



Affiliated with Tufts University School of Medicine

at TUFTS MEDICAL CENTER

and



***Vision Science Retreat
Thursday, May 31 &
Friday, June 1, 2018***

**Sackler Building,
145 Harrison Avenue
Presentations in room 114, posters in
room B09**

Thursday, May 31, Sackler B09

4:00-5:00 pm Presenters will put up posters

5:00-6:30 pm Poster viewing

Refreshments will be served.

Friday, June 1, 2018

8:00-8:40 Posters and Breakfast

8:45-8:50 **Drs. Jay Duker and Noorjahan Panjwani:**
Welcome

8:50-9:00 **Dr. Noorjahan Panjwani**, School of Medicine
and New England Eye Center, Tufts Medical
Center: "State of vision research at Tufts
University"

Session 1: Moderator: Dr. Noorjahan Panjwani

9:00-9:30 **Special Lecture: Dr. Peter Baci**, Senior
Director Ocular Disease, Editas Medicine,
Cambridge, "CRISPR genome editing for the
treatment of rare ocular diseases: Current
status and future aspirations"

9:30-9:45 **Dr. Jay Duker**, Chair, New England Eye Center, Tufts Medical Center, “Retina research 2018 - Trends, topics, and unmet needs”

9:45-10:00 **Dr. Nadia Waheed**, New England Eye Center, “Integrating imaging research into clinical trial endpoints”

10:00-10:15 **Dr. Daniela Ferrara**, New England Eye Center, “Image biomarkers in advanced age-related macular degeneration”

10:15-10:35 BREAK

10:40 Announcement of Poster Prize Winners

Competition judges:

Drs. Pedram Hamrah, Rajendra Kumar-Singh, and Driss Zoukhri

Session 2: Moderator: Dr. Pedram Hamrah

10:45-11:15 **Keynote Lecture: Dr. Michael Levin**, Tufts School of Arts and Sciences, Medford, “Quantitative modeling of endogenous bioelectric circuits to address birth defects and regenerative medicine”

11:15-11:30 **Dr. Chung-Jung Chiu**, HNRCA, Lab of Nutrition & Vision Research, “Nut intake and the risk of age-related macular degeneration in women”

11:30-11:45 **Dr. Rajendra Kumar-Singh**, School of Medicine, “Gene and protein therapies for ocular disease”

11:45-12:00 **Dr. Elizabeth Fini**, New England Eye Center, “Discovery approach to ocular hypertension”

12:00-1:00 LUNCH

Session 3: Moderator: Dr. James Kubilus

- 1:00-1:15 **Dr. Chiara Ghezzi**, *Kaplan Lab*, Biomedical Engineering, Medford, “Tissue engineered cornea systems - updates and future plans”
- 1:15-1:30 **Dr. Pedram Hamrah**, New England Eye Center, “Immunobiology of corneal plasmacytoid dendritic cells”
- 1:30-1:45 **Dr. Driss Zoukhri**, School of Dental Medicine, “Role of lacrimal gland myoepithelial cells in dry eye disease”
- 1:45-2:00 **Dr. Irmgard Behlau**, Tufts Medical Center, “Antimicrobial silk ocular drug delivery implant for chronic posterior segment diseases”
- 2:00-2:15 **Dr. James Kubilus**, School of Medicine, “Embryonic development of the anterior eye in the chicken”

2:15-2:45 BREAK

Session 4: Moderator: Dr. Allen Taylor

- 2:45-3:00 **Dr. Alice Rushforth**, CTSI, “Navigate the translational research landscape with Tufts CTSI”
- 3:00-3:15 **Dr. Michelle Liang**, New England Eye Center, “Argus II: Experience at the New England Eye Center”

3:15-3:30 **Dr. Sheldon Rowan**, HNRCA, Lab of Nutrition & Vision Research, “Aged mice lacking the Nrf2 antioxidant regulator develop cataracts and features of AMD and diabetic retinopathy”

3:30-3:45 **Dr. Vicki Chen**, New England Eye Center, “Recombinant human collagen VII reduces corneal inflammation and fibrosis after injury in the collagen VII deficient mouse”

Research Fellows:

3:45-4:00 **Dr. Anam Akhlaq**, Hamrah Lab, “Epidemiology and risk factors associated with subcategories of neuropathic corneal pain”

4:00-4:15 **Dr. Neslihan Dilruba Koseoglu**, Hamrah Lab, “The utilization of artificial intelligence for corneal nerve analyses of in vivo confocal microscopy images for the diagnosis of neuropathic corneal pain”

4:15-4:30 **Dr. Deepa Talreja**, Kumar-Singh Lab, “Development of a platform protein delivery system for retinal cells in vivo following intravitreal injection”

Tufts Vision Science Retreat

Poster Presentations

Sackler B09 (basement classroom)

Poster presentation guidelines:

Kindly put up your posters between 4:00 PM and 5:00 PM in Sackler B09 on Thursday, May 31, 2018

*Even number poster presenters should be present at their posters on May 31 from 5:00 PM to 6:00 PM.

