Tuesday
April 30, 2019

ARVO Annual Meeting
Registration
Main Lobby
7am – 6pm

Exhibit hours
8:30am – 5pm

MIT Poster Award
Competition
Exhibit Hall
4:15 – 5:45pm

All Posters
4:45 – 5:45pm

ARVO/Champalimaud
Lecture
ARVO Ballroom
5:45 – 6:45pm
Tuesday, April 30 – Minisymposia, papers, workshops/SIGs and lectures

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 – 8:30am</td>
<td>301</td>
<td>Diabetes and its Ocular Complications — SIG [RE, CL, CO, GL, GEN, MOI]</td>
<td>East 1</td>
</tr>
<tr>
<td>302</td>
<td></td>
<td>Cutting funding requirements of third world researchers by 3D-printers, drone slit-lamps and AIRBNB-style equipment sharing — SIG [RE]</td>
<td>East 8&amp;15</td>
</tr>
<tr>
<td>304</td>
<td></td>
<td>The New face of (presumed) Intraocular Tuberculosis — SIG [IM]</td>
<td>West 212-214</td>
</tr>
<tr>
<td>307</td>
<td></td>
<td>Metamorphopsia – an update on diagnostic methods, treatment, and evaluation of novel instruments and questionnaires — SIG [LV, RE, VI, VN]</td>
<td>West 221/222</td>
</tr>
<tr>
<td>308</td>
<td></td>
<td>Hyperreflective intraretinal spots (foci) in macular diseases: from bench to bedside — SIG [RE, RC, GEN, MOI]</td>
<td>West 223/224</td>
</tr>
<tr>
<td>309</td>
<td></td>
<td>Breakfast with the experts</td>
<td>Harbour Ballroom</td>
</tr>
<tr>
<td>8:45 – 10:30am</td>
<td>310</td>
<td>Non-Melanoma Tumors: Genetics and Therapeutics [AP, RC]</td>
<td>East 1</td>
</tr>
<tr>
<td>311</td>
<td></td>
<td>Diabetic retinopathy [PH]</td>
<td>East 2/3</td>
</tr>
<tr>
<td>312</td>
<td></td>
<td>Macular edema and neuroprotection-translational studies [RE]</td>
<td>East 8&amp;15</td>
</tr>
<tr>
<td>313</td>
<td></td>
<td>Microglia and Innate Immunity [RC]</td>
<td>East 11/12</td>
</tr>
<tr>
<td>314</td>
<td></td>
<td>Diabetic Retinopathy: Clinical Imaging [RE]</td>
<td>East Ballroom B</td>
</tr>
<tr>
<td>315</td>
<td></td>
<td>Gene variants in major ocular diseases [BI]</td>
<td>East Ballroom C</td>
</tr>
<tr>
<td>316</td>
<td></td>
<td>Dry Eye II [CO]</td>
<td>West 211</td>
</tr>
<tr>
<td>318</td>
<td></td>
<td>Glaucoma Genetics Development with advanced technology &amp; large datasets [GEN]</td>
<td>West 217-219</td>
</tr>
<tr>
<td>319</td>
<td></td>
<td><strong>Aging with Vision Loss: Understanding the aging consequences of visual impairment</strong> — Minisymposium [CL]</td>
<td>West 220</td>
</tr>
<tr>
<td>320</td>
<td></td>
<td><strong>Clinical outcomes and visual quality with retinal prosthetic vision restoration</strong> — Minisymposium [VI, EY, VN, LV]</td>
<td>West 223/224</td>
</tr>
<tr>
<td>321</td>
<td></td>
<td>Neurodegeneration [GL]</td>
<td>ARVO Ballroom</td>
</tr>
<tr>
<td>322</td>
<td></td>
<td>Visual Fields, Psychophysics, and Electrophysiology [GL]</td>
<td>Harbour Ballroom</td>
</tr>
<tr>
<td>10:45 – 11:30am</td>
<td>339</td>
<td>General Business Meeting</td>
<td>West 211</td>
</tr>
<tr>
<td>11:45am – 1:30pm</td>
<td>340</td>
<td>Retina/RPE New drugs, Mechanisms of action, and Toxicity [PH]</td>
<td>East 2/3</td>
</tr>
<tr>
<td>341</td>
<td></td>
<td>Update on endophthalmitis [RE]</td>
<td>East 8&amp;15</td>
</tr>
<tr>
<td>343</td>
<td></td>
<td><strong>Innate immune memory and the eye</strong> — Minisymposium [IM, AP, CO, RE]</td>
<td>East Ballroom A</td>
</tr>
<tr>
<td>344</td>
<td></td>
<td>AMD Translational studies [RE]</td>
<td>East Ballroom B</td>
</tr>
<tr>
<td>345</td>
<td></td>
<td>Highlights of OCT angiography [MOI]</td>
<td>East Ballroom C</td>
</tr>
<tr>
<td>346</td>
<td></td>
<td><strong>Lacrimal gland biology in homeostasis, disease, and repair</strong> — Minisymposium [CO]</td>
<td>West 211</td>
</tr>
<tr>
<td>347</td>
<td></td>
<td><strong>Unresolved issues in myopia</strong> — Minisymposium [AP, BI, CL, PH, RE, VI, VN]</td>
<td>West 212-214</td>
</tr>
</tbody>
</table>

Symposia, minisymposia and basic clinical lecture highlighted in **boldface**
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:45am – 1:30pm</td>
<td>348</td>
<td>Lens Development [LE]</td>
<td>West 217-219</td>
</tr>
<tr>
<td>(continued)</td>
<td>349</td>
<td>Visual Training and Rehabilitation [LV]</td>
<td>West 221/222</td>
</tr>
<tr>
<td>1:45 – 2:30pm</td>
<td>367</td>
<td>Weisenfeld Award and Lecture</td>
<td>ARVO Ballroom</td>
</tr>
<tr>
<td>2:45 – 4:30pm</td>
<td>368</td>
<td>Retinal Development [RC]</td>
<td>East 8&amp;15</td>
</tr>
<tr>
<td></td>
<td>369</td>
<td>RPE Biology in Health and Disease [RC]</td>
<td>East 11/12</td>
</tr>
<tr>
<td></td>
<td>370</td>
<td>Uveitis clinical epidemiology and therapeutics [IM]</td>
<td>East Ballroom A</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>DME Therapies and Outcomes [RE]</td>
<td>East Ballroom B</td>
</tr>
<tr>
<td></td>
<td>372</td>
<td>Retinal degeneration: molecular disease mechanisms [BI]</td>
<td>East Ballroom C</td>
</tr>
<tr>
<td></td>
<td>373</td>
<td>Corneal endothelium and Fuchs corneal dystrophy [CO]</td>
<td>West 211</td>
</tr>
<tr>
<td></td>
<td>374</td>
<td>Ganglion cells and beyond [VN]</td>
<td>West 212-214</td>
</tr>
<tr>
<td></td>
<td>375</td>
<td>Contact lens [CO]</td>
<td>West 217-219</td>
</tr>
<tr>
<td></td>
<td>376</td>
<td>Myopia: Behavior and interventions [CL]</td>
<td>West 220</td>
</tr>
<tr>
<td></td>
<td>377</td>
<td><strong>Mechanisms and biomechanics of traumatic retinal hemorrhage in children — Minisymposium [EY, RE]</strong></td>
<td>West 221/222</td>
</tr>
<tr>
<td></td>
<td>378</td>
<td>Vision assessment and modeling in health, and with impairment [VI]</td>
<td>West 223/224</td>
</tr>
<tr>
<td></td>
<td>379</td>
<td>Clinical Studies [GL]</td>
<td>ARVO Ballroom</td>
</tr>
<tr>
<td>4:15 – 5:45pm</td>
<td>390</td>
<td>MIT Outstanding Poster Award Competition</td>
<td>West Exhibition Hall</td>
</tr>
<tr>
<td>5:45 – 6:45pm</td>
<td>392</td>
<td>ARVO/Champalimaud Award Lecture</td>
<td>ARVO Ballroom</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Title</td>
<td>Board No.</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>8:45 - 10:30am</td>
<td>323</td>
<td>Stem Cells and Retinal Organoids: Disease modeling [RC]</td>
<td>A0033 - A0049</td>
</tr>
<tr>
<td></td>
<td>324</td>
<td>Stem Cell based Approaches for Transplantation and Therapies [RC]</td>
<td>A0050 - A0066</td>
</tr>
<tr>
<td></td>
<td>325</td>
<td>Gene Therapy and Delivery [PH]</td>
<td>A0083 - A0113</td>
</tr>
<tr>
<td></td>
<td>326</td>
<td>Retina genetics [GEN, CL]</td>
<td>A0210 - A0236</td>
</tr>
<tr>
<td></td>
<td>327</td>
<td>AMD [GEN, LV]</td>
<td>A0237 - A0254</td>
</tr>
<tr>
<td></td>
<td>328</td>
<td>AMD Translational Studies [RE, LE]</td>
<td>A0255 - A0281</td>
</tr>
<tr>
<td></td>
<td>329</td>
<td>OCTA in AMD/DR/Glaucoma/Ischemia [MOI]</td>
<td>A0342 - A0393</td>
</tr>
<tr>
<td></td>
<td>330</td>
<td>OCTA in Healthy/Aging Eyes [MOI]</td>
<td>A0394 - A0410</td>
</tr>
<tr>
<td></td>
<td>331</td>
<td>OCTA - Experimental Applications and Technical Improvements [MOI]</td>
<td>A0411 - A0441</td>
</tr>
<tr>
<td></td>
<td>333</td>
<td>Pediatric eye disease [CL]</td>
<td>B0041 - B0059</td>
</tr>
<tr>
<td></td>
<td>334</td>
<td>Genetics and Light dependent mechanisms in myopia [AP]</td>
<td>B0190 - B0210</td>
</tr>
<tr>
<td></td>
<td>335</td>
<td>Lens Physiology and Accommodation [LE, MOI]</td>
<td>B0211 - B0228</td>
</tr>
<tr>
<td></td>
<td>336</td>
<td>Aqueous humor Dynamics and IOP [PH]</td>
<td>B0355 - B0376</td>
</tr>
<tr>
<td></td>
<td>337</td>
<td>Corneal Epithelium Wound Repair and Healing [CO]</td>
<td>B0377 - B0407</td>
</tr>
<tr>
<td></td>
<td>338</td>
<td>Corneal neuropathy: Diabetic and other [CO]</td>
<td>B0476 - B0486</td>
</tr>
<tr>
<td>11:45 - 1:30pm</td>
<td>350</td>
<td>Stem Cells and Retinal Organoids: Development [RC, CL, GL]</td>
<td>A0001 - A0032</td>
</tr>
<tr>
<td></td>
<td>351</td>
<td>Drug delivery, drug and gene delivery system, implant delivery [PH]</td>
<td>A0114 - A0154</td>
</tr>
<tr>
<td></td>
<td>352</td>
<td>Gene therapy for ocular disorders [BI]</td>
<td>A0156 - A0197</td>
</tr>
<tr>
<td></td>
<td>353</td>
<td>Genome, chromatin structure and functional genomics [BI]</td>
<td>A0198 - A0209</td>
</tr>
<tr>
<td></td>
<td>354</td>
<td>AMD Imaging [RE, VN]</td>
<td>A0282 - A0341</td>
</tr>
<tr>
<td></td>
<td>355</td>
<td>Uveitis and scleritis - clinical therapeutics and checkpoint inhibitors [IM]</td>
<td>A0540 - A0576</td>
</tr>
<tr>
<td></td>
<td>357</td>
<td>Tumors: Eyelids, Orbit, Ocular Surface, Conjunctiva, and Ocular Adnexa [AP, CO, EY]</td>
<td>A0595 - A0627</td>
</tr>
<tr>
<td></td>
<td>358</td>
<td>Neuro-ophthalmology: Genetics and Investigational modalities [EY]</td>
<td>B0001 - B0019</td>
</tr>
<tr>
<td></td>
<td>359</td>
<td>Pediatric Ophthalmology [EY]</td>
<td>B0020 - B0041</td>
</tr>
<tr>
<td></td>
<td>360</td>
<td>Consequences of vision impairment [CL]</td>
<td>B0060 - B0071</td>
</tr>
<tr>
<td></td>
<td>361</td>
<td>DME anti-VEGF I [RE]</td>
<td>B0148 - B0178</td>
</tr>
<tr>
<td></td>
<td>362</td>
<td>Retinal Laser Therapeutic Applications and Innovations [RE]</td>
<td>B0179 - B0189</td>
</tr>
<tr>
<td></td>
<td>363</td>
<td>IOLs: Calculations, Vision, Implantation, Multifocals [VI]</td>
<td>B0229 - B0274</td>
</tr>
<tr>
<td></td>
<td>364</td>
<td>Surgery and Wound Healing I [GL]</td>
<td>B0275 - B0314</td>
</tr>
<tr>
<td></td>
<td>365</td>
<td>Pharmacologic Interventions and Cellular Mechanisms [GL, RE]</td>
<td>B0315 - B0354</td>
</tr>
<tr>
<td></td>
<td>366</td>
<td>Corneal Endothelium II [CO]</td>
<td>B0487 - B0517</td>
</tr>
<tr>
<td>2:45 - 4:30pm</td>
<td>381</td>
<td>Retina/RPE transplantation and Stem Cell [RE, LV]</td>
<td>A0067 - A0082</td>
</tr>
<tr>
<td></td>
<td>382</td>
<td>Retinal disease epidemiology [CL]</td>
<td>A0442 - A0475</td>
</tr>
<tr>
<td></td>
<td>383</td>
<td>Retinal Degenerations - Cilia and Ciliopathies [RC]</td>
<td>A0476 - A0489</td>
</tr>
<tr>
<td></td>
<td>384</td>
<td>Retinal Microglia and Neuroinflammation [RC, GL]</td>
<td>A0515 - A0539</td>
</tr>
<tr>
<td></td>
<td>385</td>
<td>Visual Impairment - Assistive Devices and Rehabilitation [LV]</td>
<td>B0072 - B0103</td>
</tr>
<tr>
<td></td>
<td>386</td>
<td>Retinal Vascular Diseases I [RE]</td>
<td>B0104 - B0147</td>
</tr>
<tr>
<td></td>
<td>387</td>
<td>Corneal Tissue Engineering and Regenerative Medicine [CO]</td>
<td>B0408 - B0465</td>
</tr>
<tr>
<td></td>
<td>388</td>
<td>Corneal Development and Cell Differentiation [CO]</td>
<td>B0466 - B0475</td>
</tr>
<tr>
<td></td>
<td>389</td>
<td>Tear film, Lacrimal and Meibomian Glands [CO, EY]</td>
<td>B0518 - B0557</td>
</tr>
</tbody>
</table>

Poster board numbers correspond to poster location in Exhibit Hall; A = Poster Area A , B = Poster Area B
East 1
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Retina / Clinical/Epidemiologic Research / Cornea / Genetics / Glaucoma / Multidisciplinary Ophthalmic Imaging / Retina

301 Diabetes and its Ocular Complications - SIG

Diabetic mellitus (DM) is a major cause of morbidity and mortality, which caused by its various complications. The ocular complications are the main cause of blindness in diabetes, which has negative impacts on patients’ quality of life and carry high economic burden. Diabetic retinopathy, the leading cause of visual loss in working-aged adults in the developing and developed countries, is the most common and specific ocular complication of DM. Other major ocular complications affecting vision caused by DM are ocular surface diseases (dry eye syndrome, diabetic keratopathy), open angle glaucoma, angle closure glaucoma, ischemic optic neuropathy and cataract. In this SIG session, we will invite experts in the fields of retina, glaucoma, cornea, cataract, ocular electrophysiology and gene therapy to address the pathogenesis, the promising predictive and prognostic biomarkers, and the potential new treatment strategies (e.g., gene therapy) of diabetic ocular complications.

Moderators: Xinyuan Zhang and William F. Mieler

Moderator. Xinyuan Zhang. Beijing Institute of Ophthalmology, Beijing Tongren Hospital, Beijing, China


Diabetes and Glaucoma. Ningli Wang. Beijing Institute of Ophthalmology, Beijing Tongren Hospital, Beijing, China


Gene therapy for ocular diseases. Catherine Tsifidis. Gene therapy and Regeneration Group, Ottawa Eye Institute, Ontario, Canada

panelist: management of proliferative diabetic retinopathy. Paisan Ruamviboonsuk. Ophthalmology, Rajavithi Hospital, Thailand

Diabetic Keratopathy. Jing Hong. Ophthalmology, Peking University Third Hospital, China

panelist-discussion. Yi-Ting Hsieh. Ophthalmology, National Taiwan University Hospital, Taiwan

Diabetic microvascular complications. Xinyuan Zhang. Beijing Institute of Ophthalmology, Beijing Tongren Hospital, Beijing, China

East 8&15
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Retina

302 Cutting funding requirements of third world researchers by 3D-printers, drone slit-lamps and AIRBNB-style equipment sharing - SIG

Recent technological advances – particularly in the open hardware movement – may significantly lower financial barriers to modern medicine and science for researchers in remote locations and developing nations. What are these technologies? How are they already being used? What are their strengths and limitations?

The main goal of this session is to explore novel technologies to help research and medical communities with limited resources. Low-cost 3D printers have become available in recent years. Along with open-source blueprint files, microcontrollers and a few key components, these printers can be used to create research, diagnostic and imaging equipment at an affordable cost. Smartphones have turbo-charged miniaturized computing and app development. These technologies can be used in surprising ways both to access remote communities (via drones) and to administer surprisingly sophisticated healthcare on site.

In addition to formal presentations on these topics, the session will facilitate networking for an AirBnB-style online booking system to share clinical and laboratory resources in regions with limited finances.

Moderators: Ashik Mohamed and Muhammad Abdulrazik

Global Members Committee Chair. Daniel L. Rathbun. 1Institute for Ophthalmic Research, University of Tuebingen, Tuebingen, Germany; 2Ophthalmology Department, Eye Research Center, Henry Ford Hospital, Detroit, MI

TREND (Teaching and Research in Natural sciences for Development) in Africa. Faborode O. Samuel. Bingham University, Nigeria


Drones to serve isolated communities. Mukesh Taneja. Tej Kohli Cornea Institute, L V Prasad Eye Institute, Hyderabad, Telangana, India

East 11/12
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Multidisciplinary Ophthalmic Imaging Group / Cornea / Glaucoma / Retina

303 OCT Guided and Robotically Enabled Ophthalmic Surgery - SIG

Microscope visualization with OCT and microscale manipulation with robots both represent recent revolutionary changes to “traditional” ophthalmic surgery with manual manipulation and a stereo microscope. In this SIG, we will discuss the impact and future of intraoperative OCT and robotic assistance in ophthalmic surgery. A panel of leading OCT and robotic technologists and clinicians will discuss current research in intraoperative OCT, robotic surgery, and the future of ophthalmic surgery.

Moderator: Joseph A. Izatt (Organizer). Anthony N. Kuo. 1Ophthalmology, Duke University Eye Center, Durham, NC; 2Biomedical Engineering, Duke University, NC

Innovations in Intraoperative OCT. Cynthia A. Toth. 1Ophthalmology, Duke University Eye Center, Durham, NC; 2Biomedical Engineering, Duke University, NC

Robotic Eye Surgery: From the lab to the operating theatre. Thomas Edwards. 1Nuffield Laboratory of Ophthalmology, University of Oxford, United Kingdom; 2Royal Victorian Eye and Ear Hospital, Victoria, Australia


Real-time intra-operative OCT guided robot-assisted surgical operation. Jin Kang. 1Electrical and Computer Engineering, Johns Hopkins University, MD; 2Dermatology, Johns Hopkins University, MD

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Tuesday – Workshops/SIGs

West 212-214
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Immunology/Microbiology

304 The New face of (presumed) Intraocular Tuberculosis - SIG

Objective: To disseminate expert consensus based guidelines for diagnosis and management of presumed intraocular tuberculosis based on collaborative ocular tuberculosis study (COTS).

Description: Several unresolved limitations have enabled the re-emergence of both pulmonary and extrapulmonary TB in neglected populations of developed and developing countries alike. Despite progress in coordinated efforts to address pulmonary TB, the approach to presumed intraocular TB remains controversial due to a lack of robust data and limited consensus. The Index TB guidelines for extrapulmonary TB in India, for instance, have not included presumed intraocular TB due to a lack of adequate evidence. This omission has resulted in barriers for ophthalmologists to initiate ATT in these patients. The difficulty in the management of intraocular TB is contributed by its ability to affect any tissue in the eye and the need for cautious interpretation of investigations. The proposed SIG will discuss the current controversies and attempts to address these challenges.

Moderators: Quan D. Nguyen and Vishali Gupta

Collaborative Ocular Tuberculosis Study Consensus (COTS CON) guidelines for initiating antitubercular therapy (8 min). Rupesh V. Agrawal. Ophthalmology, Tan Tock Seng Hospital, Singapore, Singapore

What we know (and don’t know) about the epidemiology of ocular tuberculosis (8 min). John Kempen. Department of Ophthalmology, Massachusetts Eye and Ear/Harvard Medical School, Boston, MA

Different faces and names of tubercular uveitis - A clinical confrontation (8 min). Peter J. McCluskey. Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia

Diagnosis of presumed intraocular tuberculosis - A pandora’s box (8 min). Aniruddha Agarwal. Post Graduate Institute of Medical Education and Research, India

West 217-219
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Retinal Cell Biology / Biochemistry/Molecular Biology / Genetics / Physiology/Pharmacology / Retina

305 Selective autophagy: a new therapeutic target for retinal diseases - SIG

Autophagy is a degradative pathway that cells use to recycle and eliminate intracellular components. Autophagy malfunctioning underlies the basis of numerous human pathologies including neurodegenerative diseases. The role of autophagy in eye diseases is currently being investigated along with the possibility of modulating it as a new therapeutic strategy for retinal and other eye diseases. This SIG will discuss recent conceptual advances about selective autophagy pathways in the eye, how they can be modulated and their implications for cell survival in the context of AMD and other retinal diseases.

Moderator: Patricia Boya

RPE proteostasis involves crosstalk between the proteasome and autophagy. Deb A. Ferrington. Department of Ophthalmology and Visual Neurosciences, University of Minnesota, Minneapolis, MN

Selective Autophagy in aging-related degenerative diseases. Ana M. Cuervo. 1Department of Developmental and Molecular Biology, Albert Einstein College of Medicine, New York, NY; 2Institute for Aging Studies, Albert Einstein College of Medicine, Bronx, NY *CR

Chaperone Mediated Autophagy in retinal photoreceptors. Raquel Gomez Sintes. 1Department of Developmental and Molecular Biology, Albert Einstein College of Medicine, New York, NY; 2Centro Investigaciones Biologicas, CIB-CSIC, Madrid, Madrid, Spain

West 220
Tuesday, April 30, 2019 7:00 AM-8:30 AM
Clinical/Epidemiologic Research / Anatomy and Pathology/Oncology / Biochemistry/Molecular Biology / Cornea / Eye Movements/Strabismus/ Amblyopia/Neuro-Ophthalmology / Genetics / Glaucoma / Immunology/Microbiology / Lens / Low Vision / Multidisciplinary Ophthalmic Imaging / Physiology/Pharmacology / Retina / Retinal Cell Biology / Visual Neuroscience / Visual Psychophysics/Physiological Optics

306 Patient Engagement in Ophthalmology Research - SIG

The role of patients in health research is shifting from study subjects to authentic research partners. Referred to as patient engagement in research, this partnership occurs when patients meaningfully and actively collaborate in the governance, priority setting and conduct of research, as well as in summarizing, distributing, sharing and applying its resulting knowledge. In this context, ‘patient’ refers to individuals with personal experience of a health issue and their informal caregivers. Patient engagement has shown to increase democratization of the research process and improve study enrolment and retention rates. In addition, when research engages patients as partners, results are more credible and acceptable to all stakeholders, and increase the likelihood that the knowledge is translated into real-world settings.

This Special Interest Group will explore novel models and highlight best practices for patient engagement in ophthalmic research. International examples of patient engagement strategies, priority setting partnerships, and methods to uncover optimal patient reported outcome measures will be discussed, covering a range of pediatric and adult ophthalmic conditions.

Moderator: Helen Dimaras

The Canadian Retinoblastoma Patient Engagement Strategy. Helen Dimaras. The Hospital for Sick Children, Toronto, Ontario, Canada

Overcoming barriers to the involvement of deafblind people in conversations about research. Andi Skilton. UCL Institute of Ophthalmology, United Kingdom

Organizer. Helen Dimaras. The Hospital for Sick Children, Toronto, Ontario, Canada

Discovering the patient voice in ophthalmology. Alastair K. Denniston. University of Birmingham, United Kingdom
West 221/222

Tuesday, April 30, 2019 7:00 AM-8:30 AM

Low Vision Group / Retina / Visual Neuroscience / Visual Psychophysics/Physiological Optics

307 Metamorphopsia – an update on diagnostic methods, treatment, and evaluation of novel instruments and questionnaires - SIG

While Best Corrected Visual Acuity (BCVA) may capture resolution of high-contrast letters, patients with metamorphopsia have visual distortions not captured in the traditional acuity charts that use optotypes (Snellen and EDTRS). The difference between what is measured and what is seen may impact the patients’ quality of life even in the presence of good visual acuity.

In future clinical trials for treatments of vitreoretinal interface disorders it would be helpful to develop qualitative measures and a quantitative system to evaluate metamorphopsia beyond those currently available (e.g., M charts and Amsler Grids). The special interest group proposed will focus on our current understanding of the pathophysiology of metamorphopsia and discuss current and future methods to assess it. The goal will be to develop validated endpoints and outcome measures (incl. patient-reported outcome measurements (PROMs)) that can be incorporated into the design of clinical trials. Ultimately new information about assessing and quantitating metamorphopsia may find a place in the regulatory review process.

Moderator: Clara Song

N/A. Clara Song. Medical Affairs, Oxurion, Lake Elsinore, CA *CR

Pathophysiology and retinal loci of metamorphopsia. Srinivas R. Sadda. 1Doheny Eye Institute, Los Angeles, CA; 2Dept. of Ophthalmology, Geffen School of Medicine, UCLA, Los Angeles, CA *CR

Overview of metamorphopsia: causes, prevalence, current diagnostic instruments, questionnaires, and their correlations with quality of life. Emily Wiecek. Boston Children’s Hospital, Boston, MA

Burden of metamorphopsia: an observational study on prevalence and impact of metamorphopsia on vision-and health-related quality of life: The MeMo study. Praveen Patel. 1NIHR Biomedical Research Centre, Moorfield Eye Hospital, London, United Kingdom; 2UCL Institute of Ophthalmology, London, United Kingdom *CR

Work-up of metamorphopsia for clinical decision making: flow chart and case studies. Jean-Pierre Hubschman. Dept. of Ophthalmology, Jules Stein Eye Institute, UCLA, Los Angeles, CA *CR

West 223/224

Tuesday, April 30, 2019 7:00 AM-8:30 AM

Retina / Genetics / Multidisciplinary Ophthalmic Imaging / Retinal Cell Biology

308 Hyperreflective intraretinal spots (foci) in macular diseases: from bench to bedside - SIG

Hyperreflective intraretinal spots/foci (HRS) are a new OCT biomarker of both inflammatory and degenerative retinal (mainly macular) disorders. HRS are detectable by means of structural OCT in different retinal layers: at the level of the outer retina in age-related macular degeneration, and in the inner retina in so-called vascular diseases. There is still no consensus about the pathogenesis of HRS. The most common hypotheses include: retinal inflammation markers (activated and aggregated microglial cells), precursors of hard exudates, degenerated photoreceptor cells, anteriorly migrated retinal pigment epithelium cells and retinal vessels. Therefore, different pathophysiologic processes, located into the retina but also into the choroid may be responsible for this new OCT sign. More recently, clinicopathologic correlations of HRS have been reported, using ex vivo imaging and histologic analysis. The possible pathogenesis and the clinical features of HRS will be discussed using different perspectives in most common macular diseases (age-related macular degeneration and diabetic retinopathy).

Moderator: David Sarraf

Organizer. Elisabetta Pilotto. Department of Ophthalmology, University of Padova, Padova, Italy


Hyperreflective OCT spots: a clinical biomarker of age-related macular degeneration. Ursula Schmidt-Erfurth. Department of Ophthalmology, Medical University of Vienna, Vienna, Austria *CR

Hyperreflective intraretinal spots: a clinical OCT biomarker in diabetic retinopathy. Edoardo Midena. 1Department of Ophthalmology, University of Padova, Padova, Italy; 2IRCCS – Fondazione Bietti, Rome, Rome, Italy

Harbour Ballroom

Tuesday, April 30, 2019 7:00 AM-8:30 AM

309 Breakfast with the experts

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Anatomy and Pathology/Oncology
310 Non-Melanoma Tumors: Genetics and Therapeutics

Moderators: Emine Kilic, Hans E. Grossniklaus and Jens F. Kilgaard

2776 — 8:45 Single cell vitreous analysis increases sensitivity of MYD88-LOF detection and allows detailed genotyping. Wei Jian Tan1, M. M. Wang2, P. Castagnoli3, A. S. Chan4, T. Lim1. 1A. Menarini Biomarkers Singapore Pte Ltd; 2Translational Ophthalmic Pathology Platform, Singapore Eye Research Institute *CR

2777 — 9:00 Treatment of vitreo-retinal lymphoma - 20 years of experience. Jacob Pe’er1, Z. Habot-Wilner2, S. Frenkel1. 1Ophthalmology, Hadassah-Hebrew Univ Med Ctr; 2Ophthalmology, Tel Aviv Medical Center; 3Sackler Faculty of Medicine, Tel Aviv University

2778 — 9:15 Intravitreal melphalan for vitreoretinal lymphoma. Li-Anne S. Lim1, L. A. Dalvin2, Di Ancona-Lezama3, M. Chang4, A. Mashayekhi5, C. L. Shields1. 1Ocular Oncology, Wills Eye Hospital; 2Ocular Oncology, Mayo Clinic

2779 — 9:30 Epidemiology of Conjunctival Carcinoma: A National Population Study. Anthony K. Ma1, O. M. Ahmed2, J. Lee2, R. Pointdujour-Lim3. 1Yale School of Medicine; 2Department of Ophthalmology and Visual Science, Yale School of Medicine; 3Smilow Yale Cancer Center

2780 — 9:45 Basal Cell Carcinoma-Associated Retinopathy and Optic Neuropathy (BARN): A Novel Paraneoplastic Entity. Alessandro Iannaccone1, F. Birnbaum1, R. Champaigne2, G. Adams3. 1Duke Eye Center, Duke University Medical Center; 2Casey Eye Institute, Ocular Immunology Lab, Oregon Health Sciences University

2781 — 10:00 Universal Reflex Referral to VHL. Comprehensive Clinical Care Center of Patients Presenting to Ophthalmologists Leads to Dramatic Improvement in Guideline-concordant Screening: Results of a Pilot Study. Alexis Flowers1, K. Rathmell1, D. Friedman1, A. B. Daniels1. 1Vanderbilt Eye Institute; 2Hematology/oncology, Vanderbilt University Medical Center


2783 — 8:45 A potential role for Src during early experimental diabetic retinopathy? Jurgen Sergeys1, I. Etienne1, E. Lefebvre1, I. Van Hove2, T. Van Bergen2, L. De Groef2, M. Porc2, J. Feyer1, L. K. Moons1. 1Biology, KU Leuven; 2Oxurion *CR

2784 — 9:00 Connexin hemichannel block shuts down inflammation in an animal model of chronic diabetic retinopathy to improve structural and functional outcomes. Colin R. Green1, M. N. Mat Nor2, O. O. Mugisho1, D. R. Rupenthal1, D. M. Squirrell1, M. L. Acosta2. 1Ophthalmology, Univ of Auckland; 2School of Optometry, University of Auckland *CR


2787 — 9:45 First-generation small molecule antagonists of profilin1 suppresses pathological retinal neovascularization. Xavier Guillonneau1, D. M. Gau1, V. Lignaud1, J. Sturm2, P. Francoeur2, D. Koes3, P. Roy1. 1Institut de la Vision, INSERM; 2Bioengineering, University of Pittsburgh; 3Computational and Systems Biology, University of Pittsburgh

2788 — 10:00 Targeting LXR using N,N-dimethyl-3-hydroxycholamidamide (DMHCA) provides protection from development of diabetic retinopathy in db/db mice. Cristiano Pedrozo Vieira1, A. F. Longhini1, S. L. Calzi2, B. Asare-Bediako3, M. Dupont1, J. V. Busl3, M. B. Grant1. 1University of Alabama at Birmingham; 2Michigan state University

2789 — 10:15 Influence of ranibizumab, laser photocoagulation or combination therapy on high-risk proliferative diabetic retinopathy. Katrin Lorenz1, G. E. Lang2, A. Stahl3, C. Quiering4, L. Sander4, G. Spitka5, S. Liakopoulos5. 1Department of Ophthalmology, University Medical Center Mainz; 2University Eye Hospital Ulm; 3University Eye Hospital Greifswald; 4Department of Ophthalmology, University of Cologne; 5Novartis Pharma GmbH; 6St. Franziskus-Hospital Münster *CR, ▼


2791 — 9:00 Complement C3 mediates vascular endothelial growth factor (VEGF) induced retinal edema but not visual dysfunction in mice. Allen C. Clermont1, A. Feener1, N. Murugesan2, L. P. Aiello1, E. Feener1. 1Beetham Eye Institute, Joslin Diabetes Center; 2Kovkista Pharmaceuticals, Inc; 3Ophthalmology, Harvard Medical School *CR


2793 — 9:30 NAD+ supplementation attenuates photoreceptor degeneration and reduces inflammation in a mouse model of retinal degeneration. Xiaohong N. Chen1, G. A. Moustafa1, P. Barbin2, J. W. Miller1, D. Vavvas2,3. 1Department of Ophthalmology, Massachusetts Eye and Ear Infirmary, Harvard Medical School; 2Angiogenesis Laboratory, Department of Ophthalmology, Massachusetts Eye and Ear Infirmary, Harvard Medical School


2795 — 10:00 Adjuvant ursodeoxycholic acid for retinal detachment: a potential neuroprotective therapy. Alejandra Daruich1,2, E. Picard1, M. Zolot1, H. Henry1, J. H. Boatright, F. F. Behar-Cohen1. 1Paris Descartes University- U1138; 2Hôpital Necker-Enfants Malades; 3University of Lausanne; 4Emory University

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Tuesday, April 30, 2019 8:45 AM-10:30 AM

Retinal Cell Biology
313 Microglia and Innate Immunity

Moderators: Malia M. Edwards and Margaret M. DeAngelis

2796 — 8:45  Age-dependent development of retinal microgliopathy in LysMCreER^+^SOD3mice. Xuan Du, M. Chen, H. Xu. Centre for Experimental Medicine, Queen’s University Belfast

2797 — 9:00  Microglia Repopulation Ameliorates Aging Phenotypes in Retinal Microglia and Neurons. Lian Zhao, J. Cueva Vargas, J. Liao, W. T. Wong. National Eye Institute

2798 — 9:15  Inhibition of NLRP3 does not protect against photo-oxidative damage-induced retinal degeneration. Yvette Wooff^1, N. Fernandez^1, J. Wong^2, C. Dietrich^2, R. Aggio- Bruce^1, J. A. Chu-Tan^1, S. Doyle^1, A. Robertson^1, S. Mat^1, R. C. Natoli^1, 2. Neuroscience, The Australian National University; The ANU Medical School; Trinity College Dublin; University of Queensland; Immunology, Australian National University


2800 — 9:45  RNA-Seq Reveals Alterations in Homeostatic Microglial Function during Inflammation and Resolution. Oliver H. Bell^1, D. Copland^2, A. Ward,^2, C. J. Chu^1, C. Lange^2, A. D. Dick^1, 2. Translational Health Sciences, University of Bristol; Eye Center, Medical Center, Faculty of Medicine, University of Freiburg; UCL Institute of Ophthalmology & NIHR Biomedical Research Centre for Ophthalmology at Moorfields Eye Hospital

2801 — 10:00  Complement targets newborn retinal ganglion cells for phagocytic elimination by microglia. Monica L. Vetter^1, 2, S. R. Anderson^1, J. Zhang^1, M. R. Steele^1, C. O. Romero^1, A. Kautzman^1, D. Schafer^1. Neurobiology & Anatomy, University of Utah; Ophthalmology and Visual Sciences, University of Utah; Neurobiology, University of Massachusetts Medical School

2802 — 10:15  Complement is required for retinal ganglion cell axon regeneration following mouse optic nerve injury. Shari Peterson^1, Y. Li^1, K. A. Wong^2, E. Benowitz^2. Neurosurgery, Boston Childrens Hospital; F. M. Kirby Neurobiology Center, Harvard Medical School

East Ballroom B
Tuesday, April 30, 2019 8:45 AM-10:30 AM

Retina
314 Diabetic Retinopathy: Clinical Imaging

Moderators: Barbara A. Blodi, Richard B. Rosen and Amani A. Fawzi


2804 — 9:00  Evaluation of Quantitative Ultra-widefield Fluorescein Angiography Metrics and Diabetic Macular Edema Features. Alice C. Jiang^1, S. K. Srivastava^1, J. Ross^1, S. Sharma^1, J. L. Reese^1, J. P. Ehlers^2. Case Western Reserve University School of Medicine; Cleveland Clinic

2805 — 9:15  Classification of Regions of Nonperfusion on Ultra-widefield Fluorescein Angiography in patients with Diabetic Macular Edema. Mengyuang Fang^1, 2, C. McNeil^1, M. S. Ip^1, C. C. Wykoff^1, K. Wang^1, K. G. Falavari^3, D. M. Brown^1, J. V. Hemert^1, S. R. Sadda^1. Doheny Eye Institute; Ophthalmology, University of California, Los Angeles; Retina Consultants of Houston; Optos PLC

2806 — 9:30  Deep learning algorithm for patient-level prediction of diabetic retinopathy (DR) response to vascular endothelial growth factor (VEGF) inhibition. Filippo Arcadu^1, 2, A. Maunz^1, 2, J. R. Willis^3, 4, M. Benmansour^1, 2, A. Maunz^1, 2, J. R. Willis^3, 4, M. Lemaire^5, 2, Z. Haskova^3, 4. Roche Personalized Healthcare, Genentech, Inc

2807 — 9:45  Quantifying Spatial and Temporal Vascular Perfusion Changes Before and After Intravitreal Anti-VEGF Injections in Proliferative Diabetic Retinopathy(PDR). Richard B. Rosen^1, 2, J. Andrade^1, 2, D. B. Zhou^1, 2, M. V. Castanos^1, 2, R. Weitz^1, T. Y. Chui^1, 2. Ophthalmology, New York Eye & Ear Infirmary; Ophthalmology, Icahn School of Medicine at Mount Sinai

2808 — 10:00  Changes of individual Diabetic Retinal Neovascularizations under Treatment with intravitreal Anti-VEGF or Laser using Optical Coherence Tomography Angiography. Katrin Fasterl, C. Haensli, S. A. Zweifel. Ophthalmology, University Hospital Zurich

East Ballroom C
Tuesday, April 30, 2019 8:45 AM-10:30 AM

Biochemistry/Molecular Biology
315 Gene variants in major ocular diseases

Moderators: Alison J. Hardcastle, Dror Sharon and Elfride De Baere

2809 — 8:45  Allele Frequency Analysis of Variants Reported to cause Autosomal Dominant Retinal Diseases Revealed that 17% of Genes and 9% of Mutations are Unlikely Pathogenic. Dror Sharon, M. Hanany. Department of Ophthalmology, Hadassah-Hebrew University of Medical Care

2810 — 9:00  Biallelic loss-of-function alleles of the SLC11 gene cause a variable phenotypic spectrum of retinal ciliopathies. Kristof Van Schil^1, R. L. Taylor^1, G. Ascard^2, B. Guillemin^1, L. Lambrecht^1, F. Depape^1, B. P. Leroy^3, G. Black^1, E. De Baere^1. Center for Medical Genetics, Ghent University and Ghent University Hospital; Manchester Centre for Genomic Medicine, Manchester Academic Health Sciences Centre, Manchester University NHS Foundation Trust, St Mary’s Hospital; Department of Ophthalmology, Centre Universitaire de Charleroi; Division of Evolution and Genomic Sciences, Neuroscience and Mental Health Domain, School of Biological Sciences, Faculty of Biology, Medicine and Health, University of Manchester; Division of Ophthalmology, The Children’s Hospital of Philadelphia; Department of Ophthalmology, Ghent University Hospital

2811 — 9:15  CPH1, a new gene for Dominant Optic Atrophy. Cecile Delettre Cribaillet^1, C. Mégé^1, X. Zanolongh^1, E. A. Meunier^1, M. O. Pequignot^1, M. Quiles^1, C. Hamel^1, A. Roubertie^1, N. Weisschu^1, B. Bocquet^1, G. Lenaerts^1, G. Manes^1, Wissinger^1, M. Vilarrubias^1, H. Spelbrink^1, E. Sarzi^2. INSERM U1051; University of Montpellier; Radboud Center for Mitochondrial Medicine; Centre of Reference for Genetic Sensory Diseases, CHU; Centre for Ophthalmology; Clinique Jules Verne; Molecular Biology Institute Barcelona; Institut MitoVasc; Université d’Angers

2812 — 9:30  Target 5000: Target Capture Genotyping of Retinal Degenerations in Ireland. Adrian Dockery^1, N. C. Wynne^1, K. Stephenson^1, W. Hauean, P. Humphries^1, G. Silverst^1, M. Carrigan^1, D. J. Keegan^1, P. F. Kenna^1, G. Farrar^1. Trinity College Dublin; Ophthalmology, The Mater Misericordiae Hospital; Ophthalmology, Royal Victoria Eye and Ear Hospital; Centre for Experimental Medicine, Queen’s University Belfast
Towards comprehensive identification and functional characterization of deep-intronic ABCA4 variants in 1000 Stargardt disease cases. Mubeen Khan1, 2, S. Cornelis3, M. del Pozo Valero1, 4, M. Khan1, 5, H. Stohr6, F. Grassmann2, M. Steinhauer2, F. Hoischen7, C. Ayuso1, R. Raman8, 9, J. A. Muenier1, S. defoort1, B. H. Weber7, C. Dhamen8, F. P. Cremers1.

