adults can reestablish normal eye dominance, acuity and binocular vision. We are working to understand where and how ngr1 operates within the visual circuit and how it governs closure of the critical period. These efforts reveal that abnormal vision during the critical period alters eye dominance and impairs acuity, but these effects are independent, as correct eye dominance is not required to improve visual acuity. We believe that these results may help us to target drugs that will act on ngr1 with the goal to improve visual acuity in the affected eye of amblyopes.

I am grateful for the care and scientific endeavors provided at the University of Louisville Department of Ophthalmology & Visual Sciences!

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