**Odd number poster presenters should be at their posters on June 1 from 8:00 AM to 8:45 AM.

The poster number precedes each entry.

- 1** **Abdo Abdou-Slaybi**, *PI Hamrah*, “Adult and pup trigeminal ganglion neuronal cells exhibit differential expression of neuropeptide receptor kisspeptin receptor 1”
- 2** **Anam Aklaq**, *PI Hamrah*, “Change in discomfort- and vision-related symptoms of the ocular surface disease index in patients with neuropathic corneal pain”
- 3** **A. Yasin Alibhai**, *PI Waheed*, “Quantitative analysis of capillary non-perfusion in diabetic retinopathy using widefield OCT-angiography”
- 4** **Malvika Arya**, *PI Waheed*, “Parafoveal vessel density assessment by optical coherence tomography angiography (OCTA) in diabetic eyes”
- 5** **Irmgard Behlau**, “The search for antifungal prophylaxis after artificial cornea surgery”

- 6 **Eloy Bejarano**, *PI A. Taylor HNRCA*, “Glycative stress inhibits ubiquitin-dependent internalization and p62-dependent autophagic degradation of Xc43”
- 7 **William Binotti**, *PI Hamrah*, “Comparative assessment of semi-automated conjunctival methodologies for spectral domain anterior segment optical coherence tomography angiography”
- 8 **Zhiyi Cao**, *PI Panjwani*, “Treatment with a highly selective galectin-3 inhibitor, GAL-200-10, reduces both pathological corneal neovascularization and fibrosis”
- 9 **Bhanu Dasari**, *PI Kumar-Singh*, “Aptamer mediated protein delivery to retinal cells”
- 10 **Gabriela Dieckmann**, *PI Hamrah*, “Neuropathic corneal pain in post-cataract surgery patients”
- 11 **Gabriela Dieckmann**, *PI Hamrah*, “Efficacy of intranasal neurostimulation for peripheral pain among neuropathic corneal pain patients”
- 12 **Elizabeth Fini**, “Endocytosis inhibitors protect the ocular surface against damaging stress”
- 13 **Elizabeth Fini**, “Homeostatic role for GPR158 in modulating intraocular pressure (IOP)”
- 14 **Deshea Harris**, *PI Hamrah*, “Plasmacytoid dendritic cells and their role in vascular endothelial cell proliferation and differentiation in vitro”
- 15 **Arsia Jamali**, *PI Hamrah*, “A murine model of Alzheimer's disease shows gender-specific ocular surface findings”

- 16 **Arsia Jamali**, *PI Hamrah*, “Local adoptive transfer of plasmacytoid dendritic cells as a novel therapeutic approach for corneal neovascularization”
- 17 **Dilruba Koseoglu**, *PI Hamrah*, “Deep learning convolutional neural network for the classification and segmentation of in vivo confocal microscopy images”
- 18 **Binit Kumar**, *PI Kumar-Singh*, “Complement membrane attack complex activates the NLRP3 inflammasome in experimental autoimmune uveitis and inhibition by AAV mediated delivery of sCD59”
- 19 **Maria Lopez**, *PI Hamrah*, “Corneal pain has a negative impact on the quality of life of patients with neuropathic corneal pain”
- 20 **Opeoluwa Olukorede**, *PI A. Taylor HNRCA*, “Autophagy in the degradation of advanced glycation end products”
- 21 **Chris Or**, *PI Waheed*, “Incidence of vascularized drusen in non-exudative age-related macular degeneration using spectral domain optical coherence tomography (OCT) angiography”
- 22 **Gustavo Ortiz**, *PI Hamrah*, “Mechanisms of action of the leukocyte function-associated antigen-1 (LFA-1) antagonist lifitegrast in dry eye disease”
- 23 **Nicholas Pondelis** (*colleague will present*), *PI Hamrah*, “Detection and assessment of treatment efficacy of demodex blepharitis by in vivo confocal microscopy”
- 24 **Sheldon Rowan**, *PI A. Taylor HNRCA*, “Glycemically stressed Nrf2-null mice develop features of age-related macular degeneration and diabetic retinopathy”

- 25 **Alice Rushforth group**, *CTSI*, with Drs Geneve Allison and Dan Weiner “Programs, resources & services to foster collaborative, interdisciplinary research”
- 26 **Yashar Seyed-Razavi**, *PI Hamrah*, “Role of resident dendritic cells on corneal cold thermoreceptor function”
- 27 **Deepa Talreja**, *PI Kumar-Singh*, “Platform for the rapid delivery of protein therapeutics into retinal and corneal cells in vivo following intravitreal injection”
- 28 **Vanessa Yanez**, *PI Kumar-Singh*, “CRISPR/Cas9-based editing delivered in vitro using an aptamer for the treatment of retinitis pigmentosa P23H”