1Department of Human genetics, Radboud university medical center; 2Donders institute for Brain, Cognition and Behaviour; 3Fundación Jiménez Díaz, CIBERER, Department of Genetics; 4Institut für Humangenetik, Universität Regensburg; 5Department of Medical Epidemiology and Biostatistics, Karolinska Institutet; 6Division of Human Genetics, Institute of Infectious Disease and Molecular Medicine, University of Cape Town; 7Institut des Neurosciences de Montpellier, INSERM, Université de Montpellier; 8Service des Explorations de la fonction visuelle, CHRU de Lille; 9University Lille, Inserm UMR-S 1172, CHU Lille., Biochemistry and Molecular Biology Department - UF Génopoles, Lille

Genetic risk of AMD at both the CFH and ARMS2/HTRA1 loci is associated with increased protease expression and activity in human Bruch’s membrane/inner choroid. Paul N. Bishop1, 2, S. McHarg1, N. Bayatti1, R. Perveen1, G. Black1, 5, A. J. Day1, A. Dowsey1, S. J. Clark1, R. J. Unwin1.

1School of Biological Sciences, University of Bristol; 2School of Medical Sciences, University of Bristol; 3Institut des Neurosciences de Montpellier, INSERM, Université de Montpellier; 4Service des explorations de la fonction visuelle, CHRU de Lille; 5University Lille, Inserm UMR-S 1172, CHU Lille., Biochemistry and Molecular Biology Department - UF Génopoles, Lille

Targeted assessment of the chromosome 15 locus identifies a potential protective role for ISLR coding variants in exfoliation syndrome. Mineo Ozaki1, 2, T. Mizoguchi1, S. Nakano1, S. Manabe1, K. Mori1, K. Miya1, E. Chihara1, S. Ishiko1, K. Iino1, Y. Kiuchi1, M. Inatani1, K. Sugiyama1, T. Kubota1, T. Aung4, C. Khor15.

1School of Biological Sciences, University of Southern California; 2Department of Ophthalmology, Johns Hopkins Wilmer Eye Inst, Dana Center; 3NIHR Biomedical Research Centre, Moorfields Eye Hospital; 4Zhongshan Ophthalmic Center, 5Singapore National Eye Centre

Wednesday, April 30, 2019 8:45 AM-10:30 AM

Cornea

316 Dry Eye II

Moderators: Tor P. Utheim, Cintia S. De Paiva and Monica Alves

DDIT4 regulates impaired autophagy through oxidative stress in dry eye. BOWEN WANG, X. Wang, J. Yuan. Zhongshan Ophthalmic Center

Alliation of endoplasmic reticulum stress enhances human corneal epithelial cell viability under hyperosmotic conditions. Damien Guindolet, P. Argueso. Scheepens Eye Research Institute

Anti-inflammatory properties of butyrate on the ocular surface epithelium. Humberto Hernandez1, R. G. de Souza1, Z. Yu1, R. A. Britton1, C. S. De Paiva1. Ophthalmology, Baylor College of Medicine; 2Ophthalmology, Johns Hopkins Wilmer Eye Inst, Dana Center; 3NIHR Biomedical Research Centre, Moorfields Eye Hospital; 4Zhongshan Ophthalmic Center, 5Singapore National Eye Centre

Vitamin D enhances the autophagic lysosomal clearance in oxidatively stressed human corneal epithelial cells: A therapeutic intervention for keratoconus. Shivapriya Shikavaram1, R. S2, A. Ghosh1, N. Jeyabalavan1. GROW Research Laboratory, Narayana Nethralaya Foundation; 2Department of Cornea and Refractive Surgery, Narayana Nethralaya Post Graduate Institute of Ophthalmology Narayana Nethralaya Eye Hospital

Silk-Derived Protein-4 (SDP-4) Inhibits Nuclear Factor Kappa B (NF-κB) Inflammatory Signaling that Underlies Dry Eye Disease (DED). David W. Infanger; W. Abdel-Naby; J. J. Kalal, N. B. Paulson, Y. Bai, B. D. Lawrence. Research and Development, Silk Technologies, Ltd. *CR

Silk-Derived Protein-4 (SDP-4) Inhibits Nuclear Factor Kappa B (NF-κB) Inflammatory Signaling that Underlies Dry Eye Disease (DED). David W. Infanger; W. Abdel-Naby; J. J. Kalal, N. B. Paulson, Y. Bai, B. D. Lawrence. Research and Development, Silk Technologies, Ltd. *CR

Topical Leukocyte Function-Associated Antigen-1 (LFA-1) Antagonist Treatment (Lifitegrast) Suggest that Immune Synapse and T cell Adhesion in Limbal Vessels is affected during DED. Gustavo Ortiz1, V. G. Sendra2, A. Jamali1, P. Hamrah1. 1Hamrah Lab Location: Tupper 2nd floor, Center for Translational Ocular Immunology; 2Pathology Department, Universidad de Buenos Aires *CR

Development of a targeted carrier for Rapamycin in a murine model of Sjögren’s syndrome. Yaping Ju1, H. Guo1, F. Britton2, H. Edman3, S. Peddi1, S. Janga1, J. A. MacKay1, S. F. Hami-Alvarez1, 4. 1Department of Pharmacology and Pharmaceutical Sciences, School of Pharmacy, University of Southern California; 2Department of Ophthalmology, Roski Eye Institute, Keck School of Medicine, University of Southern California

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
2828 — 10:00 West Indies Glaucoma Laser Study (WIGLSS). Clinical Outcomes following Selective Laser Trabeculoplasty in Afro-Caribbean Glaucoma Patients at High Risk for Progression. Tony Realmi1, B. K. Gounderappa1, D. Burt2, H. Shillingford-Ricketts1. 1Ophthalmology, WVU Eye Institute; 2Epidemiology Data Center, Graduate School of Public Health, University of Pittsburgh; 3Eye Care St. Lucia; 4Harrlsbro Medical Center

2829 — 10:15 Beliefs and Attitudes of Ophthalmologists Regarding Selective Laser Trabeculoplasty as First Line Therapy for Glaucoma. Lucas Bonafede1, J. Tran1, L. A. Hark1, C. Sanvicente1, Q. Zhang2, R. Costello2, L. J. Katz1. 1Glaucoma Research Center, Wills Eye Hospital; 2Biodataistics Consulting Core, Wills Eye Hospital; 3Department of Ophthalmology, Columbia University Medical Center

West 217-219
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Genetics Group

318 Glaucoma Genetics Development with advanced technology & large datasets

Moderators: Louis R. Pasquale and Kathryn P. Burdon

2830 — 8:45 Genome-wide association study of macular ganglion cell complex thickness in 41,504 participants of the UK Biobank study. Hannah Currant1, T. Fitzgerald1, P. G. Hysi2, C. A. Reisman1, Q. Yang1, C. J. Hammond1, P. J. Foster3, P. Patel1, E. Birney1, A. P. Khawaja4. 1European Bioinformatics Institute (EMBL-EBI); 2Kings College London; 3Topcon Healthcare Solutions; 4NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology

2831 — 9:00 Genome-wide Association Study of Choroidal Thickness in the Amish. Omar Garcia Rodriguez1, S. H. Slifer1, W. K. Scott1, Y. E. Song1, K. Miskimen1, M. G. Nittala1, S. R. Sadda1, L. J. Haines1, M. A. Pericak-Vance1, D. Stambolian1. 1Hussman Institute for Human Genomics, University of Miami; 2Population & Quantitative Health Science, Case Western Reserve University; 3Doheny Eye Institute, Doheny Imaging Reading Center; 4Ophthalmology, University of California; 5Institute for Computational Biology, Case Western Reserve University; 6Ophthalmology and Genetics, University of Pennsylvania

2832 — 9:15 Glaucoma polygenic risk score predicts treatment intensity and RNFL loss in glaucoma suspects. Ayib Gassim1, M. Hassall2, X. Han3, J. N. Marshall1, M. S. Awadalla3, S. L. Graham4, F. R. Healey1, A. Agar5, J. Landers6, A. Galanopoulos7, R. J. Casson7, A. W. Hewitt8, S. MacGregor9, J. E. Craig1. 1Department of Ophthalmology, Flinders University; 2QIMR Berghofer Medical Research Institute; 3Macquarie University; 4University of Sydney; 5Prince of Wales Hospital; 6Royal Adelaide Hospital; 7Adelaide University; 8University of Tasmania


2834 — 9:45 Mutations in PRSS56 are Associated with Primary Congenital Glaucoma. Sushabratat Chakraborti1, G. Pyatla1, C. Labelle-Dumas1, S. Kol1, A. K. Mandal1, S. Senthil1, M. Kabra1, N. Tolman1, S. Hameed1, R. C. Khanna1, I. Kaur1, S. John1, S. Nair1-6. 1Brien Holden Eye Research Centre, L V Prasad Eye Institute; 2Ophthalmology, University of California; 3Jasti V Ramanamma Children’s Eye Care Centre, L V Prasad Eye Institute; 4Howard Hughes Medical Institute, The Jackson Laboratory; 5Gullapalli Pratibha Rao International Centre for Advancement of Rural Eye Care, L V Prasad Eye Institute; 6Anatomy, University of California

2835 — 10:00 Novel DDX58 Gene Mutation Associated With Childhood Glaucoma. Terri L. Young, K. Whisentun, Y. Bradford, N. Stangel, S. Lamartina, S. Tompson. Ophthalmology, University of Wisconsin


Tuesday – Papers/Minisymposia – 2828 – 2841

West 220
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Clinical/Epidemiologic Research

319 Aging with Vision Loss: Understanding the aging consequences of visual impairment - Minisymposium

Visual impairment largely affects older adults, and as the global population ages, the prevalence of visual impairment is expected to rise dramatically. Research has documented that the impact of visual impairment goes beyond vision, as older adults with visual impairment have worse physical and cognitive functioning and are greater risk of negative health outcomes such as disability and mortality. This session is focused on considering the impact visual impairment within the complexities of aging, and will outline gaps in our understanding of the long-term health consequences of visual impairment older adults.

Moderators: BonnieLin K. Swener and Ecosse L. Lamoureux

2837 — 8:45 Aging Eyes in Aging Bodies: What Does a Graying Population Mean for the Vision Care and Research Community? Heather Whitson1, 2. 1Duke University; 2Geriatrics Research Education and Clinical Center, Durham VA

— 9:05 Q&A

2838 — 9:10 Cause of Death?: The relationship between visual impairment, ocular conditions and mortality. David J. Lee. University of Miami

— 9:25 Q&A

2839 — 9:30 Cognitive and functional implications of vision loss. Ellen E. Freeman1. 1School of Epidemiology and Public Health, University of Ottawa; 2Ophthalmology, Maisonneuve-Rosemont Hospital

— 9:45 Q&A

2840 — 9:50 The impact of visual impairment on quality of life among older adults. Ecosse L. Lamoureux1, 2. 1Singapore Eye Research Institute, Singapore National Eye Centre; 2Duke-NUS Medical School

— 10:05 Q&A

2841 — 10:10 Integrating vision and healthcare services for older adults. Alan R. Morse. Lighthouse Guild

— 10:25 Q&A
320 Clinical outcomes and visual quality with retinal prosthetic vision restoration - Minisymposium

Many new vision restoration approaches are being clinically explored. However, the expected visual outcomes are not well understood. This minisymposium focuses on clinical outcomes, potential visual quality, and visual adaptation that has been achieved or can be expected through retinal prosthetic devices.

Moderators: Lisa A. Ostrin and Ava K. Bittner

2842 — 2848 Signals triggering electrophysiological remodeling in retinal degeneration. Richard H. Kramer. Molecular and Cell Biology, University of California, Berkeley *CR

2843 — 9:05 Reading performance in simulated prosthetic vision. Yossi Mandel1,2. 1School of Optometry and Vision Science, Faculty of Life Sciences, Bar-Ilan University; 2Bar-Ilan Institute for Nanotechnology and Advanced Materials (BINA), Bar-Ilan University


2846 — 9:56 Eye Tracking Control in Visual Prostheses. Avi Caspi1,2. 1Electrical and Electronic Engineering, Jerusalem College of Technology; 2The Johns Hopkins Wilmer Eye Institute - Johns Hopkins Medicine *CR


2848 — 8:45 Densitometry and geometry of optic disc hemorrhages in the Ocular Hypertension Treatment Study. Louis R. Pasquale1, C. Cousins2, B. Pan2, J. C. Chou1, L. L. Shen1, M. Gordon1, M. Kass1, R. Ritch1. 1Ophthalmology, Harvard Medical School; 2Ophthalmology PnR, Icahn School of Medicine at Mount Sinai; 3Department of Ophthalmology and Visual Sciences, Washington University School of Medicine; 4Ophthalmology PnR, New York Eye and Ear Infirmary at Mt. Sinai. *CR

2849 — 9:00 T and B Lymphocyte Deficiency in RAG1 Mice Decreases Retinal Ganglion Cell Loss in Experimental Glaucoma. Markus H. Kuehn1,2, O. W. Grämlich1,2, N. D. Heuss1, C. R. Godvin2, D. S. Gregerson1. 1Ophthalmology and Visual Sciences, University of Iowa; 2Iowa City VA Medical Center; 3Ophthalmology and Visual Neurosciences, University of Minnesota

2850 — 9:15 APOE signaling plays a key role in neurodegeneration-associated microglia in glaucoma. Milica Margeta1, S. M. Leitch2, O. Butovsky3. 1Mass Eye & Ear Infirmary; 2Brigham and Women’s Hospital

2851 — 9:30 Reduced number and caliber of optic nerve axons and smaller optic nerves in mice homozygous for a glaucoma-causing mutation in Adams10, Hanging Wu1, W. R. Kuchtey1, 2, J. Kuchtey1. 1Vanderbilt Eye Institute; 2Department of Molecular Physiology and Biophysics, Vanderbilt University

2852 — 9:45 Astrocyte energy transfer via connexin 43 results in contralateral deficits following unilateral glaucoma. Melissa Cooper1,2, S. Pasini2, W. S. Lambert3, M. L. Risner2, K. B. D’Alessandro1, D. J. Calkins2. 1Neuroscience, Vanderbilt University; 2Vanderbilt Eye Institute, Vanderbilt University Medical Center

2853 — 10:00 Live imaging of human optineurin mutants in the optic nerve of Xenopus laevis. Yaeram Jeong, N. Marsh-Armstrong. Ophthalmology, University of California, Davis

2854 — 10:15 Machine Learning-Based Quantification of Axonal Damage in Glaucomatous Rat Optic Nerves. Bailey Hannon1, M. Rich1, R. C. Ford1, A. T. Read1, K. Gao2, E. L. Dyer3, J. Raymond4, G. Cull1, C. F. Burgoyne5, M. T. Purdue6, C. R. Ether1, 2. 1Woodruff School of Mechanical Engineering, Georgia Institute of Technology; 2Coulter Department of Biomedical Engineering, Georgia Institute of Technology; 3School of Electrical and Computer Engineering, Georgia Institute of Technology; 4Devers Eye Institute, Legacy Research Institute; 5Center for Visual and Neurocognitive Rehabilitation, Atlanta VA Healthcare System

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
2857 — 9:15 Using a Machine Learning Technique Called Kalman Filtering to Forecast Conversion from Ocular Hypertension to Primary Open Angle Glaucoma. Gian-Gabriel P. Garcia¹, M. Lavieri², C. Andrews³, X. Liu¹, M. P. Van Dyen¹, M. Kasst⁴, M. O. Gordon⁵, J. D. Stein¹. ¹Industrial and Operations Engineering, University of Michigan; ²Ophthalmology and Visual Sciences, University of Michigan; ³Center for Eye Policy and Innovation, University of Michigan; ⁴Ophthalmology and Visual Sciences, Washington University School of Medicine

2858 — 9:30 Defect Classes of Visual Field Measurement in Glaucoma. Jorryt G. Tichelaar¹, M. Wang², L. Q. Shen², L. R. Pasquale³, M. V. Boland³, S. R. Weltik⁴, C. G. de Moraes⁵, J. S. Myers⁶, P. Bex⁷, O. Saeedi⁸, N. Baniasadi⁹, D. Li¹, H. Wang¹⁰, T. Elze¹. ¹Schepens Eye Research Institute, Harvard Medical School; ²Mass. Eye and Ear, Harvard Medical School; ³Wilmer Eye Institute, Johns Hopkins University School of Medicine; ⁴Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; ⁵Edward S. Harkness Eye Institute, Columbia University Medical Center; ⁶Wills Eye Hospital; ⁷Icahn School of Medicine at Mount Sinai, New York Eye and Ear Infirmary of Mount Sinai; ⁸Department of Psychology, Northeastern University; ⁹Department of Ophthalmology and Visual Sciences, University of Maryland Medical Center; ¹⁰Institute for Psychology and Behavior, Jilin University of Finance and Economics *CR

2859 — 9:45 A new perimetry thresholding algorithm with size-modulated stimuli reduces variability by half in damaged regions of the visual field compared to SITA Standard. David F. Garway-Heath¹, M. A. Miranda¹, H. Zhu¹, ², P. J. Mulholland³, ⁴, B. Petriti¹, C. Bronze¹, D. P. Crabb⁴, R. Anderson¹. ¹National Institute for Health Research (NIHR) Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; ²School of Computer Science, Beihang University; ³Optometry and Vision Science Research Group, Ulster University; ⁴Division of Optometry and Visual Sciences, City University London *CR

2860 — 10:00 “No need to press a button” – Using a portable eye movement perimeter to rapidly assess visual field loss in a glaucoma clinic. Pete R. Jones¹, D. Lindfield², D. P. Crabb³. ¹Optometry and Visual Sciences, City, University of London; ²Royal Surrey County Hospital *CR

2861 — 10:15 The effect of TrkB receptor knockdown on mouse retinal ganglion cell function and their response to acute mild intraocular pressure stress. Vickie H. Wong¹, A. Wang¹, C. T. Nguyen¹, J. K. Lim¹, M. Nicholson¹, J. Xiao¹, S. Murray¹, B. V. Bui¹. ¹Optometry and Vision Sciences, The University of Melbourne; ²Anatomy and Neurosciences, The University of Melbourne

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.

*CR Refer to the Program Number in the Clinical Trial (CT) Registration Index. * Refer to the Program Number in the Clinical Trial (CT) Registration Index.
Tuesday, April 30, 2019 8:45 AM-10:30 AM

Retinal Cell Biology

323 Stem Cells and Retinal Organoids: Disease modeling

**Moderators: Roly Megaw and Valeria Canto Soler**


2864 — A0035  Modelling Autosomal Dominant Optic Atrophy using Induced Pluripotent Stem Cells. Paul E. Sladen 1, K. Jovanovic 1, M. Aguil 2, P. Yu-Wai-Man 1, M. E. Cheetham 1. Institute of Ophthalmology, UCL; 1Moorefield’s Eye Hospital

2865 — A0036  Analysis of photoreceptor degeneration by using promoter NL1 reporter knock-in human induced pluripotent stem cell lines. Kohei Homma 1, N. Ozato 1, K. Tabuta 1, H. Okano 2, Y. Otsuki 1. Ophthalmology, Keio University School of Medicine; 1Physiology, Keio University School of Medicine

2866 — A0037  Delayed differentiation of retinal organoids derived from a patient with CRB1-associated retinitis pigmentosa. Xiao Zhang 1, S. McLenachan 2, D. Zhang, S. Chen, S. Arunachalam 1, J. A. Thompson 2, T. McLaren 2, T. Lamey 1, J. Roach 3, F. K. Chen 1, 2. Ocular Tissue Engineering Laboratory, Lions Eye Institute; 1Centre for Ophthalmology and Visual Science, The University of Western Australia; 2Australian Inherited Retinal Disease Registry, Sir Charles Gairdner Hospital

2867 — A0038  Establishment of non-integrated iPSCs from urine-derived cells of a Chinese patient with X-linked retinoschisis. Xin Yan 1, 2, Y. Guo 1, S. Mao 1, Y. Zhou 1, 2, J. Chen 1, S. Tang 1, 2. Aier School of Ophthalmology, Central South University; 1Aier Eye Institute; 2Key Laboratory for Regenerative Medicine, Ministry of Education, Jitan University

2868 — A0039  Utilising patient-specific retinal organoids to investigate the role of SNV/NP200 variants of unknown significance in severe early onset retinitis pigmentosa. Carla B. Melloagh 3, M. Ackerman 3, J. A. Thompson 1, J. Roach 2, T. McLaren 1, T. Lamey 1, A. Akkarj 4, R. Ram 1, S. Leary 1, A. Chopra 1, S. Chen 1, D. Zhang 2, S. McLenachan 1, F. K. Chen 1, 2. Lions Eye Institute Ltd.; 1Centre for Ophthalmology and Visual Science, University of Western Australia; 2Department of Medical Technology & Physics, Australian Inherited Retinal Disease Registry & DNA Bank, Sir Charles Gairdner Hospital; 3The Perron Institute for Neurological and Translational Science; 4Institute for Immunology & Infectious Diseases, Murdoch University; 1Industrial Pharmacogenetics, Murdoch University

2869 — A0040  Generation of Induced Pluripotent Stem Cell Models of Dominant Retinitis Pigmentosa. Kwan-Leong Hau 1, K. Ziaka 1, R. Guarascio 1, D. Athanasou 1, M. Aguil 2, J. Bellingham 3, E. Bloch 2, 3, L. Da Cruz 3, 4, M. E. Cheetham 1, 5. UCL Institute of Ophthalmology; 1Moorefield’s Eye Hospital

2870 — A0041  Modelling RP2 retinitis pigmentosa using iPSC derived retinal organoids. Amelia Lane 1, K. Jovanovic 1, D. Ottaviani 1, A. Bruglar-Panes 1, C. Shortall 2. 1UCL Institute of Ophthalmology; 2Trinity College Dublin, Smurfit Institute of Genenticcs

2871 — A0042  Generation of rod- vs. cone-dominant patient-derived 3D retinal grafts for the treatment of retinal degenerative blindness. Laura R. Bohrer 1, J. A. Cooke 1, A. Shrestha 1, 2, E. R. Burnnight 1, K. R. Anfinson 1, M. M. Collins 1, R. F. Mullins 1, E. M. Stone 1, 2, K. S. Worthington 1, 2, L. A. Wiley 1, B. Tucker 1. Institute for Vision Research, Department of Ophthalmology & Visual Sciences, University of Iowa; 1Department of Biomedical Engineering, University of Iowa

2872 — A0043  Non-invasive electrical stimulation promotes photoreceptor survival and regeneration in mice with inherited photoreceptor degeneration. Honghua Yu 1, X. Dong 1, B. Liu 1, Q. Wu 1, S. Enayati 1, K. Cho 1, D. Chen 1. Ophthalmology, Guangdong General Hospital; 1Scheepens Eye Research Institute of Massachusetts Eye and Ear, Department of Ophthalmology, Harvard Medical School

2873 — A0044  Evaluation of selected Human Embryonic Stem Cell Lines for differentiation to three-dimensional retinal tissue (organoids) for cell therapies of retinal degenerative conditions. Ratchesh K. Singh 1, F. Binette 1, T. Deluca 1, A. Ottaviani 2, G. S. Hoge 1, O. Nasonkin. Department of Ophthalmology, BioTime. 1CR


2875 — A0046  Generation of a patient: sibling pair-derived hiPSC-RPE model of pathological myopia. Xinyue Bai 1, L. Chen 1, X. Yang 2. 1Eye & ENT Hospital of Fudan University; 2Jules Stein Eye Institute-UCLA

2876 — A0047  Generation of stem cell lines that can model human Ucular Albinism Type 1 by carrying a mutated or deleted OAT1 gene. Deborah B. Farber, E. Baulier. Jules Stein Eye Inst, CHS/UCLA


2878 — A0049  Modeling oculodentodigital dysplasia syndrome using human induced pluripotent stem cells. Lin Cheng 1, M. R. Cring 2, 3, M. H. Kuehn 1, 2. 1Department of Ophthalmology and Visual Sciences, The University of Iowa; 2Center for the Prevention and Treatment of Visual Loss, Veterans Affairs Medical Center; 3Department of Pediatrics, The University of Iowa

West Exhibition Hall A0050-A0066

Tuesday, April 30, 2019 8:45 AM-10:30 AM

Retinal Cell Biology

324 Stem Cell based Approaches for Transplantation and Therapies

**Moderators: Anna La Torre and Melissa K. Jones**

2879 — A0050  Safety and retinal toxicity of a biodegradable scaffold for stem cells derived RPE implantation. Preclinical study in rabbits. Mariana Kavosamuoro 1, R. fernandes 2, M. maia 1, F. Lojudice 1. 1Universidade Federal de Sao Paulo; 2NUCEL, University of Sao Paulo

**Tuesday – Posters – 2881 – 2898**

**2881 — A0052** Donor-host material transfer is photoreceptor-specific and comprises mRNA but not mitochondria. Oliver Borsch 1, S. Lonné 2, S. Gasparini 3, M. Adler 4, 1Center for Regenerative Therapies Dresden; 2TU Dresden

**2882 — A0053** Neuroprotective Effect of Extracellular Vesicles delivery via Intravenous Injection on Optic Nerve Crushed Muscle. Leila Satarian 1, Baharvand 1, Seiedrazizadeh 1, F. Pakdel 1. 1Stem cell, Royan; 2Farabi Hospital

**2883 — A0054** Transplantation of human iPSC-derived RPE cells preserves the retinal structure and function in the rd10 mouse model of retinitis pigmentosa. Deliang Zhu 1, M. Xie 1, Z. Cui 1, Y. Guo 1, S. Liu 1, P. Wang 1, J. Zhang 1, J. Chen 1, 1Key Laboratory of Opto-electronic Information Sensing Technologies of Guangdong Higher Educational institutes, Jinan University; 2Key Laboratory for Regenerative Medicine, Ministry of Education, Jinan University; 3Department of Ophthalmology, the First Clinical Medical College of Jinan University; 4Eye institute, Medical college of Jinan University

**2884 — A0055** Differentiation, Characterization, and Transplantation of hiPSC-derived retinal pigment epithelial (RPE) cells in retinal degenerative RCS rats. Rupendra Shrestha 1, Y. Wen 2, R. Tsai 1, 1Institute of Medical Sciences, Tsu Chi University; 2Institute of Eye Research, Hualien Tzu Chi General Hospital

**2885 — A0056** Transplantation of human iPSC-derived photoreceptor precursors isolated by targeting of the surface antigen CD73. Giuliana Gagliardi 1, K. Ben M Barok 1, J. Conart 1, A. Slembrouck-Broc 2, J. Degardin 2, C. Nanteau 2, S. Reichman 1, O. Goureau 1, 1Department of Ophthalmology, Donders Institute of Brain, Radboud University Medical Center; 2Institut de la Vision, Sorbonne Université, INSERM, CNRS; 3INSERM U861, CECS, AFM, Institute for Stem Cell Therapy and Exploration of Monogenic Diseases

**2886 — A0057** Transplantation of human pluripotent stem cell-derived photoreceptors on a biocompatible scaffold in the S334ter rat. Allison Ludwig 1, J. Phillips 1, L. Jager 1, K. Nilles 1, S. Stuedemann 1, J. Lee 1, I. Lee 1, S. Gong 1, Z. Ma 1, D. M. Gamm 1, 1Comparative Biomedical Sciences, University of Wisconsin-Madison; 2McPherson Eye Research Institute, University of Wisconsin-Madison; 3Waisman Center, University of Wisconsin-Madison; 4Electrical and Computer Engineering, University of Wisconsin-Madison; 5Biomedical Engineering, University of Wisconsin-Madison; 6Ophthalmology and Visual Sciences, University of Wisconsin-Madison

**2887 — A0058** Subretinal transplantation of Human Central Nervous System Stem Cells stimulates controlled proliferation of endogenous retinal pigment epithelium. Trevor J. McGill 1, J. Stoddard 1, B. Lu 1, A. Tsukamoto-Weissman 1, S. huan 1, L. Osborne 1, A. Capela 1, Ophthalmology, Casey Eye Institute-OHSU; 2Center of Molecular and Human Genetics, Baylor College of Medicine; 3Astellas Institute of Regenerative Medicine; 4Department of Materials Science and Engineering, National Taiwan University

**2888 — A0059** Transplantation sites affect the outcome of mesenchymal stem cell based therapy on retinal degeneration. Hailin Tian, L. Lu, G. Xu. Tongji University Eye institute, Tongji University Medical school

**2889 — A0060** hESC-derived retina organoid sheet transplants develop photoreceptors, connect with the host retina and improve visual function in immunodeﬁcient RCS rats. Magdalene J. Seiler 1, B. Lin 1, B. McLelland 1, G. Nistor 1, R. B. Araman 2, B. Thomas 2, H. Keirstead 2. 1PMR, Stem Cell Research Ctr, Univ of California, Irvine; 2Ophthalmology, University of California, Irvine; 3AVITIA Biomedical Inc.; 4Roski Eye Inst., Ophthalmology, University of Southern California

**2890 — A0061** Co-grafted sheets of hESC derived retina organoids and RPE improve vision function in RCS rats. Bin Lin, J. Martinez 1, Z. Zhu 1, D. R. Hinton 1, M. Humayun 1, B. McLelland 1, R. Araman 1, M. J. Seiler 1, B. Thomas 1, 1Stem Cell Research Center, University of California at Irvine; 2Department of Ophthalmology, USC Roski Eye Institute; 3USC Dr. Allen and Ginsburg Institute for Biomedical Therapeutics; 4Department of Pathology, Keck School of Medicine, USC; 5Ophthalmology, UC Irvine, School of Medicine

**2891 — A0062** Subretinal survival of retinal progenitors (RPs) derived from human embryonic stem cells (hESCs) in different animal models. Hamzah Awidi 1, A. Obolensky 1, A. Ejenberg 1, C. Matevich 1, M. Idelson 1, H. Khuner 1, B. Reubinoff 1, E. Banin 1, 1Ophthalmology Department, Hadassah Hebrew University Medical Center; 2Ophthalmology Department, Center for Retinal and Macular Degenerations, Hadassah Hebrew University Medical Center; 3Gene Therapy Institute, Hadassah-Hebrew University Medical Center

**2892 — A0063** Inhibition of Receptor interacting protein kinases enhance photoreceptor precursor graft survival in a mouse model of inherited retinal degeneration. Daniel E. Maidana, L. Gonzalez-Buendia, J. W. Miller, D. Vavvas. Ophthalmology, Massachusetts Eye and Ear Infirmary

**2893 — A0064** Transplantation of embryonic stem cell-derived retinal neurons preserves retinal ganglion cells and their function in glaucomatous mice. Karen Chang 1, K. Choi 2, K. Kim 1, C. Luo 1, W. Sar 1, R. Chen 1, M. Mirotsou 1, R. Lanza 1, D. F. Chen 1. 1Scheppens Eye Research Institute, Massachusetts Eye and Ear, Department of Ophthalmology, Harvard Medical School; 2HGSC, Department of Molecular and Human Genetics, Baylor College of Medicine; 3Astellas Institute of Regenerative Medicine; 4Department of Materials Science and Engineering, National Taiwan University

**2894 — A0065** The Construction of Bioengineered RPE Sheets with Enhanced RPE Cilium Assembly Using SMILE-Derived Lenticle. Juining Ge 1, Y. Wang 1, Z. Cui 1, H. Li 1, J. Chen 1, S. Tang 1, 1Aier Eye Institute; 2Aier School of Ophthalmology, Central South University, China

**2895 — A0066** Mechanisms of Action of Mesenchymal Stem Cell-Derived Extracellular Vesicles in Retinal Ischemia. Biji Mathew 1, S. Ravindran 1, L. A. Torres 1, N. Chinnakesavalu 1, S. Tran 1, R. Patel 1, S. Roth 1 1Anesthesiology, University of Illinois At Chicago; 2College of dentistry, University of Illinois at Chicago; 3Ophthalmology, University of Illinois at Chicago

---

West Exhibition Hall A0083-A0113

Tuesday, April 30, 2019 8:45 AM-10:30 AM

**Physiology/Pharmacology**

**325 Gene Therapy and Delivery**

**Moderators:** David Culp and Elizabeth Crabtree

**2896 — A0083** Intravitreal Delivery of AAV2 Vectors to the 13-Lined Ground Squirrel Retina. Benjamin S. Sajdak 1, 2, K. J. Ertel 1, H. Zhang 1, E. R. Nettlesheim 1, D. K. Merriman 1, D. M. Lipinski 1, J. Carroll 1, 2 1Cell Biology, Neurobiology, & Anatomy, Medical College of Wisconsin; 2McPherson Eye Research Institute, University of Wisconsin-Madison; 3Ophthalmology & Visual Sciences, Medical College of Wisconsin; 4Biology, University of Wisconsin Oshkosh

**2897 — A0084** Novel recombinant Adeno-Associated Virus transfects photoreceptor cells following intravitreal injection in sheep. Maya Rossi 1, E. Banini 1, E. Averbukh 1, M. Desrosiers 1, A. Obolensky 1, R. Ezra-Elian 1, H. Honig 1, E. Yamin 1, A. Rosov 1, H. Doir 1, E. Gootwine 1, D. Dalkara 1, R. Ofir 1. 1Koret School of Veterinary Medicine, Hebrew University of Jerusalem Israel; 2Department of Ophthalmology, Hadassah-Hebrew University Medical Center; 3Institut de la Vision; 4ARO, The Volcani Center, Rishon LeZion

**2898 — A0085** First in human clinical trial of robot-assisted subretinal drug delivery under local anaesthesia. Jasmina Čehajic Kapetanović 1, K. Xue 1, T. Edwards 2, T. C. Meens 2, M. J. Beevers 1, G. J. Naus 1, M. D. de Smet 1, R. E. MacLaren 1, R. Nettesheim 1, 1Schepens Eye Research Institute; 2HGSC, Department of Molecular and Human Genetics, Baylor College of Medicine; 3Astellas Institute of Regenerative Medicine; 4Department of Materials Science and Engineering, National Taiwan University

---

* Refer to the Program Number in the Clinical Trial (CT) Registration Index.  *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
2900 — A0087 Novel AAV Capsids Demonstrate Strong Retinal Expression in Non-Human Primates After Intravitreal Administration. Brian Kevany1, S. Suh1, J. Lu1, L. Padegimas1, K. Palczewski1, T. Miller1.
"Product Development, Abeona Therapeutics, LLC; "Ophthalmology, University of California - Irvine; "Ophthalmology, University of North Carolina; "Department of Microbiology & Immunology, University of North Carolina; "Department of Clinical Sciences, North Carolina State University *CR"

"Ophthalmology, University of Pittsburgh; "Helen Wills Neuroscience Institute, University of California, Berkeley; "Neurobiology, University of Pittsburgh *CR"

2902 — A0089 A fluorescence-based assay for improvement of dual hybrid AAV vectors in the retina. Elvir Becirovic1, 2, L. M. Riedmayr1, 2, L. M. Hirsch1, 2, 3.
"Department of Ophthalmology, University of North Carolina; 4Department of Microbiology and Immunology, University of North Carolina; 5Department of Ophthalmology, University of California; 6Department of Optometry and Vision Science, Western Michigan University; 7Department of Ophthalmology, University of Miami; 8Coburn Uitto Institute for Vision Research, Miami University*CR"

2903 — A0090 Switchable gene therapy for controlled intervention in neovascular blindness. Jinying Chen1, 2, L. Tu1, J. Wang2, 4, F. Li2, 3, B. V. Bui2, A. W. Hewitt2, 4, J. Zhong1, G. Liu1.
"Department of Ophthalmology, the First Affiliated Hospital of Jinan University; "Menzies Institute for Medical Research, University of South Australia; "Ophthalmology, Department of Surgery, University of Melbourne; "Centre for Eye Research Australia; "State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Centre, Sun Yat-sen University; "Department of Optometry and Vision Sciences, University of Melbourne *CR"

"Clearside Biomedical; "Surgical & Radiological Sciences, UC Davis; "Ophthalmology & Vision Science, UC Davis *CR"

2905 — A0092 Rhodopsin genomic loci DNA nanoparticles transfer led physiological transgene expression in retinitis pigmentosa. Zongchao Han1, 2, M. Zheng1, R. N. Mitra1.
"Ophthalmology, University of North Carolina at Chapel Hill; "Division of Pharmacoengineering & Molecular Pharmaceutics, UNC Eshelman School of Pharmacy *CR"

2906 — A0093 Rescue of human LHON Cybrids and LHON Mice with A Single Mitotargeted AAV Carrying Multiple Mitochondrial Genes. Hong Ji, J. Guy.
"Ophthalmology, Bascom Palmer Eye Inst, Univ of Miami *CR"

2907 — A0094 AAV-mediated Targeting of Müller Glia in Healthy and Diseased Retina. Cecile Fortuny1, 2, J. G. Flannery2, 3.
"HWNi, University of California; "Vision Science Graduate Program, University of California, Berkeley; "Molecular & Cell Biology, University of California, Berkeley *CR"

"Nanoscope Technologies, LLC *CR"

2909 — A0096 Suprachoroidally delivered non-viral DNA nanoparticles transfect choriretinal cells in non-human primates and rabbits. Viral Kansara1, 2, J. Yoo1, M. J. Cooper2, O. S. Laird2, D. Taraborelli1, R. Moen1, G. Noronha1.
"Clearside Biomedical, Inc; "Copernicus Therapeutics, Inc *CR"

"Adverum Biotechnologies *CR"

"Applied Genetic Technologies Co. *CR"

"In vivo pharmacology and toxicology, AGTC *CR"

2913 — A0100 Repeated plasmid electrotrocension into the ciliary muscle allows for fine-tuning of intracellular protein levels. Thierry Bordet1, K. Bigot1, E. Touchard1, R. Benard1, J. Laffitte1, K. R. Bogg56, F. F. Behar-Cohen1, 2.
"Eyevensys; "Paris Descartes University, Centre de Recherche des Cordeliers, Inserm UMR S 1138; "Sorbonne University, University of Pierre et Marie Curie *CR"

2914 — A0101 AAVHSCs target multiple cell types in the eye and have potential to treat rare retinal diseases. Sumeet Sarin1, N. Avila2, L. Smith1, H. Rubin1, P. Morales1, J. L. Ellsworth1, J. Gingras1, O. Francone1, A. Seymour2.
"Ophthalmology, Homology Medicines; "Homology Medicines *CR"


2916 — A0103 Lipid Nanoparticle Based Messenger RNA Delivery to the Retina. Renee C. Ryals2, S. Patel9, K. Weller1, M. E. Pennesi3, G. Sahay1.
"Ophthalmology, Casey Eye Institute OHSU; "Pharmacy, Oregon State University *CR"

2917 — A0104 PDMAEMA non-viral vectors efficiently express PDE6a in the rd10 mouse model of Retinitis Pigmentosa. Diogo B. Bitoque1, A. M. Rosa da Costa1, 2, G. A. Silva3.
"Algarve Chemistry Research Centre (CIQA), University of Algarve; "CEDOC/Nova Medical School-Universidade Nova de Lisboa; "Department of Chemistry and Pharmacy, University of Algarve *CR"

2918 — A0105 Corneal fluorescein distribution following intrastromal injection using a purpose-designed precise corneal injection (PCI) needle. Allison Blanchard1, M. Cullen1, E. Crabtree2, J. H. Salmon1, L. Song3, 4, M. Hirsch1, 4, B. C. Gilger1.
"Clinical Science, North Carolina State University; "Gene Therapy Center, University of North Carolina; "Department of Ophthalmology, University of North Carolina; "Thea Medical, Inc. *CR"

2919 — A0106 Vector shedding and immunology measures in a choroideremia gene therapy trial. Alan R. Barnard1, 2, A. Rudenko1, 2, M. I. Patracio2, 3, L. C. Chandler2, 4, K. Xue2, 5, R. E. MacLaren4, 5.
"Nuffield Lab of Ophthalmology, University of Oxford; "Oxford Eye Hospital, Oxford University Hospitals NHS Foundation Trust and NIHR Biomedical Research Centre *CR"


2921 — A0108 Effects of Subretinal AAV8 Gene Therapy on Microporometry in CNGA3 Achromatopsia Patients. G. Alex Ochakovski1, A. Zhou1, I. Knebelwein1, S. Kohf1, A. Rindorff8, K. Bartz-Schmidt1, M. Ueffing1, E. Zrenner2, 3, S. Michalak1, M. Bie1, B. Wissinger1, T. Peters1, B. Wilhelm1, M. Fischer1, 2.
"Centre for Ophthalmology, University Eye Hospital, University Hospital Tuebingen; "Institute for Ophthalmic Research, Centre for Ophthalmology, University Hospital Tuebingen; "STZ eyetrial at the Centre for Ophthalmology, University Hospital Tuebingen; "Center for Integrated Protein Science Munich *CR"

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
2922 — A0109  Biodistribution and tolerability of rAAV vectors in the anterior chamber for the treatment of primary open angle glaucoma. Kristina Ertel1, D. M. Lipinski2, 3 · 1Cell Biology Neurobiology and Anatomy, Medical College of Wisconsin; 2Ophthalmology and Visual Science, Medical College of Wisconsin; 3Nuffield Laboratory of Ophthalmology, University of Oxford · CR

2923 — A0110  Suprachoroidal AAV-Vectored Gene Transfer Provides Widespread Transgene Expression in RPE and Retina. Kuo Ding1, J. Shen1, Z. Hafez1, S. Hackett1, R. Formica1, V. E. Lorenc1, R. Chadha1, M. Zhang1, S. V. Everen1, N. Buss1, M. Fiscello1, O. Danoes1, P. A. Campochiaro1 · Wilmer Eye Institute · Regenxbio · CR

2924 — A0111  Subretinal and Intravitreal Delivery of the Photoreceptor-Specific AA2-7m8-hGRIK1-GFP Viral Vector in Mice. Chen Matsevich1, D. Dalakara2, A. Obolensky3, M. Desrosiers4, A. Ejenberg5, D. Sharon5, E. Banin5, A. Berezin6 · Center for Retinal and Macular Degeneration, Hadassah-Hebrew University Medical Center; 1Institut de la Vision

2925 — A0112  Long term safety and efficacy of gene editing by CRISPR/Cas9 in autosomal dominant mutation model for RP. Shaomei Wang1, 2, B. Bakondi1, B. Lu1, A. Mercado1, Y. Zhou1, S. Girman1 · 1Board of Governors Regenerative Medicine Institute, Cedars-Sinai Medical Center; 2Medicine, David Geffen School of Medicine · CR

2926 — A0113  Transduction profiles of rAAV capsid mutants for retina following intravitreal injection. Wenzheng Li · Shanghai Aier Eye Hospital, Aier School of Ophthalmology, Central South University

West Exhibition Hall A0210-A0236
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Genetics Group

326 Retina genetics

Moderators: Chen Zhao and Bo Lei

2927 — A0210  A novel homozygous intr-frame deletion of GNAT1 gene cause golden discolouration of the fundus and reduced dark-adapted ERG similar to characteristics of Oguchi disease in a Japanese family. Shuhei Kameya1, D. Kubota1, K. Gocho1, S. Kikuchi1, K. Yamaki1, T. Igashiri1, H. Takahashi1, N. Ishida1, K. Yoshitake2, T. Iwata3, A. Mizota4 · 1Ophthalmology, Nippon Medical School; 2Division of Molecular and Cellular Biology, National Institute of Sensory Organs; 3Ophthalmology, Teikyo University; 4Ishida Eye Clinic; 5Ophthalmology, Nippon Medical School Chiba Hokusoh Hospital · CR

2928 — A0211  Identification of the Genotypes of Inherited Retinal Disease with Night Blindness in West Virginia. Monique J. Leys1, B. Froebel2, R. Coulkey1, A. Jones1, J. Odom1 · Ophthalmology, WVU Eye Institute · CR

2929 — A0212  Screening of patients for inherited retinal disease associated gene mutations in a university and university-affiliated retina-only private practice. Rebecca Sarran1, M. W. MacCumber2 · Ophthalmology, Rush University Medical Center · CR

2930 — A0213  Novel compound heterozygote mutations in CYP2U1 can cause maculopathy with or without neurological signs of hereditary spastic paraplegia HSP56. Veronika Vaclavik1, E. Ranza1, F. Munier1, F. Holzer1, M. Giupponi2, S. Antonarakis2, D. F. Schorderet1 · Jules Gonin Eye Hospital, ocugentic unit, University of Lausanne; 1Service de Genetique HUG; 2HUG, Service Neurology

2931 — A0214  Long term follow-up of phenotype in a Chinese case with KCNV2-retinopathy: Report of novel disease-causing variants. XIAO LIU2, 3, H. Lie3, G. Wang3, X. Meng3, Y. Long3, J. Ren3, Q. Tao4, L. Yang4, 1Y. Y. Fujinami1, 2T. Kurihara2, K. Tsukrata1, K. Fujinami3, 2S. Li4, Z. Yin4 · Laboratory of Visual Physiology/Ophthalmic Genetics, National Institute of Sensory Organs, National Hospital Organization, Tokyo Medical Center; 1Department of Ophthalmology, Keio University School of Medicine; 2Department of Ophthalmology, Southwest Hospital; 3Sport and Health Science Graduate School of Health Management, Keio University; 4Department of Genetics, Department of Genetics · CR

2932 — A0215  Structural PPT1 variant implicated in non–syndromic retinal degeneration in dogs. Leonardo Mangiavacchi1, D. Becker1, D. Torjman1, J. K. Niggel1, V. Jagannathan1, S. Pearce-Kelling1, M. L. Katz1, G. D. Aguirre1 · 1Department of Clinical Sciences & Advanced Medicine, University of Pennsylvania; 2Cornell Technology Park, OptGen, a division of Wisdom Health; 3Mason Eye Institute, University of Missouri School of Medicine; 4Institute of Genetics, University of Bern

2933 — A0216  Genotype-Phenotype Analysis of Three Novel NR2E3 Mutations. saoud A. Al-khuzaiei1, S. Halford1, P. Clouston2 · 1Oxford Eye Hospital, John Radcliffe Hospital, Oxford University Hospitals NHS Foundation Trust; 2Nuffield Laboratory of Ophthalmology, Nuffield Department of Clinical Neuroscience, University of Oxford

2934 — A0217  Mutations in RHO and pre-mRNA Splicing-factor Genes Are Major Causes of Autosomal Dominant Retinitis Pigmentosa in Chinese Families. Yang Li1 · Beijing Inst of Ophthalmology, Beijing Tongren Hospital

2935 — A0218  Case-control collapsing analysis identifies genes mimicking Stargardt/ABCA4 disease. Chu Jian Ma1, C. Wolock2, N. Stong3, T. Nagasaki4, W. Lee5, D. Goldstein1, R. Allikmets2 · 1Dept. of Ophthalmology/Harkness Eye Institute, Columbia University Medical Center; 2Dept of Pathology and Cell Biology, Columbia University; 3Institute for Genomic Medicine, Columbia University · CR

2936 — A0219  Identification of Novel Genetic Variants of Retinal Disease in Brazilian Population. Luiz G. Mello1, J. Polido2, J. R. Carvalho-Jr1, 3, F. P. Saraiva1, V. B. Mahajan4, 5, T. Cabral5 · 1Department of Specialized Medicine - CCS and Ebserh - Cassiano Antonio Moraes University Hospital (HUCAM), Federal University of Espirito Santo; 2Department of Ophthalmology, Federal University of Sào Paulo; 3Department of Ophthalmology and Omics Laboratory, Stanford University; 4Veterans Affairs Palo Alto Health Care System

2937 — A0220  Clinical and mutation analysis of patients with Best vitelliform macular dystrophy or autosomal recessive bestrophinopathy in Chinese population. Luchen Huang · Ophthalmology, People’s Hospital of Peking University

2938 — A0221  EPAS1 gain-of-function mutation causes ocular manifestations in HIF-2α paraganglioma-somatostatinoma-polycythemia syndrome. Pauline Dmitriev1, H. Wang1, K. Pacak2, E. Y. Chew3, Z. Zhuang1 · 1Neuro-Oncology Branch, National Cancer Institute, NIH; 2Section on Medical Neuroendocrinology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH; 3Division of Epidemiology and Clinical Applications, National Eye Institute, NIH

2939 — A0222  RPGR ORF15 sequencing improves diagnostic yield in patients with inherited retinal dystrophies. Sari Tuupanen1, J. Sistonen1, K. Kämpjärvi1, P. Siitonen1, M. Mehine1, J. Käänsäkki1, K. Wells1, J. Schleit2, M. Valori3, P. Salmenperälä1, E. Sankila4, E. Salminen5, T. Alastalo6, J. Koskenvuo7, S. Myllykangas8 · 1Blueprint Genetics; 2Helsinki University Eye Hospital; 3Blueprint Genetics · CR

2940 — A0223  Whole Exome Sequencing of Unknown Retinal Disease Cases: The Alberta Perspective. Lance P. Doucette1, S. Hoang1, 2, radziwon1, J. M. MacDonald1 · Ophthalmology & Visual Sciences, University of Alberta
2946 — A0229 Genetic Diagnosis and detection rate for patients of inherited retinal degenerations in East Asia. Ding-Siang Huang1, T. Chen2, P. Chen3, C. Lin4, H. Hsu5, C. Yang6, C. Yang7, F. Hu8. 1Department of Ophthalmology, National Taiwan University Hospital; 2Department of Ophthalmology, National Taiwan University Hospital Yunlin Branch; 3Graduate Institute of Medical Genomics and Proteomics, National Taiwan University College of Medicine

2947 — A0230 Novel mutation in CNTNBP1 causing familial exudative vitreoretinopathy and maculopathy. Razek Georges Cossa1, Y. Zhao1, M. J. DeBenedictis1, A. Babich1, J. E. Sears1,2, E. I. Troublais3. 1Cole Eye Institute, Cleveland Clinic; 2Cellular and Molecular Medicine, Cleveland Clinic *CR

2948 — A0231 Prevalence and phenotypes of CRB1 retinal dystrophies. Beatrice BOCQUET1, C. Dhaenens1, I. Perraudeau1, J. Roze2, J. Kaplan3, A. Roux3, D. Hamrouni3, G. Gardes3, G. Manet2, E. De Baere2, B. P. Leroy2, V. Kalattis3, I. A. Menner1. 1University of Montpellier, INSERM U1051 - INM; 2Montpellier Hospital, National Centre for rare diseases; 3Biochemistry and Molecular Biology Department - UF Génopôtes, University Lille - CHU Lille; 4INSERM UMR-S 1172; 5IMAGINE - Paris Descartes University, Laboratory of Ophthalmology in LGO - INSERM UMR1163 - Institute of Genetic Diseases; 6Montpellier Hospital - University of Montpellier, Laboratory of Molecular Genetics; 7Center for Medical Genetics Ghent - Ghent University Hospital

2949 — A0232 Donan disease presenting with early onset of hypertrophic cardiomyopathy and peripheral pigmentary retinal dystrophy in a female with a de novo novel mosaic mutation in the LAMP2 gene. Elisabeth Wittsmör1, M. Meiner1, E. Englund1, C. Hedberg Oldfors1, A. Oldfors1, C. Lundin1. 1Department of Ophthalmology, Lund University; 2Department of Pathology, University of Gothenburg

2950 — A0233 Prediction of Causative Genes in Inherited Retinal Disorders From Spectral-domain Optical Coherent Tomography Utilizing Deep Learning Techniques. Yu Y. Fujinami1, N. PONTIKOS1, L. Yang2, K. Yoshitake3, K. Tsunoda4, A. G. Robson5, J. Zhu1, A. Dockery1, L. Soares6,7, A. Babiuch1, J. E. Sears1,2. 1Ophthalmology, New Zealand National Eye Centre, FMHS, University of Auckland; 2Eye Department, Greenlane Clinical Centre, Auckland District Health Board

2951 — A0234 Functional Characteristics of East Asian Patients with Occult Macular Dystrophy (Miayke’s disease); EAOMD Report No. 2. Lethu Yang1,2, J. Koo3, K. Tsunoda4, M. Kondo5, Y. Y. Fujinami1, A. G. Robson5, T. Kurihara6, K. Tsabota7, S. Kameya8, T. Iwata9, X. Zou10, K. Park11, Y. Miyake12, S. Woot13, R. Sai14, K. Fujinami15. 1Division of Vision Research, National Institute of Sensory Organs, National Hospital Organization, Tokyo Medical Center; 2Department of Ophthalmology, Keio University School of Medicine; 3Department of Ophthalmology, Seoul National University Bundang Hospital; 4Department of Ophthalmology, Mie University Graduate School of Medicine; 5Graduate School of Health Management, Keio University; 6Electrophysiology, Moorfields Eye Hospital; 7UCI Institute of Ophthalmology; 8Department of Ophthalmology, Nippon Medical School Chiba Hokusou Hospital; 9Division of Molecular and Cellular Biology, National Institute of Sensory Organs, National Hospital Organization Tokyo Medical Center; 10Department of Ophthalmology, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences; 11Aichi Medical University *CR

2952 — A0235 Alternate day vs daily topical brinzolamide in the treatment of cystic maculopathy in inherited rod cone retinal degenerations. Andrea L. Vincent1,2, G. Kiray2. 1Ophthalmology, New Zealand National Eye Centre, FMHS, University of Auckland; 2Eye Department, Greenlane Clinical Centre, Auckland District Health Board

2953 — A0236 Patient Involvement in Development of Customised Care Plans for Genetically-confirmed Inherited Retinal Degeneration. Aoife Mary Long1,2, K. Stephenson1, J. Zhu1, A. Dockery1, G. Silvestri1, P. F. Kenna1,2, L. Brady3, J. O’Byrne2, G. Farrar3, D. J. Keegan4. 1Royal College of Surgeons Ireland; 2Mater Misericordiae University Hospital; 3School of Genetics & Microbiology, Trinity College Dublin; 4The Research Foundation, Royal Victoria Eye and Ear Hospital; 5Department of Ophthalmology, The Royal Victoria Hospital; 6Fighting Blindness Foundation; 7National Centre for Inherited Metabolic Disorders, Mater Misericordiae University Hospital; 8Rare Disease Office, Mater Misericordiae University Hospital
Evidence for novel risk loci for age-related macular degeneration on the X chromosome: the VA Million Veteran Program. Robert P. Igo2, C. W. Halladay4, D. C. Crawford2, T. Haddi6, P. B. Greenberg6, J. Sullivan4, S. J. Fliesler2, W. Wig10, P. E. Konig1, N. S. Peachey2, S. K. Iyengar1, 2. Population and Quantitative Health Sciences, Case Western Reserve University; Louis Stokes Cleveland VA Medical Center; Center for Innovation in Long Term Services and Supports, Providence VA Medical Center; Ophthalmology and Visual Sciences, Case Western Reserve University; University Hospitals Eye Institute; Section of Ophthalmology, Providence VA Medical Center; Division of Ophthalmology, Alpert Medical School, Brown University; Research Service, VA Western NY Healthcare System; Ophthalmology, SUNY-University at Buffalo; Ophthalmology, Biochemistry and Neuroscience Program, SUNY-University at Buffalo; Section of Cardiology, Medical Service, Providence VA Medical Center; Division of Cardiology, Alpert Medical School, Brown University; Psychiatry, Case Western Reserve University; Ophthalmology, Cleveland Clinic Lerner College of Medicine

Pathway analysis identifies PLCG2 as a candidate gene for age-related macular degeneration. Andrea R. Waksmanski5, M. Grunin1, T. Kinzy1, R. P. Igo2, J. L. Haines1, J. Cooke Bailey2. Genes and Genome Sciences, Case Western Reserve University; Cleveland Institute for Computational Biology, Case Western Reserve University; Population and Quantitative Health Sciences, Case Western Reserve University


X-Chromosome Inactivation is a Biomarker of Clinical Severity in Female Carriers of X-linked Retinitis Pigmentosa. Abigail T. Fahim1, L. S. Sullivan1, S. J. Bowne3, K. Webb-Jones4, D. K. Wheaton1, K. E. Branham1, M. Othman1, A. J. Karouki1, A. Andrews3, J. R. Heckenlively2, D. G. Birch1, S. P. Daiger1. Ophthalmology and Visual Sciences, University of Michigan; Genetics, University of Texas Medical School; Department of Human Genetics, University of Texas Southwestern Medical Center; Genetics and Genome Sciences, Case Western Reserve University

Three loci associated with risk of advanced age-related macular degeneration (AMD) also influence anti-VEGF treatment response. William K. Scott1, O. García Rodríguez2, P. Whitehead-Gay2, L. D. Adams1, J. K. Welch1, R. Lauz1, M. A. Brantley3, J. L. Kovach1, S. G. Schwartz4, A. Agarwal1, J. L. Haines2, M. A. Pericak-Vance1. Hussman Institute for Human Genomics, University of Miami; Population and Quantitative Health Sciences, Case Western Reserve University; Ophthalmology and Visual Sciences, Vanderbilt University Medical Center; Bascom Palmer Eye Institute, University of Miami; West Coast Retina

A panel-based next generation sequencing reveals extensive locus and allelic heterogeneity underlying inherited retinal degenerations in Mexican population. Juan C. Zenteno1, 2; L. Garcia-Montaño3, M. Cruz-Aguilar3, R. Matsui-Serrano2, J. Ronquillo1, F. Graue-Wiechers2, L. Castul1, T. Urrea2, U. De Dios-Cuadras2, O. Chacon-Camacho1. Genetics, Institute of Ophthalmology “Conde de Valenciana”; Retina, Institute of Ophthalmology “Conde de Valenciana”; Biochemistry, Faculty of Medicine, UNAM


Homogeneity and heterogeneity of genetic backgrounds among four uveitis subtypes estimated from genome-wide SNPs. Guannan Su, P. Yang. Chongqing Medical University

Meta-analysis of the rs243865 MMP-2 Polymorphism and Age Related Macular Degeneration Risk. Francisco J. Valentin Bravo1, R. Usategui-Martínez1, S. Pastor Idoate1, J. Pastor1, 2. Ophthalmology, Hospital Universitario de Valladolid; University of Valladolid, Instituto Universitario de Oftalmobiología Aplicada (IOBA)

Sharing of genetic association signals by age-related macular degeneration and Alzheimer’s disease at multiple levels. Handan Tan, P. Yang. Chongqing Key Laboratory of Ophthalmology and Chongqing Eye Institute, The First Affiliated Hospital of Chongqing Medical University

The Association of Previously-Reported Genetic Markers with Clinical Phenotypes of Polypoidal Choroidal Vascularopathy. Mingyue Luo1, Y. Chen1, J. Yang2, X. Zhao2, S. Xia1. Ophthalmology, Peking Union Medical College Hospital; Zhiguizhou Provincial People’s Hospital

Three loci associated with risk of advanced age-related macular degeneration (AMD) also influence anti-VEGF treatment response. William K. Scott1, O. García Rodríguez2, P. Whitehead-Gay2, L. D. Adams1, J. K. Welch1, R. Lauz1, M. A. Brantley3, J. L. Kovach1, S. G. Schwartz4, A. Agarwal1, J. L. Haines2, M. A. Pericak-Vance1. Hussman Institute for Human Genomics, University of Miami; Population and Quantitative Health Sciences, Case Western Reserve University; Ophthalmology and Visual Sciences, Vanderbilt University Medical Center; Bascom Palmer Eye Institute, University of Miami; West Coast Retina
2969 — A0252 Increased expression of IGFBP2 induces RPE and photoreceptor degeneration at senescence. Sandeep Kumar1,2, A. Fni1, M. Parker3, G. G. Gum1, V. Naugeshwaran1, Y. Fu1. 1Ophthalmology, Absorption Systems; 2Ophthalmology, Cullen Eye Institute

2970 — A0253 The phenotype of knock-out mouse of tumor-associated calcium signal transducer2 as a model of gelatinous drop-like corneal dystrophy. Yukiko Nagahara, k. uesugi, P. Xu, S. Kawasaki, M. Tsujikawa, K. Nishida. Department of Ophthalmology, Osaka University Graduate School of Medicine

2971 — A0254 RGR gene mutation may cause progressive choroidal degeneration under zones of affected retinal pigment epithelium. David Mansfield1, U. Shahani. 1Ophthalmology, Inverclyde Royal Hospital; 2Vision Sciences, Glasgow Caledonian University

West Exhibition Hall A0255-A0281
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Retina

328 AMD Translational Studies

Moderator: Bruce Ksander

2972 — A0255 Clinical and histopathologic ophthalmic findings in a population of rhesus macaques (Macaca mulatta) with a remote history of high dose gamma radiation exposure. William Carrera1,2, G. Dugan1, R. Carrera1, J. Cline3, J. Weinstein1, M. Greven1. 1Ophthalmology, California Pacific Medical Center; 2Ophthalmology, Wake Forest Baptist Medical Center; 3Pathology, Section on Comparative Medicine, Wake Forest Baptist Medical Center; 4Columbia University Vagelos College of Physicians and Surgeons

2973 — A0256 Early local activation of complement in aqueous humor of patients with age-related macular degeneration. Lebriz Altay1, T. Schick1, G. Widmer2, G. Duchateau-Nguyen1, P. Piraino1, A. Jayagopal2, F. Drawnet3, S. Fauser1. 1University of Cologne, Department of Ophthalmology; 2Roche Pharma Research and Early Development, Roche Innovation Center Basel; 3P Value Research S.R.L. *CR


2975 — A0258 Withdrawal_Neural Differentiation of Human Retinal Pigment Epithelial Cells on Alginate/Gelatin Substrate. Zahra S. Soheili1, H. Shams Najafabadi1, S. Samiee2, H. Ahmadian1, E. Ranawe Pirmaran1, M. haghhigh1. 1Molecular Medicine, National Institute of Genetic Engineering and Biotechnology; 2Blood Transfusion Research Center High Institute for Research and Education in Transfusion Medicine; 3Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences; 4Gynecologist and obstetrician, Aban hospital, Tehran, Iran

2976 — A0259 Monocyte-related biomarkers of intermediate age-related macular degeneration. Vivienne Fang1, V. Oza2, S. S. Stinnett1, L. Vajzovic1. 1Department of ophthalmology, West China Hospital, Sichuan University; 2Disease Model and Medicine Translation Department, National Chengdu Center for Safety Evaluation of Drugs

2977 — A0260 Fibrosis in a laser induced CNV/AMD monkey model. Yujiro Wang1, H. Zhang2, K. Xu1, K. Ma1, C. Zhang1, Q. Cai1. 1Department of ophthalmology, Wuhan University Medical School; 2Tulane University Medical School *CR

2978 — A0261 Intravitreal Connective Tissue Growth Factor Neutralizing Antibody Reduces Subretinal Fibrosis Associated with Experimental Choroidal Neovascular Membrane. Hamid Ahmadian1, N. Duffarian1, S. Rohani1, M. Rezaei Kanavi2, F. Suri1, M. Mirrakhimi1, A. Hafezi-Moghadam1, Z. Soheili1. 1Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences; 2Ocular Tissue Engineering Research Center, Shahid Beheshti University of Medical Sciences; 3Molecular Biomarkers Nano-Imaging Laboratory, Department of Radiology, Harvard Medical School; 4National Institute of Genetic Engineering and Biotechnology


2980 — A0263 The three dimensional (3D) ultrastructure of VEGF driven choroidal neovascularization in the rat. Antje Biseneimier1,2, S. Liu1, A. Tschulakov1, B. Illing1, H. Thakkar3,4, Y. Fang1, B. Schroeppel3,3, C. Burkhardts3, U. Schraermeyer3,4. 1Center for Ophthalmology, Division for experimental vitreoretinal surgery; 2Natural and Medical Institute at the University of Tuebingen, Applied Material Science and Electron Microscopy; 3STZ OcuTox Preclinical Drug Assessment


2982 — A0265 Interleukin-18 accelerates wound healing and induces changes in cellular organization in choroidal neovascularization. Ema Ozaki, E. Connolly, K. Brennan, M. Campbell, S. Doyle. Trinity College Dublin

2983 — A0266 The Association of Reticular Pseudodrusen in Age-related Macular Degeneration in Human Eyebank Eyes. Fukutaro Mano1, H. S. Robinson2, N. Sprehe1,2, T. W. Olsen. 1Ophthalmology, Mayo Clinic; 2Ophthalmology, Emory University; 3The Lions Eye Institute for Transplant and Research

2984 — A0267 Meta-Analysis of the Ocular Half-Life (T½) of Fabs and IgGs in Humans and Other Species: Two Ways that Size Matters. Norman A. Mazer1, D. Schwab1, C. Diack1, H. Kettenberger1, K. F. Hauss1, S. Bell1, R. Alvarez Sanchez1, M. Fuett1, A. Caruso1. 1Pharmaceutical Sciences, Roche Innovation Center Basel; 2Therapeutic Modalities, Roche Innovation Center Munich; 3Clinical Pharmacology, Genentech *CR

2985 — A0268 Characterization of the Controlled and Extended Release of Dexamethasone-Loaded Nanoparticles and Affibeclper-Loaded Microspheres from a Hydrogel Drug Delivery System. Kayla Cascarilla1, W. Lin1, A. Puskar1, S. Hassani1, W. F. Mieler1, J. J. Kang-Mieler1. 1Department of Biomedical Engineering, Illinois Institute of Technology; 2Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago *CR

2986 — A0269 Sample preparation effects on retina lipid analysis by MALDI imaging and LC-MS technologies. Ankita Kothnala1, D. M. Anderson1, N. H. Patterson1, J. D. Messinger1, C. Curcio1, K. L. Schey1. 1Department of Biochemistry, Vanderbilt University; 2Department of Ophthalmology, University of Alabama at Birmingham

2987 — A0270 Study of Stability and Bioactivity of Affibeclper During Fabrication and Release from a Microsphere-Hydrogel Drug Delivery System. Wenqiang Liu1, K. Cascarilla1, X. Li1, A. Puskar1, S. Hassani1, S. Shah1, B. Lee2, W. F. Mieler1, J. J. Kang-Mieler1. 1Illinois Institute of Technology; 2Department of Ophthalmology, University of Illinois at Chicago *CR

2988 — A0271 Human antibody targeting C-type lectin-like domain of CLEC14a as a potential therapy for neovascular age-related macular degeneration. Sung Wook Park1,2, J. Hong1,2, H. Lee1, S. Lee1, M. Kim1, E. Lee1, D. Kweon1, H. Yu1. 1Ophthalmology, Seoul National University Hospital; 2Retinal Degeneration Research Laboratory, Seoul National University Hospital Biomedical Research Institute; 3Nuclear Medicine, Seoul National University Bundang Hospital; 4Scripps Korea Antibody Institute; 5Woori Technology Inc. *CR

2990 — A0273 High-throughput Screening Identifies Compounds that Protect RPE from Physiological Stressors Present in AMD. Mark A. Fields¹, H. Cai¹, J. Gong¹, l. abriola², D. Hoyer², L. V. Del Priore³, S. Nagdev³, D. Paull³. ¹Ophthalmology and Visual Science, Yale School of Medicine; ²Yale Center for Molecular Discovery; ³New York Stem Cell Foundation

2991 — A0274 Intravitreal injection of bortezomib attenuates choroidal neovascularization by antagonizing VEGF and PDGF-mediated signaling. Shengzhou Wu, Y. Liu, M. Feng. Sch of Optom & Ophthal, Wenzhou Medical College


2993 — A0276 Cyto-/neuro-protective effects of bromidine drug delivery system (DDS) in a nonhuman primate progressive retinal degeneration model of geographic atrophy (GA) secondary to age-related macular degeneration (AMD). Lakshmi Rajagopalan, C. Ghosn, M. Liakopoulos. Department of Ophthalmology, University of Cologne


2995 — A0278 Localized retinal detachment protects the neuroretina from laser burns aimed at producing subretinal choroidal neovascularizations in porcine eyes. Silja Hansen¹, A. Askou¹, M. la Cour¹, T. Bek¹, T. Cordoni². ¹Department of Biomedicine, Aarhus University; ²Department of Ophthalmology, Aarhus University Hospital

2996 — A0279 The Differential Effects of Amyloid-Beta Species on Retinal Physiology in the Rat - Potential Implications for Retinal Disease and Age-Related Macular Degeneration. Shiri Zayit-Soudry², E. Na’amani³, S. Ya’ari³, M. Mimouni², S. Safari³, L. Libiu², L. Adler-Abravimovich³, G. Gazit³. ²Ophthalmology, Rambam Health Care Campus; ³Technion-Israel Institute of Technology; ¹Molecular Microbiology and Biotechnology, Tel Aviv University; ²Oral Biology, Tel Aviv University

2997 — A0280 Circadian rhythm mediated regulation of the inner blood retina barrier: Relevance for geographic atrophy development. Natalie Hudson¹, S. Liddie¹, E. Ozaki¹, S. Doyle¹, E. Demmons¹, A. Browne¹, M. S. Lawrence¹, M. Campbell¹. ¹Trinity College Dublin; ²R&DGen *CR

2998 — A0281 Folate decorated nanoparticarergic nanocarriers for enhanced lutein uptake for treatment of age-related macular degeneration. Jwala Renukuntla, P. Bolla, R. Kalhapure, A. Arnipalli, J. Franco, C. Meraz. UTEP School of Pharmacy

West Exhibition Hall A0342-A0393
Tuesday, April 30, 2019 8:45 AM-10:30 AM Multidisciplinary Ophthalming Imaging Group
329 OCTA in AMD/DR/Glaucoma/Ischemia

Moderators: Linda M. Zangwill and Qisheng You

2999 — A0342 3D Volumetric Analysis of Vasculated Serous Pigment Epithelial Detachment Progression in Neovascular AMD using OCT Angiography. David Sarraf¹, A. Au¹, K. K. Hou¹, J. Davila¹, F. Gunnemann¹, S. Fragiotta¹, R. Saccori¹, M. Arya¹, D. Pauleikhoff¹, G. Querques¹, N. K. Waheed¹, K. Freund¹, S. R. Sadda¹. ¹Ophthalmology, Stein Eye Institute UCLA; ²Vitreous Retina Macula NY; ³Ophthalmology, St Franziskus Hospital; ⁴Ophthalmology, St Franziskus Hospital; ⁵Vitreous Retina Macula Consultants NY; ⁶Ophthalmology, IRCCS Ospedale San Raffaele, University Vita-Salute San Raffaele; ⁷New England Eye Center, Tufts Medical Center; ⁸Ophthalmology, Doheny Eye Institute *CR

3000 — A0343 Automated Method for the Long-term Quantitative Analysis of Neovascularization using Optical Coherence Tomography Tomography Angiography (OCTA). Alexandra Miere², D. Colantuono³, A. Ohayon³, K. Taibouni³, E. Petit³, C. Jung³, E. H. Soutey². ²Ophthalmology, Centre Hospitalier intercommunal de Creteil; ³Laboratory of Images, Signals and Intelligent Systems, University Paris-Est; ³Clinical Research Center, GRc Macula, and Biological Ressources Center, Centre Hospitalier Intercommunal de Creteil


3002 — A0345 Quantitative comparison of three optical coherence tomography angiography devices in choriorretinal disease. Yifan Lu², E. J. C. Wang¹, R. Zeng¹, D. Vasvári¹, W. Miller¹, J. B. Miller¹. ¹Harvard Medical School; ²Massachusetts Eye and Ear Infirmary *CR


3005 — A0348 Optical coherence tomography angiography-guided photodynamic therapy for acute central serous chorioretinopathy. Jinfeng Qu. People’s Hospital of Peking Univ *CR

3006 — A0349 Comparison of Reproducibility of Foveal Avascular Zone Measurement using Optical Coherence Tomography Angiography and Fluorescein Angiography. Khalid Y. Al-Kirwi¹, G. Ulhaď¹, M. Hassan¹, M. S. Ormaechea¹, Q. Zhou¹, M. Hulîne¹, A. N. Tran¹, R. Afshrd¹, J. Bae¹, D. V. Do¹, M. A. Ibrahim¹, Q. D. Nguyen¹, Y. Sepah¹. ¹Ophthalmology, Byers Eye Institute; ²Ophthalmology, Imamem Khadhimin Medical City University Hospital; ³Ophthalmology, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine; ⁴Ophthalmology, Hospital Universitario Austral; ⁵Ocular Imaging Research and Reading Center; ⁶Optovue Inc *CR

3007 — A0350 Quantitative Optical Coherence Tomography Angiography of Dry vs Wet AMD and the Effects of Prolonged Anti-VEGF Therapy. Rani S. Gabriel, C. Shah, J. Toledo Corral, M. C. Mehta. UC Irvine School of Medicine

3008 — A0351 Early OCT Angiography Changes One Week After Anti-VEGF Injection for Diabetic Macular Edema. Daniel Malach¹, C. Shah, J. Toledo Corral, M. C. Mehta. UC Irvine School of Medicine

3009 — A0352 Quantitative OCTA Change Analysis after 6 month Anti-VEGF Treatments for Proliferative Diabetic Retinopathy in the Real World. Jesse J. Jung¹, M. H. Chen¹, Q. V. Hoang¹. ¹East Bay retina Consultants, Inc.; ²Ophthalmology, University of California, San Francisco; ³Silicon Valley EyeCare; ⁴Carl Zeiss Meditec Inc; ⁵Ophthalmology, Edward S. Harkness Eye Institute, Columbia University College of Physicians and Surgeons; ⁶Ophthalmology, Singapore Eye Research Institute, Singapore National Eye Centre, Duke-NUS Medical School *CR
3010  —  A0353  Optical coherence tomography angiography changes before and after panretinal photocoagulation in patients with treatment-naive proliferative diabetic retinopathy. Anna S. Vergmann1, T. Y. Wong1, R. Kawasaki1, T. Peto2, J. Grunslund1. 1Ophthalmology, Odense University Hospital, Denmark; 2University of Southern Denmark; 1School of Medicine, Dentistry and Biomedical Sciences, Queen’s University, Belfast; 2Singapore National Eye Centre; 3Department of Vision Informatics, Osaka University Graduate School of Medicine.

3011  —  A0354  Changes on the Optical Coherence Tomography Angiography (OCT-A) in newly diagnosed Type I diabetes patients.

One year follow-up. Anna Sala-Puigdollers, M. Figueras-Roca, C. Alba- Linero, J. Zarranz-Ventura, V. Budi, M. Hernandez, A. Adan. Ophthalmology, Hospital Clinic de Barcelona

3012  —  A0355  Diagnostic Ability of Subnormal Capillary Density Area using a Reference-Based OCT-Angiography Deviation Mapping Approach to detect eyes with Diabetic Retinopathy. Jorge S. Andrade Romo1, G. Lynch1, D. B. Zhou1, M. V. Castanos2, R. E. Linderman1, J. Carroll1, R. B. Rosen2, T. Y. Chui2. 1New York Eye and Ear Infirmary; 2Icahn School of Medicine at Mount Sinai; 3Medical College of Wisconsin.

3013  —  A0356  Quantitative geometric features in optical coherence tomography angiography of diabetic retinopathy. David Le1, M. Alam1, J. I. Lim1, Y. Yao1. 1Department of Bioengineering, University of Illinois at Chicago; 2Department of Ophthalmology & Visual Science, University of Illinois at Chicago.

3014  —  A0357  Identifying Macular and Peripapillary Perfusion Density Change in Eyes with Retinopathies Using OCT-Angiography. Toco Y. Chui1, 2, D. B. Zhou1, 2, M. M. Castanos1, J. S. Andrade Romo1, R. E. Linderman1, J. Carroll1, R. B. Rosen2, 3. 1Ophthalmology, New York Eye & Ear Infirmary of Mount Sinai; 2Icahn School of Medicine at Mount Sinai; 3Cell Biology, Neurobiology & Anatomy, Medical College of Wisconsin; 4Ophthalmology & Visual Sciences, Medical College of Wisconsin.

3015  —  A0358  Use of optical coherence tomography angiography as the biomarker in diabetic retinopathy. Amir Hajrasoulia1, E. Kassa1, A. H. Hajrasoulia2. 1Ophthalmology, Indiana University School of Medicine; 2Department of City and Regional Planning, California Polytechnic State University.


3018  —  A0361  Impact of the scan field on flow measurements in Optical Coherence Tomography Angiography (OCT-A) images of diabetic eyes. Javier Zarranz-Ventura1, M. Dotti1, A. Ala-Chilet1, M. Barraso1, T. Hernandez2, C. Oliva3, J. Gascon3, A. Sala-Puigdollers4, M. Figueras-Roca5, Z. Chu5, R. K. Wang5, A. Adan5. 1Vitreo-Retinal Unit, ICOF, Hospital Clinic Barcelona; 2University of Washington.


3020  —  A0363  Projection-resolved optical coherence tomography angiography based metrics for early detection of retinal microvascular impairments in diabetes mellitus. Juan Ye1, T. Zhu1. Eye Center, Second Affiliated Hospital of Medical College, Zhejiang University.

3021  —  A0364  Longitudinal OCTA Analysis of Children with Type I Diabetes Mellitus. Kim Duong1, M. Fernn1, A. Omuru1, A. S. Khouri2, B. Szirtes1. 1University of Alabama at Birmingham School of Optometry; 2Rutgers New Jersey Medical School.

3022  —  A0365  Multimodal imaging of the initial stages of diabetic retinopathy. Different disease pathways in different patients. Dalila Alves1, I. Marques1, T. Santos1, L. Mendes1, A. Santos1, C. Lobo1, M. K. Durbin1, J. G. Cunha-Vaz1. 1IC, AIBILI - Association for Innovation and Biomedical Research on Light and Image; 2AIBILI - Association for Innovation and Biomedical Research on Light and Image; 3R & D, Carl Zeiss Meditec, Inc; 4Faculty of Medicine, University of Coimbra.

3023  —  A0366  The diagnostic efficacy of various measurements using optical coherence tomography angiography for detecting retinal microvascular changes in diabetic eyes without clinical features of diabetic retinopathy. Sawarin Laotaweerungsawat1, 2, C. Psaras1, M. K. Durbin1, J. G. Cunha-Vaz1, J. R. Chui1, 2. 1Royal Victorian Eye and Ear Hospital; 2Centre for Eye Research Australia; 3Department of Diabetes and Endocrinology, Royal Melbourne Hospital; 4Diabetes and Endocrine Service, Royal Women’s Hospital; 5Department of Surgery (Ophthalmology), University of Melbourne; 6Department of Obstetrics and Gynaecology, Mercy Hospital for Women; 7Department of Optometry and Vision Sciences, University of Melbourne; 8Department of Ophthalmology, Royal Melbourne Hospital; 9Perinatal Department, Mercy Hospital for Women; 10Department of Ophthalmology, Austin Hospital.

3024  —  A0367  Retinal vascular changes during pregnancy in patients with diabetes mellitus as measured using optical coherence tomography angiography. Mai Okada1, F. Widyapratu2, S. Rogers2, A. Nankervis1, J. Conn2, S. Shub3, X. Fagani4, D. Quest5, L. E. Lim5, R. C. Symons6. 1Royal Victorian Eye and Ear Hospital; 2Centre for Eye Research Australia; 3Department of Diabetes and Endocrinology, Royal Melbourne Hospital; 4Diabetes and Endocrine Service, Royal Women’s Hospital; 5Department of Surgery (Ophthalmology), University of Melbourne; 6Department of Obstetrics and Gynaecology, Mercy Hospital for Women; 7Department of Optometry and Vision Sciences, University of Melbourne; 8Department of Ophthalmology, Royal Melbourne Hospital; 9Department of Ophthalmology, University of California; 10Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago.

3025  —  A0368  Relating retinal vessel oxygenation and tortuosity at progressive stages of diabetic retinopathy. Selin L. Avazian1, P. Karamian1, J. Cano1, S. Leahy1, A. H. Kashani1, A. A. Moshfeghi1, H. Ameri1, N. P. Blair2, M. Shahidi1. 1Department of Ophthalmology, University of Southern California; 2Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago.

3026  —  A0369  A Comparison: Structural optical coherence tomography and angiography in diabetic retinopathy and diabetic macular edema. Laura C. Huang1, A. Shariat1, A. Oh1, T. Leng2, Y. J. Liao1. 1Ophthalmology, Byers Eye Institute, Stanford University; 2Ophthalmology, UCLA Doheny Eye Institute.

3027  —  A0370  Peripapillary vascular and neural remodelling secondary to diabetic retinopathy: an OCT angiography study. Luisa Frizziero1, R. Parrozzani2, D. Londer1, S. Bini1, E. Pilotto1, E. Midena1. 1IRCCS – Fondazione Bietti, Rome, Italy; 2Department of Ophthalmology, University of Padova.

3028  —  A0371  Retinal Vascular Response to the Handgrip Test in Type 1 Diabetes using OCT-Angiography. Carlos Marques-Neves1, 2, I. Cardoso Leal1, 2, A. Silva-Herdade1, S. Moreira1, S. do Vale1, 2, P. Dionisio1, L. Abegao Pinto1, 2, M. Castanho1, D. C. Sousa1, 2. 1Vision Sciences Study Center, Universidade de Lisboa; 2Ophthalmology, Hospital Santa Maria; 3Instituto de Bioquimica, Faculdade de Medicina, Universidade de Lisboa; 4Respiratory Medicine, Hospital Santa Maria; 5Endocrinology, Hospital Santa Maria.

3029  —  A0372  Ultra Wide-Field en face Swept-Source Optical Coherence Tomography Angiography Application in Proliferative Diabetic Retinopathy. Hagar Khalid1, L. Nicholson1, R. Schwartz1, M. El-Bradey1, D. A. Sin1, K. Balaskas1, P. A. Keane1, R. Rajendram1. 1NHRI Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology, London, UK; 2Ophthalmology, Tanta University; 3Ophthalmology Department, Tanta University.

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Tuesday Posters – 3030 – 3052

3030 — A0373 Effect of Segmentation Error Correction on Optical Coherence Tomography Angiography Measurements in Healthy Subjects and Diabetic Macular Edema. Khalil Ghasemi Falavarjani1, A. Habibi2, P. Amari3, S. Ghasemizadeh1, M. Ashrafkhorsanj1, D. Sarraf8. 1Department of Ophthalmology, Iran University of Medical Sciences; 2Department of Ophthalmology, Stein Eye Institute, UCLA *CR


3032 — A0375 Correlation of Optical Coherence Tomography Angiography Retinal Vascular Parameters with Systemic Biomarkers in Diabetic Black Adults without Retinopathy. Rose Dimitroyannis1, L. Chiu2, K. Ho3, P. Hulvey4, D. Skondra5. 1University of Chicago; 2University of Chicago Pritzker School of Medicine; 3Department of Ophthalmology and Visual Science, University of Chicago Medical Center


3035 — A0378 Automated Image Alignment for Comparing Vascular Changes in Fundus Fluorescein Angiography and Optical Coherence Tomography Angiography in the Macula of Patients with Diabetic Retinopathy. David J. Ramsey1, A. G. Elnahrawy1. 1Ophthalmology, Lahey Hospital and Medical Center; 2Ophthalmology, Tufts University School of Medicine; 3Department of Ophthalmology, Cairo University

3036 — A0379 Comparison of foveal avascular zone quantification. Tobias Batram, N. Feucht, C. Lohmann, M. Maier. Department of Ophthalmology, Technical University of Munich

3037 — A0380 Evaluation of diabetic macular ischemia using Optical Coherence Tomography Angiography and Fluorescein Angiography. Jennifer Trenado Luna1, S. Rojas Juarez2, A. Ramirez Estudillo3. 1Ophthalmology Resident, Hospital de la Luz; 2Retina, Hospital de la Luz

3038 — A0381 Association of superficial and deep macula vessel density with past visual field progression in glaucoma. Sasan Moghiml, M. Zangwill2, H. Hou2, J. Proudfoot, R. Penteado, H. Kyung1, H. Fa1, A. Li, E. Ghabari, C. Bowd, R. N. Weinreb. Viterbi Family Department of Ophthalmology, University of California, San Diego


3040 — A0383 Diurnal variations in flow density measured using Optical Coherence Tomography Angiography (OCTA) and the impact of heart rate, mean arterial pressure and intraocular pressure on flow density in primary open-angle glaucoma patients. Viktoria C. Müller1, J. Sto1, L. Kirschke2, P. Nello3, M. Alnavais6h1, N. Eer1. 1Dept. of Ophthalmology, University of Muenster Medical Center; 2Dept. of Biometry and Clinical Research, University of Muenster Medical Centre

3041 — A0384 Comparison of the glaucoma diagnostic ability of macular vessel density in inner retina layers. Jonghoon Shin, J. Seo. ophthalmology, Pusan national university yansan hospital

3042 — A0385 Peripapillary Vessel Density as a Glaucoma Biomarker throughout the Glaucoma Severity Spectrum. Ravneet S. Rai1, K. Lucy1, N. Tracer1, M. Wu2, M. Liu3, M. de los Angeles Ramos Cadena1, S. Rathi1, A. Madu2, H. Ishikawa1, J. Schuman3, G. Wollstein1. NYU Eye Center, NYU Langone Health; 3Departments of Population Health and Environmental Medicine, NYU Langone Health *CR

3043 — A0386 Macular optical coherence tomography angiography in ischemic optic neuropathy compared to that in glaucoma. Masoud Fard1, H. Ghavvehchian1, R. Ritch1. 1Neuro-ophthalmology, Farabi Eye Hospital; 2New York Eye and Ear Infirmary

3044 — A0387 Diagnostic accuracy of OCTA vessel density and OCT tissue thickness measurements using machine learning. Christopher Bowd1, A. Belgith2, L. M. Zangwill3, M. H. Goldbaum1, M. Christopher1, E. Ghabari1, H. Hou1, S. Moghim1, R. Penteado2, R. N. Weinreb1. 1Hamilton Glaucoma Center, Shirley Eye Institute, Viterbi Family Department of Ophthalmology, UC San Diego; 2Jacobs Retina Center, Shirley Eye Institute, Viterbi Family Department of Ophthalmology, UC San Diego *CR

3045 — A0388 Reverse Polarity OCT Angiography as a Biomarker of Neovascular and Ischaemic Retinal Diseases. Chris Ashton, N. Patel. NHS

3046 — A0389 Vessel Position of the Arteriovenous Crossing in Branch Retinal Vein Occlusion. Takahiro Kogo1, Y. Muraoka1, Y. Iida1, S. Ooto1, T. Murakami1, Y. Iida2, S. Kadomoto1, A. Uji1, A. Tsujikawa1. 1Department of Ophthalmology and Visual Sciences, Kyoto University Graduate School of Medicine; 2Osaka Red Cross Hospital *CR


3048 — A0391 Longitudinal changes of vessel density in cases converting from non-ischemic to ischemic central retinal vein occlusion. Akira Fukatomi, K. Tsuboi, M. Kamei. Aichi Medical University


3050 — A0393 The Carbon Footprint of Fluorescein Angiography compared to OCT Angiography. Rhiannon Reynolds1, D. Morris1, U. Chakravarthy2. 1University Hospital of Wales; 2Queens University, Belfast *CR

West Exhibition Hall A0394-A0410

Tuesday, April 30, 2019 8:45 AM-10:30 AM
Multidisciplinary Ophthalmic Imaging Group

330 OCTA in Healthy/Aging Eyes

Moderator: Brian Soetikno


3052 — A0395 Choroidal flow density negatively correlates with advancing age in spectralfold domain optical coherence tomography angiography. Christiane Frank, P. Scherm, K. Wehrmann, N. Feucht, C. Lohmann, M. Maier, M. Pettenkofer. Klinikum rechts der Isar, Technische Universität München

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3053 — A0396 Generalized estimating equation modeling of choroidal capillaris flow deficits with an SS-OCTA normal database. Zhongli Chu1, J. Yiu1, Q. Zhang1, G. Gregori1, P. J. Rosenfeld1, R. K. Wang1, 2. *Bioengineering, University of Washington; 3Department of Biostatistics, University of Washington; 4Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 5Ophthalmology, University of Washington *CR

3054 — A0397 OCT Angiography reveals a non-flow area enlargement in the choroid with increasing age. Pieter Nelis1, 2, V. C. Müller1, N. Mihailovic1, N. Eter1, M. ten Tusscher1, M. Alnawaiseh1. 1UZ Brunel (VUB); 2University of Muenster Medical Center

3055 — A0398 Repeatability of choroid capillaris flow deficit measurements in PLEX Elite 9000 for normal eyes. Mary K. Durb1, L. De Sitternes1, S. Kuback1, Z. Chu1, Q. Zhang1, G. Gregori1, H. Zhou1, Y. Shi1, R. K. Wang1, 2. *Carl Zeiss Meditec, Inc; 2Department of Bioengineering, University of Washington; 3Ophthalmology, Bascom Palmer Eye Institute

3056 — A0399 Impact of slab selection on quantification of the choroid capillaris on optical coherence tomography angiography. Ik Soo Byon1, 2, M. Nassisi1, 2, S. R. Sadda3, 2. *Doheny Eye Institute; 3Ophthalmology, University of California, Los Angeles *CR

3057 — A0400 Quantitative Assessment of the Choriocapillaris in Healthy Individuals Using Spectral Domain Optical Coherence Tomography Angiography. Youngsok Ji1, 2, T. Hirano1, 2, M. G. Nittala1, s. velagala1, S. R. Sadda3, 2. *Doheny Eye Institute; 3Ophthalmology, University of California, Los Angeles *CR


3060 — A0403 Quantitative comparisons of angiograms of 4 OCTA devices. Jingyuan Yang, M. Yuan, X. Zhao, E. Wang, Y. Chen. Ophthalmology, Peking Union Medical College Hospital


3064 — A0407 Vasculature analysis by anterior segment OCT angiography in light- and dark-colored eyes. Jil Cathérine Andresen1, F. Bosche1, B. Sandhoff1, F. G. Holz1, C. K. Brinkmann. 1Department of Ophthalmology, University of Bonn; 2Carl Zeiss Meditec *CR

3065 — A0408 Ocular Vessel Density Among Healthy Subjects of Different Ethnicities. Maria de los Angeles Ramos Cadena1, H. Ishikawa1, J. Schuman1, K. Lucy1, M. Wu1, 2, M. Liu1, 3, R. S. Rai1, J. Jimenez Romeo1, G. Lazzano1, D. Diaz Robles1, J. Shin1, 4, K. Sung1, G. Wollstein1. 1NYU Langone Health, NYU Eye Center; 2Division of Biostatistics, Department of Population Health and Environmental Medicine, NYU Langone Health; 3Glaucoma, Asociación Para Evitar la Ceguera en México I.A.P.; 4Ophthalmology, College of Medicine, University of Ulsan, Asan Medical Center; 5University of Ulsan, Gangneung Asan Hospital *CR


3067 — A0410 Intrascan repeatability of quantitative metrics using widefield optical coherence tomography angiography (OCTA) in old community-dwelling Asian adults. Jimmy M. Hong1, 2, B. Tan1, P. Gupta1, T. Y. Wong2, E. L. Lamoureux1, 2, L. Schmetterer1, 3, J. Chua1, 2. 1Department of Ophthalmology, University of Bonn; 2Carl Zeiss Meditec; 3Academic Clinical Program, Duke-NUS Medical School

3068 — A0411 Choriocapillaris analysis in non-human primates using SS-OCTA. Bingyao Tan1, J. Chua1, 2, Y. A. Baraithi1, 2, M. Mani1, 2, A. S. Chan1, 2, M. Ang1, 2, L. Schmetterer1, 3, *Singapore Eye Research Institute; 2Academic Clinical Program, Duke-NUS Medical School

3069 — A0412 4D contrast-enhanced OCT improves in vivo visualization of neovascular structure and hemodynamics in mice. Conrad W. Merkle1, M. Augustin1, D. J. Harper1, V. J. Srinivasan1, 2, G. Garhofer1, B. Baumann1. 1Center for Medical Physics and Biomedical Engineering, Medical University of Vienna; 2Biomedical Engineering, University of California, Davis; 3Ophthalmology and Vision Science, University of California Davis School of Medicine; 4Clinical Pharmacology, Medical University of Vienna *CR

3070 — A0413 Averaging strategies to improve imaging of the rodent choriocapillaris with OCT angiography. Vivek J. Srinivasan1, 2, T. Zhang1, J. Zhu1. 1Biomedical Engineering, University of California, Davis; 2Ophthalmology and Vision Science, University of California, Davis *CR


3072 — A0415 Optical Coherence Tomography Angiography in laser-induced mouse branch retinal vein occlusion model. hajime takashashi, K. Nakagawa, H. Yamada, H. Morii, K. Takashashi. Kansai Medical University *CR

3073 — A0416 Hemodynamics of Neovascular Central Serous Chorioretinopathy: a Stress/Rest Optical Coherence Tomography-Angiography Study. Marco Lupidi1, F. Cardillo Piccolino1, C. Cagin1, R. Corbucci1, D. Fruttini1, M. Nicolò2, C. Eandi1. *Ophthalmology, Eye Clinic, University of Perugia; 2The Macula Onlus Foudation *CR

3074 — A0417 Optical coherence tomography angiography for vascular remodeling after pterygium surgery with limbal-conjunctival autograft. Zhanlin Zhao1, 2, Y. YUE1, 2, C. Shao1, 2, Y. Fu1, 2, X. Fan1, 2. 1Shanghai Key Laboratory of Orbital Diseases and Ocular Oncology; 2Ophthalmology, Ninth People’s Hospital, Shanghai JiaoTong University School of Medicine

3077 — A0420  Textural Parameters of OCTA Images of Choriocapillaris Are Different in Young Healthy Adults of Different Races. Asadolah Movahedan1, L. Chun1, P. Vargas2, D. Skondra1, P. La Riviere1. *Ophthalmology & Visual Sciences, University of Chicago; *Department of Radiology, University of Chicago *CR

3078 — A0421  MHz Swept-Source OCT Angiography of the choriocapillaris. Tilman Schmitt1, M. Niederleitner2, H. Ren1, M. A. Arain1, R. Williams3, M. Salas5, L. Ginner4, W. Drexler2, R. A. Leitgeb2. *Research and Development, Carl Zeiss Meditec, Inc.; *Center of Medical Physics and Biomedical Engineering, Medical University of Vienna *CR

3079 — A0422  Differentiating veins from arteries on optical coherence tomography angiography (OCTA) using vortices in the deep capillary plexus to identify venous outflow origin. Xiaoyu Ju1,2, N. Yinnestimate1, D. Sarraf3, K. Freund4. *Vitreous Retina Macula Consultants of New York; *State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Center, Sun Yat-sen University; *Bascom Palmer Eye Institute, University of Miami; *Stein Eye Institute, UCLA; *Department of Ophthalmology, New York University School of Medicine *CR

3080 — A0423  Projection resolved optical coherence tomography angiography to distinguish flow signal in retinal angiomatous proliferation from flow artifact. Alan Fayed2, A. A. Fawzi1. *Northwestern University; *Cairo University

3081 — A0424  Methods of Quantification for Optical Coherence Tomography Angiography Image Analysis. Nihal Mahat3, K. Liu4, A. Alibhai1, P. Braun2, A. Ishibazawa3, O. Sorour4, J. S. Duker5, N. K. Waheed5. *New England Eye Center, Tufts Medical Center; *Brown University Alpert Medical School; *University of Hawai‘i John A. Burns School of Medicine; *Yale School of Medicine; *Department of Ophthalmology, Asahikawa Medical University; *Department of Ophthalmology, Tanta University *CR


3083 — A0426  High-resolution pigment and flow imaging with multi-scale sensorless adaptive optics OCT. Destiny Hsu1, J. Kwoun1, D. J. Wahl1, M. Ju1, Y. Jian1, M. V. Sarunic1. *School of Engineering Science, Simon Fraser University; *Casey Eye Institute, Oregon Health & Science University

3084 — A0427  Assessing Scleral Area Vessel Density in Subjects with Anterior Sclerosis using Optical Coherence Tomography Angiography. Sarakshi Mahajan1, M. Huimin2, M. Hussain1, M. S. Ormachea3, G. Uliudag1, A. N. Tran1, J. Bae3, R. Afridi3, S. Karkhuri1, M. Hausanreisoglu4, A. Pham3, K. Y. Al-Kwir2, D. V. Do1, Q. D. Nguyen1, Y. Segah3. *Ophthalmology, Byers Eye Institute, Stanford University; *Ophthalmology, Hospital Universitario Austral; *Department of Ophthalmology, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine; *Ophthalmology, Shri Sadguru Seva Sangh Trust-eye Hospital; *Ophthalmology, Gazi University


3086 — A0429  Visualization of fine retinal networks through higher optical resolution OCTA. Simon Belet1, S. Kabach1, L. De Sisternes1, P. Krawec1, T. Callan1, C. Wu1, R. A. Goldberg1. *Carl Zeiss Meditec, Inc.; *Bay Area Retina Associates *CR

3087 — A0430  Variability and Repeatability of Retinal Vessel Caliber Measurements with Optical Coherence Tomography Angiography. Martha Whiting1, J. Tsai1, X. Zhang1, L. Magder2, O. Saeedi1. *Ophthalmology, University of Maryland School of Medicine; *University of Maryland School of Medicine *CR

3088 — A0431  Assessment of OCT angiography image quality in clinical studies. Ian Holmen1,2, S. Kondal1, J. W. Pak1,2, B. A. Blodi1,2, K. E. Stepkin1, A. Domalpally2. *Fundus Photograph Reading Center, Madison, WI; *Department of Ophthalmology and Visual Sciences, University of Wisconsin


3090 — A0433  Comparing higher order morphotmetrics of retina blood vessels imaged with OCT-angiography and histology. marconi barbosa1, D. Yu1, P. Yu1, D. Au1, T. Maddess1. *Neuroscience Department, The Australian National University; *Lions Eye Institute, UWA *CR


3093 — A0436  Handheld Swept-Source Optical Coherence Tomography Angiography in Awake Neonates Screened for Retinopathy of Prematurity. Yasmin Mohshiri1, A. Legocki2, K. Zhou1, S. Song1, K. Rezaei1, K. Tarzcy-Horoch2, R. K. Wang3, M. T. Cabrera1,4. *Department of Ophthalmology, Seattle Children’s Hospital; *University of Washington School of Medicine; *Department of Ophthalmology, University of Washington Medical Center; *Department of Bioengineering, University of Washington

3094 — A0437  Handhold OCT Angiography Probe for Imaging of Infants in the Clinic or Nursery. Christian Viehland1, X. Chen1, D. Tran-Viet1, M. Jackson-Atogi1, P. Ortiz1, G. Waterman1, C. A. Toth2, J. A. Izzat1. *Biomedical Engineering, Duke University; *Ophthalmology, Duke University *CR

3095 — A0438  Machine Learning for the automated interpretation of Optical Coherence Tomography Angiography for Age-related Macular Degeneration. Konstantinos Balaskas1, A. Alibhai2, H. Khalid1, P. Sergouniotis1, N. PONTIKOS1, P. A. Keane1. *Moorefields Eye Hospital, London; *Manchester Royal Eye Hospital *CR

3096 — A0439  Using Medical Image Reconstruction Methods for Denosing of OCTA Data. Lenmart Husvoti1, S. Ploner1, E. M. Mood2, A. Alibhai1, J. Schottenhamml1, J. S. Duker1, N. K. Waheed1, J. G. Fujimoto1, A. K. Maier1. *Massachusetts Institute of Technology; *Pattern Recognition Lab, Friedrich-Alexander University Erlangen-Nuremberg; *New England Eye Center, Tufts Medical Center *CR

3097 — A0440  Correction of artifacts from misregistered B-scans in orthogonally scanned and registered OCT angiography. Stefan B. Ploner1, J. Schottenhamml2, E. M. Mood1, L. Husvoti2, A. Alibhai1, N. K. Waheed1, J. S. Duker1, J. G. Fujimoto1, A. K. Maier1. *Pattern Recognition Lab, Friedrich-Alexander University Erlangen-Nuremberg; *Electrical Engineering and Computer Science and Research Laboratory of Electronics, Massachusetts Institute of Technology; *New England Eye Center, Tufts Medical Center *CR

3098 — A0441  Removal of microsaccade artifacts on en face OCT angiograms using hybrid frequency and wavelet filtering. Hao Wang1, J. Yang1, J. Xie1, Z. Gu1, H. Mao1, S. Jiang1, K. Zhao1, Y. Zhao1, Y. Hu1, J. Cheng1, Y. Zheng1, J. Liu1. *Cixi Institute of Biomedical Engineering, Chinese Academy of Sciences; *Department of Eye and Vision Science, University of Liverpool

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3099 – 3121 – Tuesday – Posters

West Exhibition Hall A0490-A0514
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Visual Neuroscience

332 Animal Models for Visual Disease and Restoration

Moderator: Stephanie C. Joachim


3100 – A0491 Evaluating retinal biomarkers in a mouse model of Parkinson’s disease. Christine T. Nguyen1, K. Tran1, J. K. Lim1, V. H. Wong1, A. Shahadeh1, A. J. Vingrys1, B. V. Bu1, D. Finkelstein2. 1Optometry and Vision Sciences, University of Melbourne; 2Flory Institute of Neuroscience and Mental Health

3101 – A0492 Physiologic dysfunction, demyelination, and retinal ganglion cell loss in mice with neurofibrinomas and optic pathway gliomas. Steven F. Stashoff1, F. Nadal-Nicolas1, E. Jecrois2, W. Li1, M. Bornhorst1, Y. Zhu1. 1Section on Retinal Neurophysiology, National Eye Institute; 2Center for Neurosciences, Children’s National Health Care; George Washington U

3102 – A0493 Histological changes associated with aging in the retina of the vervet monkey. Jerome Garneau1, L. Rodriguez1, J. Bouskila1, J. Bouchard1, M. Pito1, V. Pernot1. 1Ophthalmology, University Naval - CHUL; 2Department of Human Genetics, McGill University; 3School of Optometry, University of Montreal; 4Laboratory of Neuropsychiatry-Psychiatric Centre, University of Copenhagen

3103 – A0494 Thyroid hormone levels may predict pathological changes in cone opsin expression and consequent color vision defects before detectable retinopathy. Rosina I. Hajdu1, 2, Z. Turoczi3, I. Szalai1, E. Tátrai3. 1Department of Ophthalmology, Semmelweis University; 2Department of Anatomy, Histology and Embriology, Semmelweis University; 3Second Department of Internal Medicine, Semmelweis University; 4Heart and Vascular Center, Semmelweis University; 5Pazmany Peter Catholic University; 6Augenzentrum Retinology Unit, Pallas Kliniken; 7Department of Biophysics and Radiation Biology, Semmelweis University

3104 – A0495 Release of Retinal Extracellular Vesicles in a Model of Retinitis Pigmentosa. Lorena Vidal1, M. Oltra1, J. Barcia1, A. Sahaboglu2, F. Sancho1. 1Catholic University of Valencia; 2Institute for Ophthalmic Research, University of Tübingen

3105 – A0496 The eye as a window to the brain: retinal characterization in a transgenic aSYN mouse model of Parkinson’s disease. Lien Veye1, M. Vandenamee1, V. Baekelandt1, L. K. Mooms1, L. De Groef1. 1Biology, KU Leuven; 2Medicine, KU Leuven

3106 – A0497 Signal transduction mechanism underlying H+ efflux from retinal Müller glial cells induced by extracellular ATP. Robert P. Malchow1, B. K. Thernookovar1, M. Gongwar1, B. Goegelein1, L. Shepherd1, H. Caringal1, T. Leuschner1, L. Kiedrowski2, M. Kreitzer1. 1Biological Sciences & Ophthalmology, University of Illinois at Chicago; 2Biological Sciences, University of Illinois at Chicago; 3Biology, Indiana Wesleyan University

3107 – A0498 In vivo screen for extracellular vesicles that promote Müller glia proliferation and neurogenetic activity in zebrafish and mice. Sankarathi Balaity1, D. Didiano1, C. Bertolocci1, S. Hinger2, E. M. Levine1. 1Ophthalmology, Vanderbilt Eye Institute, Vanderbilt University Medical Center; 2Department of Biological Sciences, Vanderbilt University


3109 – A0500 Transplantation of human embryonic stem cell derived retinal tissue in the subretinal space of immunodeficient rats with retinal degeneration (RD). Igor O. Nasonkin1, B. Lin1, F. Binette1, G. Hogge1, R. Aramant2, R. K. Singh1, M. J. Seiler2. 1Biotime, Inc.; 2Physical Medicine & Rehabilitation; Ophthalmology, University of California, Irvine; School of Medicine

3110 – A0501 Ephrin-A2 and -A3 are negative regulators of photoreceptor regeneration in rhodopsin knock out mice. Ruilin Zhu1, K. Cho2, L. Yang1, D. F. Chen1. 1Ophthalmology, Peking University First Hospital; 2Schepps Eye Research Institute

3111 – A0502 Minocycline protects retinal ganglion cells and optic nerve structure in an immune mediated retina degeneration model. Andreas Smits1, P. Grotjagdt, S. Kuehn, G. State, B. Dick1, S. C. Joachim1. Experimental Eye Research Institute, Ruhr University Bochum

3112 – A0503 Retinal and optic nerve dysfunction in PS19 tau transgenic mice. Daniel L. Chao1, H. Lin1, D. Castillojos, K. Chiang1, N. Hiramatsu1, A. Chen1, E. Koo2. Ophthalmology, Regeneron Pharmaceuticals

3113 – A0504 Fishing for neuroreparative strategies in the short-living Notobranchius furzeri. Sophie Vanhunsel, J. Van houcke, I. Furzeri. 1Catholic University of Valencia; 2Center for Military Psychiatry and Neuroscience, Blast-Induced Neurotrauma Branch, Walter Reed Army Institute of Research, Silver Spring MD USA

3114 – A0505 Impg1 and Impg2 knock down analysis in the development of medaka fish photoreceptors. Guillaume OLIVIER3, D. FALANGA4, F. SALIERN0, D. INTARTAGLIA2, C. CAZEVIEILLE5, E. POLISHCHU6, S. Banfi7, A. MULLER1, J. A. Mewnier1, I. Conte1, G. Manes1. 1Neurobiology, INSERM - U1051; 2TIGEM; 3Guy de Chauliac


3116 – A0507 Retinal physiological changes in Thyroid Stimulating Hormone Receptor Knock Out mice. Adrianna Latuzuszek, R. Wudali, Y. Hu, C. Romano. Ophthalmology, Regeneron Pharmaceuticals

3117 – A0508 Enhanced temporal contrast sensitivity precedes retinal degeneration in a P23H mouse model of retinitis pigmentosa. Rose L. Pasquarello1, 2, M. Booth1, B. Knox1, Y. Umino1, C. Solessio1. 1Ophthalmology, Center for Vision Research, SUNY Upstate Medical University; 2Neuroscience, SUNY Upstate Medical University; 3SUNY Upstate Medical University

3118 – A0509 Extended electrophysiological characterization of the retinal degeneration in CLN3c mice. Cornelia Volz1, M. Mirza1, T. Langmann1, H. Jaggle2. 1Department of Ophthalmology, University Clinic Regensburg; 2Institute of Human Genetics, University of Cologne; 3Institute of Human Genetics, University of Regensburg

3119 – A0510 Diabetes-induced changes in rat ERG in relation to glucose and pH. Robert A. Linsenmeier1, 2, A. Dmitriev1. 1Biomedical Engineering Dept, Northwestern University; 2Neurobiology Department, Northwestern University

3120 – A0511 Effects of exercise on retinal and cognitive function in Type II diabetic rats. Cody A. Worthy1, 2, R. S. Allen1, 2, L. V. Cardelle1, 2, C. Motz1, A. Feola1, 2, M. Coulter1, 2, J. H. Boatright1, 2, M. T. Purdue1, 2. 1Center for Visual and Neurocognitive Rehabilitation, Atlanta VA Medical Center; 2BME Biomedical Engineering, Georgia Institute of Technology; 3Ophthalmology, Emory University School of Medicine

3121 – A0512 Preferential retina horizontal cell loss in an animal model of mild traumatic brain injury. Mary A. Johnson1, J. C. DeMar2, G. Xue1, D. M. Wilder2, A. C. Batuure2, J. G. Rosenberger1, J. B. Long1. 1Ophthalmic and Vision Science, Univ of Maryland Sch of Medicine; 2Center for Military Psychiatry and Neuroscience Research, Blast-Induced Neurotrauma Branch, Walter Reed Army Institute of Research, Silver Spring MD USA

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3122 — A0513 Characteristics of GCaMP expressing cells in retinal ganglion cell layer of Thy1-GCaMP transgenic mice before and after optic nerve injury. Yabana Takeshi1,2, M. Hooper1, S. Farrell1, B. C. Chanahai1. 1Ophthalmology and Visual Sciences, Dalhousie University; 2Ophthalmology, Tohoku University Graduate School of Medicine  
3123 — A0514 Transcriptomic assessing and guiding DSB repair pathway activity towards precise genomic engineering of post-mitotic neurons. Giovanni Pasquini1, A. Kenpe1, M. Kar1, K. Steger1, V. Busskamp1. 1DFG Research Center for Regenerative Therapies, Technische Universität Dresden; 2Deutsches Zentrum für Neurodegenerative Erkrankungen e.V. (DZNE); 3Department of Ophthalmology, Justus-Liebig-University Giessen

West Exhibition Hall B0042-B0059
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Clinical/Epidemiologic Research

333 Pediatric eye disease

Moderators: Fiona Stapleton and Megan E. Collins

3124 — B0042 Progression from Preplus to Plus Disease in Acute-Phase Retinopathy of Prematurity (rROP) Study. Qianqian E. Cheng1, G. E. Quinn2, E. Daniel3, A. Baumritter3, G. Ying4. 1University of Pennsylvania; 2Ophthalmology, Children’s Hospital of Philadelphia

3125 — B0043 Prevalence and caretaker perception of childhood eye diseases in urban Tanzania. Ariana Naaseh1, K. White1, A. Dinicu1, D. Zezoff1, J. Chion1, A. Runge1, A. Lucas1, K. Bera1, E. Crawford2, E. Cooper2, J. Maher3, C. Boissvert3. 1University of Calvinnary, Irvine School of Medicine; 2Gavin Herbert Eye Institute, University of California, Irvine School of Medicine

3126 — B0044 Concussion-Related Visual Dysfunction in Children: A Retrospective Study. Premkumar Gunasekaran1, C. Hodge1, 2, G. Villarreal3, A. K. Rose1. 1University of California, Irvine School of Medicine; 2Gavin Herbert Eye Institute, University of California, Irvine School of Medicine

3127 — B0045 Success rate of optical biometry measurements in primary school students. Takuto Yabana1, T. Yamashita1, N. Yoshihara1, N. Kakiuchi1, T. Sakamoto1. Kagoshima University

3128 — B0046 Accuracy of vision screening in pre-school and young school-aged children. Mythili Ilango1, A. French1, K. A. Rose1. University of Technology Sydney


3130 — B0048 Access to Eye Care Services by Schoolchildren in a Longitudinal Cohort. Felicia Adinanto1, A. French2, K. A. Rose2. Discipline of Orthoptics, University of Technology Sydney

3131 — B0049 Effectiveness of teachers visual acuity test in school screening of children from 3 to 10 years in Sete Barras, Sao Paulo, Brazil. Ana C. Carneiro1, C. Pelegreni Barbosa Gracelit2, A. Fernandes1, A. L. Silva1, F. Hira1, C. Nakamura1. 1Pediatric Ophthalmology, Federal University of Sao Paulo; 2Federal University of Sao Paulo

3132 — B0050 Causes Of Childhood Blindness At A Tertiary Eye Care Facility In Saudi Arabia. Burhan A. Aldawalibi1, K. F. Tabbara2. 1Ophthalmology, The Eye Center and The Eye Foundation for Research in Ophthalmology; 2Department of Ophthalmology, College of Medicine, King Saud University


3135 — B0053 Secondary IOL Implantation among aphakic children in the Infant Aphakia Treatment Study. Carolyn Drews-Botsch1, A. Nizam1, E. Wilson1, D. Vanderveen1, S. R. Lambert3. 1Department of Biostatistics and Bioinformatics, Emory University; 2Medical University of South Carolina; 3Harvard University; 3Ophthalmology, Stanford University


3137 — B0055 Natural history of retinal maturation in Asian Indian preterm infants with and without Retinopathy of Prematurity. Sucheta Kulkarni1, R. Mendke1, G. Venancio1, N. Kasahara1. Ophthalmology, Universidad Autonoma de Nuevo Leon

3138 — B0056 Efficacy of preschool vision screening in New Zealand children in a community with significant socioeconomic disadvantage. Joanna Black1, R. Findlay1, A. Leversha1, A. Burge1, N. Anstic1. 1University of Auckland; 2Starship Community Services, Auckland District Health Board; 3School of Optometry and Vision Science, University of Canberra

3139 — B0057 Use of Social Media as a Tool to Enhance Public Awareness of Leukocoria. Aisla A. Mumtaz1, J. Alexander1. Ophthalmology, University of Maryland Medical Center

3140 — B0058 Prognostic factors of poor final visual acuity after repair of open globe injuries in a pediatric population in Mexico. Marissa L. Fernandez1, A. Treviño-Herrera1, D. Rodriguez-Medellin1, F. Morales-Wong1, C. Fernández de Luna1, A. Rodríguez-Martínez1, G. Villarreal-Mendez1, M. Fernandez-Espinoza1, J. Mohamed-Hamsho1, K. Mohamed-Noriega1. Department of Ophthalmology, Universidad Autonoma de Nuevo Leon

3141 — B0059 Universal digital imaging screening cost of neonatal visual impairment causes. Lorena d. Haefeli1, M. Neves1, J. Malacarne1, M. L. Moreira1, A. A. Zin1, M. T. Pinto2. Instituto Figueire

West Exhibition Hall B0190-B0210
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Anatomy and Pathology/Oncology

334 Genetics and Light dependent mechanisms in myopia

Moderator: Elise N. Harb

3142 — B0190 The characterization of high myopic-associated SNPs in Asian populations in an European cohort of myopic maculopathy. Sergio Recalde1, 2, M. Hernandez1, 2, V. Bilbao3, L. Maestre-Rellán1, I. Belza1, 2, E. Alonso1, 2, J. Beznarteu1, 2, J. Arza1, J. Ruiz-Moreno1, 2, P. Fernandez1, 2, A. Garcia-Layana1, 2. 1Ophthalmology Experimental Lab., Clinica Universidad de Navarra; 2Ophthalmology department, Clinica Universidad de Navarra; 3IDISNA, Navarra Institute for Health Research; 4Ophthalmology department, Clinical University of Navarra; 5Ophthalmology department, San Eloy Hospital; 6Surgical-Clinical Institute of Ophthalmology, University of the Basque Country; 7Ophthalmology department, Castilla La Mancha University; 8Ophthalmology department, Baviera European Institute of Retina

3143 — B0191 Genetic risk scores of the largest multi-traits GWAS meta-analysis on refractive errors. Caroline C. Klaver1, 2, M. S. Tedja1, X. Han1, V. J. Verhoeven1, N. Ericksson1, N. Furlotte1, N. Amin1, C. v. Duijn1, S. MacGregor1. 1Ophthalmology and Epidemiology, Erasmus Medical Center; 2Ophthalmology, Radboud University Medical Center; 3Statistical Genetics, QIMR Berghofer Medical Research Institute; 4Clinical Genetics, Erasmus Medical Center; 5Epidemiology, Erasmus MC; 6Epidemiology, University of Oxford, NDPH
3149 — B0197 Identification of two gene variants for axial length in children, Shiyaoyi Lu1, J. YAM1, S. Tang1, K. Kami1,2, A. L. Young2,3, C. C. Tham1,4, C. C. Pang1,2, L. Chen1,2.1 Department of Ophthalmology and Visual Sciences, the Chinese University of Hong Kong; 2Department of Ophthalmology and Visual Sciences, Prince of Wales Hospital; 3Joint Shantou International Eye Center of Shantou University and The Chinese University of Hong Kong; 4Hong Kong Eye Hospital

3150 — B0198 Commonalities between transcriptomic and proteomic profiles of FDM in chick, Loretta Giummarra Vocale1,2, N. Riddell, M. J. Murphey3, S. G. Creever3.1 School of Health and Biomedical Sciences, RMIT; 2School of Psychology & Counselling, La Trobe University

3151 — B0199 Crosstalk between prostanoid receptor (EP2) and peroxisome proliferator-activated receptor (PPAR)-linked cyclic adenosine monophosphate (cAMP) signaling affects myopia in guinea pigs, Nethraiheet J rinsivasalu, S. Zhang, Y. Hu, X. Zhou, J. Qu. Wenzhou Medical University

3152 — B0200 Light exposure history alters dopamine activity in the retina, Erica Landis1,2, H. Park1, M. A. Cheneke1, L. He2, C. Sidhu2, R. Strickland1, P. Ivanov1,2,3, M. T. Pardue4,1. 1Atlanta VA Health System; 2Ophthalmology, Emory University School of Medicine; 3Pharmacology, Emory University School of Medicine; 4Biomedical Engineering, Georgia Institute of Technology

3153 — B0201 Wavelength Specificity of Violet Light on Suppressing Refractive Change and Axial Elongation in A Murine Model of Lens-induced Myopia, Xiaoyan Jiang1,2, T. Kuriharar1, K. Mori1,2, S. Ikeda1,2, H. Torii1,2, K. Tsutobat1, Laboratory of Photobiology, Keio University School of Medicine; 2Department of Ophthalmology, Keio University School of Medicine *CR

3154 — B0202 Blue light in the evening stimulates ocular growth and alters ocular rhythms in chicks, Jonathan Elin-Calcador, Sandra Gisbert Vision Science, University of Oxford

3155 — B0203 The effect of monochromatic light on eye growth of chicks with competing optical defocus, Rosa Ke-man Chun, H. Li, H. So, C. Yiu, K. Li, T. Lam, D. Y. Tee, C. To. School of Optometry, The Hong Kong Polytechnic University

3156 — B0204 Determining the Isoluminant Point in Chicks, Alex Hentschel. Vision Science, New England College of Optometry


3158 — B0206 Dopamine transporter (DAT) expression changes in lens induced myopic eye in Guinea pigs, Wangyuan Liu, J. Dai. Fudan University Eye and ENT Hospital

West Exhibition Hall B0211-B0228
Tuesday, April 30, 2019 8:45 AM-10:30 AM
Lens

335 Lens Physiology and Accommodation

Moderator: Julie C. Lim

3163 — B0211 Research on decrease of lens elasticity in mice and rats during aging, Hayato Nagashima1, M. Hayano1, S. Amano1, A. Sakuma1, T. Hishiki1, M. Suenatsu1, K. Tsutoba1. 1Department of Ophthalmology, Keio University School of Medicine; 2Kyoto Institute of Technology; 3Clinical and Translational Research Center, Keio University School of Medicine; 4Department of Biochemistry, Keio University School of Medicine

3164 — B0212 Ex vivo simulated accommodation in human donor eyes with and without cortical cataract, Ralph Michael, J. C. D’Antin, L. Pinilla Cortés, B. Sheil2, H. J. Burd, R. I. Barraquer. Centro de Oftalmologia Barraquer; 1University of Oxford
3188 — B0362 Effects of a Soluble Guanylate Cyclase Activator (AL-EF-58-MF61) on IOP and Aqueous Humor Dynamics in Monkeys. Shan Fan1, G. Prasadana1, C. M. Adams2, C. Towler3, C. B. Toris1, C. M. Adams3. 1Ophthalmology, Univ of Nebraska Medical Ctr; 2Ophthalmology, Novartis Institutes for Biomedical Research; 3Technical Research & Development, Novartis; Global Discover Chemistry, Novartis; Case Western Reserve University *CR

3189 — B0363 Human Scleral Fibroblast Steroid-Response and Cellular Migration Inhibition. Thania Bogarin1, S. Saraswathy2, E. Barron3, E. Barron1, J. J. Zheng1, R. N. Weinreb2, A. Huang2, 3. 1Ophthalmology, UCLA; 2Ophthalmology, Doheny Eye Institute; 3Ophthalmology, Shiley Eye Institute *CR

3190 — B0364 Role of LOXL1 in conventional outflow function and behavior. Guorong Li1, W. M. Johnson1, H. Schmitt1, I. D. Navarro1, J. J. Cui1, M. Groelle2, H. Roberts2, M. A. Hauser2, W. Stam1. 1Ophthalmology, Duke Eye Center; 2Oxygen Biosciences Inc; 3East Chapel Hill High School

3191 — B0365 Relationship between episcleral venous pressure, intraocular pressure and trabecular meshwork resistance: a mathematical model. Sara Mathew1, A. Harris2, A. Verticchio3. 1Department of Medicine, Western Sydney University; 2Head of Endocrinology Department, Campbelltown Hospital SWSLHD; 3School of Medicine, University of Otago; Department of Architecture, Building and Engineering, Otago Polytechnic; Department of Optometry and Vision Sciences, College of Applied Medical Sciences, King Saud University; Department of Rehabilitation Sciences & Rehabilitation Research Chair King Saud University; Department of Odontology Clinical Oral Physiology, Umea University

3192 — B0366 Evaluating the Short-Term Effects on Semi-automated Aqueous Flare Assessment After Fundus Fluorescein Angiography Imaging. Nam V. Nguyen1, 2, M. Halim3, M. Hassan4, A. Segawa5, M. Ertop6, Z. Aktas1, S. Ozdek2, G. Gurelik1, A. N. Tran1, S. Mahajan1, R. Afridi4, M. A. Ibrahim1, Y. Sepah1, Q. D. Nguyen1, M. Hasanreisoglu3, 4. 1Department of Biochemistry, University of Nebraska-Lincoln; 2Ocular Imaging Research and Reading Center; 3Department of Ophthalmology, Byers Eye Institute Stanford University; 4Department of Ophthalmology, Gazi University

3193 — B0367 Concomitant dosing of the NO-donor NCX 667 (1%) and Xalatan® (latanoprost ophthalmic solution 0.005%) results in robust and sustained IOP-lowering in ocular normotensive dogs. Michael V. Bergamini, T. Navratil, F. Impagnatiello, E. Bastia. Nicot *CR


3195 — B0369 Intraocular pressure estimates measured using a novel hand held tonometer. Pinakin G. Davey1, J. Maggiano1, L. C. Peterson1, S. Maurath2, P. Joson1. 1College of Optometry, Western University of Health Sciences; 2Orange County Retina; 3Tayani Institute *CR

3196 — B0370 Intraocular pressure changes and corneal biomechanics after hypersonic small-incision lenticule extraction. Dan Fu, X. Zhou. Ophthalmology and vision science, Eye and ENT Hospital of Fudan University

3197 — B0371 Effects of Simulated High Altitude on Intraocular Pressure: The Beijing intraocular and intraocular (ICOP)study. Yuan Xie1, D. Yang1, Y. Sun1, Y. Yang1, G. Wang1, N. Wang1. 1Beijing Tongren Eye Center, Beijing Tongren Hospit; 2Minhang general hospital

3198 — B0372 Effects of posture changes on Intraocular Pressure measurements in Healthy Eyes - Goldman Application, Schiotz Indentation and PT100 Noncontact tonometers. Uchechukwu L. Oniaogwu1, A. TAIIR2, D. Simmons1, M. King3, H. Zafar5, K. C. Oghuehi1. 1Department of Medicine, Western Sydney University; 2Head of Endocrinology Department, Campbelltown Hospital SWSLHD; 3School of Medicine, University of Otago; Department of Architecture, Building and Engineering, Otago Polytechnic; Department of Optometry and Vision Sciences, College of Applied Medical Sciences, King Saud University; Department of Rehabilitation Sciences & Rehabilitation Research Chair King Saud University; Department of Odontology Clinical Oral Physiology, Umea University

3199 — B0373 Angiotensin II receptor blockers in nanoparticle eye drops lower IOP in rabbits. Laura Lorenzo-Soler1, O. B. Olafsdottir1, I. M. Kristinsdottir1, P. Jansook2, T. Loftsson1, E. Stefansson1, 2. 1Faculty of Medicine, University of Iceland; 2Oculis ehf.; Department of Ophthalmology, Landsdpatil University Hospital; Faculty of Pharmaceutical Sciences, University of Iceland *CR

3200 — B0374 Intraocular Hypertension Due to Repeated Injections Of Intravitreal Dexamethasone For Macular Edema: A 3-Year Observational Study, fernanda PACELLA, E. PACELLA, L. tavernet, E. Trovato Battaglia, p. Torchetti, L. Pannarale. Organs sense, Sapienza Roma

3201 — B0375 Changes in ciliary body melanin: effect on melatonin levels in the aqueous humor. Jesus J. Pintor1, H. Awad Akdozi1, J. Sanchez-Naves1, M. perez de lara1, A. Gaya1, J. Calvo1. 1Bioquimica y Biologia Molecular IV, E U de Optica UCM-Ocupharm Diagnostics SL; Department of Ophthalmology, Berael Institut of Ophthalmology, Palma de Mallorca, Spain.; 2Tissue Bank, Balearic Island Blood and Tissue Bank Foundation (FBSTIB), Cell Therapy and Tissue Engineering Group (TERCIT), Balearic Islands Institute of Health Research (idISBa)

3202 — B0376 Electrochemical characterization of ciliary epithelium physiology: a theoretical approach. Giovanna Guidoboni1, G. Bonifazzi2, R. Sacco2, A. Layton1, S. D. Olson1, M. C. Brucal Hallare1, B. A. Siesky1, A. Bruttini1, A. Verticchio Vercellin1, A. Harris5, T. University of Missouri; 2Politecnico di Milano; 3University of Waterloo; 4Worchester Polytechnic Institute; 5University of Littoral Cotes d'Opale, France.

West Exhibition Hall B0377-B0407
Tuesday, April 30, 2019 8:45 AM-10:30 AM


3205 — B0379 Deposition of Provisional Matrix Components in Corneas Exposed to Nitrogen Mustard Persists at Least 7 Days After Exposure. Marion K. Gordon, R. Hahn, P. Zhou, Y. Chang, D. Gerecke. Pharmacology & Toxicology, Rutgers University


3207 — B0381 The Effects of Ganoderma lucidum on Corneal Ulceration in Rabbits. Emmanuel E. Okewa-Vincent1, W. Yego1, A. Raga1, E. Alabi1. 1Department of Optometry and Vision Science, Masinde Muliro University of Science and Technology; 2Department of Ophthalmology and Center for Visual Science, University of Rochester Medical Center

3209 — B0383 Effects of Calcium-Enriched and Vitamin D-Deficient Diets on Corneal Epithelial Wound Healing and Nerve Density in Diabetic Vitamin D Receptor Knockout Mice. Xiaowen Lu, S. Vick, M. A. Watsky. Cellular Biology and Anatomy, Augusta University

3210 — B0384 “Plexitome”, a Novel, Microfabricated Device for the Treatment of Corneal Abrasions and Recurrent Corneal Erosions. Edward Chaum*, C. Winborn*. 1Ophthalmology, Vanderbilt University Medical Center; *University of Iowa

3211 — B0385 Sutureless Transplantation of Dialedehyde Starch-crosslinked Amniotic Membrane for the Treatment of Ocular Surface Disease. Jeongho Kim1, 2, S. Yi3, 2, S. Jung3, 2, Y. Nam2, 2, B. Park2, 2, H. Kim3, 2. Department of Ophthalmology, School of Medicine, Kyungpook National University; 2Bio-Medical Institute, Kyungpook National University Hospital

3212 — B0386 Nanoconjugates for normalization of cultured human diabetic limbal epithelial cells and organ-cultured corneas by gene therapy. Andrei A. Kramerov*, 1, 2, Shah2, 2, Surjan1, 1, Twarda1, 1, Ghim1, 2, H. Ding2, 2, Y. Ljubimova1, 1, Saghizadeh1, 2, Y. Ljubimov1, 2. 1Biomedical Sciences, Cedars-Sinai Medical Center; 2Regenerative Medicine Institute Eye Program, Cedars-Sinai Medical Center; *University of California; *Neurosurgery, Cedars-Sinai Medical Center

3213 — B0387 Protein Ubiquitination Promotes Corneal Epithelial Wound Healing. Peter Reinach, X. Ling, J. Tong, D. Yan. Ophthalmology and Optometry, Wenzhou Medical University

3214 — B0388 Role of Neuruplin-I in Impaired Sensory Nerve Regeneration and Wound Healing in the Diabetic Mouse Cornea. Patrick S. Lee, F. X. Yu. Ophthalmology, Wayne State University School of Medicine

3215 — B0389 Identifying Surfaces for ex vivo expansion of conjunctiva. Kyle G. Doherty*, S. Dixon, R. Williams. 1Eye and Vision Science, University of Liverpool; 1Biomet Technology Limited

3216 — B0390 Effects of µ-Opioid Receptor Agonists on Wound Healing of Corneal Epithelium. Erzest YLDIZ, O. Gedir Totuk*, A. Mollica*, K. Kabadayi, A. Sahin*. 1Research Center for Translational Medicine, Koç University; 2Department of Ophthalmology, Bahcesehir University; 3Department of Ophthalmology, Koç University; 4Department of Pharmacy, Università degli Studi G. d’Annunzio Chieti p E. Pescara; 5Faculty of Medicine, Bahcesehir University


3218 — B0392 Photobonded silk-filbrin films for corneal dressin. Andres De la Hoz*, I. E. Kochevar2, F. Omenetto*, S. Marcos*. 1Visual Optics and Biophotonics Group, Instituto de Optica, CSIC; 2Wellman Center for Photomedicine, Massachusetts General Hospital; *Silk Lab, Tufts University

3219 — B0393 Ultrahigh-resolution anterior segment optical coherence tomography in corneal wound healing. R. M. Werkmeister*, A. Puntaloni*, M. Pfister*, V. Arauha dos Santos*, G. Schmidinger*, G. Garhofer*, D. Schmidl*, M. Schmetterer*. 1Center for Medical Physics and Biomedical Engineering, Medical University of Vienna; 2Department of Ophthalmology, Gr. T. Popa University of Medicine and Pharmacy; 3Department of Ophthalmology, Medical University of Vienna; 4Department of Clinical Phactiology, Medical University of Vienna; 5Singapore Eye Research Institute, Singapore National Eye Centre; 6Christian Doppler Laboratory of Ocular and Dermal Effects of Thiomers, Medical University of Vienna

3220 — B0394 Suppressed expression of ISG15 is associated delayed Corneal Wound Healing in C57BL/6 mice Suppressed expression of ISG15 is associated delayed Corneal Wound Healing in C57BL/6 mice. Nan Gao, F. X. Yu. Ophthalmology, Wayne State Univ/Kresge Eye Inst

3221 — B0395 Chronic inflammation induces abnormal differentiation of corneal epithelial stem cells. Shangkun Ou1, 1, J. Yi2, 2, Y. Guo2, 2, H. He2, 2, Y. Li2, 2, S. Liu1, 1, M. Liang2, 2, Y. Mao2, 1, Z. Liu2, 2, W. Li2, 2. 1Xiangan hospital of Xiamen university; 2The Eye Institute of Xiamen University

3222 — B0396 Corneal denervation causes epithelial apoptosis through inhibiting NAD biosynthesis. Ya Li, Q. Zhou, W. Shi. Shandong Eye Institute


3224 — B0398 Pre-Clinical Evaluation of "Plexitome", a Novel, for corneal dressing. Andres De la Hoz*, I. E. Kochevar2, F. Omenetto*, S. Marcos*. 1Visual Optics and Biophotonics Group, Instituto de Optica, CSIC; 2Wellman Center for Photomedicine, Massachusetts General Hospital; *Silk Lab, Tufts University


3226 — B0400 Role of eosinophil-derived lipid mediators in controlling corneal wound healing. Mamoru Ogawa*, Y. Isobe*, t. ishihara*, Y. Uchino1, K. Tsutoba1, M. Arita1. Ophthalmology, Keio Univ School of Medicine; 2Laboratory for Metabolomics, RIKEN


3228 — B0402 The OBSERV platform (Ophthalmic Bioreactor Specialized in Experimental Research & Valorisation): an innovative ex vivo model of human herpetic keratitis, Emilie COURRIER*, V. LAMBERT1, C. MAURIN1, T. BOURLET5, P. VERHOEVEN5, S. CHAROUAI-BOUKERZAZA1, S. AL BOURGOL2, E. CROUZET1, C. PERRACHE1, P. HERBEPIN1, Z. HE6, P. Gain1, 1, G. Thuret1, 1. 1Laboratory Biology, Engineering and Imaging of Corneal Grafts, Jean Monnet University; 2University Hospital of Saint-Etienne, Department of Ophthalmology; 3Groupe Immunités des Muqueuses et Agents Pathogènes, Jean Monnet University

3229 — B0403 Diodeolysophosphatidylglycerol (DOPG) inhibits heat shock protein B4 (HSPB4)/ toll-like receptor 2 (TLR2) axis inflammatory mediator expression in a macrophage cell line. Luke Y. Chang1, V. Choudhary1, R. R. Patel1, R. Patel1, A. Estes1, D. D. Bogorad1, M. A. Watsky4, W. B. Bollag1. Ophthalmology, Augusta University; 2Charlie Norwood VA Medical Center; 3Physiology, Augusta University; 4Cellular Biology and Anatomy, Augusta University

3230 — B0404 A novel therapeutic approach for treating corneal alkaline burn injury by targeting Fidgetin-like 2, a microtubule regulator. Cheng Zhang*, J. Yang*, D. Anugo, B. O’Rourke1, D. Sharp*, S. Zhou1, R. S. Chuck4. 1Ophthalmology and Visual Sciences, Albert Einstein College of Medicine, Montefiore Medical Center; 2Ophthalmology and Visual Sciences, Albert Einstein College of Medicine; 3MicroCures, INC; 4Department of Physiology and Biophysics, Albert Einstein College of Medicine; 5Ophthalmology and Visual Sciences, Zhong-Shan Ophthalmic Center

3231 — B0405 Use of cyanocrylate glue in corneal thinning and perforation associated with infectious keratitis, shuyan zhu1, 2, J. Yin1, 2, R. B. Singh1, 2, R. Al Karmi1, 2, A. Yung1, 2, R. Dana1, 2. 1Ophthalmology, Massachusetts Eye and Ear Infirmary; 2Harvard Medical School
3232 — B0406 Expression of lubricin in the human amniotic membrane. Jingyi Wang1, 2, D. A. Sullivan3, D. Chen4, 5, H. Xie3, 5, Y. Li2, Y. Liu1. 1Scheepens Eye Research Institute, Massachusetts Eye and Ear Infirmary, HMS; 2Ophthalmology, Peking Union Medical College Hospital; 3Ophthalmology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology 4Res; 5Research Laboratories in Ophthalmology, IRCCS GB Bietti Foundation

3233 — B0407 Tear Biomarkers in contact sports. Emilia Cantera1, 2, M. Cortes1, 3, B. O. Balzamino1, C. Briamonte1, G. Esposito1, A. Micera3. 1Israelitic Hospital; 2Health and Sports Medicine Centre, University of Rome Foro Italico4; 3University Campus Bio Medico; 4Research Laboratories in Ophthalmology, IRCCS GB Bietti Foundation

West Exhibition Hall B0476-B0486

Tuesday, April 30, 2019 8:45 AM-10:30 AM

3238 Corneal neuropathy: Diabetic and other

Moderator: Mehrnoosh Saghizadeh

3234 — B0476 Elucidating the role of peroxisome proliferator-activated receptor alpha in diabetic keratopathy using novel in vivo and in vitro models. Amy Whelchel, G. Matlock, J. Ma, D. Karamichos. University of Oklahoma Health Sciences Center

3235 — B0477 Soluble form TrkB, but not full-length TrkB, express in mouse cornea. Hironori Uehara, B. Archer, B. K. Ambati. Moran Eye Center, University of Utah

3236 — B0478 Weak electric current stimulates corneal nerve regeneration after superficial lamellar keratectomy. SeRa Park1, J. Kim1, P. Kim1, D. Kim1, D. Lim1, T. Chung3. 1Samsung biomedical research institute; 2Ophthalmology, Samsung Medical Center, Sungkyunkwan University School of Medicine; 3Nu Eyne Co., Ltd


3238 — B0480 Upregulated expression of substance P in regenerating corneal nerves. Yong-Soo Byun, J. Mok, C. Joo. Ophthalmology and Visual Science, Catholic University of Korea, College of Medicine

3239 — B0481 Liquid jet aesthesiometer repeatability and sex differences in corneal sensitivity. Blanka Golebiewski1, K. Ehmann2, J. Chen1, B. Truong1, F. Stapleton1. 1School of Optometry and Vision Science, University of New South Wales; 2Brien Holden Vision Institute 4CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
West 211
Tuesday, April 30, 2019 10:45 AM-11:30 AM
339 General Business Meeting

Welcome - ARVO President, Dr. Steven J. Fliesler, PhD, FARVO

Presentation of ARVO Distinguished Service Awards - ARVO President, Dr. Steven Fliesler, PhD, FARVO

- Dr. Claude F. Burgoyne, MD, FARVO
- Dr. Raymond A. Applegate, OD, PhD, FARVO
- Dr. Andrew D. Dick, MBBS, MD, FMedSci, FARVO

Presentation of the Joanne G. Angle Award to Dr. Thomas Yorio, PhD, FARVO

- ARVO President Dr. Steve Fliesler, PhD, FARVO

Presentation of Membership Update and Election Results: - Membership and Annual Meeting attendance update - ARVO Executive Vice President, Dr. Justine R. Smith, FRANZCO, PhD, FARVO

- Introduction of Incoming Officers - ARVO Executive Vice President, Dr. Justine R. Smith, FRANZCO, PhD, FARVO

- 2019 Achievement Award recipients - ARVO Executive Vice President, Dr. Justine R. Smith, FRANZCO, PhD, FARVO

- 2020 Achievement Award nominees - ARVO Executive Vice President, Dr. Justine R. Smith, FRANZCO, PhD, FARVO

Conclude Meeting - ARVO Executive Vice President, Dr. Justine R. Smith, FRANZCO, PhD, FARVO

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Tuesday, April 30, 2019 11:45 AM-1:30 PM

**340 Retina/RPE New drugs, Mechanisms of action, and Toxicity**

**Moderators: Filippo Drago and Thomas Yorio**

**3245 — 11:45** Expanding clinical spectrum of pentosan polysulfate sodium-associated pigmentary maculopathy. Adam M. Hanifj, S. Taylor2, S. Armenti1, R. Shah3, A. Igelman4, M. E. Pennesi5, T. Jayasundera6, P. Yang7, T. S. Huang8, C. J. Flaxel9, R. Khurana10, J. D. Stein1, N. Jain11. Ophthalmology, Emory University; 2Casey Eye Institute - OHSU; 3Kellogg Eye Center - University of Michigan; 4Northern California Retina Vitreous Associates; 5Emory University School of Medicine  

**3246 — 12:00** Designing topical VEGF-A inhibitors with high retinal bioavailability using ex vivo permeability modelling. David O. Bates1, S. Liddell2, H. Toop3, A. E. Stewart3, A. Murphy2, A. Habgood4, J. Daubney4, C. Gutierrez-Caballero4, K. McKechnie4, J. Morris3, J. Batson2. Exonate Ltd; 1University of Birmingham; 2University of Nottingham; 3Radboudumc; 4Ophthalmology, Emory University  

**3247 — 12:15** A new short blunted-ended double strand RNA-dsRNA-184-U inhibits retinal neovascularization through dissociating F1 F0-ATP synthase. yueqiu luo, s. liu. Eye Center of the Second Affiliated Hospital, School of Medicine, Zhejiang University  

**3248 — 12:30** Association between a newly described pigmentary maculopathy and pentosan polysulfate sodium. Rachel Shah1, A. M. Hanifi2, J. Yan1, B. Cribs2, G. O’Keeffe1, S. Yeh2, A. Hendrick1, J. Shantha1, G. Hubbard1, P. Patel1, P. Rao1, N. Jain1. Ophthalmology, Emory University; 2Radboud University Medical Center; 3INSERM  

**3249 — 12:45** Variable nonsense mediated decay in choroideremia patients points to a prognostic indicator for nonsense suppression therapy. Mariya Moosajee1, A. Mitsios1, V. Kalatzis2, P. J. Coffey2, A. M. Dubin3, A. Webster4, H. Sarkar1. UCL Institute of Ophthalmology; 1 Genetics, Moorfields Eye Hospital; 2INSERM  

**3250 — 1:00** QR-421a, an antisense oligonucleotide, for the treatment of retinitis pigmentos due to USH2A exon 13 mutations. Hester van Diepen1, K. Dulla1, H. Chan1, I. Schulkens2, W. Beumer1, L. Vorthoren1, C. den Besten2, L. Bui2, J. Turunen2, J. Miao3, S. Broekman4, E. de Vriese5, M. Done6, S. Albert7, E. van Wijk1, P. S. Adamson1. ProQR Therapeutics; 2Radboudumc  

**3251 — 1:15** Topical OT-717 confers superior retinal protection compared to intravitreal anti-VEGF in mouse retinal vein occlusion model. Maria I. Avrutsky1, Y. Y. Jean1, C. K. Colon Ortiz1, J. Lawson1, C. Chen2, A. M. Potenski3, F. Morales4, S. Snipa5, G. S. Salvesen2, C. M. Troy1. Pathology and Cell Biology, Columbia University; 2Sanford Burnham Prebys Medical Discovery Institute  

**3256 — 12:45** Rapid Pathogen Identification with Matrix Assisted Laser Desorption-Ionization Time-of-Flight Mass Spectrometry and Rapid Antimicrobial Susceptibility Testing with Vitek 2 in In-Vitro Endophthalmitis without Prior Culture. Lindsay Chou1, L. Dolle-Molle2, D. Missiakas3, O. Schweinwand4, K. Beavis5, D. Skovdla. University of Chicago Pritzker School of Medicine; 2Department of Ophthalmology and Visual Science, University of Chicago Medical Center; 3Clinical Microbiology Laboratory, University of Chicago Medical Center; 4Department of Microbiology, University of Chicago; 5Department of Pathology, University of Chicago Medical Center  

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3261 — 12:30 MicroRNA-143 plays a protective role in ischemia-induced retinal neovascularization. Guei-Sheung Liu1, J. Wang2, J. Chen1, L. Tu3, V. Singh4, M. Riaz5, E. Li5, A. W. Hewitt6, P. van Wijngaarden6, G. Dusting6.

1Menzies Institute for Medical Research, University of Tasmania; 2Department of Ophthalmology, the First Affiliated Hospital of Jinan University; 3Centre for Eye Research Australia; 4Public Health Genomics, School of Public Health and Preventive Medicine, Monash University; 5State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Center, Sun Yat-sen University; 6Ophthalmology, Department of Surgery, University of Melbourne

3262 — 12:45 Co-operative Activities of VEGF and SDF-1 in Retina. DA LONG1, J. Shen1, S. Hackett1, L. Lu1, Z. Hafiz1, Q. Gong2, P. A. Campochiaro1, Y. Yu1, J. Wang3, S. Ferguson3, W. Chou3, Y. Wang2, H. Kang1.

1Wilmer Eye Institute; 2Aptitude Medical Systems *CR

3263 — 1:00 RUNX3 regulates PHD2-HIF1α-VEGF signal axis and plays a vital role in the retinal neovascularization. Xi Lu1, Y. Xu3, X. Liang1.

Zhongshan Ophthalmic Center

3264 — 1:15 A Long-acting GLP-1R Agonist Ameliorates Retinal Angiogenesis in the Oxygen-induced Retinopathy Model. Lingli Zhou1, Z. Xu1, Y. Oh2, S. Lee1, E. J. Duh3.

1Wilmer Eye Institute, Johns Hopkins University of Medicine; 2Zhongshan Ophthalmic Center, Sun Yat-sen University *CR


Surgery/Ophthalmology, Cedars-Sinai Medical Center


Ophthalmology, Leiden University Med Center

3267 — 12:27 Ocular immune privilege programs monocytes to mediate innate memory-tolerance. Andrew W. Taylor.

Ophthalmology, Boston University School of Medicine *CR


Unit on Neuron-Glia Interactions in Retinal Disease, National Eye Institute

3269 — 1:02 Dysregulation of Innate Receptor Responses in Ocular Autoimmunity. Holly L. Rosenzweig.

Dept. Immunology-OHSU, OHSU/Portland VA Medical Center


1Ophthalmology, Northwestern University; 2Rheumatology, Northwestern University *CR


Schepens Eye Research Institute/MEEI

3272 — 12:15 AIBP suppresses choroidal neovascularization (CNV) by enhancing cholesterol efflux. Yingbin Fu1, M. Parker1, L. Zhu1, Q. Yan1, N. Enemchukwu1, J. Kim1, L. Fang1.

1Ophthalmology, Baylor College of Medicine; 2Cardiovascular Sciences, The Methodist Hospital Research Institute

3273 — 12:30 Gnotobiotic Animal Model of Laser-Induced Choroidal Neovascularization in Germ-Free Mice. Dimitra Skondra MD, PhD1, A. Movahedian1, M. Spedale1, N. Deng1, V. Leone1, E. Chang1, B. Theriault1.

1Department of Ophthalmology, The University of Chicago; 2Animal Resources Center, Gnotobiotic Research Animal Facility, The University of Chicago; 3Department of Ocular Fundus Diseases and Refraction, FangChengGang Aier Eye Hospital; 4Department of Medicine, The University of Chicago; 5Department of Surgery, The University of Chicago


Ophthalmology and vision science, University of California

3275 — 1:00 Transplantation of Bio-Printed Choroidal-RPE Tissue into The Subretinal Space of Rats. Celine Koster1, F. Barone2, A. Maminishkin3, M. Song4, R. Quinn5, C. F. Lewallen6, J. van Meurs7, K. Bharit1, A. A. Bergen7.

1Clinical Genetics, AUMC; 2Unit on Ocular Stem Cell and Translational Research, NEI; 3Section on Epithelial and Retinal Physiology and Disease, NEI; 4GEW. Woodruff School of Mechanical Engineering, Georgia Institute of Technology; 5Rotterdam Oogziekenhuis; 6Erasmus MC; 7NIH


1Ophthalmology, Mayo Clinic; 2Ophthalmology, Emory University; 3University of Minnesota; 4Mayo Clinic; 5Ophthalmology, Chungbuk National University *CR


1MIT; 2New England Eye Center, Tufts Medical Center; 3Thorlabs, Inc.; 4Pravium Research; 5The Warren Alpert School of Brown University *CR


Casey Eye Institute, OHSU *CR


1Department of Bioengineering, University of Illinois at Chicago; 2Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago *CR


1Department of Bioengineering, University of Washington; 2Department of Ophthalmology, University of Washington *CR

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.

Refer to the Program Number in the Clinical Trial (CT) Registration Index.

3282 — 1:00 Age-Dependent Changes in the Macular Choriocapillaris of Normal Eyes Imaged with Swept-Spectrum OCT Angiography. Giovanni Gregori1, F. Zheng1, Q. Zhang1, Y. Shi1, J. Russell1, J. Banta1, Z. Chu1, H. Zhou1, N. Patel1, W. Feuer1, M. K. Durbin1, L. De Sisternes1, R. K. Wang1, P. J. Rosenfeld1. 1Ophthalmology, Bascom Palmer Eye Institute; 2Ophthalmology, Second Affiliated Hospital of Zhejiang University; 3Bioengineering, University of Washington; 4Carl Zeiss Meditec *CR

3283 — 1:15 The Relationship of Optical Coherence Tomography Angiography (OCTA) Metrics to Progression of Diabetic Retinopathy: A 2-Year Prospective Study. Zihan Sun1, F. Tang1, R. Wong1, K. Loke1, K. Szeto2, J. Chan2, S. Ng1, C. Y. Cheung2. 1Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong; 2Hong Kong Eye Hospital

3287 — 12:36 Tear biomarkers for Sjögren Syndrome. Sarah F. Hann-Alvarez1, 2. 1Ophthalmology, Univ of Southern California; 2Pharmacology and Pharmaceutical Sciences, University of Southern California

3288 — 12:53 Advances in lacrimal gland organ regeneration. Masatoshi Hirayama1, 2. 1Ophthalmology, Keio University School of Medicine; 2Ophthalmology, Tokyo Dental College Ichikawa General Hospital


West 212-214

Tuesday, April 30, 2019 11:45 AM-1:30 PM

Anatomy and Pathology/Oncology / Biochemistry/Molecular Biology / Clinical/ Epidemiologic Research / Physiology/ Pharmacology / Retina / Visual Neuroscience / Visual Psychophysics/Physiological Optics

347 Unresolved issues in myopia - Minisymposium

Half of the world population will be myopic by 2050, one-fifth of which will have a significantly increased risk of myopia-associated blindness. Despite the confluence of experimental and clinical research offering exciting new treatment possibilities, unresolved questions remain. This symposium aims to address unresolved issues in myopia by combining the expert opinion of both basic and clinical international myopia researchers in current hot myopia topics.

Moderators: Alexandra Benavente-Perez, Regan S. Ashby and Xiaoying Zhu

— 11:45 Introduction

3290 — 11:46 Can manipulation of the retinal ON-OFF-pathways prevent myopia? Basic Research. Frank Schaefel. Section Neurobiology of Eye, Ophthalmic Research Institute


— 12:00 Q&A

3292 — 12:03 How does the eye detect visual signals controlling eye growth? David Troilo. SUNY College of Optometry

3293 — 12:10 How does the eye detect the myopia go-grown-signal? Clinical Research/Applications. Daniel I. Flitcroft1, 2. 1Ophthalmology, Childrens University Hospital; 2Dublin Institute of Technology

— 12:17 Q&A

3294 — 12:20 How does atropine inhibit myopia development? Evidence from animal studies. William K. Stell. Cumming School of Medicine, University of Calgary *CR

3295 — 12:27 Does low-dose atropine slow myopic eye elongation - Observations from humans? Christine F. Wildsoet. UC Berkeley Myopia Research Group, Univ of California, Berkeley *CR

— 12:34 Q&A

3296 — 12:37 Does bright light exposure inhibit myopia progression or only onset? Basic Research. Ian G. Morgan. Research School of Biology, Australian National University

3297 — 12:44 The role of time outdoors in myopia onset and progression in schoolchildren from ROCT study. Pei-Chang Wu. Ophthalmology, Chang Gung Memorial Hospital - Kaohsiung

— 12:51 Q&A


3299 — 1:01 Can disruptions in diurnal/circadian rhythms explain the current myopia epidemic? Clinical Research/Applications. Kathryn Saunders. Ulster University

— 1:08 Q&A

— 1:11 Discussion

West 217-219

Tuesday, April 30, 2019 11:45 AM-1:30 PM

Lens 348 Lens Development

Moderators: Rupalatha Maddala and Ales Cvekl


3301 — 12:00 S100A4 deficiency-induced aberrant gene expression during lens differentiation is epigenetically regulated through altered Histone 3 lysine methylation marking. Rupalatha Maddala1, S. K. Murphy1, V. Rao1. 1Ophthalmology, Pharmacology, Duke University Medical Center; 2Division of Reproductive Sciences, Duke University Medical Center; 3Ophthalmology, Duke University Medical Center

— 12:00 Q&A

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3302 — 12:15 The RNA-binding protein Celf1 post-transcriptionally controls Pax6 and Prox1 in lens development. Sandeep Aryal1, J. Viet2, A. D. Siddam2, C. Gautier-Courteille1, B. Weatherbee1, L. Paillard3, S. A. Lachke4. 1Biological Sciences, University of Delaware; 2Institut de Génétique et Développement de Rennes, Université de Rennes; 3Center for Bioinformatics and Computational Biology, University of Delaware

3303 — 12:30 Pten Deletion Rescues Fiber Cell Differentiation in FGFR-Deficient Lens Epithelial Explants. Stephanie Padula1, E. Sidler2, F. J. Lovic3, M. L. Robinson1. 1Biology, Miami University; 2Center for Visual Sciences, Miami University; 3Biology, Center for Tissue Regeneration and Engineering, University of Dayton

3304 — 12:45 Regulating lens regenerative potential through Eph receptor signaling. Anthony Sallese1, G. Tissios2, V. Barker3, A. Crothers3, A. Miller4, P. Tsions5, K. Del Rio-Tsonis6. 1Biology, Center for Visual Sciences, Miami University; 2Biology, Center for Tissue Regeneration and Engineering, University of Dayton; 3Cell, Molecular, and Structural Biology, Miami University

3305 — 1:00 Identifying the mechanisms of centripetal movement of lens placodal cells during invagination. Timothy F. Plageman, N. Houssin. College of Optometry, The Ohio State University

West 221/222
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Low Vision Group

349 Visual Training and Rehabilitation

Moderators: Russell L. Woods and Aurelie Calabrese

3306 — 11:45 Making Sense of Reading: The Impact of Presentation Format on Reading Comprehension for Sighted and Blind Individuals. Natalie N. Stepien-Bernabe1, 2, D. Let1, A. McKerracher1, D. A. Orel-Bixler1. 1Vision Science Program, School of Optometry, University of California, Berkeley; 2Smith-Kettlewell Eye Research Institute; 3Cognitive Psychology, Pennsylvania State University; 4Vancouver Island University

3307 — 12:00 Anodal transcranial direct current stimulation reduces crowding in peripheral vision. Rajkumar Nallour Raveendran1, 2, K. Tsang1, D. Tiwana1, A. Chow2, B. Thompson1. 1Envision Research Institute; 2School of Optometry and Vision Science, University of Waterloo

3308 — 12:15 The Effects of Feedback on Eye Movement Control Training. William H. Seiple1, F. J. Lovic1, B. Weatherbee1, A. R. Morse2, 3. 1Research, Lighthouse Guild; 2Ophthalmology, New York University School of Medicine; 3Cythor Inc.; 4Ophthalmology, Harkness Eye Institute, Columbia University

3309 — 12:30 Digital Glasses for Visual Rehabilitation of Glaucoma Patients suffering from Visual Fields Defects. Ahmed M. Sayed1, 2, R. Kashem3, M. Abdel-Mottaleb4, V. Roongpoovapat5, R. K. Parrish2, M. Abdel-Mottaleb1, M. Abou Shousha1, 3. 1Ophthalmology, Bascom Palmer Eye Institute, University of Miami; 2Biomedical Engineering, Helwan University; 3Electrical and Computer Engineering, University of Miami

3310 — 12:45 The variable spatial resolution is compensated by tip of the tongue tracing in pattern recognition. Zahide Pamir, M. Canoluk, J. Jang, E. Peli. Ophthalmology, Schepens Eye Research Institute

3311 — 1:00 Comprehensive Visual and Mobility Training in Argus II Patients Using Computer Assisted Rehabilitation System. Meghan J. DeBenedictis1, S. Davidson1, M. Streicher2, A. Rosenfeldt3, J. Alberts4, A. Yuan1, A. Rachitskaya1. 1Cole Eye Institute, Cleveland Clinic; 2Biomedical Engineering, Cleveland Clinic; 3Concussion Center, Cleveland Clinic

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3312 — A0001 An in-vitro retina aggregate system to investigate the effects of environment on photoreceptor neurite outgrowth. En Leh Samuel Tsi1, 2, A. Ortin-Martinez2, A. Guridua2, L. Comanita, N. Yan2, S. Smiley1, P. Nickerson2, V. Delplace1, M. Shoiche4, V. Wallace1, Donald K Johnson Eye Institute, Krembil Research Institute; 1Department of Laboratory Medicine and Pathobiology, University of Toronto; 2Department of Chemical Engineering & Applied Chemistry, University of Toronto; 3Institute of Biomaterials and Biomedical Engineering, University of Toronto; 4Department of Ophthalmology and Vision Sciences, University of Toronto

3313 — A0002 Pre-transplantation analysis of intrinsic fluorophores by 2-photon microscopy to validate suitability of retinal organoids. Tej Kalakantla1, Y. Xue2, A. Browne4, B. McLelland3, Donald K Johnson Eye Institute, Krembil Research Institute; 1Department of Laboratory Medicine and Pathobiology, University of Toronto; 2Department of Ophthalmology and Vision Sciences, University of Toronto; 3Institute of Biomaterials and Biomedical Engineering, University of Toronto; 4Department of Ophthalmology and Vision Sciences, University of Toronto


3316 — A0005 Customized rotating wall vessel bioreactors produce improved retinal organoids with reduced operation costs and less frequent experimental failure. Michael Phelan1, 2, P. Lelkes4, A. Svaroop1. 1Bioengineering, Temple University; 2Neurobiology Neurodegeneration & Repair Laboratory, National Eye Institute

3317 — A0006 Human Retina-on-a-Chip: Merging retinal organoids with Organ-on-a-Chip technology. Kevin Achberger4, C. Probst3, J. Haderspeck3, S. Bolz4, V. Cora3, J. Chuchuya1, L. Antkowiak1, W. Hau3, M. Ueffing3, P. Loskill4, S. Liebau1. 1Institute of Neuroanatomy and Developmental Biology, University Tuebingen; 2Fraunhofer Institute for Interface Engineering and Biotechnology IGB; 3Institute for Ophthalmic Research, University of Tuebingen; 4Department of Women’s Health, University Tuebingen

3318 — A0007 Investigation of photoreceptor segment development in a microphysiological Retina-on-a-Chip. Lena Antkowiak1, K. Achberger4, C. Probst3, J. Haderspeck3, J. Chuchuya1, P. Loskill4, S. Liebau1. 1Institute of Neuroanatomy and Developmental Biology, University Tuebingen; 2Fraunhofer Institute for Interface Engineering and Biotechnology IGB; 3Institute for Ophthalmic Research, University of Tuebingen; 4Department of Women’s Health, University Tuebingen

3319 — A0008 Automated cell culture for the differentiation of induced pluripotent stem cells into retinal pigment epithelial cells by LabDroid. Naohiro Motozawa1, A. Tsujikawa1, M. Takahashi1. 1Department of Ophthalmology and Visual Sciences, Kyoto University Graduate School of Medicine; 2Laboratory for Retinal Regeneration, RIKEN

3320 — A0009 Studying the biocompatibility and 3D cell-scaffold interaction of photoreceptor precursors in a microwells array. Amos Markus1, Y. Chemla1, G. Shpun1, I. Henn1, N. Farah1, Y. Mandel3. 1Optometry and Visual Science, Faculty of Life Science, Bar Ilan University; 2Mina and Everard Goodman Faculty of Life Sciences, Israel, Bar Ilan University; 3Institute for Nanotechnology and Advanced Materials (BINA), Bar Ilan University

3321 — A0100 Semi-automated approach for 3D retinal organoids differentiation. Evgenii Kegeles1, 2, P. Y. Baranov1. 1The Schepps Eye Research Institute of Massachusetts Eye and Ear, an affiliate of Harvard Medical School; 2School of Biological and Medical Physics, Moscow Institute of Physics and Technology (State University)

3322 — A0111 Decellularised extracellular matrix from neural retina and retinal pigment epithelium enhance the expression of synaptic markers and light responsiveness of human pluripotent stem cell derived retinal organoids. Majlinda Lako1, B. Dorgau1, M. Felemban1, G. Hilgen1, M. Kiening1, D. Hallani1, N. C. Hunt1, Y. Ding2, N. Krasnogor3, J. Al-Aama1, H. Z. Asfour1, E. Sernagor2. 1Institute of Genetic Medicine, Newcastle University; 2Institute of Neuroscience, Newcastle University; 3PACE; 4School of Computing


3324 — A0113 Transcriptomic analysis of retinal organoid development and molecular dynamics. Zekai Cui4, J. Chen4, Y. Guo2, X. Yan1, S. Mao1, Y. Zhou1, S. Tang4. 1Aier Eye Institute; 2Key Laboratory for Regenerative Medicine, Ministry of Education, Jinan University; 3Aier School of Ophthalmology, Central South University; 4The second Xiangya Hospital, Central South University

3325 — A0114 Molecular specific imaging of human induced pluripotent stem cell derived retina organoids. Omid Masihzadeh, M. Flores-Beliver, S. Aparicio-Domingo, K. Li, V. Canto Soler. The Sue Anschutz-Rodgers Eye Center, University of Colorado Denver

3326 — A0115 Comparing mouse retinal organoid differentiation to mouse retina development. Adam Millner1, S. Kwong1, S. Cheemad1, Y. Mercado-Ayon1, R. Dixon1, A. La Torre1. 1Cell Biology and Human Anatomy, University of California-Davis; 2Physiology and Membrane Biology, University of California-Davis

3327 — A0116 Screening for RPE to Neural Retina Reprogramming using CRISPR Edited F5X2-specific fluorescent reporter hiPSC. Phuong T. Lam1, C. Gutierrez2, N. G. Burns12, B. J. Smucker3, K. Bharit2, K. Del Rio-Tsonis1, M. L. Robinson21. 1Biology, Miami University; 2Center for Visual Sciences, Miami University; 3National Eye Institute; 4Statistics, Miami University

3328 — A0117 3D hydrogels protect human retinal progenitor cells from stress exerted during transplantation. PIERRE COLOMBE1, D. Singh1, M. Spector1, 2, M. J. Young1. 1Material Sciences and engineering, Massachusetts Institute of Technology; 2Material Sciences and engineering, Harvard Medical School; 3Schepens Eye research Institute, Harvard Medical School

3329 — A0118 Adipose tissue derived stem cell concentrated conditioned medium alters the expression pattern of glutamate regulatory proteins and aquaporin-4 in retina after mild traumatic brain injury. Kumar Abhiram1, Jha1, J. Gentry1, A. Reiner2, R. Gangaraj1. 1Department of Ophthalmology, University of Tennessee Health Science Center; 2Anatomy and Neurobiology, Neuroscience Institute, University of Tennessee Health science center

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3330 — A0019 Notch signaling pathway inhibition in the specification of human retinal ganglion cells from induced pluripotent stem cell derived retinal organoids. Zenith Acosta Torres1,2, T. Kelley3, S. Schurer2,4, D. Pelaez1,2. 1Biomedical Engineering, University of Miami; 2Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 3Department of Ophthalmology, University of Miami School of Medicine; 4Center for Computational Science, University of Miami *CR

3331 — A0020 The role of microRNAs in human retinogenesis. Melissa K. Jones1, M. Chow2, N. K. Kambali1, 2, K. J. Wahlin1. 1Shiley Eye Institute, Department of Ophthalmology, University of California San Diego; 2Department of Biotechnology, California State University San Marcos


3334 — A0023 RNAseq analysis of in vitro retinal organoids shows comparable pathway expression to developing eye in vivo. Philip Wagstaff1, A. ten Aste1, E. Lo Faro1, A. Jongejans1, C. Boom1, C. van Karnebeek2, F. Wijburg3, R. Wanders4, E. Meijers-Heijboer1, N. M. Janssonius1, A. A. Bergen1, 4. 1Department of Clinical Genetics, Amsterdam University Medical Center; 2Department of Ophthalmology, University Medical Center Groningen; 3Department of Clinical Epidemiology, Biostatistics and Bioinformatics, Amsterdam University Medical Center; 4Department of Ophthalmology, Amsterdam University Medical Center; 5Department of Pediatric Metabolic Diseases, Amsterdam University Medical Center; 6Department of Genetic Metabolic Diseases, Amsterdam University Medical Center; 7Department of Ophthalmology, Leiden University Medical Center

3335 — A0024 The peripheral retina as a stem cell niche: evidence of human adult neurogenesis. Isabel Ortもhio Lizaraz1, D. A. Peterson2, N. Cuenca3, 1Physiology, Genetics and Microbiology, University of Alicante; 2Rosalind Franklin University of Medicine and Science

3336 — A0025 Pigment Epithelium Derived Factor (PEDF) expression and upregulation in retinal tissue differentiated from mouse embryonic stem cells. Tatiana Perepelkina1, 2, P. Y. Baranov1, 2. 1Schepens Eye Research Institute; 2Ophthalmology, Harvard Medical School

3337 — A0026 Imaging retinal organoid subcellular dynamics non invasively with Full-Fold OCT. Kassandra Groux1, J. Scholler1, S. Reichman1, M. Paques2, O. Goueze1, J. A. Saheb3, M. Fink1, C. Boccara1, K. Grieve2. 1Institut Langevin, ESPCI Paris, PSL Research University; 2Vision Institute, Quinze Vingts National Ophthalmology Hospital; 3Department of Ophthalmology, University of Pittsburgh School of Medicine

3338 — A0027 Stem cell-derived retinal ganglion cell differentiation and its transplantation. Kun-Cheng Chang, S. Wu1, L. Li1, C. Sun1, X. Xia1, C. Knusel1, M. Nahmou1, M. Wernig1. 1J. L. Goldberg1. Ophthalmology, Stanford University; 2Pathology, Stanford University

3339 — A0028 Characterization of interphotoreceptor matrix proteins expressed by human pluripotent stem cell derived retinal cells. Steven Mayer1, 2, E. E. Capowski1, D. Sinha1, J. Phillips1, K. L. Edwards1, D. M. Gamm1, 2, 4. 1Cellular and Molecular Pathology, University of Wisconsin-Madison; 2McMenemy Eye Research Institute, University of Wisconsin-Madison; 3Waisman Center, University of Wisconsin-Madison; 4Ophthalmology and Visual Sciences, University of Wisconsin-Madison

3340 — A0029 Human Pluripotent Stem Cell-Derived Retinal Ganglion Cells Display Extensive Neurite Outgrowth With Target Recognition. Clarisse Fligor1, P. K. Shields1, K. B. VanderWall1, J. S. Meyer1, 2. 1Biology, IUPUI; 2Stark Neurosciences Research Institute, Indiana University


3342 — A0031 Exploring effect of culture condition on human retinal progenitor cells. Deepthi Singh1, P. Colomb1, M. J. Young2. 1Material science and engineering, Massachusetts Institute of Technology; 2Schepens Eye Research Institute, Harvard Medical School

3343 — A0032 Mesenchymal stem cells conditioned medium produced on nicothinamide and/or vasoactive intestinal peptide action improve antioxidative/neuroprotective properties in vitro. Ivan Fernandez-Bueno1, 2, M. L. Alonso-Alonso1, M. Garcia-Gutierrez1. 1Instituto Universidad de Oftalmología Aplicada (IOBA), University of Valladolid; 2Centro en Red de Medicina Regenerativa y Terapia Celular de Castilla y Leόn; 3Red Tematбca de Investigación Cooperativa en Salud (RETICS), Oftared, Instituto de Salud Carlos III

3344 — A0014 Recovery of retinal oxygenation after MEMS implant activation. Juan Carlos Martinez1, 2, N. Scianmarello1, C. A. Cook1, A. Gonzalez-Calle1, 2, Y. Tait1, M. S. Humayun1, 2. 1Ophthalmology, University of Southern California; 2Ophthalmology, USC Ginsburg Institute for Biomedical Therapeutics; 3Medical Engineering, California Institute of Technology


3346 — A0116 In vitro biocompatibility analysis of 3D printed diatom-inspired polymer-based prototypes for intraocular drug delivery. Brenda Salvador1, J. Valdez-Garcia1, J. Zava1, L. Dvil1, G. Guerero-Ramirez1, 3. 1Tecnológico de Monterrey; 2Material Science and Engineering, University of California, Merced

3347 — A0117 Measurement of drug release from silicone oil in a range of in vitro and ex vivo models. Victoria R. Kearns1, A. Davies1, H. Cauldbeck2, 4, S. Rannard2, R. Williams1, Y. Chan1, H. Shum1. 1Department of Eye and Vision Science, University of Liverpool; 2Department of Chemistry, University of Liverpool; 3Department of Mechanical Engineering, University of Hong Kong *CR

3348 — A0118 Sub-tenon sustained controllable delivery of dexamethasone in the treatment of severe acute experimental uveitis. Libei Zhao1, 2, M. Peng1, W. Liu1, D. Liu1, 3. 1Binghong Aier Hospital; 2Aier school of ophthalmology, Central South University

3349 — A0119 Effect of external surface terminal sterilization of prefilled syringes (PFS) with ethylene oxide (EO) on the concentration and stability of ranibizumab (RBZ). Nikolos London1, S. Ranade1, I. Stolov1, J. Lin2, M. Bowen3, 1Retina Consultants; 2Genentech, Inc. *CR

3350 — A0120 In vitro and Computational Modelling of the Eye for Evaluating the Delivery of Therapeutics in the Treatment of Retinal Pathologies. Alys Davies1, S. Fong2, R. Williams1, V. R. Kearns1. 1Department of Eye and Vision Science, University of Liverpool; 2Department of Computer Science, University of Chester *CR

West Exhibition Hall A0114-A0154
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Physiology/Pharmacology

351 Drug delivery, drug and gene delivery system, implant delivery

Moderators: Brian C. Gilger and Peter F. Kador
3351 — A0121 The ocular pharmacokinetics of an assembled oil-in-water emulsion with 14C labeled core-oil versus its core-oil as a sole component. Muhammad Abdurazik. Innovative Therapeutic Algorithms, East-Jerusalem Biomedical Institute

3352 — A0122 Preliminary study on continuous controllable subtenon cyclophosphamide drug delivery to the posterior ocular segment in rabbit model. Wensiang Liu1, L. Zhao1, D. Lin2. 1Changsha Aier Hospital; 2Aier school of ophthalmology, Central South University

3353 — A0123 Anterior ocular segment distribution characteristic and safety of cyclophosphamide following Sub-tenon Depot for Subconjunctival Drug delivery. Saja Muwafak1, P. T. Khaw2, R. A. Eiferman3, S. Brocchini1, D. P. DeVore4. 1Pharmaceutics, The School of Pharmacy, University College London; 2National Institute for Health Research (NIHR) Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 3Ophthalmology, University of Louisville; 4Sanova Biosciences Inc

3354 — A0124 An Injectable Collagen Depot for Subconjunctival Drug delivery. Saja Muwafak1, P. T. Khaw2, R. A. Eiferman3, S. Brocchini1, D. P. DeVore4. 1Pharmaceutics, The School of Pharmacy, University College London; 2National Institute for Health Research (NIHR) Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 3Ophthalmology, University of Louisville; 4Sanova Biosciences Inc


3357 — A0127 Obtaining a stable large pupil using a drug combination in patients between the ages of 30 – 50. Rebecca K. Zoltoski1, J. Ashtiana-Zarandi1, A. Beachnau1, P. Bista1, R. Lake1, P. Pourhosseini1, M. Roa1, N. Sammak1, G. Metzinger1. 1Ophthalmology, New England Eye Center; 2Ocular Therapeutics; 3Texan Eye Care; 4Wolstan & Goldberg Eye Associates; 5Woolfson Eye Institute *CR

3358 — A0131 Combining diluting drops in different solution can provides a larger dilution. Michael Bannon1, J. Ashtiana-Zarandi1, A. Beachnau1, P. Bista1, R. Lake1, P. Pourhosseini1, M. Roa1, N. Sammak1, G. Metzinger1. 1Ophthalmology, New England Eye Center; 2Ocular Therapeutics; 3Texan Eye Care; 4Wolstan & Goldberg Eye Associates; 5Woolfson Eye Institute *CR

3359 — A0132 Thermo-responsive injectable microgel is able to achieve controlled drug release in the vitreous environment. Siyun Liu1, T. McDonald1, R. Van ‘t Hof2, Y. Kears3. 1Department of Eye and Vision Science, University of Liverpool; 2Department of Chemistry, University of Liverpool; 3College of Life Science, University of Leicester; 4Department of Musculoskeletal Biology, University of Liverpool

3360 — A0130 A Prospective, Multicenter, Open-Label First-in-Human Study to Evaluate the Safety, Tolerability and Efficacy of OTX-TIC (travoprost) Implant in Subjects with Primary Open-Angle Glaucoma or Ocular Hypertension: Preliminary Findings. Michael H. Goldstein1, T. Walters1, D. F. Goldberg2, D. Day3, E. Braun4. 1Ophthalmology, Moorfields Eye Hospital, New England Eye Center; 2Ocular Therapeutics; 3Texan Eye Care; 4Wolstan & Goldberg Eye Associates; 5Woolfson Eye Institute *CR

3361 — A0133 Combining diluting drops in different solution can provides a larger dilution. Michael Bannon1, J. Ashtiana-Zarandi1, A. Beachnau1, P. Bista1, R. Lake1, P. Pourhosseini1, M. Roa1, N. Sammak1, G. Metzinger1. 1Ophthalmology, New England Eye Center; 2Ocular Therapeutics; 3Texan Eye Care; 4Wolstan & Goldberg Eye Associates; 5Woolfson Eye Institute *CR

3362 — A0132 Thermo-responsive injectable microgel is able to achieve controlled drug release in the vitreous environment. Siyun Liu1, T. McDonald1, R. Van ‘t Hof2, Y. Kears3. 1Department of Eye and Vision Science, University of Liverpool; 2Department of Chemistry, University of Liverpool; 3College of Life Science, University of Leicester; 4Department of Musculoskeletal Biology, University of Liverpool

3363 — A0133 A collapsable hyaluronic acid hydrogel to prolong protein release in the vitreous. Sahar Aswad1, P. T. Khaw2, S. Brocchini1,2. 1Pharmaceutics, The School of Pharmacy, UCL; 2National Institute for Health Research (NIHR) Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology

3364 — A0134 The PK-PD study of tropicamide and phenylephrine after a triple ocular instillation in rabbits. Xiao Zhao, X. Wang, X. Shen, Q. Yang. Shenyang Xingqi Pharmaceutical


3366 — A0136 Role of Vitreoretinal Interface on the Penetration of Liposomes and CNTF into Retina. Shrin Tavakoli1, K. Peynsaert2, T. Lajunen3, J. Ikonen4, J. Devolder1, K. Renaud3, A. Urrti5. 1Department of Pharmaceutical Biosciences, University of Helsinki; 2Lab of General Biochemistry and Physical Pharmacy, Faculty of Pharmacy, Ghent University


3370 — A0140 Intraocular Forward-Imaging B-scan Optical Coherence Tomography Probe with Integrated Light Source to Guide Subretinal Injections. Jin H. Shen, T. A. Moreno, K. M. Joos. Vanderbilt Eye Institute, Vanderbilt University Medical Center *CR


3372 — A0142 Engineering of locked nucleic acids with small molecule ligands for oral use in cancer surface diseases. Kilchert V. Kilchert1, A. Jayagopal2, F. Drawnel2. 1Biomedical Engineering, Vanderbilt University; 2Ophthalmology Discovery and Biomarkers, F. Hoffmann-La Roche Ltd *CR


3374 — A0144 Safety of IVMED-10 & IVMED-20 in a Pilot Clinical Trial for Post-Cataract Inflammation. Michael Burr1, S. Molokhia1,2, A. Chayer1, B. Ambati2. 1iVeena; 2Pacific ClearVision Institute; 3University of Utah; 4Codet Vision Institute *CR


3376 — A0146 In situ forming photocrosslinked biodegradable implants for sustained delivery of proteins. Raghuraj Raghuram1, Y. Wang2, K. Soliman2, R. Sonavane2, D. Jones2. 1School of Pharmacy, Queens University Belfast; 2School of Pharmacy, Re-Vana Therapeutics Ltd *CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3377 — A0147 Novel biodegradable photocrosslinked implants for sustained ocular delivery of triamcinolone acetonide. Yajing Wang1; R. Sonawane2; K. Soltman2; D. Jones1; R. Thakur1; 1Pharmacy, Queen’s University Belfast; 2School of Pharmacy, Re-Vana Therapeutics Ltd

3378 — A0148 Spherical Nucleic Acids Exhibit Enhanced Distribution and Persistence Compared to Linear Oligonucleotides in Rat Eyes Following Intravitreal Administration. Bart R. Anderson1, S. Nallagatla1, R. Kang2, M. L. Harvey2, E. R. Kandimalla2; 1R&D, Exicure; 2Charter Preclinical Services

3379 — A0149 Controlled Delivery of a Protein to the Ocular Surface. Thomas Rowe1, A. Goode1, E. Mayville2, A. Thomas1, E. Rustin1. 1Formulation, Encompass Pharmaceutical Services; 2University of Georgia

3380 — A0150 Efficient Corneal Gene Delivery Following Subconjunctival Administrations of AAV Vectors. Elizabeth Crabtree1, L. Song2, T. Llanga2, L. Conaster3, B. C. Gilger4, M. Hirsch5; 1Department of Ophthalmology, North Carolina State University; 2Department of Ophthalmology, University of North Carolina at Chapel Hill; 3Gene Therapy Center, University of North Carolina at Chapel Hill

3381 — A0151 Poly (oligo ethylene glycol methacrylate) hydrogels for controlled release of protein-based therapeutics. Ben B. Muirhead1, S. Nallagatla1, R. Kang1, M. L. Harvey2, E. R. Kandimalla2; 1R&D, Exicure; 2Charter Preclinical Services

3382 — A0152 Selective and Sustained Episcleral Delivery of Dexamethasone: Preclinical Safety and Pharmacokinetics. Ricardo A. De Carvalho1, P. P. Ko1, G. C. Mastutani1, R. Brito2, M. V. Dougherty3, J. P. Manders3; 3Ophthalmics

3383 — A0153 A Comparison in Precision and Accuracy of the Conventional Syringe to the Suh Precision Syringe. Yajing Wang1; R. Sonawane2; K. Soltman2; D. Jones1; R. Thakur1; 1Pharmacy, Queen’s University Belfast; 2School of Pharmacy, Re-Vana Therapeutics Ltd

3384 — A0154 Surface modified Econazole solid lipid nanoparticles: preparation, characterization, ex vivo and in vivo studies. Junjie Zhang1, Z. Liang, Z. Zhang1, J. Li, T. Zhou1, L. Wang1; 1Dpt of Pharmaceutical Science, Henan Eye Institute, Henan Eye Hospital; 2Henan Provincial People’s Hospital

West Exhibition Hall A0156-A0197
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Biochemistry/Molecular Biology

352 Gene therapy for ocular disorders

Moderators: Katya Lobanova, Jillian N. Pearring and Jianhai Du

3385 — A0156 Gene Therapy for eAMD by Lentiviral Delivery of Dicer-Independent shRNAs Providing Increased Specificity and Safety. Sidse Alsing1, T. Bjorg1, L. Aagaard1, T. Corydon1; 1Department of Biomedicine, Aarhus University; 2Department of Ophthalmology, Aarhus University Hospital

3386 — A0157 OX1 (oxidation resistance gene 1) Reduces Oxidative Stress and Prolongs Photoreceptor Survival in Retinal Degeneration. Ramesh Periasamy1, W. Zhang1, M. Kampa1, M. Volkert2; 1Department of Ophthalmology, UMASS Medical School; 2Dept of Microbiology and Physiological Systems, UMASS Medical School

3387 — A0158 A promising non-viral gene therapy approach for retinitis pigmentosa. Karine Bigot1, P. Gondouin1, P. Montagne1, R. Benard1, E. Picard1, Y. G. Courtois2, R. Buggage1, T. Bordet1, F. B. Behar-Cohen1; 1Eyesensys; 2Sorbonne University CRC Inserm UMR1138

3388 — A0159 Impact of Voretigene Neparvovec on Legal Blindness in Germany in Patients with RPE65 Mutation-Associated Inherited Retinal Dystrophy – Post Hoc Analysis of Phase III Trial Data. Sue Lacey1, C. Aouda1, D. C. Chung1, K. Z. Reape1, K. A. High1, D. Viriato1; 2Novartis Pharma; 3Spark Therapeutics, Inc

3389 — A0160 The shorter the better?: Assessing novel therapeutic strategies for CRB1-associated retinal disease. Alex Garanto1, A. Hoogendoorn1, J. J. Lurvink1, R. W. Collins1; 1Human Genetics, Radboudumc; 2Donders Institute for Brain, Cognition and Behaviour

3390 — A0161 Gene therapies differentially rescue disease phenotype in patient-specific hiPSC-RPE models of Best disease. Divya Sinha1, B. Steyer1, P. K. Shab1, R. Vaila2, K. L. Edwards3, C. Bacig1, B. R. Pattnaik4, K. Saha2, D. M. Gamm1; 1Waisman Center, University of Wisconsin-Madison; 2McPerson Eye Research Institute, University of Wisconsin-Madison; 3Wisconsin Institute for Discovery, University of Wisconsin-Madison; 4Department of Pediatrics, University of Wisconsin-Madison; 5Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison

3391 — A0162 Photoreceptor-specific AAV gene replacement enhanced by the adjunctive use of hydroxychloroquine in vivo. Laurel C. Chandler1, M. E. McClements1, A. R. Barnard2, M. I. Patricio3, R. E. Maclaren3, K. Xue4. 1University of Oxford; 2Novartis; 3University of Oxford; 4University of Maryland

3392 — A0163 A destabilized domain-based approach to control protein abundance in aged mice and models of retinal degeneration. Shyamantu Datta1, B. Chen1, M. Renwick2, H. Peng1, R. Ufret-Vincent1, J. Hullemen2; 1Ophthalmology, UT Southwestern Medical Center; 2Ophthalmology and Pharmacology, UT Southwestern Medical Center

3393 — A0164 Versatile, non-antibiotic control of an ocular DHFR-based destabilizing domain. John Hullemen1, V. Chau, S. Datta, H. Peng, M. Renwick1, 1Ophthalmology and Pharmacology, University of Texas Southwestern Med Center

3394 — A0165 Effective arrest of retinal degeneration depends on the timing of gene restoration in a BBS17 mouse model. Poppy Datta, B. Hendrickson, S. Seo. Ophthalmology and Visual Sciences, University of Iowa

3395 — A0166 Effect of Simvastatin on REP-1 Replacement Therapy in a Mouse Model of Choroideremia. Elena Posse de Chaves1, S. Samuelson2, D. Ordoñez2, Q. Wang1, C. St. Laurent1, I. M. MacDonald1, Y. Sauvé4; 1Pharmacology, University of Alberta; 2Pharmacology, University of Alberta; 3Neuroscience and Mental Health Institute, University of Alberta; 4Ophthalmology and Visual Sciences, University of Alberta

3396 — A0167 Germline CRISPR/Cas9-mediated Gene Editing Prevents Vision Loss in a Novel Mouse Model of Aniridia. Seyyedeh Zeinab Mirjalili Mohanna1, T. C. Lengyell1, S. Lam2, T. W. Johnson3, E. M. Simpson1; 1Department of Medical Genetics, University of British Columbia; 2Center for Molecular Medicine and Therapeutics at BC Children’s Hospital Research Institute, University of British Columbia


3398 — A0169 Long-term Effect of Voretigene Neparvovec on the Full-Field Light Sensitivity Threshold Test of Patients with RPE65 Mutation-Associated Inherited Retinal Dystrophy – Post Hoc Analysis of Phase I trial data. Daniel C. Chung1, K. Lee1, K. Z. Reape1, K. A. High1, S. Lacey1, D. Viriato1; 2Novartis Pharma AG

*CR Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3399 – A0170 Identifiation of a new Kozak consensus in genes expressed in photoreceptors. Anum Butt1, M. E. McClements2, R. E. MacLaren4; 1Nuffield Laboratory of Ophthalmology, University of Oxford; 2Oxford Eye Hospital

3400 – A0171 Aniridia and PAX6: The foundations for an RNA therapy. Athanasios Papadimitropoulos1, N. L. Rouce1, D. C. Blakey1, D. Aberdam1, C. Williamsby1, K. Hamill1; 1Eye and Vision Science, University of Liverpool, IACD; 2Genomic Medicine Group, Ulster University, Biomedical Sciences Research Institute; 3Hôpital Saint-Louis; 4MiNA Therapeutics *CR

3401 – A0172 Splice modulation therapy for a variety of ABCA4 mutations underlying Stargardt disease. Rob W. Collin1, M. Khan1, R. Sangermano1, S. Naessens1, M. Baudouin1, C. C. Hoang1, F. Coppieters2, S. Albert1, M. E. Cheetham1, E. De Baere2, F. P. Cremers1, A. Garanto1; 1Radboud University Medical Centre; 2Ghent University; 3University College London *CR

3402 – A0173 Dual Adeno-Associated Virus Vector mediated gene therapy for autosomal recessive Stargardt Disease. Frank M. Dyka1, L. L. Molday2, V. A. Chiodo1, R. S. Molday2, W. Hauswirth1; 1Ophthalmology, University of Florida; 2University of British Columbia *CR

3403 – A0174 Treatment of a BBS1 splice site mutation applying a combination of designed U1snRNA and antisense oligonucleotides. John P. Neidhardt1, M. Vorm1, A. Bräuer1, S. Breuel1; 1Human Genetics, University of Oldenburg; 2Anatomy, University of Oldenburg

3404 – A0175 Overexpression of Nr2 in the retinal pigment epithelium of rd1 mice improves RPE morphology. David M. Wu1, M. Ivanchenko2, X. Ji1, H. Xu1, S. Zhao1, W. Xiong1, C. Cepko1, 2; 1Retina Service, Massachusetts Eye and Ear Infirmary; 2Genetics, Harvard Medical School; 3HHMI; 4Neurobiology, Harvard Medical School; 5Biomedical Sciences, City University of Hong Kong *CR

3405 – A0176 Gene augmentation therapy for NMNAT1-associated retinal degeneration: Promise and challenges. Scott H. Greenwald1, B. S. Pavlyk1, E. Hennessy1, M. J. Scandura1, R. Xiao2, L. H. Vandenbergh1, E. A. Pierce1; 1Ophthalmology, Massachusetts Eye and Ear; 2Harvard Medical School; 3Grousbeck Gene Therapy Center, Massachusetts Eye and Ear, Harvard Medical School

3406 – A0177 Discovery of a Hammerhead Ribozyme with Enzyme Kinetics comparable to Protein Enzymes. Jason Myers, J. M. Sullivan; 1Ophthalmology, SUNY at Buffalo, VA Western NY

3407 – A0178 Genetic strategies to treat vision loss in a murine model of Usher syndrome Type 1C. Katelyn N. Robillard1, M. Haithawy1, N. G. Bazan, J. J. Lentz; 1Neuroscience Center, LSU Health Sciences Center - New Orleans


3409 – A0180 Rescue of mouse RPGR function in vivo using CRISPR/Cas9 gene editing. Jessica Gumerson1, A. Alsufyani, W. Yu, X. Sun, J. Lei, Z. Wu, L. Dong, T. Li; 1National Eye Institute, National Institutes of Health

3410 – A0181 Adeno-associated viral (AAV) vector tropism in the young Brown Norway rat retina. Nanda Boon1, C. Alves, J. Wijnholds; 1Ophthalmology, LUMC *CR

3411 – A0182 Enhanced antiangiogenic activity of PIGF silencing in combination with PEDF overexpression in ocular neovascular diseases. Rute S. Araujo1, G. A. Silva1; 1CEDOC, NOVA Medical School, Universidade Nova de Lisboa; 2Bioengineering-Cell Therapies and Regenerative Medicine PhD Program, NOVA Medical School, Universidade Nova de Lisboa

3412 – A0183 Facilitated Hammerhead Ribozymes- A New Therapeutic Modality for Inherited Retinal Degenerations. Jack M. Sullivan1, J. Myers1, A. Trujillo1, M. C. Butler2, Z. Fayazi1, J. A. Punnoose1, K. A. Halvorsen2; 1Ophthalmology, SUNY at Buffalo, VA Western NY; 2RNA Institute, University at Albany- SUNY

3413 – A0184 Nogo-A expression silencing impairs the function and survival of retinal neurons in physiological conditions. Julius B. Mdomba1, L. Rodriguez1, S. Joly1, D. Dalkara2, V. Perney1; 1Université Laval- CHUL; 2Institute de la Vision

3414 – A0185 Rapid Preclinical Validation of PTGS Therapeutic Agents for Inherited Retinal Degenerations. Mark C. Butler1, 2, Z. Fayazi1, J. M. Sullivan2, 1; 1Ophthalmology, VA WNY at Buffalo; 2Ophthalmology, Ross Eye Institute *CR


3416 – A0187 In vitro expression model for AAV2.VMD2.BEST1 gene therapy vectors. Cristina Martinez-Martinez dela Camara1, R. Truran1, G. Robinson1, R. E. MacLaren2; 1Nuffield Laboratory of Ophthalmology, University of Oxford; 2Oxford Eye Hospital, Oxford University Hospitals NHS Trust; 3Nightstar Therapeutics *CR

3417 – A0188 Intrastromal Delivery of rAAV-PAX6 Transiently Rescues Corneal Defects in a Mouse Model of Aniridia. Elizabeth M. Simpson1, A. J. Koreck1, S. Lam1, J. W. Hickmott2; 1Centre for Molecular Medicine and Therapeutics at BC Children’s Hospital, University of British Columbia; 2Department of Medical Genetics, University of British Columbia

3418 – A0189 Retinal preservation following lateral ventricle injection of AAV9-Cln6 into mouse model for Batten disease. Bin Lu1, B. Meyerink1, K. White1, J. Weimer1, C. Svendsen1, S. Wang1; 1Board of Governors Regenerative Medicine Institute, Biomedical Sciences, Cedars Sinai Medical Center; 2Pediatrics and Rare Diseases Group, Sanford Research; 3Pediatrics of Sanford School of Medicine, University of South Dakota; 4David Geffen School of Medicine, University of California Los Angeles

3419 – A0190 Successful rescue of M-cone function in aged M-opsin knock-out mice, a model for blue cone monochromacy. Wen-Tao Deng1, J. Li2, P. Zhu3, W. Bauerh, W. Hauswirth1; 1University of Florida; 2University of Utah *CR

3420 – A0191 Validation of in vitro gene therapy for Bietti crystalline dystrophy. Jiang-Hui Wang1, D. Hickey1, M. E. McClements2, T. Colgan1, T. Edwards1; 1Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 2Department of Clinical Neurosciences, Nuffield Laboratory of Ophthalmology, University of Oxford

3421 – A0192 Electrolute quantification in aqueous and vitreous humor of common preclinical species. Christian Li; 1Study Management, Citixlab North America Inc.

3422 – A0193 Development of new topical preparations for external ophthalmomiyosisis treatment. Giuseppe D’Amico Ricci1, A. Pinna1, G. Garippat1, S. Cortese1, R. Serra1, E. Giancopol1, F. Boscia1; 1Ospedale Oftalmico, Asl Città di Torino; 2O.U. Sassari; 3Department of Biomedical Sciences, University of Sassari; 4Department of Veterinary Medicine, University of Sassari; 5Department of Clinical, Surgical and Experimental Sciences, University of Sassari

3423 – A0194 A novel antisense oligonucleotide approach to treat eye diseases by increasing target gene expression. Jacob Kach, K. Lim, S. Weyn-Vanhentenryck, A. Venkatesh, I. Aznar1, G. Liu1; 1Stoke Therapeutics *CR

3424 – A0195 Cell-Penetrable and in vivo activatable mini-chaperones for stabilizing misfolded proteins. Pattrt Santhoshkumar, K. Sharma; 1Ophthalmology, University of Missouri-Columbia

3425 – A0196 Inhibition of ptergyium fibroblasts viability by a Siempre viva plant extract partitioned in Aqueous-Two Phase Systems. Daniela Enriquez-Ochoa, C. Sánchez-Trasviña, K. Mayolo-Delosia, P. Lopez, J. Zavala, M. Rito-Palomares, J. Valdez-Garcia; 1ITESM
3426 — A0197 Development and efficacy assessment of AA2V8-hG1.7p.cोCNGA3, a CNGA3 gene therapy vector. Tassos Georgiadis1,2, T. Muttski2, J. Hoke3, M. Rizzi2, A. Gonzalez-Cordero2, R. Sampson1, J. W. Bainbridge1, A. Smith1, R. R. Ali2, I. MeiraGTX Ltd; 2UCL Institute of Ophthalmology *CR

West Exhibition Hall A0198-A0209
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Biochemistry/Molecular Biology

353 Genome, chromatin structure and functional genomics

Moderator: Eric A. Pierce

3427 — A0198 Interplay between piRNAs and miRNAs modulate specific targets in retinitis pigmentosa. Subhakalashmi Chidambaram1,2, R. Arora1, L. Dohadwala1, S. Sivagurunathan1, J. Arunachalam1, K. Mathuramalingam1. 1Biochemistry and Molecular Biology, Pondicherry University; 2Biochemistry and Cell Biology, Vision Research Foundation; 3National Centre for Biological Sciences; 4Central Inter-Disciplinary Research Facility

3428 — A0199 Identification of the ocular aging signature using RNA-Seq. Angela Banks1, A. Chen1, N. Li1, N. Vo1, M. Morris2, Y. Wang2, C. Ball2, L. Mansur1. 1Ophthalmology, Novartis Institutes for Biomedical Research; 2Novartis Institutes for Biomedical Research *CR

3429 — A0200 Cytokines associated with uveitis in melanoma induce expression of ICAM-1 and the IncRNA ICR in a tumor and stimulus specific manner. Binoy Appukuttan1, A. L. Waterman1, L. M. Ashander2, Y. Ma1, J. R. Smith1. 1Clinical & Molecular Medicine, Flinders Univ of South Australia - FU; 2Eye and Vision Health, Flinders University

3430 — A0201 Development and epigenetic plasticity of murine Müller glia. Dmitry V. Ivanov1,2, R. Seemungal1, G. Dvorianitchkova1. 1Bascom Palmer Eye Institute, Department of Ophthalmology, University of Miami Miller School of Medicine; 2Department of Microbiology and Immunology, University of Miami Miller School of Medicine

3431 — A0202 MicroRNAs as potential regulators of fibrosis in retinal pigment epithelial cells. Patricia Sanchez-Diaz1, W. Greene1, T. Burke2, H. H. Wong1. 1Rosenberg School of Optometry, University of the Incarnate Word; 2Sensory Trauma, United States Army Institute of Surgical Research, Fort Sam Houston

3432 — A0203 The signature of the healthy trabecular meshwork. Ilona Liesenbohrs1,2, L. M. Eijssen3,4, M. Katon3,4, C. T. Evelo3,4, T. G. Gorgels3,4, W. H. Hubens1,4, H. J. Beckers3,4, C. A. Webers1,4, J. S. Schouten1,4. 1University Eye Clinic Maastricht, Maastricht University Medical Centre; 2Maastricht Centre for Systems Biology, MaCSBio, Maastricht University; 3School for Mental Health and Neuroscience, Department of Psychiatry and Neuropsychology, Maastricht University; 4Department of Bioinformatics - BiGCaT, Maastricht University; 5Department of Ophthalmology, Canisius Wilhelmina Hospital

3433 — A0204 Lens-PaTrNing: an interactive web resource for interrogating signaling pathways and Transcriptional Networking during lens and cataract formation. Michael O’Connor1, J. Monks1, M. Kabir1, J. W. Ho1, L. Liyanage1. 1Western Sydney University; 2The University of Hong Kong

3434 — A0205 Comprehensive genetic analysis of IgG4-related ophthalmic diseases by RNA-sequencing. Masaki Asakage1, Y. Usui2, M. Ogawa1, N. Yamakawa1, K. Unumune1, R. Nenoto1, H. Goto1, N. Nezzi1, M. Kuroda1. 1Ophthalmology, Tokyo Medical University Hospital; 2Molecular Pathology, Tokyo Medical University Hospital

3435 — A0206 Identification of ocular regulatory functions of core histone variant H3.32 in mouse. Sharmilee Vetrivel1, J. Graw1, F. Giesert2. 1Institute of Developmental Genetics, IDG; 2Eye and Brain Group; 3Helmholtz Zentrum Munich, Institute of Developmental Genetics

3436 — A0207 The sequence variants in the promoter of CYFIP1 correlate with phenotype severity in canine progressive retinal atrophy. Sudeep Dohadwala1,2, s. Sivagurunathan1, J. Arunachalam1, K. Muthuramalingam1. 1Biochemistry and Molecular Biology, Pondicherry Central University; 2Biochemistry and Cell Biology, Vision Research Foundation

3437 — A0208 Evaluating methods for differential gene expression and alternative splicing using internal synthetic controls. Tatyana Appelbaum, L. Ivanov1,2, R. Seemungal1, G. Dvorianitchkova1. 1Bascom Palmer Eye Institute, Department of Ophthalmology, University of Miami Miller School of Medicine; 2Department of Microbiology and Immunology, University of Miami Miller School of Medicine

3438 — A0209 The signature of the healthy trabecular meshwork. Ilona Liesenbohrs1,2, L. M. Eijssen3,4, M. Katon3,4, C. T. Evelo3,4, T. G. Gorgels3,4, W. H. Hubens1,4, H. J. Beckers3,4, C. A. Webers1,4, J. S. Schouten1,4. 1University Eye Clinic Maastricht, Maastricht University Medical Centre; 2Maastricht Centre for Systems Biology, MaCSBio, Maastricht University; 3School for Mental Health and Neuroscience, Department of Psychiatry and Neuropsychology, Maastricht University; 4Department of Bioinformatics - BiGCaT, Maastricht University; 5Department of Ophthalmology, Canisius Wilhelmina Hospital

3439 — A0282 Rod and cone visual pigment synthesis rates are abnormal in IAMD and dependent on underlying pathology. Tom H. Margrain1, N. Cassels1, A. M. Binns1, A. Wood2. 1Cardiff Centre for Vision Sciences, Cardiff University; 2School of Health Sciences, City, University of London *CR

3440 — A0283 Effect of Age-related Macular Degeneration on changes in choroidal thickness induced by retinal defocus. John R. Phillips1,2, T. Chen1, S. T. Chiang1,2. 1School of Optometry and Vision Science, The University of Auckland; 2Department of Optometry, Asia University; 3Department of Optometry, Mackay Junior College of Medicine, Nursing & Management; 4Department of Medical Research, China Medical University Hospital

3441 — A0284 Association of treatment response with quantitative changes in choroidal neovascularization and outer choroidal vessel in neovascular age-related macular degeneration. Hyangwoo Lee1,2, M. Lee1,2, M. Kim1,2, H. Chung1,2, H. Kim1,2. 1Ophthalmology, Konkuk university medical center; 2Konkuk university school of medicine

3442 — A0285 Subretinal fibrosis detection using polarization sensitive optical coherence tomography. Joy Willems1, M. Graf2, A. van de Kreek2, F. D. Verbraak2, Y. de Jong2, J. de Boer2,2. 1Biophotonics and medical imaging, VU Amsterdam; 2Ophthalmology, Amsterdam VUmc *CR

3443 — A0286 Quantity and morphology of inner retinal vasculature is reduced in intermediate Age-Related Macular Degeneration. Lisa Nivison-Smith1,2, M. Trinh1, M. Kalloniatis2,1. 1School of Optometry and Vision Science, New South Wales University; 2Centre for Eye Health

3444 — A0287 Quantification of two dimensional progression velocity in geographic atrophy and its relationship with autofluorescence at the borders. Giovanni Ometto1,2, G. Montesano1, J. H. Terheyden1, D. P. Crabb1. 1Ophthalmology, City University of London; 2Moorfields Eye Hospital; 3Department of Ophthalmology, University of Bonn *CR

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.

3446 — A0289 Remodeling of choroidal vessels in geographic atrophy secondary to nonexudative age-related macular degeneration. Vittorio Capuano1, A. Miere1, E. Borrelli1, R. Saccorii2, L. Todisco1, O. Semoïn1, F. Bandello1, E. H. Souied2, G. Querques2,3. Service Universitaire d’Ophthalmologie, Centre hospitalier Intercommunal de Créteil; University Vita Salute IRCCS Ospedale San Raffaele

3447 — A0290 A longitudinal analysis of changes in en-face optical coherence tomography and fundus autofluorescence in Stargardt disease. Vivienne C. Greenstein1, C. L. Xu1, S. Tsang1, R. Allikmets2, J. Sparrow1, D. C. Hood2. 1Ophthalmology, Columbia University; 2Psychology, Columbia University; 3Pathology and Cell Biology, Columbia University *CR

3448 — A0291 Genesis of cholesterol crystals in eyes with drusenoid pigment epithelial detachment secondary to non-neovascular age-related macular degeneration. Serena Fragiotta1,2, P. Fernandez Avellaneda1, B. Leong1, K. Kato1, Y. Sakurada1, L. Yannuzzi1, C. A. Curcio1, K. Freund2. 1Vitreous Retina Macula Consultants of New York; 2Sapienza University of Rome; 3University of Yamanashi; 4University of Alabama at Birmingham *CR

3449 — A0292 Volume rendering of choroidal neovascularization complicating age related macular degeneration: qualitative and quantitative characterization. Diogo Cabral1,2, F. Coscas1, T. Pereira1, C. Brás-Geraldes3, R. Laiqinah5, S. Barrão1, G. Coscas5, E. H. Souied2. 1Instituto de Oftalmologia Dr Gama Pinto; 2Department of Ophthalmology, Centre Hospitalier Intercommunal de Créteil, University Paris Est Créteil XII; 3Centre de Statistiques et its Applications, University of Lisbon; 4Microscopy Facility, CEDOC, NOVA Medical School, Universidade NOVA de Lisboa; 5CEDOC, NOVA Medical School, Universidade NOVA de Lisboa; 6Ophthalmology, Centro Hospitalar de Entre o Douro e Vouga; PDICSS, Faculty of Medicine of Porto University

3450 — A0293 Comparison of the visualization and measurement of choroidal neovascularization using fluorescein angiography and two spectral domain optical coherence tomography angiography devices. Chris Oy1,2, M. Bonini Filho2, N. K. Waheed3. 1Ophthalmology, LSU; 2Tufts Medical Center, New England Eye Center *CR

3451 — A0294 An association between RPE disruption and fibrotic scar formation after aflibercept therapy for neovascular age-related macular degeneration. Keijiro Ishikawa1, S. Shiose2, M. Akiyama1, K. Kanor1, Y. Kaizu2, I. Wada2, S. Nakao1, Y. Oshima2, K. Sonoda2. 1Ophthalmology, Kyushu University; 2Fukouka University Chikushin Hospital *CR

3452 — A0295 RNA biomarker discovery in Polypoidal Choroidal Vasculopathy (PCV): Pharmacogenomics approach. Mathavan Sinnakarupp1, L. Alagappan1, S. K2, P. TM2, S. N.N1, M. Bhende2. 1SN ONGC Department of Genetics and Molecular Biology, Vision Research Foundation; 2Vitreo Retina, Medical Research Foundation


3454 — A0297 Longitudinal and spatial analysis of ellipsoid zone reflectivity by optical coherence tomography in eyes at high risk for development of late AMD. Sarah Thiele1, B. Isselnann1, M. Pfaud2, J. Nada2, K. Fleckenstein2, M. Schmidt1, F. G. Holz1, S. Schnitz-Valckenberg1. 1University of Bonn, Department of Ophthalmology; 2University of Bonn, Institute for Medical Biometry, Informatics and Epidemiology *CR

3455 — A0298 Annotation of choroidal neovascularization components in age-related macular degeneration using polarization-sensitive optical coherence tomography with optical coherence tomography angiography. Noriko Miyamoto1, K. Totani2, M. Mandai2, M. Santuz3, S. Ogawa4, Y. Takagi2, Y. Hiram1, S. Oshima1, M. Takahashi4, Y. Karimoto3,1. 1Dept of Ophthalmology, Kobe City Eye Hospital/Kobe City Med Ctr Gen Hosp; 2Kobe City Eye Hospital; 3Tomey Corporation; 4Riken Center for Developmental Biology *CR

3456 — A0299 Associations between variation in retinal thickness and visual function. Rebecca N. Evans1, U. Chakravarthy1, B. Reeves1. 1Bristol Medical School, University of Bristol; 2Institute of Clinical Science, The Queen’s University of Belfast *CR, R

3457 — A0300 SD-OCT «subretinal evanescent hyperreflectivity » in age-related macular degeneration. Polina Astroz Evtochenko1, f. amoroso1, O. Semoïn1, M. Sourr1, A. Mouallem-Beziere2, G. Querques2, E. H. Souied1. 1Centre Hospitalier Intercommunal de Créteil; 2University Vita-Salute

3458 — A0301 Retinal function, vasculature and oxygen parameters in patients with macular degenerations. Rebekka Heitmar. Optometry and Vision Sciences, Aston University

3459 — A0302 Spectral and Lifetime Autofluorescence Characteristics of Soft Drusen and Hyperpigmentation in Patients with Age-Related Macular Degeneration (AMD), Martin Hammer1, L. Zweifel1, L. Kreilkamp1, L. Sauer2, R. Schulz1, R. Augsten1, D. Meller1. Dept of Ophthalmology, University Hospital Jena; 2Moran Eye Center, Univ. of Utah *CR

3460 — A0303 Fluorescence Lifetime Imaging Ophthalmoscopy (FLIO) in Patients with Pigment Epithelial Detachment (PED) due to Age-related Macular Degeneration (AMD). Lydia Sauer, C. B. Komanski, A. Vitale, P. S. Bernstein. Department of Ophthalmology, John A Moran Eye Center *CR

3461 — A0304 Feature analysis of the choroid in optical coherence tomography images – limitations and opportunities. Louise Terry1, D. Ravenscroft2, J. Deng3, X. Xie3, N. White1, T. H. Margrain1, R. V. North1, A. Wood4. 1Cardiff University; 2Swansea University

3462 — A0305 Flavoprotein Fluorescence is a Marker of AMD Progression. Jessica Hsueh1,2, R. Raimondi1,2, G. Hom1,2, T. Conti3, R. P. Singh3,4. 1Case Western Reserve University School of Medicine; 2Cole Eye Institute, Cleveland Clinic; 3Center for Ophthalmic Bioinformatics, Cleveland Clinic *CR

3463 — A0306 Characterizing Spectra from Hyperspectral Autofluorescence (AF) of Human Eyes with and without Age-related Macular Degeneration (AMD). Taariq Mohammed1, Y. Tong1, A. Al-Obeidi1, N. Chall2, T. Ach1, C. A. Curcio1, R. Smith1. 1New York University School of Medicine; 2New York Eye and Ear Infirmary of Mount Sinai; 3University Hospital Würzburg; 4University of Alabama at Birmingham School of Medicine

3464 — A0307 Association between spectral profile from Hyperspectral Autofluorescence (AF) with localization of Melanin-containing Organelles in Human RPE in eyes with and without AMD. Arshed Al-Obeidi1, T. Mohammed1, Y. Tong2, N. Chall2, T. Ach1, C. A. Curcio1, R. Smith1. 1New York University; 2Department of Ophthalmology, New York Eye and Ear Infirmary of Mount Sinai; 3Department of Ophthalmology, University Hospital of Würzburg; 2Department of Ophthalmology, University of Alabama at Birmingham School of Medicine
Tuesday Posters
11:45 am – 1:30 pm

Zhongshan Ophthalmic Center; State Key Laboratory of Ophthalmology, New York University Langone School of Medicine

topographic analysis using machine learning. Limei Sun, X. Ding.

Multimodel Imaging of Non-visualized Ophthalmic Center; 4Genentech; 5Vitreous Retina Macula Consultants of New York


The Efficacy of 0.1% Tacrolimus Ophthalmic Suspension in the Treatment of Scleritis. HIROYUKI YAZU’2, D. Miyazaki1, H. Fujishima1. Ophthalmology, Tsurui University School of Dental Medicine; 2Ophthalmology, Keio University School of Medicine; Ophthalmology and Visual Science, Faculty of Medicine Tottori University CR.


Clinical Outcomes for Intravenous Immunoglobulin Treatment in Autoimmune Retinopathy with Comparison to Natural History Controls. Caroline Minkus, L. Sobrin, L. Stanwyck. Massachusetts Eye and Ear


Clinical course and treatment of prolonged cases in Vogt-Koyanagi-Harada disease. Ayaka Takeda1, N. Shiratori1, S. Yui1, J. Hori1. Nippon Medical School; Nippon Medical School, Tama-nagayama Hospital

The possibility of discontinuation of biologics and bioholiday in the management of Vogt-Koyanagi-Harada disease. Noriyasu Hashida, K. Asao, K. Nakai, K. Maruyama, K. Nishida. Ophthalmology, University of Sao Paulo; Ophthalmology, University of Vienna; Ophthalmology, Johns Hopkins University; Ophthalmology, Icahn School of Medicine at Mount Sinai

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
5307 — A0548 Sensitivity and Predictive Value of Radiography and ACE Levels in the Diagnosis of Sarcoïd Uveitis. Jawad Arshad1, D. Culver2, K. Baynes3, S. Sharma4, S. K. Srivastava1. 1Case Western Reserve University School of Medicine; 2Cleveland Clinic


5310 — A0551 Modified Anterior Sub-tenon’s Periocular Steroid Injection for Treatment of Intraocular Inflammation and Cystoid Macular Edema. Kenneth McKay1, D. S. Borkar1,2, D. Sevgi1, G. Papaliodis1, L. Sobrin1. 1Ophthalmology, Massachusetts Eye and Ear Infirmary; 2Ophthalmology, Wills Eye Hospital

5311 — A0552 Treatment response analysis of visual acuity and central subfield retinal thickness following suprachoroidal CLS-TA. Christopher R. Henry1, N. Teusch1, C. Comisar2, D. Taraborelli1, B. Kapik4, G. Noronha4. 1Ophthalmology, Wills Eye Hospital; 2Ophthalmology, Houston Methodist Hospital; 3Certara; 4Clearside Biomedical

5312 — A0553 Dexamethasone Intravitreal Implantation To Treat Uveitic Macular Edema. Grace Levy-Clarke1, J. Wippel1, N. N. Patel1, M. Benitez Cartaya1, J. H. Kempert1. 1Clinical Research, Tampa Bay Uveitis Center, LLC; 2St Luke’s Cataract and Laser Institute; 3Orlick, Berger, Kasper and Patel; 4Massachusetts Eye and Ear Infirmary

5313 — A0554 Minimizing Recurrences of Ocular Inflammation and Need for Adjunctive Treatment of Non-infectious Posterior Uveitis (NIPU) during the 2 Years Following Treatment with a Single 0.18 mg Fluocinolone Acetonide Intraocular Insert (FAI). Quan D. Nguyen1, K. Patel2, D. A. Paggiarino2, E. Investigators2. 1Byers Eye Institute, Stanford University; 2EyePoint Pharmaceuticals

5314 — A0555 Pharmacokinetics of Intravitreal Sirolimus in a Subset of Subjects With Non-infectious Uveitis of the Posterior Segment of the Eye. David Chu1,2, S. Mudumba1. 1Metropolitan Eye Research and Surgery Institute; 2Institute of Ophthalmology and Visual Science, New Jersey Medical School, Rutgers University; 3Santen Inc

5315 — A0556 Long-term results of therapy with interferon alpha in chronic uveitic macular edema. Christoph M. Deuter, J. Fassul, D. Doycheva, M. Zierhat. Centre for Ophthalmology, University of Tuebingen

5316 — A0557 Drug Retention Rate of Tocilizumab in Uveitis. Real-World Data from the Spanish Biotherapies in Uveitis (BioÚvea) Study Group. Alfredo Alán Civera1, V. Llorens1, M. Cordero-Coma1, L. Martínez-Costa1, A. Blanco-Estebar1, M. Losada-Castillo1, C. Hernandez-Hernandez1, E. Juez-Navarro2, A. Garcia-Aparicio1, L. Rodriguez Melian1, M. Jodor-Marquez1, O. Garcia Garcia1, A. Fonollas-Calduch1, L. Cocho1, J. Solana-Fajardo1, M. Hernandez-Garfello1. 1Ophthalmology, Hospital Clinic Barcelona; 2IDIBAPS; 3Ophthalmology, Complejo Hospitalario Leon; 4Ophthalmology, Hospital Donostia; 5Ophthalmology, Hospital Universitario de Tenerife; 6Rheumatology, Hospital De La Princesa; 7Rheumatology, Hospital Virgen de la Salud; 8Ophthalmology, Hospital Insular de Gran Canaria; 9Ophthalmology, Hospital Regional de Málaga; 10Ophthalmology, Hospital de Cruces; 11Ophthalmology, Hospital Perpetuo Socorro; 12Ophthalmology, Hospital General de Valencia; 13Ophthalmology, Complejo Hospitalario Universitario de Albacete; 14Ophthalmology, IOBA; 15Ophthalmology, Hospital Dr Peset

5317 — A0558 Correlation of an Objective Fluorescein Angiography Inflammatory Scoring System with Visual and Anatomical Outcomes in Eyes with Non-Infectious Uveitis treated with Intraocular Tocilizumab. Mohammad A. Sadiq1, M. Hassan2, R. Afridi2, M. Hallim2, S. C. Balayot3, M. A. Ibrahim3, D. V. Do4, y. sapah4, Q. D. Nguyen4. 1University of Louisville; 2Ophthalmology, Byers Eye Institute; 3Ocular Imaging Research and Reading Center


5320 — A0561 Evolution of intraocular inflammation after the end of the ADJUVITE study. Delphine Lami1, C. Fardeau1, I. Kone-Paut1, I. Marie1, F. Mouriaux1, V. Despert1, M. Weber1, C. Couret1, P. Loehang1, P. Quartiier1, B. Bodaghi1. 1Ophthalmology, Hospital Pitie-Salpetriere; 2Hospital Kremlin-Bicetre; 3Hospital de Rennes; 4Hospital de Nantes; 5Hospital Neckar


5322 — A0563 Long term outcomes of infliximab in patients with Behcet’s disease-related uveitis. Satoshi Yamada1, E. Hasegawa1, A. Takeda2, N. Yawata1, K. Sonoda1. 1Ophthalmology, Kyushu University; 2Clinical Research Center, National Hospital Organization, Kyushu Medical Center; 3Ophthalmology, Fukuoka Dental College

5323 — A0564 The frequency of adverse events in non-infectious uveitis patients treated with TNF inhibitors. Chisato Agata1, T. Kaburaki1, R. Tanaka1, K. Komae1, H. Izawa1, H. Nakahara1, H. Kawashima1, M. Aihara2. 1Ophthalmology, The University of Tokyo Hospital; 2Ophthalmology, Jichi Medical University Hospital

5324 — A0565 Rate of Remission after Immunomodulatory Therapy for Uveitis. Deep Purikcle1, S. Monor1, M. Fabrykonski2, T. Truong1, J. Chua1, C. Samson1. 1Ophthalmology, Manhattan Eye, Ear & Throat Hospital, Northwell Health System; 2The New York Medical College; 3Epidemiology, Mailman School of Public Health, Columbia University

5325 — A0566 Inflammation Relapse and Remission in Patients with Non-infectious Ocular Inflammation by Etiology and Treatment. Saanvashal S. Sainchek3, J. Gottlieb1,2. 1Health-Sciences, University of Bristol; 2The Ottawa Eye Institute, The Ottawa Hospital Research Institute; 3Department of Ophthalmology, University of Ottawa

5326 — A0567 Changing biological disease modifying treatment for paediatric uveitis in the real world. Sophia Zagora1, L. Oh1, C. Nguyen1, K. Phan1, E. Wong1, D. Singh-Grewal1, J. Chaitow1, J. R. Grigg1,2, P. J. McCluskey1,2. 1Paediatric Rheumatology, Children’s Hospital Westmead and Sydney Children’s Hospital, Randwick; 2Sydney Eye Hospital; 3Save Sight Institute, University of Sydney


*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.


3530 — A0571 Initial intravitreal injection of high-dose ganciclovir for cytomegalovirus retinitis in HIV-negative patients. zhuyan qian1, H. Li2, Y. Tao3, W. Li4. 1Department of Ophthalmology, Shanghai Aier Eye Hospital; 2Department of Ophthalmology, the First Hospital of Peking University; 3Department of Ophthalmology, Beijing Chaoyang Hospital; 4Aier School of Ophthalmology, Central South University.

3531 — A0572 New candidate treatment for clearing precipitate from the intraocular lens. Kazuichi Maruyama1, H. Sakaguchi2, N. Hashida3, S. Koh1, N. Maeda2, K. Nishida1. 1 Ophthalmology, Osaka University Graduate School of Medicine; 2Kosai Eye Clinic.

3532 — A0573 Local Therapy for Cancer Immunotherapy-Associated Uveitis. Arthi Venkat1, S. Arepalli1, S. Sharma1, N. Karthik1, C. Lowder1, S. K. Srivastava1. 1 Ophthalmology - Retina and Uveitis, Cleveland Clinic Foundation - Cole Eye Institute; 2Ophthalmology, Casey Eye Institute - Oregon Health and Sciences University.

3533 — A0574 Risk Factors for Poor Visual Outcomes in Patients That Develop Uveitis After Treatment with Checkpoint Inhibitors. Marez Megall1, H. Kluger2, S. Weiss3, R. Pontidjuour-Lim1, N. Kombo1. 1 Yale Ophthalmology and Visual Sciences; 2Yale Smilow Cancer Center.


3542 — A0582 Distribution of retinal amyloid deposits in association with Alzheimer’s disease. Melanie C. Campbell1, J. Ren1, E. Mason1, R. Redekop2, L. Emptage2, V. Hirsch-Reinshagen3, R. Hsiung4, I. Mackenzie1. 1Physics & Astronomy/Sch Of Optom, University of Waterloo; 2University of British Columbia *CR


3545 — A0586 Comparing Liquid Biopsy Fixatives for Preservation of DNA and RNA integrity: Identifying the optimum fixative for Primary Vitreoretinal Lymphoma diagnostics. Mona M. Wang1, W. Tan2, P. Ricciardi-Castagnoli1, T. Lim3, A. S. Chan2. 1Translational Ophthalmic Pathology, Singapore Eye Research Institute; 2Singapore National Eye Centre; 3A. Manarini Biomarkers Singapore Pte Ltd *CR


3547 — A0588 Retinal hemangioblastomas in von Hippel-Lindau germline mutation carriers: progression, complications and treatment outcome. Anass Hajaj1, K. van Overdam2, R. Oldenburg3, A. de Klein1, E. Kilić1. 1Ophthalmology, Erasmus Medical Center; 2Vitreoretinal Surgery, The Rotterdam Eye Hospital; 3Clinical Genetics, Erasmus Medical Center.


3550 — A0591 Adenoma and adenocarcinoma of the retinal pigment epithelium: clinical and imaging characteristics, treatment options and histopathologic findings in 51 consecutive patients. Luis Acaba-Berrocal1, B. K. Williams2, M. Di Nicola2, J. Lucio-Alvarez2, J. A. Shields2, C. L. Shields2. 1Sidney Kimmel Medical College; 2Wills Eye Hospital.


3552 — A0593 Multimodal imaging including optical coherence tomography angiography of tamoxifen retinopathy: A comparison with macular telangiectasia type 2. Suhwan Lee1, H. Kim2, Y. Yoon3. 1Kangwon National University Hospital; 2Asian Medical Center

3553 — A0579 Prevalence of tamoxifen retinopathy and its risk factors. Hyun-Ah Kim1, S. Lee2, Y. Yoon1. 1 Ophthalmology, Ansan Medical Center, University of Ulsan College of Medicine; 2Ophthalmology, Kangwon National University Hospital, Kangwon National University Graduate School of Medicine

3554 — A0578 Paraneoplastic retinopathy analyzed in unusual cancers. Thanh-Tin Nguyen, K. Bhavsar, E. B. Suhler. 1Ophthalmology, Byers Eye Institute, Stanford University; 2Pathology, University of California San Diego; 3Vanderbilt Eye Institute; 4Ophthalmology, Tan Tock Seng Hospital; 5Ophthalmology, Post Graduate Institute of Medical Education & Research (PGIMER); 6Ophthalmology, Stanford University; 7Statistics, Aachen University.

3555 — A0568 Outcomes in Patients That Develop Uveitis After Treatment with Checkpoint Inhibitors. Audele Yarmohammadi1, V. Goodwill2, C. sigurdson3, M. H. Goldbaun1, P. Savino1, J. H. Lim1, 1 Ophthalmology, UC San Diego Shirley Eye Institute; 2Pathology, University of California San Diego.

3556 — A0583 Morphology of Retinal Pathologic Prion Protein (PrP) Deposits in Sporadic Creutzfeldt-Jakob Disease (sCJD) Patients. Adeleh Yarmohammadi1, V. Goodwill2, C. sigurdson3, M. H. Goldbaun1, P. Savino1, J. H. Lim1. 1 Ophthalmology, UC San Diego Shirley Eye Institute; 2Pathology, University of California San Diego.

3557 — A0593 Morphology of Retinal Pathologic Prion Protein (PrP) Deposits in Sporadic Creutzfeldt-Jakob Disease (sCJD) Patients. Adeleh Yarmohammadi1, V. Goodwill2, C. sigurdson3, M. H. Goldbaun1, P. Savino1, J. H. Lim1. 1 Ophthalmology, UC San Diego Shirley Eye Institute; 2Pathology, University of California San Diego.

3558 — A0578 Paraneoplastic retinopathy analyzed in unusual cancers. Thanh-Tin Nguyen, K. Bhavsar, E. B. Suhler. 1Ophthalmology, Byers Eye Institute, Stanford University; 2Pathology, University of California San Diego; 3Vanderbilt Eye Institute; 4Ophthalmology, Tan Tock Seng Hospital; 5Ophthalmology, Post Graduate Institute of Medical Education & Research (PGIMER); 6Ophthalmology, Stanford University; 7Statistics, Aachen University.

3559 — A0579 Prevalence of tamoxifen retinopathy and its risk factors. Hyun-Ah Kim1, S. Lee2, Y. Yoon1. 1 Ophthalmology, Ansan Medical Center, University of Ulsan College of Medicine; 2Ophthalmology, Kangwon National University Hospital, Kangwon National University Graduate School of Medicine

3560 — A0578 Paraneoplastic retinopathy analyzed in unusual cancers. Thanh-Tin Nguyen, K. Bhavsar, E. B. Suhler. 1Ophthalmology, Byers Eye Institute, Stanford University; 2Pathology, University of California San Diego; 3Vanderbilt Eye Institute; 4Ophthalmology, Tan Tock Seng Hospital; 5Ophthalmology, Post Graduate Institute of Medical Education & Research (PGIMER); 6Ophthalmology, Stanford University; 7Statistics, Aachen University.

3561 — A0577 Multimodal imaging including optical coherence tomography angiography of tamoxifen retinopathy: A comparison with macular telangiectasia type 2. Suhwan Lee1, H. Kim2, Y. Yoon3. 1Kangwon National University Hospital; 2Asian Medical Center

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3552 — A0593  Optical Coherence Tomography (OCT) characteristics of the choroid undergoing congenital hypertrophy of the retinal pigment epithelium (CHRPE). Ethan Sobol,1, J. H. Francis,2, M. Greenberg,2, R. Polberg,2, D. H. Abrams1.1, Ophthalmology, Icahn School of Medicine at Mount Sinai; 2Ophthalmic Oncology, Memorial Sloan Kettering Cancer Center. 1Ophthalmology, Oakland University William Beaumont School of Medicine; 2Ophthalmology, Weill-Cornell Medical Center *CR

3553 — A0594  Clinical features and Optical Coherence Tomography findings of Retinal Astrocytic Hamartomas in Chinese Tuberous Sclerosis Complex Patients. Chenxi Zhang,1, Z. Zhang,1, K. Xu,1, Q. Long,1, Z. Yang,1, R. Dai,1, H. Du,1, D. Li.1 1Department of Ophthalmology, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences; 2Department of Respiratory Medicine, Peking Union Medical College Hospital, Peking Union Medical College and Chinese Academy of Medical Sciences

West Exhibition Hall A0595-A0627

Tuesday, April 30, 2019 11:45 AM-1:30 PM

Anatomy and Pathology/Oncology

357 Tumors: Eyelids, Orbit, Ocular Surface, Conjunctiva, and Ocular Adnexa

Moderators: Vivian Lee and Shahar Frenkel

3554 — A0595  Whole Exome Profiling and Mutational Analysis of Ocular Surface Squamous Neoplasia. Nallely Ramos Betancourt,1, F. G. Matthew,1, G. Wang1, C. L. Karp,1, D. Daivila-Alquisiras,1, L. Hernández-Zimbrón,1, R. García-Vásquez,1, K. A. Vázquez Romo,1, E. Hernandez-Quintela,1, J. Fromow-Guerra,1, A. Galo1,2 1Institute for Human Genomics, University of Miami, Miller School of Medicine; 2Ophthalmology, Moorfields Eye Hospital; 1Ophthalmology, East Sussex Healthcare Trust; 2Ophthalmology, Brighton and Sussex University Hospital NHS Trust

3555 — A0596  Melanocytic Ocular Tumors: A 12-Year Clinicopathological Review. Ana Carolina Horita,1, M. Botelho,1, J. Coblenz,2, S. Bergeron,2, M. N. Burnier,2, J. Portela Passos2, E. B. Abreu2,1 1Universidade Sao Francisco; 2Ophthalmology, Jacobi Medical Center; 1Ophthalmology, Institute Penido Burnier; 2Ocular Pathology, The MUHC-McGill University Ocular Pathology & Translational Research Laboratory


3561 — A0602  Delayed onset Scleromalacia following intraoperative Mitomycin C application for Conjunctival Melanoma. Syed Shahid1, S. N. Ahmed2, M. Nanavaty3, 1,2 1Ophthalmology, Moorfields Eye Hospital; 3Ophthalmology, Centre hospitalier universitaire de Sherbrooke; 1,2 The MUHC-McGill University Ocular Pathology & Translational Research Laboratory

3562 — A0603  Fluorouracil 2.5% for the treatment of squamous cell carcinoma according to characteristics by optical coherence tomography. Elisa Alegria, R. Velasco, s. arellano. Oftalmología, Hospital de la Luz IAP


3564 — A0605  Conjunctival Keratoacanthoma: A Clinicopathologic Case Series. Sander R. Dubovoy1,2, N. Venkateswaran1, J. Matthews1, G. AlBanyat1, G. W. Elgar1, C. L. Karp1. 1Ophthalmology, Bascom Palmer Eye Institute/University of Miami; 2Florida Lions Ocular Pathology Laboratory; 1Dermatology and Cutaneous Medicine, University of Miami

3565 — A0606  Primary or metastatic: The usefulness of p63 to assess mucinous carcinoma of an eyelid. Sabrina Bergeron1, J. Coblenz2, E. Arthurs3, P. Daigle4, M. MacDonald5. 1The MUHC - McGill Ocular Pathology & Translational Research Laboratory; 2Ophthalmology, McGill University

3566 — A0607  A 10-year study of melanocytic lesions of the conjunctiva. Andreise Martins Paro1,2, G. Feltrin de Barros3, J. Portela Passos3, J. Burnier1, E. Abreu1,2, M. N. Burnier1,2. 1Ophthalmology, Institute Penido Burnier; 2Ocular Pathology, The MUHC-McGill University Ocular Pathology & Translational Research Laboratory


3569 — A0610  A unique recurrent bilateral presentation of oncocytomas of the caruncle. Cameron Oliver1, S. Bergeron, J. Coblenz2, A. T. Dias3, J. Burnier2, M. N. Burnier1. 1University of British Columbia; 2The MUHC-McGill University Ocular Pathology & Translational Research Laboratory

3570 — A0611  Interleukin-1β expression is positively correlated with cyclooxygenase-2 expression in basal cell carcinoma of the eyelid. Patrick Daigle1, M. MacDonald2, A. T. Dias3, S. Bergeron1, R. Darwich1, M. N. Burnier2,1. 1Ophthalmology, Centre hospitalier universitaire de Sherbrooke; 2The MUHC - McGill Ocular Pathology Laboratory; 3Ophthalmology, McGill Academic Eye Centre

3571 — A0612  Changes in T staging prevalence for eyelid carcinoma after AJCC 2018 guidelines. Claudia Zepeda-Palacios1, A. Perez-Ortiz2, K. Rodriguez-Villuendas,3 G. Grase Moreno4, D. Capiz Correa1,1. 1Orbita, Fundacion Hospital nuestra senora de la Luz; 2Massachusetts General Hospital; 3Escuela Superior de Medicina, Instituto Politécnico Nacional

3572 — A0613  A Retrospective clinical review of Periocular Basal Cell carcinoma outcomes in Glasgow: A 5 year study. Olayinka A. Williams, O. C. Erikitola, C. Diaper. 1Ophthalmology department, NHS Greater Glasgow and Clyde; 2NHS Greater Glasgow and Clyde

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
5373 — A0614 Is pterygium an indicator of an increased risk of developing cutaneous melanoma? – Retrospective study in the UK. Jia Yu Y. Ng1, A. Chilinska2, S. Pradhan1, M. Althaus1, N. Gopee1, D. Brass1, J. Langtry3, T. Oliphant3, E. Barnes3, P. F. Cigueñedo3, 3. Ophthalmology, Royal Victoria Infirmary; 3Newcastle University; 1Dermatology, Royal Victoria Infirmary

5374 — A0615 Atypical Fibroxanthoma Affecting the Ocular Surface and Adnexa: A Case Series. Pedro Monsalve1, 4, A. L. Garcia1, 4, X. Zhou1, 4, W. E. Elgar2, 4, C. L. Karpi1, 4, T. E. Johnson1, 4, A. Galor1, 4, S. Dubovy1, 4. 1Ophthalmology, Bascom Palmer Eye Institute. University of Miami Miller School of Medicine; 2Dermatopathology, University of Miami Miller School of Medicine; 3Bascom Palmer Eye Institute, University of Miami, Miami, Florida; Florida Lions Eye Bank, Florida.; 4Ophthalmology, Bascom Palmer Eye Institute, University of Miami, Miami, Florida; Department of Ophthalmology, Miami Veterans Administration Medical Center, Miami, Florida.

5375 — A0616 Ocular surface squamous neoplasia, a now medically treatable disease spectrum? Matthew H. Ip1, 2, M. T. Coronel1, 2, 1Department of Ophthalmology, Prince of Wales Hospital; 2The University of New South Wales.

5376 — A0617 Clinical and Histopathological Discrepancy of Sebaceous Cell Carcinoma: a 12-year review. Juliana Portela Passos1, M. Botelho1, A. Horita1, A. Martins Paro1, C. Mastromonaco1, M. N. Burnier1. Ocular Pathology & Translational Research Laboratory, MUHC-McGill University

5377 — A0618 Clinicopathological Features of IgG4-related Idiopathic Orbital Inflammatory Pseudotumor. Jingqiao Chen1, H. Ye1, R. Chen1, H. Liu1. 1Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 2Department of Ophthalmology and Visual Sciences, The University of Iowa; 3Dermatology, Stanford Eye Institute; 4Ophthalmology, New York University; 5Dermatology, Stanford University

5378 — A0619 Characteristics and treatment outcomes of orbital lymphangiomata in Taiwanese patients. Ho-Min Chen1, Y. Tsai1, 1Ophthalmology, Chang Gung Memorial Hospital, Keelung, Taiwan; 2Ophthalmology, Chang Gung Memorial Hospital, Linkou, Taiwan

5379 — A0620 Extranasal Rosai-Dorfman disease of the eye and ocular adnexa: A clinicopathologic series of 8 cases. Armando L. Garcia1, 2, P. Monsalve1, S. T. Weston1, W. Lee1, D. T. Tse1, C. L. Karpi1, A. Galor1, S. Dubovy1, 1Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 2Florida Lions Ocular Pathology Laboratory, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine

5380 — A0621 Steroid Treatment Masking the Diagnosis of IgG4-related Orbipathy. Catherine Liu, C. Arès. McGill University

5381 — A0622 Differentiation of orbital lymphoproliferative diseases by metabolomics. Hiroyuki Shimizu1, H. Goto1, Y. Usui1, N. Nezu1, K. Tsubota1, M. Ogawa2, M. Asakura3. Ophthalmology, Tokyo Medical University


5383 — A0624 Metastatic Lesions to the Eye and Orbit: A 15-year Retrospective Review. Ann Quan1, S. Shaib1, K. M. Cauvuto1, M.D.1, S. S. Swaminathan1, A. Garcia1, T. E. Johnson1, D. T. Tse1, W. Lee1, J. Harbour1, S. Dubovy1, 1Ophthalmology, Bascom Palmer Eye Institute; 2University of Southern California; 3Ophthalmology, Duke University

5384 — A0625 The Presence of Vascular Endothelial Growth Factor Receptors in Ocular Cavernous Hemangiomas and Lymphangiomas. Ann Tran1, W. Tso1, R. Gallo1, A. Levitt1, D. Pelz1, W. Lee1. Ophthalmology, Bascom Palmer Eye Institute

5385 — A0626 Incidence of Perineural Invasion with Headway Pathway Inhibitors in Orbital and Periorbital Basal Cell Carcinoma. Arthika Chandramohan1, A. A. Nair2, A. Chang3, A. L. Kossler1. 1Ophthalmology, Stanford Eye Institute; 2Ophthalmology, New York University; 3Dermatology, Stanford University

5386 — A0627 Temporal artery biopsy length does not affect rate of positive diagnosis in temporal arteritis: a retrospective review of 107 cases. Clara J. Mon1, T. F. McKechnie1, B. S. Challa2, B. S. Korn1, 3, D. O. Kikkawa1, 3, J. H. Lin2, 1Ophthalmology, University of Miami Miller School of Medicine; 2Dermatopathology, Stanford University; 3Radiology, Stanford University

5387 — B0001 Repeatability of the Photopic Negative Response in Stable Optic Neuropathy using a Handheld Electroretinogram System. Anh Bu1, M. Bindiganavale1, F. Khushzad1, M. D. Patel2, H. Moss2, 1University of California, Irvine; 2Stanford University

5388 — B0002 Clinical Prediction Score for Neuroimaging in Acquired Isolated Third Nerve Palsy. Natchada Tanueuchuesat1, J. Withthayaweerasak. Prince of Songkhla University

5389 — B0003 Adapting CRISPR towards Mitochondrial DNA Diseases. Anh H. Pham1, J. C. Burnett2. 1Ophthalmology, UCLA Stein Eye Institute; 2Center for Gene Therapy, City of Hope.

5390 — B0004 Optic nerve abnormalities in morning glory disk anomaly. An MRI study. Diem Trang Nguyen1, N. Bodd aer1, D. Bremond-Gignac2, M. P. Robert1. 1ophthalmology, Hopital Necker Enfants Malades; 2Centre de Références des Maladies Ophthalmiques Rares (OPHTARA); 3radiology, Hopital Necker Enfants Malades

5391 — B0005 Portable VEP Diagnostics for NeuroVisual Disorders. Srinivas Sridhar1, C. Verske1, A. Banjalmali1, A. Tran1, A. Cardozo2, K. Lashkari2, P. Bext. 1NeuroFieldz Inc; 2Northeastern University; 3Harvard Medical School.

5392 — B0006 The Retinal Vascular Perfusion in the Deep Slab Using by OCT Angiography in Amaurosis Fugax. Ari Kame1. Ari Eye Clinic

5393 — B0007 An En-Face OCT Registration Approach for Locating the Center of Bruch’s Membrane Opening in Longitudinal Papillodema Cases. Yashila M. Permeswaran1, J. Wang1, R. H. Kar doln1, M. Garvin1, 1Department of Electrical and Computer Engineering, The University of Iowa; 2Department of Ophthalmology and Visual Sciences, The University of Iowa; 3Center for the Prevention and Treatment of Visual Loss, Iowa City VA Health Care System.

5394 — B0008 Diagnosis of optic nerve hypoplasia and vision prognosis with orbital MRI vs. fundus photography. Pamela Garcia-Filion1, J. Kruglyakovski1, M. Nelson1, M. Borchart1. 1Biomedical Informatics, University of Arizona, College of Medicine-Phoenix; 2Georgetown University School of Medicine; 3The Vision Center, Children’s Hospital Los Angeles; 4Radiology, Children’s Hospital Los Angeles

5395 — B0009 Normal retinal ganglion cell (RGC) production and candidate disease associated genes identified in optic nerve hypoplasia (ONH). Jennifer Aparicio1, H. Hopp1, L. Li1, K. Stachek1, N. Harutyunyan1, D. Craig1, D. Cobrinik1, M. Borchart1. 1The Vision Center, Children’s Hospital Los Angeles; 2Department of Pathology and Laboratory Medicine, Children’s Hospital Los Angeles; 3Department of Ophthalmology, USC Keck School of Medicine; 4Department of Translational Genomics, USC Keck School of Medicine

5396 — B0010 Rare genetic causes of dominant optic atrophy. Petra Liskova1, 2, P. Diblik2, M. Tesarova1, L. Huna1, T. Honzik1, L. Dudakova1. 1Department of Pediatrics and Adolescent Medicine, First Faculty of Medicine, Charles University and General University Hospital in Prague; 2Department of Ophthalmology, First Faculty of Medicine, Charles University and General University Hospital in Prague

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Tuesday – Posters – 3597 – 3618

3597 — B0011 Deep-Learning-Based Estimation of Regional Volumetric Information from 2D Fundus Photography in Cases of Optic Disc Swelling, Samuel Johnson¹, M. Islam², J. Wang², T. Matthew³, R. H. Kardon², M. Garvie¹ 1Electrical and Computer Engineering, University of Iowa; 2Center for the Prevention and Treatment of Visual Loss, Iowa City VA Health System; 3Ophthalmology and Visual Sciences, University of Iowa Hospital and Clinics; 4Neurology, University of Iowa Hospital and Clinics

3598 — B0012 The efficacy of photographic evaluation of the optic nerve to determine the presence of acute optic nerve head elevation. Samantha Feldman, M. Mahan, B. Osborne. Ophthalmology, Georgetown University


3600 — B0014 The Impact of Brain Tumors on Grating Acuity Measured by Sweep-Visually Evoked Potentials in Children. Solange R. Salomao¹, P. F. Dottol¹, A. M. Cappellano¹, N. S. Silva¹, P. Y. Sacaí¹, D. M. Rocha¹, A. Berezovsky² 1Departamento de Oftalmologia e Ciencias, Universidade Federal de Sao Paulo; 2Grupo de Apoio ao Adolescente e a Criança com Câncer (IOP-GRAACC), Instituto de Oncologia Pediátrica-UNIFESP

3601 — B0015 The landscape of mitogenomes from LHON patients carrying the m.14484T>C/MT-ND6 mutation. Valerio Carelli¹, L. Caporali¹, F. Tagliavini¹, C. La Morgia¹, A. Achilli¹, A. Olivieri¹, A. Torron¹ 1University of Bologna; 2IRCSS Institute of Neurological Sciences of Bologna (ISNB); 3University of Pavia


3603 — B0017 Relationship between retinal nerve fiber layer defects and coronary artery calcium in patients at-risk for cardiovascular disease. Joo Youn Shin¹, J. o. Lee¹, S. Byeon², C. Lee², S. Park². Ophthalmology, Inje University; 2Cardiology Division, Severance Cardiovascular Hospital and Cardiovascular Research Institute, Yonsei University College of Medicine; 3Department of Ophthalmology, The Institute of Vision Research, Yonsei University College of Medicine

3604 — B0018 Retinal nerve fiber layer thickness in severely obese patients. Rita Laiglinhas¹, P. Cardoso¹, M. Guimarães¹, H. S. Sousa¹, J. Preto¹, M. Noru¹, D. Cabral¹, J. Chibante¹, F. Falcão Reis¹, M. Falcao¹ 1Faculty of Medicine of Porto University; 2Centro Hospitalar de São João; 3Centro Hospitalar de Entre o Douro e Vouga; 4Instituto de Oftalmologia Dr. Gama Pinto


West Exhibition Hall B0020-B0041 Tuesday, April 30, 2019 11:45 AM-1:30 PM

Eye Movements/Strabismus/Amblyopia/Neuro-Ophthalmology

359 Pediatric Ophthalmology

Moderator: Huibert J. Simoncz


3607 — B0021 An office-based fix and follow grading system for assessing visuo-cognitive function in infants. JAE HO JUNG¹, H. JEON¹ 1Ophthalmology, Seoul National University Hospital; 2Ophthalmology, Pusan National University Hospital

3608 — B0022 Steady-state flicker VEPs as markers of visual pathway maturation in term-born and preterm infants. Christina Beisse¹, D. L. McCulloch¹, U. Shahani¹, M. Bach¹ 1Ophthalmology, University Hospital Heidelberg; 2School of Optometry and Vision Science, University of Waterloo; 3University of Freiburg; 4Glasgow Caledonian University

3609 — B0023 Visual outcomes at age 10.5 years in the Infant Aphakia Treatment Study. Scott R. Lambert¹, G. Catsonis¹, L. DaBois³, A. Nizam¹, C. Drews-Botsch¹. 1Biostatistics, Emory University; 2Ophthalmology, Stanford University; 3Ophthalmology, Emory University; 4Epidemiology, Emory University

3610 — B0024 Association between motor skills at 4½ years and physical activity at 10½ years in the Infant Aphakia Treatment Study. E Eugenie Hartmann², C. Drews-Botsch², S. R. Salomao³ 1Ophthalmology, Stanford University; 2Epidemiology, Emory University

3611 — B0025 Actual Visual Demands of Children in the Classroom - Implications for Vision Screening Guidelines. Carolina Adams¹, S. Leach², Y. Kresch¹, S. E. Brooks¹ 1Ophthalmology, Columbia University Medical Center; 2Suni Optometry

3612 — B0026 Immediate versus Delayed Spectacle Treatment for Moderate Hyperopia in Children 3 to 5 Years of Age. Marjean T. Kulp¹, J. M. Holmes¹, T. W. Dean¹, D. W. Suh¹, R. T. Kraker¹, D. K. Wallace¹, D. B. Petersen¹, S. A. Cotter¹, E. R. Crouch¹, I. J. Lorenzana², B. H. Ticho³, L. C. Verderber¹, K. Weise¹ 1College of Optometry, Ohio State University; 2Department of Ophthalmology, Mayo Clinic; 3Jaeb Center for Health Research; 4University of Nebraska Medical Center; 5Department of Ophthalmology, Indiana University; 6Southern California College of Optometry at Marshall B. Ketchum University; 7Rocky Mountain Eye Care Associates; 8The Eye Specialists Center, LLC; 9University of Alabama Birmingham School of Optometry; 10Department of Ophthalmology, Virginia Pediatric Eye Center; 11Pediatric Eye Associates; 12Advanced Vision Center

3613 — B0027 Reduced eye-related quality of life and functional vision using the new PedEyeQ in children wearing glasses. David A. Leske¹, S. R. Hart¹, S. M. Wernimont¹, Y. S. Cañizares², L. Liebermann¹, C. S. Cheng-Patel¹, E. E. Birch¹, J. M. Holmes¹ 1Ophthalmology, Mayo Clinic; 2Retinal Foundation of the Southwest; 3UT Southwestern Medical Center

3614 — B0028 Improving emergency paediatric ophthalmology services at Imperial College NHS Trust; a quality improvement project. Caroline L. Kilduff¹, S. Wren¹ 1Ophthalmology, Royal Free Hospital; 2Imperial College NHS Healthcare Trust

3615 — B0029 A Prospective Evaluation of Adverse Events Occurring in Children undergoing Fundus Fluorescein and Indocyanine Green Angiography, Elisa Marziali, B. MacPhee, P. Ibanez, A. Dahlmann-Noor, D. Thomas. Pediatric Uveitis, Moorfields Eye Hospital

3616 — B0030 Evaluation of a remote telemedicine screening system for severe retinopathy of prematurity. Brett A. Begley¹, D. W. Suh¹ 21University of Nebraska Medical Center; 2Retinal Children’s Hospital and Medical Center


3618 — B0032 Retinal degeneration in patients with CLN2 disease. Simon Dulz¹, C. Schwerding², E. Wibbeler¹, M. Nickel¹, M. Spitzer¹, A. Schulz¹, Y. Atskoka¹ 1Ophthalmology, University Medical Center Hamburg-Eppendorf; 2Children’s Hospital, Medical University Center Hamburg-Eppendorf

* Refer to the Program Number in the Clinical Trial (CT) Registration Index.  *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3619  —  B0033  Correlation of novel macular structural and vascular abnormalities in familial exudative vitreoretinopathy. Cindy Cai, S. Hsu, A. Fion, L. Vajovic. Department of Ophthalmology, Duke University Medical Center *CR

3620  —  B0034  Vascular abnormalities associated with morning glory disk anomaly are not moyamoya. Matthieu P. Robert1,2, N. Boddaretn, M. Kossorotoff, D. Nguyen1, D. Bremond-Gignac1. Ophthalmology, Necker-Enfants Malades University Hospital; 1COGNAC-G. Neuroscience Federation, Paris Descartes University; 2Pediatric Radiology, Necker-Enfants Malades University Hospital; 3Children Stroke Center, Necker-Enfants Malades University Hospital

3621  —  B0035  Ophthalmologic disorders and risk factors in children with autism spectrum disorder (ASD). Melinda Chang1, N. Gandhi1, M. O'Hara1, Ophthalmology, Children’s Hospital Los Angeles, University of Southern California; 2University of California, Davis


3625  —  B0039  Impact of glaucoma on visual prognosis in pediatric patients with Peters anomaly. Zena Ibrahim, s. joudar-jain, D. Cao, C. Mocan. Ophthalmology and Visual Sciences, University of Illinois at Chicago


3627  —  B0041  A Comparison in Precision and Accuracy of the Conventional Syringe to the New Precision Syringe. Audrey Netzel1, D. DeLuna1, J. Dietze1, B. Begley1, J. Ndulue2, D. W. Suh1. 1School of Medicine, Creighton University; 2School of Medicine, University of Nebraska *CR

West Exhibition Hall B0060-B0071
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Clinical/Epidemiologic Research

361 Consequences of vision impairment

Moderator: Ellen E. Freeman

3628  —  B0060  Risk of auto accidents in patients with moderate-stage glaucoma. Sheryl S. Wizor1, E. Shiumey1, C. Savicentie1, B. E. Leiby1, J. Tran1, M. Waitsboud1, J. S. Myers1, L. Katz1, M. R. Moster1, G. L. Spaeth1. Ophthalmology Research Center, Wills Eye Hospital; 2Sidney Kimmel Medical College; 3Thomas Jefferson University; 4Tele-Auv Medical Div of Ophthalmology, Tele-Auv University*


3630  —  B0062  Improved estimation of subtle, but noticeable changes in functional vision using new tests of visual acuity and contrast sensitivity. Emma Flor1, A. M. Janoff1, L. A. Lesmer1, M. Murugappan1, M. J. Barnes1, A. K. Bitner1. College of Optometry, Nova Southeastern University; 2College of Osteopathic Medicine, Nova Southeastern University; 3Ophthalmology, University of California, Los Angeles; 4Adaptive Sensory Technology *CR

3631  —  B0063  Factors associated with employment success for blind and visually impaired Canadians. Mahadeo Sukhai. CNIB

3632  —  B0064  Transportation Issues among Patients Receiving Care at a Retinal Specialist Clinic (BURDEN study). James Czares, G. M. Gordon, M. Wintrope, D. J. Pieramici. California Retina Research Foundation, California Retina Consultants

3633  —  B0065  The impact of visual acuity on cardiovascular diseases mortality in South Korea: A nationwide population-based study. Dong-Hui Lim1, J. Han1, K. Han1, K. Na1, T. Chung1. Ophthalmology, Samsung Medical Center; 2Ophthalmology, Kangbuk Samsung Hospital; 3Ophthalmology, Yeouido St. Mary’s Hospital; 4Biostatistics, College of Medicine, The Catholic University of Korea

3634  —  B0066  The association between visual acuity and Parkinson's disease in South Korea: A nationwide population-based study. Jisang Han1, D. Lim1, K. Shiu1, T. Chung1. Ophthalmology, Kangbuk Samsung Hospital; 2Ophthalmology, Samsung Medical Center, Sungkyunkwan University School of Medicine

3635  —  B0067  The impact of comorbid visual impairment and dementia on activity limitations in older adults. Nish Patel1, B. Stagg1, J. R. Ehrlich1. 1Ophthalmology and Visual Sciences, Center for Eye Policy and Innovation, University of Michigan; 2Institute for Healthcare Policy and Innovation, University of Michigan; 3Duke University Eye Center

3636  —  B0068  Near vision impairment and frailty: Evidence of an association. Varshini Varadaraj1, M. Lee1, P. Y. Ramulu1, K. Bandeen Roche2, B. K. Swenor1. 1Wilmer Eye Institute, Glaucoma, Johns Hopkins University School of Medicine; 2Wilmer Eye Institute

3637  —  B0069  Association between Vision Loss and Screening Mammography among Women with Medicare. Annie M. Wu1, A. R. Morse2, W. H. Seiple1, N. Talwar1, S. Hansen1, P. P. Lee3, J. D. Stein4. 1Department of Ophthalmology and Visual Sciences, W.K. Kellogg Eye Center, University of Michigan; 2Lighthouse Guild; 3Department of Ophthalmology, NYU School of Medicine; 4Center for Eye Policy and Innovation, University of Michigan *CR

3638  —  B0070  Digging deeper into the vision-cognition relationship: Determining the association between visual function and cognitive domains. Bonnieln K. Swenor1, B. Munoz1, Y. An1, M. Albert1, S. Resnick1. Ophthalmology, Johns Hopkins Wilmer Eye Institute; 2Department of Neurology, Johns Hopkins University School of Medicine; 3Laboratory of Behavioral Neuroscience, National Institute on Aging, National Institutes of Health


West Exhibition Hall B0148-B0178
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Retina

361 DME anti-VEGF I

Moderator: Ajay E. Kuriyan

3640  —  B0148  The effects of intravitreal aflibercept on non-perfused areas and flicer ERGs in eyes with diabetic macular edema. Masahiko Sugimoto, A. Ichio, H. Matsubara, M. Kondo. Ophthalmology, Mie University School of Medicine *CR, ▶
3641 — B0149 A 12-month Prospective Study to Evaluate the Efficacy of Treat and Extend Regimen (T&E) of Intravitreal Aflibercept as a Second-Line Treatment for Diabetic Macular Edema (TADI Study), Tareq Z. Jouami1, R. Ehrlich1, Y. Barak1, H. Katz2, R. Pokorny3, J. Levy1, J. Hanbury4, O. Segai1, S. Shulman4, M. Goldstein4, L. Tissiano1, I. Chowers1. 1Department of Ophthalmology, Hadassah Medical Center; 2Department of Ophthalmology, Rabin Medical Center; 3Department of Ophthalmology, Rambam Medical Center; 4Department of Ophthalmology, Sackler Faculty of Medicine; 5Department of Ophthalmology, Assaf Harofeh Medical Center; 6Department of Ophthalmology, Sharee Zedek Medical Center; 7Department of Ophthalmology, Meir Medical Center; 8Ophthalmology Institute, Assuta Medical Center; 9Department of Ophthalmology, Tel Aviv Medical Center; 10Department of Ophthalmology, Kaplan Medical Center. *CR


3644 — B0152 Choroidal Indices as Predictors of Visual Outcomes to anti-VEGF Treatment in DME patients, using Swept Source OCT. Ana Rita Santos1, D. Alves1, I. Lains1, J. C. Wang2, J. B. Miller3, J. Figoeur4, R. Silva5. 1CEC, AIBILI; 2Orthotics, School of Health, Polytechnic of Porto; 3AIBILI; 4Department of Ophthalmology, Centro Hospitalar e Universitario de Coimbra; 5Coimbra Institute for Clinical and Biomedical Research (iCBR- FMUC), Faculty of Medicine. University of Coimbra; 6Department of Ophthalmology, Retina Service, Massachusetts Eye and Ear Infirmary, Harvard Medical School. *CR

3645 — B0153 Identifying predictors associated with diabetic macular oedema progression in a Maltese cohort using anti-VEGF naïve patients treated with intra-vitreal bevacizumab injections. Francis Carbonaro1, A. Bezzina1. 1Ophthalmology, Mater Dei Hospital; 2Department of Ophthalmology, University of Malta; 3Mater Misericordiae University Hospital; 4Department of Ophthalmology, University of Malta. *CR

3646 — B0154 Real-world outcomes of anti-VEGF intravitreal therapy used to treat diabetic macular edema in a centre in Ireland following launch of National Diabetic Retinal Screening Programme (RetinaScreen). Rajiv Pandey1, S. Powell2, L. Landi3, S. Venclovas1, D. J. Keegan4. 1Diabetic RetinaScreen; 2Mater Retinal Research Group, Mater Misericordiae University Hospital; 3University College Dublin

3647 — B0155 Real Life Visual Acuity Outcomes For Patients Treated With Anti-VEGF For Diabetic Macular Oedema In A Tertiary Referral Center. Josef Huemer1, C. Kern2, D. Fu3, S. Wagner3, K. U. Kortuem3, P. Patel4, K. Balaskas2, D. A. Sim5, P. A. Keane6. 1Eye Department, Tauernklinikum, Zell am See, Austria; 2Moorfields Eye Hospital, NHS Trust; 3Department of Ophthalmology, University Hospital LMU; 4National Institute for Health and Research (NIHR) Biomedical Center, Moorfields Eye Hospital. *CR

3648 — B0156 Comparing the efficacy of bevacizumab to ranibizumab in patients with diabetic macular edema: the BRDME study. Maarit J. Vader1, A. M. Schauwvlieghe2, F. D. Verbraak2, G. Dijkmans1, J. M. Hooymans3, L. I. Los4, A. H. Zwinderman5, T. Peto6, C. B. Huyng7, R. van Leeuwen8, J. R. Vingerling9, A. C. Moll5, J. J. van Lith-Verhoeven8, M. G. Dijkgraaf10, R. O. Schlingemann12. 1Ophthalmology, Amsterdam UMC, University of Amsterdam; 2Ophthalmology, Amsterdam UMC, Vrije Universiteit Amsterdam; 3Ophthalmology, Leiden University Medical Centre; 4Ophthalmology, University Medical Center Groningen; 5Clinical Epidemiology, Biostatistics and Bioinformatics, Amsterdam UMC, University of Amsterdam; 6Ophthalmology, Queens University Belfast; 7Ophthalmology, Radboud University Medical Center; 8Ophthalmology, University Medical Center Utrecht; 9Ophthalmology, Erasmus Medical Centre; 10Ophthalmology, Elisabeth - Twee Steden (ETZ) Hospital; 11Clinical Research Unit, Amsterdam UMC, University of Amsterdam; 12Ophthalmology, University of Lausanne, Jules-Gonin Eye Hospital

3649 — B0157 Real life structural outcomes in optical coherence tomography for patients treated with anti-VEGF for diabetic macular oedema. Karsten U. Kortuem1, C. Kern2, D. Fu3, J. Huemer1, S. Wagner3, P. Patel4, K. Balaskas2, D. A. Sim5, P. A. Keane6. 1Eye Department, Tauernklinikum, Zell am See; 2Moorfields Eye Hospital, LMU, Munich, Germany; 3Department of Ophthalmology, University Hospital LMU, Munich, Germany; 4Department of Ophthalmology, University Hospital LMU, Munich, Germany; 5National Institute for Health and Research (NIHR) Biomedical Center, Moorfields Eye Hospital, London, UK. *CR

3650 — B0158 Real-life study assessing the effectiveness of intravitreal aflibercept injection (IAI) treatment of diabetic macular edema (DME) in UK routine clinical practice (DRAKO): Baseline Characteristics. Sohba Sivaprasad1, F. Ghanchi2, S. Kelly2, A. Kogati3, J. S. Talks3, P. Scanlon4, M. Saddiq1, N. Jain1. 1National Institute for Health Research, Moorfields Biomedical Research Centre; 2Bradford Teaching Hospitals NHS Foundation Trust; 3Bolton Hospital NHS Foundation Trust; 4City Hospitals Sunderland NHS Foundation Trust; 5Newcastle Upon Tyne Hospitals NHS Foundation Trust; 6Gloucestershire Hospitals NHS Foundation Trust; 7'04 Research Limited, Belfast, UK; 8Bayer PLC

3651 — B0159 Real-World Use of Intravitreal Aflibercept Injections in Diabetic Macular Edema: 1-Year Interim Results of APOLLON. Jean-François Korobelnik1, L. Kodjikian2, V. Daire3, C. Faure4, R. Tadayon1, A. Giocanti-Aurégan5, P. Massin6. 1CHU de Bordeaux, Université de Bordeaux, INSERM, Bordeaux Population Health Research Center, LEHA team; 2Centre Hospitalier de la Croix Rousse, Université de Lyon; 3Hôpital Gui De Chauliac, Montpellier, INSERM, Université de Montpellier; 4Clinique Saint-Martin, Ramsay Générale de Santé; 5Hôpital Lariboisière, AP-HP, Université Paris 7 – Sorbonne Paris Cité, Paris Hôpital; 6Avicenne, AP-HP, Université Paris 13, DHU Vision et Handicaps; 7CUDC, Hôpital Lariboisière. *CR

3652 — B0160 Intravitreal Aflibercept for Diabetic Macular Oedema in Real-world; 24 Month Visual Acuity and Anatomical Outcomes. Marko Luic4, P. Patel, R. Hamilton, R. Rajendram. 1NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology.*CR

3653 — B0161 Correlation Between Visual Acuity And Central Retinal Thickness For Patients Treated With Anti-Vegf For Diabetic Macular Oedema. Charles Hennings1, C. Kern2, D. Fu3, K. U. Kortuem3, J. Huemer1, S. Wagner3, S. K. Wagner1, P. Patel1, K. Balaskas4, D. A. Sim5, P. A. Keane6. 1Moorfields Eye Hospital, London, United Kingdom; 2Department of Ophthalmology, University Hospital LMU, Munich, Germany; 3Eye Department, Tauernklinikum, Zell am See; 4National Institute for Health and Research (NIHR) Biomedical Center, Moorfields Eye Hospital, London, UK. *CR


3656 — B0164 Comparing the efficacy of intravitreal aflibercept and ranibizumab in treatment of diabetic macular oedema. Dun Jack Fu1, C. Kern2, K. U. Kortuem3, J. Huemer1, S. Wagner3, K. Balaskas4, D. A. Sim5, P. A. Keane6. 1Research Centre, Moorfields Eye Hospital NHS Foundation Trust; 2Department of Ophthalmology, University Hospital LMU; 3Eye department, Tauernklinikum. *CR

*CR Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Analysis of intraretinal cysts and visual outcomes in patients with central-involving diabetic macular edema (CI-DME) with sub-optimal response to anti-vascular endothelial growth factor (VEGF). Tal Ben Ami, K. Peddada, W. Li. Ophthalmology, Drexel University College of Medicine

Sustained Diabetic Retinopathy Severity Improvement with Intravitreal Aflibercept in Diabetic Macular Edema: A Post Hoc Analysis of the VISTA and VIVID Trials. Dilsher S. Dhoot. California Retina Consultants

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.

3683 — B0230 Refractive error as predicted by posterior corneal astigmatism integration into surgical calculations over a range of keratometry and intra-cular lens power. Hoon C. Jung1, V. Govindaraju1. Ophthalmology, University of Washington; 2Central Michigan University College of Medicine

3684 — B0231 Impact of Posterior Corneal Astigmatism on Refractive Astigmatism after Cataract Extraction with Intraocular Lens Implantation. Zachary Landis1, A. Luo1, D. Jung2, J. Quillen3, T. O'Rourke1, S. Pantanelli1, I. U. Scott2. 1Penn State College of Medicine; 2Penn State University *CR


3687 — B0234 Eigenlenses: an eigenvectors-based model for full crystalline lens shape description. Eduardo Martinez-Enriquez1, A. De Castro1, A. Mohamed2, 3, M. Ruggeri4, S. Williams4, J. Parel5, 6, F. Manns5, 7, S. Marcos1. 1Visual Optics and Biophotonics Lab, Institute of Optics, CSIC; 2Ophthalmic Biophysics, L V Prasad Eye Institute; 3Brien Holden Vision Institute; 4Ophthalmic Biophysics Center, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 5Department of Biomedical Engineering, University of Miami College of Engineering; 6Ophthalmic Biophysics, LV Prasad Eye Institute; 7Brien Holden Vision Institute

3688 — B0235 Evaluation of toric null lenses for characterizing the image quality of toric IOLs. Minghan Chen1, M. State1, M. van der Mooren1, C. Canovas1, R. Zonneveld1, H. A. Weeber2, P. Jablin3, P. Piers4. Johnson & Johnson Vision; 3Johnson & Johnson Vision *CR

3689 — B0236 Experimental Comparison of Intraocular Lenses in Presence of Tilts and Decentrations with a Model Eye. Lukas Traxler, N. Bayer, B. Reuterer, A. Drauschke. Life Science Engineering, University of Applied Sciences Technikum Wien


3691 — B0238 Population based adjustment of oblique anterior corneal astigmatism to allow for the likely effect of posterior corneal astigmatism for calculation of toric IOLs. Michael Goggin1, S. Sheen-Ophir1, B. LaHood2. 1Ophthalmology, University of Adelaide; 2Ophthalmology, The Queen Elizabeth Hospital; 3Ophthalmology, Eye Institute


3693 — B0240 Optical testing of intraocular lenses using a combined laser-ray tracing and optical coherence tomography system. Fabrice Manns1, 2, M. Ruggeri1, 3, A. Mohamed1, S. Williams2, 4, B. Maceo Heilman1, 5, S. S. Durgam1, M. Taneja1, 2, A. Ho1, 2, J. Parel3, 4. 1Ophthalmic Biophysics Center, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 2Department of Biomedical Engineering, University of Miami College of Engineering; 3Ophthalmic Biophysics, LV Prasad Eye Institute; 4Brien Holden Vision Institute


3695 — B0242 Raytracing simulations for small-aperture and toric IOLs in keratoconus eyes. Uwe Oberheide1, 2, A. Grafow1, H. Weigand3, Ö. Kermann. 1Applied Optics and Electronics, TH Koeln - Cologne University of Applied Sciences; 2Augenklinik am Neumarkt

3696 — B0243 Sizing distribution of Implantable Collamer Lens in a Chinese cohort and postoperative vault changes. Xiaotian Chung1, 2, x. fang1. 1Refractive Surgery, Aier Eye Hospital Group; 2Refractive Surgery, Shenyang Aier Eye Hospital

3697 — B0244 Application of UBM and anterior segment OCT in posterior chamber intraocular lens implantation. Yanzhen Xue. Aier school of ophthalmology, Central South University


3701 — B0248 An Optically Equivalent Physical Eye Model for In-Vitro Assessment of Intraocular Lenses. James G. Pano1, A. Ho2, 3, K. Ehrmann2, 3, R. C. Bakaraju2, 3. 1Research and Development, Brien Holden Vision Institute; 2School of Optometry & Vision Science, University of New South Wales *CR

3702 — B0249 Assessment of Intraocular Lens Glare Type Photic Phenomena both at Large and Small Pupils in a Schematic Model Eye. Kamal Das1, L. Werner2, S. Collins1. 1Intraocular Lens R&D, Alcon Laboratories, Inc; 2John A Moran Eye Center, University of Utah *CR


3704 — B0251 Effect of acrylic material characteristics on stray light performance. Henk A. Weeber, M. van der Mooren, P. Piers. R & D, AMO Groningen BV *CR


3706 — B0253 Evaluating refractive outcomes after scleral-sutured Bausch & Lomb Akreos A060 intraocular lens implantation. Sivenee Dang1, S. Idrees2, D. Diloreto2, M. M. Chung2, R. S. Ramachandran2, A. Kuriyan2. 1University of Rochester School of Medicine and Dentistry; 2Flaum Eye Institute, University of Rochester Medical Center

<table>
<thead>
<tr>
<th>ID</th>
<th>Title</th>
<th>Authors</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>B0257</td>
<td>Metric for assessing the functional range of vision of multifocal IOLs.</td>
<td>Jim Schwiegerling, R. Lapid-Gortzak, C. Balachandran, R. Suryakumar.</td>
<td>Optical Sciences, University of Arizona; Ophthalmology, Academic Medical Center; Macquarie University; Alcon Laboratories</td>
</tr>
<tr>
<td>B0258</td>
<td>New set of complementary extended-depth-of-focus IOL: comparison with the state-of-the-art.</td>
<td>Fannie Castignoles.</td>
<td>R&amp;D, Cristals Industrie</td>
</tr>
<tr>
<td>B0260</td>
<td>Refractive technology to improve intermediate vision in monofocal intraocular lenses.</td>
<td>Aixa Alarcon, C. Canovas, B. Koopman, P. Piers.</td>
<td>Johnson and Johnson Vision</td>
</tr>
<tr>
<td>B0262</td>
<td>Visual Quality Analysis Of Three Kinds Of Intraocular Lens For Cataracts With Highly Myopic Patients.</td>
<td>Xianjun Liang.</td>
<td>central south university; Foshan AIER EYE HOSPITAL</td>
</tr>
<tr>
<td>B0263</td>
<td>Study on glare phenomena and vision quality of a virtually implanted tunable liquid crystal IOL compared to monofocal and EDOF IOLs.</td>
<td>Karsten Minami, H. Bissen-Miyajima.</td>
<td>University of Pikeville; Department of Physics, Engineering Physics and Optics, Laval University</td>
</tr>
<tr>
<td>B0267</td>
<td>Theoretical Model To Predict Usable Areas Of A Progressive Lens For Reading In Computer Screens.</td>
<td>Jose Miguel Cleva, E. Chamarro, C. Gago, A. Gonzalez, P. Concepcion, J. Alonso.</td>
<td>IOT *CR</td>
</tr>
<tr>
<td>B0268</td>
<td>Accommodative Response Differences Among Single Vision and Multifocal Contact Lenses.</td>
<td>Jason Shen, B. Chen, F. Spors, F. Dong, D. Tsang, L. McNaughton, D. J. Egan.</td>
<td>College of Optometry, Western Univ of Hlth Sciences; Eye Center of Second Affiliated Hospital Zhejiang University College of Medicine; Western University of Health Science Graduate College of Biomedical Sciences; University of Pikeville, Kentucky College of Optometry</td>
</tr>
<tr>
<td>B0269</td>
<td>Multifaceted assessment of the effect of eye exercises for presbyopic individuals.</td>
<td>Yukari Tsuneyoshi, K. Negishi, K. Tsubota.</td>
<td>Ophthalmology, Keio university school of medicine; Ophthalmology, National Hospital Organization Saitama National Hospital</td>
</tr>
<tr>
<td>B0270</td>
<td>Next generation diffractive multifocal contact lenses for presbyopia correction using LIRIC.</td>
<td>Sam C. Butler, C. Leeson, K. R. Hucler, J. D. Ellis, W. Knox, I. G. Cox, G. Yoon, S. M. MacRae, L. Zheleznyak.</td>
<td>Clario Vision, Inc.; Flaum Eye Institute, University of Rochester; Institute of Optics, University of Rochester; IGC Consulting; College of Optical Sciences, University of Arizona</td>
</tr>
<tr>
<td>B0271</td>
<td>Optimization of the light sword optical element (LSOE) for presbyopia correction.</td>
<td>Walter Torres, A. Mira-Agudelo, J. Barrera, A. Kołodziejczyk.</td>
<td>Grupo de Óptica y Fotónica, Instituto de Física, Facultad de Ciencias Exactas y Naturales, Universidad de Antioquia UDeA, Calle 70 No. 52-21; Faculty of Physics, Warsaw University of Technology, Koszwyka 75, 00-662</td>
</tr>
<tr>
<td>B0274</td>
<td>Impact of modified chromatic aberration on the depth of field using an adaptive optics visual simulator.</td>
<td>Nikolai Sachkov, E. Fernandez, P. Artal, V. Optica SL; Laboratory of Optics, Universidad de Murcia *CR</td>
<td></td>
</tr>
</tbody>
</table>

West Exhibition Hall B0275-B0314
Tuesday, April 30, 2019 11:45 AM-1:30 PM
Glaucoma

364 Surgery and Wound Healing I

Moderators: anthony wells and Kuldev Singh

Rutgers New Jersey Medical School

3729 — B0276 Deficiencies in United States ophthalmologists’ eye logging of minimally invasive glaucoma surgeries (MIGS). Mary Qiu, J. Goshe.
Ophthalmology, Cole Eye Institute at Cleveland Clinic Foundation

Bascom Palmer Eye Institute, University of Miami; Miami Veterans Affairs Medical Center; Bascom Palmer Eye Institute, University of Miami; Henry Ford Health System

University of Toyama

3732 — B0279 The changes of corneal endothelial cell density after EX-PRESS glaucoma drainage device surgery. Kaoru Shimasaki, Y. Saito, s. Shimasaki, H. Onda.
Showa university school of medicine

3733 — B0280 Efficacy of XEN glaucoma implant in patients with POAG and in patients with PXFG. Olof B. Olafsdottir, M. S. Gottfredsdottir.
Faculty of Medicine, University of Iceland; Ophthalmology, Landsdalti University Hospital *CR

3734 — B0281 XEN Gel Stent Outcomes in an African American Population at Howard University Hospital. Payan Angadi, S. Rajpal, L. Jones.
Howard University Hospital *CR

Glaucoma, Wills Eye Hospital *CR

3736 — B0283 XEN Gel Stent to Treat Intraocular Hypertension After Dexamethasone-Implant Intravitreal Injections: 5 Cases. Amina Rezkullah, T. Mathis, P. Denis, L. Kodjikian.
Ophthalmology, Croix Rousse Hospital *CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
3737 — B0284 Evaluation of XEN implant in the surgical management of glaucoma: about 24 cases, a preliminary study, Hussam El Chehab, E. Agard, A. Levron, M. Chapener, R. Chudzinski, C. Dot. Ophthalmology, Desegnettes Hospital

3738 — B0285 Xen 45 surgical results: retrospective comparison of primary XEN implantation, filtering bleb needling and open filtering bleb revision. Stefan Steiner, H. Resch, B. Kiss, C. Vass. Department of Ophthalmology and Optometry, Medical University of Vienna *CR

3739 — B0286 Minimally invasive glaucoma surgery efficacy in uveitic and steroid-induced glaucoma. Robert Purgert, C. Lowder, J. Eisengart. Cleveland Clinic Cole Eye Institute

3740 — B0287 Effect of the Hydrus microstent with combined phacoemulsification on intraocular pressure. Maria K. Casagrande, L. Meier, S. Farrokhi, M. Spitzer, M. Klemm. Ophthalmology, University Hospital Hamburg Eppendorf

3741 — B0288 Secondary procedures two years after first-generation trabecular micro-bypass stent placement. Catherine Q. Sun†, Y. Sayegh†, A. Quan†, P. D. Bacig†, A. S. Maharaj†, S. R. Wellik†, K. Kishor†, A. K. Junk†. 1Bascom Palmer Eye Institute, University of Miami; 2Ophthalmology, Henry Ford Hospital; 3Bascom Palmer Eye Institute, University of Miami; 4Ophthalmology, Miami Veterans Affairs Medical Center

3742 — B0289 Novel Retrolubar Extension Shunt to Rescue Eyes with Fibrotic Encapsulated Blebs and Uncontrolled Ocular Hypertension. William E. Sponzel†, M. Puig†, H. Ramo‡, S. Grot‡, F. March de Ribot†. 1Madison Square Bldg Ste 306, WESMDPA; 2Vanderbilt University; 3Barcelona University Hospital; 4Universidad Autónoma de Guadalajara School of Medicine; 5UTHSCSA School of Medicine; 6Biomedical Engineering, UTSA *CR

3743 — B0290 Modified filtering trabeculotomy vs conventional trabeculectomy: a retrospective study of two procedures in patients with open angle glaucoma. Alicja Strzelkowska†, P. Strzelkowski†, A. Rosentreter‡, J. Hillenkamp†, F. Grehn. Department of Ophthalmology, University Hospital of Würzburg; 2HELIOS Klinikum Wuppertal-University of Witten / Herdecke *CR


3745 — B0292 Ab interno trabeculectomy revision: efficacy and safety. Jefferson Berryman, M. Lim, J. D. Brandt, H. Kim. Ophthalmology, University of California, Davis


3747 — B0294 Long-term effect of trabeculectomy on corneal endothelial cell loss. Kazuyuki Hirooka†, E. Nitta†, K. Ukegawa†, S. Sato†, Y. Kuchič†. 1Ophthalmology, Kagawa Univ Faculty of Medicine; 2Ophthalmology, Hiroshima University

3748 — B0295 Behavior of Schlemm’s canal endothelium after canal surgery - A new concept of trans-Schlemm’s canal endothelium pressure.-. Teruhiko Hamanaka†, S. Chin†, Y. Shimmer†, N. Ishida†, T. Kumasaka†. 1Ophthalmology, Japanese Red Cross Medical Cr; 2Ophthalmology, Ishida Eye Clinic; 3Ophthalmology, Hokkaido University; 4Ophthalmology, Hokkaido University; 5Ophthalmology, Ishida Eye Clinic; 6Pathology, Japanese Red Cross Medical Center


3750 — B0297 Glaucoma Drainage Device Coated with Mitomycin C Loaded Opal Shale Microparticles to Inhibit Bleb Fibrosis. Huiqing Yuan†, D. Aimeng†, H. Liang†, Z. Shao†, P. Fan†, X. Zhou. 1Department of Ophthalmology, Harbin Medical University; 2Department of Pharmaceutics, College of Pharmaceutical Sciences, Soochow University; 3Department of Ophthalmology, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine

3751 — B0298 Effects of a multi-kinase inhibitor compared with mitomycin-C on conjunctival scarring in a canine filtration surgery model. EMIKA Nemoto†, S. Kojima†, T. Sugiyama†, D. Jin†, S. Takai†, M. Maeda†, R. Kohmoto†, M. Ueki†, H. Oka†, T. Ikeda. 1Ophthalmology, Osaka Medical College; 2Innovative Medicine, Osaka Medical College; 3Ophthalmology, Takatsuki Redcross Hospital

3752 — B0299 Intravitreal imaging reveals corneal limbal lymphangiogenesis after filtration surgery. Miao Zhang†, G. Li†, M. Shi†, L. Chen. 1University of California, Berkeley; 2Shenzhen Key Laboratory of Ophthalmology, Shenzhen Eye Hospital, School of Optometry, Shenzhen University

3753 — B0300 Rosiglitazone prevents fibrosis after glaucoma filtration surgery by promoting autophagy: in vitro and in vivo. Xuanchu Duan†, F. Zhang†. 1Glaucoma, Changsha Aier Hospital, Aier School of Ophthalmology, Central South University; 2Ophthalmology, The second xiangya hospital

3754 — B0301 The influence of macrophage depletion in mouse model of filtration surgery. miki onoue, Y. Asada, S. Iwamoto, T. Hirakata, A. Matsuda, K. ADAchi. jundento university of graduate school of medicine


3756 — B0303 Prospective Cohort Study of Risk Factors for Choroidal Detachment After Trabeculectomy. Hiroshi Kakimoto. University of Fukui

3757 — B0304 Refractive outcomes for combined phacoemulsification and glaucoma drainage procedure. Rajvi Mehta†, S. Tomatsu†, D. Coar†, A. Plee†, A. Mokkur†, A. Aref†, T. S. Vajaratna†. 1Illinois Eye and Ear Infirmary; 2Department of Ophthalmology and Visual Sciences, University of Illinois College of Medicine

3758 — B0305 Unplanned Return to Operating Room after Glaucoma Surgery. Nur Cardakli†, D. S. Friedman†. 1Johns Hopkins University School of Medicine; 2Dana Center, Johns Hopkins Wilmer Eye Inst

3759 — B0306 Prospective evaluation of changes in extraocular motility and ocular deviation after Ahmed valve implantation. Katsunori Hara†, K. Konishi†, Y. Matsuzaki†, M. Tanito†. 1Department of Ophthalmology, Shimane University faculty of Medicine; 2Division of Ophthalmology, Matsue Red Cross Hospital

3760 — B0307 Comparative outcomes using the recently introduced Ahmed valve in Malta: single-surgeon series in a mixed glaucoma population with one year follow-up. James Vassallo, F. Carbonaro. Mater Dei Hospital, Malta

3761 — B0308 Effect of Head Tilt on Tube Position of Glaucoma Drainage Implants, Chungkwon Yoo, J. Han, J. Park, Y. Kim. Ophthalmology, Korea University College of Medicine

3762 — B0309 First-in-man clinical study on a novel glaucoma drainage implant for refractory glaucoma. Victor T. Koh†, C. M. Aquino†, P. Chew†, K. Barton†. 1Ophthalmology, National University Hospital; 2National University of Singapore; 3Moorfields Eye Hospital *CR

3763 — B0310 Diameter of Intraluminal Stent for Use with the Baerveldt Glaucoma Implant: A Laboratory Study. Alexander Schneider, M. DiScalfani, D. Richards. 1Ophthalmology, University of South Florida; 2Physics, University of South Florida
3764 — B0311 Autologous partial-thickness scleral flap and donor corneal graft in management of tube erosion of glaucoma drainage device. Xiongfei Liu, S. K. Law. Stein Eye Institute UCLA


3766 — B0313 A combined surgical approach to neovascular glaucoma: one-year follow up. Piotr Strzałkowski, A. Strzałkowski, D. Hommes, A. Rosenteter1, 2, W. Goebel1, T. Achi1, J. Hillenkamp1. 1Ophthalmology, University Hospital Wuerzburg; 2HELIOS Klinikum Wuppertal - University of Witten/Herdecke *CR

3767 — B0314 The effect of Ultrasound Cycloplasty (UCP) using High Intensity Focused Ultrasound (HI FU) on aqueous humour dynamics: a one year follow up. Arji Daas, De Antonio Ramiez, K. Lim. Ophthalmology, University Hospital of Hawaii, Department of Ophthalmology, University of Minnesota


3769 — B0316 HL3501, a novel selective adenosine A3 receptor (A3AR) antagonist, produces IOP lowering in glaucoma models using New Zealand White (NZW) rabbits and C57BL/6 mice. Yunhee Kim1, H. Kwon1, J. Yang1, S. Kim1, D. Kim1, J. Yang1, J. Kim1. 1Handok; 2T2B Infrastructure Center for Ocular Disease

3770 — B0317 NCX 1741, a novel NO-donating derivative of the phosphodiesterase-5 inhibitor avanafil, reduces IOP in models of ocular hypertension and glaucoma. Francesco Impagnatiello1, E. Bastia1, C. C. Toris1, S. Fan1, S. Brambilla1, C. Galli1, N. Almirante1, M. V. Bergamin2, 3. 1Nicox Research Institute; 2University of Nebraska Medical Center; 3Case Western Reserve University; 4Nicox Ophthalmics, Inc.; 5Nicox Ophthalmics, Inc., *CR


3772 — B0319 Pharmacologic and safety profile of the ocular hypotensive agent cromakalin prodrug 1 (CKLP1), a novel ATP-sensitive potassium channel opener. Michael P. Fauth1, R. Kudug1, T. Rinkoski1, C. Hann1, C. Bahlere1, B. Holman1, J. Reiff1, P. Dosa1, U. Roy Chowdhury1. 1Ophthalmology, Mayo Clinic; 2Institute for Therapeutics Discovery and Development, Department of Medicinal Chemistry, University of Minnesota

3773 — B0320 Transgenic mice expressing Transforming growth factor-b2 increased intraocular pressure. Tomoka Uemura, O. Sakai, Y. Sakamoto. Senju pharmaceutical *CR

3774 — B0321 Pretreatment with Intracocular Pressure-Lowering Medication and Glaucoma Progression in Patients Receiving Intravitreal Anti-VEGF Therapy. Jeanette Du1, J. T. Patrice2, B. E. Prum1, Y. Shildkrot1. 1Ophthalmology, University of Virginia; 2Public Health Sciences, University of Virginia

3775 — B0322 The Vitreous Allograft Model: A Paradigm for Induced Ocular Hypertension in Rabbits. Ahsal Ha, Y. Kim, Y. Kim, J. Jeoung, K. Park. Ophthalmology, Seoul National University Hospital

3776 — B0323 Raised intraocular pressure following silicone oil pars-plana vitrectomy: Long-term follow-up from a tertiary UK unit. Fidan Jmor, J. Aslan, C. Lee, E. Agorogiannis, R. Cheeseman, A. Choudhary. St Paul’s Eye Unit, Royal Liverpool University Hospital, Liverpool


3778 — B0325 Prostaglandin analogue and beta blocker combination treatment facilitates anti-fibrotic environment in trabecular meshwork of glaucoma patients by regulating SMAD-dependent signaling. Praveen Machiraju1, S. Teywani1, A. Ghosh1, S. Sethu1, A. Ghosh1. 1GROW Research Laboratory, Narayana Nethralaya Foundation; 2Glaucoma services, Narayana Nethralaya

3779 — B0326 Intracanal pressure (IOP) lowering efficacy of Bimatoprost Sustained Release (BimSR) in dogs pretreated with selective laser trabeculoplasty (SLT). Fidan Jmor, J. Aslan, C. Lee, E. Agorogiannis, R. Bergamini1, 2, 3, 4, 5. 1GROW Research Laboratory, Narayana Nethralaya; 2Ophthalmology, Mayo Clinic; 3University of Miami; 4Case Western Reserve University; 5Nethralaya Infrastructure Center for Ocular Disease *CR


3782 — B0329 Effect of latanoprostene bunod on nifedipine capillary blood flow in patients with pigmentary glaucoma. Erica B. Jacobs1, A. Najafi1, L. R. Pasquale2, R. Ritchi1. 1Einhorn Clinical Research Institute, New York Eye and Ear Infirmary of Mount Sinai; 2Icahn School of Medicine at Mount Sinai

3783 — B0330 Stannialcain-1, a downstream effector molecule in latanoprost signaling, does not signal through the FP receptor for IOP reduction. Gavin Roddy, M. P. Fauth. Mayo Clinic

3784 — B0331 Safety and efficacy of topically administered netarsudil (Rhopressa®) in normal and glaucomatous dogs with ADAMTS10-open-angle glaucoma (ADAMTS10-OAG). Kelly A. Leary1, K. Lin1, J. P. Siebel1, C. Harmar1, A. M. Komaromy1. 1Small Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University; 2Animal Science, Michigan State University; 3Fisheries & Wildlife, Michigan State University

3785 — B0332 Differential effects of orexin receptors-1 and 2 on IOP and ICP responses to hypothalamic activation. Arthur DeCarlo1, J. L. Henry1, I. Calimian2, R. Grytz3, P. L. Johnson3, B. C. Samuels3. 1Ophthalmology, University of Alabama at Birmingham; 2Starke Neurosciences Research Institute, Indiana School of Medicine *CR

3786 — B0333 Melatonin and agomelatine improved effects on the IOP. Dario Ruscinio1, N. Pescolosido1, S. Pezzino1, R. Pignatello1, R. Corsaro1, M. Dal Monte1, M. Cammalleri1, P. Bagnoli1. 1Scientific Department, Sofft Spa; 2Ophthalmology, University Policlinic; 3Drug Science, University of Catania; 4University of Pisa

3787 — B0334 Assessing the Effects of Exogenous Cholesterol Metabolites on Human Optic Nerve Stiffness with Atomic Force Microscopy. Gurkaran S. Sarohia1, W. M. Batchelor1, E. D. Garza2, N. DiStefano2, N. M. Ziebarth3, S. K. Bhattacharyya1. 1University of British Columbia; 2University of Miami *CR
3788 — B0335  Proteomic alterations supporting the altered bioenergetic profile of astroglia in glaucoma. Guigun Tezel1, X. Yang2, J. Cai3, M. Baris4, J. B. Klein2. Ophthalmology, Columbia University; 3University of Louisville

3789 — B0336  Ceramide-induced Retinal Ganglion Cell Degeneration and Astrocyte Involvement. Jie Fan, J. Liu, C. E. Crosson. Ophthalmology-Storm Eye Inst, Medical Univ of South Carolina

3790 — B0337  NLRP3 inflammasome contributes to retinal ganglion cell (RGC) death during glaucoma pathogenesis in DBA/2J mouse model. Sqi Li, J. Gao, J. Z. Cai1, J. A. Matsubara. Ophthalmology, University of British Columbia

3791 — B0338  Antioxidants protect against reactive astrocytosis-induced sensitization to oxidative stress. Anita K. Ghosh1,2, V. R. Rao4,5, E. B. Stubb3,5, S. Kaja3,5. Ophthalmology and Molecular Pharmacology & Therapeutics, Graduate Program in Neuroscience, Loyola University Medical Center; 3Research Service, Edward Hines Jr. VA Hospital; 1Ophthalmology and Molecular Pharmacology & Therapeutics, Loyola University Chicago; 2Ophthalmology, Loyola University Chicago *CR

3792 — B0339  Effects of astroglia-targeted immunomodulation on altered bioenergetic profile in glaucoma. Xiangjun Yang1, J. Cai2, M. Baris3, J. B. Klein2. Ophthalmology, Columbia University; 1University of Louisville

3793 — B0340  A newly formulated low-weight dextran sulphate, ILB, reduces inflammation and fibrosis in pre-clinical models of inflammation and scarring. Lisa J. Hilt1, H. Botfield1, L. Bruce2, A. Logan1. Neurobiology, University of Birmingham; 1TikoMed AB *CR

3794 — B0341  To determine the level of compliance and the common obstacles to glaucoma medications in central London. Carolyn Ford1, K. Lim2, J. Rodrigues1, T. Gale1, J. Mehta1, C. Pharb4, P. Campbell1,2. 1Guys and St Thomas’ Foundation Trust; 2Division of Ophthalmology and Visual Sciences, City, University of London

3795 — B0342  Modulation of outward K+ currents in retinal ganglion cells mediated by activation of somatostatin receptor subtype 5. Na Wu. Eye & ENT Hospital of Fudan University


3797 — B0344  Effect of oral Lumega-Z on pericentral FDT function in IOP-stabilized severe glaucoma. RAFAEL GARCIA1, W. E. Spoonse2, M. Montelongo1, S. Sullivan1, A. Amin1. 1School of Medicine, Universidad Autonoma de Guadalajara; 2Visual Sciences/Biomedical Engineering, UIW/UTSA; 1Ophthalmology, New York Medical College


3799 — B0346  Trabecular meshwork fibrosis and PI3-kinase isoforms as drug targets. Sunil Paraparam, G. Subramanian, V. Arutla, S. Aniol, S. Gijidharan, D. Tingey, M. Motolko. Ophthalmology, University of Western Ontario

3800 — B0347  TGF-β induces NOX4 and fibrotic genes in trabecular meshwork cells: role in glaucoma. Reinold K. Goetz1,2, M. Irnaten1,2, C. J. O’Brien1,2. 1Dept of Ophthalmology, Mater Misericordiae University Hospital; 2School of Medicine and Medical Science, University College Dublin

3801 — B0348  TGFβ2 induces chronic endoplasmic reticulum stress in trabecular meshwork cells. Shruti Patil, C. Phaw1, P. Campbell1,2. Ophthalmology and Molecular Pharmacology & Therapeutics, Loyola University Chicago; 1Department of Pharmacology and Neuroscience and Biopharmaceuticals, Loyola University Chicago; 2Ophthalmology, Loyola University Chicago *CR

3802 — B0349  Preserved-free versus preserved monotherapy: an in vivo confocal, prospective, masked, 36 months study on glaucoma patients. Gemma c. Rossi1, C. Lunini1, A. m. Mirabile1, E. Piscasso1, F. Bettio1, A. Pavliugnaiti1, G. Pasinetti2. Eye Clinic, IRCCS Policlinico San Matteo Foundation; 1beato palazzolo institute

3803 — B0350  Identification and Characterization of Glaucoma with Ocular Hypertension in a Colony of Aged Non-Human Primates. Chi-Wai Wong1, L. Teng1, W. Liu1, X. Zhai2, S. Li1, M. Li2, X. Liang1, L. Lu1, C. Jin2, P. Rao3, X. Liu4, Y. Hu1, J. Luo1. 1VIZ-Biosciences; 2Zhongshan Ophthalmic Center; 3NGM Biopharmaceuticals *CR

3804 — B0351  Extended Delivery of Pirfenidone with Novel Soft Contact Lenses. Caising Wu1, P. Or2, J. Chong3, X. Chen1, C. Lee2, I. Doni1, M. Yu1, D. Lam1, Y. Yang1. 1Zhongshan Ophthalmic Center; 2Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology


3806 — B0353  Nonclinical development of NCX 470, a novel nitric oxide (NO)-donating, IOP lowering prostaglandin analog for glaucoma and ocular hypertension. Elena Busutta1, N. Almirante2, M. V. Bergamin3, T. NAVRATIL4, M. W. Modi1, E. Impagnatiello1,2. 1Nicox Research Institute; 2Nicox Ophthalmic Inc.; 3Nicox Ophthalmic Inc.; 4MWM Consulting Group Inc *CR

3807 — B0354  Stepwise and robust differentiation methods of functional retinal ganglion cells derived from human pluripotent stem cells. Jinkyu Park1,2. 1Department of Ophthalmology, Yonsei University College of Medicine; 2Department of Ophthalmology, Yonsei University Graduate School of Medicine

West Exhibition Hall B0487-B0517

Tuesday, April 30, 2019 11:45 AM-1:30 PM

Cornea

366 Corneal Endothelium II

Moderators: Gary S. Peh and Takashi Miyai

3808 — B0487  Corneal endothelial cell density in normal tension glaucoma. Jeannie Xu1, M. Desai2, B. Eliaissi-Rad2,3, H. J. Lee2,4. Ophthalmology, Boston University; 2Ophthalmology, Boston Medical Center

3809 — B0488  Effect Of Obstructive Sleep Apnea On Corneal Morphological Characteristics. Ziville Vieversyte1,2, A. Bojarunt1,2, R. Jaravecivate1,2, S. Galgauskas1,2, R. Zablocki1,2, R. Asoklis1,2. Vilnius University; 1Centre of Pulmonology and Allergology, Clinic of Chest Diseases, Immunology and Allergology, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania; 2Centre of Pulmonology and Allergology, Clinic of Chest Diseases, Immunology and Allergology, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania

3810 — B0489  Long time findings at the Corneal Endothelium in Eyes After Cataract Surgery with Clear Cornea Incision (CCI). Sandra Z. Avila3,4, T. M. Schaefer1,2, R. Y. Hida1, F. C. Abib1. 1Anterior Segment, Centro de Cirurgia e Diagnose de Oftalmologia do Paraíba - CDOP; 2Cornea, Clínica Schaefer; 3Anterior Segment, Clínica Lumina Oftalmo; 4Cornea, Clínica de Olhos Dr Fernando Abib; 5Anterior Segment, Universidade de Sao Paulo/Santa Casa de Sao Paulo

3811 — B0490  Endothelial cell density following corneal transplantation – an 18-year prospective study. Ali E. Sharreeb1, S. Pradhan2, M. S. Figueiredo3, E. Curnow4, J. Armitage3, F. C. Figueiredo1,3. 1Institute of Genetic Medicine, Newcastle University; 2Royal Victoria Infirmary; 3Ocular, Tissue and Eye Services, NHS Blood and Transplant; 4Clinical Trials Unit, NHS Blood and Transplant

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3812 — B0491 Descemet’s Membrane Endothelial Keratoplasty: Long-term development of color and contrast in Fuchs’ endothelial corneal dystrophy patients. Tarek Bayyoud, H. Wilhelm, M. Zierhut, S. Thaler, K. Bartz-Schmidt. Ophthalmology, University of Tuebingen

3813 — B0492 Risk factors associated with high endothelial cell density decrease after Descemet membrane endothelial keratoplasty. Korine v. Dijkstra, S. Oellerich, H. Lisanne, N. Di Hubschbahti, L. Baydoun, G. Melles. 1Netherlands Institute for Innovative Ocular Surgery (NIIOS); 2Melles Cornea Clinic

3814 — B0493 Accuracy of a deep learning approach for corneal endothelial biomarker extraction in ultrathin-DSAEK images. Juan P. Viguera-Guillén, J. van Rooij, H. G. Lemij, L. J. van Vliet, K. A. Vermeer. 1Rotterdam Ophthalmic Institute; 2Imaging Physics, Delft University of Technology; 3Rotterdam Eye Hospital

3815 — B0494 Effect of anterior chamber depth on long term endothelial cell density in patients with iris fixed phakic intraocular lenses. mehdi roozbahani, A. Eldanasoury, S. Tolees, C. Arana. 1Ophthalmology, University of Southern California, Roski Eye Institute; 2Magrabi Eye Hospital


3817 — B0496 Adoption of pre-punched and pre-loaded DMEK processing increases the availability of donor corneas suitable for eye bank prepared DMEK grafts. Sairaa Prabhu, D. L. Kornberg, C. S. Sales, R. S. Williams, K. Clover, K. D. Tran. 1Ophthalmology, Weill Cornell Medicine; 2VisionGift

3818 — B0497 Factors Associated With Eye Bank Descemet Membrane Endothelial Keratoplasty Processing Damage. Gabriel M. Rand, P. Gore, L. Forest-Smith, T. Livesay, R. S. Chuck. 1Montefiore Medical Center; 2Savings Sight

3819 — B0498 Factors influencing the health and longevity of donor corneal endothelial cells. Munetoyo Toda, K. Kitazawa, M. Ueno, Y. Maruyama, A. Uchihara, C. Sotozono, J. Hamuro, S. Kinoshita. 1Frontier Medical Science and Technology for Ophthalmology, Kyoto Prefectural University of Medicine; 2Ophthalmology, Kyoto Prefectural University of Medicine *CR

3820 — B0499 The effect of cornea preservation time on Descemet membrane endothelial keratoplasty outcomes. Maria Elena Montpetit Gonzalez, J. Choremis, M. Mabon, T. Boutin, L. Mejdoub, J. Brunette, J. C. Talajic. 1Ophthalmology - Cornea, Maisonneuve-Rosemont Hospital; 2Ophthalmology, Université de Montréal *CR

3821 — B0500 The Use of Micronanobubbles to Improve the Viability of Donor Corneal Tissue. Christina Kong, S. Condomoor, K. Xie, R. Sayadi, B. Johnson, A. Widgerow, M. Farid. 1University of California, Irvine; 2University of California, Irvine

3822 — B0501 Differences in eye bank corneal endothelial cell density after storage in Optisol GS versus Life4C solutions. Daniel J. Polla, G. M. Rand, P. Gore, L. Forest-Smith, T. Livesay, R. S. Chuck. 1Ophthalmology, Montefiore Medical Center, Albert Einstein College of Medicine; 2Saving Sight

3823 — B0502 Metabolic Optimization of Endothelial Keratoplasty Graft Tissue with Coenzyme Q10. Jessica M. Skelé, B. T. Aldrich, A. E. Wilcox, G. A. Schmidt, C. R. Reed, M. A. Greiner. 1University of Iowa; 2Iowa Lions Eye Bank


3826 — B0505 Corneal Active Storage Machine allows corneal graft delivery for up to 3 months. Thibaud GARCIN, A. Gauthier, E. CROUZET, G. Thuret, P. Gain. 1Laboratory Biology Engineering and Imaging of Corneal Graft, Univ Jean Monnet; 2Laboratory Biology Engineering and Imaging of Corneal Graft, Lions Eye Bank; 3Laboratory Biology Engineering and Imaging of Corneal Graft, Univ Jean Monnet *CR


3829 — B0508 Association of Visual Disability and Corneal Optics in Fuchs Endothelial Corneal Dystrophy Patients before and after Endothelial Keratoplasty. Viviane Grewing, M. Fritz, D. Boehringer, T. Reinhard, K. Wacker. University Hospital Freiburg, Eye Center, Albert-Ludwigs-University of Freiburg

3830 — B0509 Utilization of scanning acoustic microscopy (SAM) in quantifying the biomechanical variations in tissues with Fuchs endothelial dystrophy (FED). Jean-Marc Perone, E. Ahmed Mohamed, s. brandt, M. Koegel, N. Declercq. 1ophthalmology department, Regional Hospital Center of Metz-Thionville, Mercy Hospital; 2Laboratory for Ultrasonic Nondestructive Evaluation “LUNE”, UMI Georgia Tech–CNRS 2958; 3Center for Applied Microstructure Diagnostics CAM Fraunhofer Institute for Microstructure of Materials and Systems IMWS,

3831 — B0510 Design and Evaluation of a Specular Microscope that incorporates the Scheimpflug Principle. Michihiko Taki, H. YOKOSUKA, H. NAKAMURA, M. Hanebuchi. NIDEK

3832 — B0511 Prevalence of and risk factors for Fuchs endothelial corneal dystrophy (FED). Sangita P. Patel, B. Plotke, A. Sima, A. E. Millen. 1ophthalmology, University at Buffalo; 2Ophthalmology and Research Service, VA Western NY Healthcare System; 3Epidemiology and Environmental Health, University at Buffalo


3835 — B0514 Randomized control trial on the effectiveness of collagen crosslinking on bullous keratopathy. Bonnie Nga Kwan Choy1, J. Lai2, C. Liu2. 1ophthalmology, The University of Hong Kong; 2Hong Kong Polytechnic University
3836 — B0515  New “Chameleon-like”
Corneal Endothelial Image Pattern generated
by Specular Microscope. Kenzo Tomishige1, G.
C Caiado1, R. Holzchuh1, I. Corso Teixeira1, F. C.
Abib1, R. Y. Hida1. 1Ophthalmology, Irmandade
da Santa Casa de Misericórdia de São Paulo;
2Universidade Federal do Paraná; 3Universidade de
São Paulo

3837 — B0516 Repeatability of the automated
cell miscounting of corneal endothelial status
generated by Non-contact Specular microscope
in patients after cataract surgery. RAFAELA B.
AMADE2, J. V. Godinho2, I. Corso Teixeira2, F. C.
Abib2, P. A. Ottaiano2, R. Y. Hida1. 1Universidade
Federal do Parana; 2Santa Casa de São Paulo;
3Universidade de São Paulo

3838 — B0517 Corneal edema in setting of
routine cataract surgery and use of intracameral
moxifloxacin. Hassan N. Tausif1, R. Nyalakonda2,
C. Gupta1. 1Ophthalmology, Beaumont Eye
Institute; 2Oakland University William Beaumont
School of Medicine

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Rarely can we celebrate the elimination of a human disease, and there are few examples. Notably, of the diseases targeted for elimination by The World Health Organization two are leading causes of blindness worldwide. Research that identified who is at risk of the disease, created better diagnostic and program tools to guide and monitor interventions, and pushed programs to go “the last mile” to ensure elimination is the story of global partnerships. The lessons learned from vision scientists who contributed to the elimination efforts are invaluable as the focus turns to elimination for other eye diseases in the future.

— 1:45  Introduction: Hugh Taylor

— 1:50  Towards the Elimination of Disease - Sheila West, PhD, FARVO
Tuesday – Papers/Minisymposia – 3839 – 3854

3852 — 4:15 Reduced serine synthesis in patient-derived retinal pigmented epithelium leads to localized lipid dysfunction in MacTel. Kevin Eade1, 2, s. giles1, S. Harkins-Perry1, R. Fallon3, M. Gunter1, 3, m. baldini4, M. Wallace4, R. Allikmets1, C. Metallo1, M. Friedlander1, 3, the Lowy Research Institute; 1the scripps research institute; 1Columbia University; 1UCSD

East Ballroom A
Tuesday, April 30, 2019 2:45 PM-4:30 PM
Immunology/Microbiology
370 Uveitis clinical epidemiology and therapeutics

Moderators: Nisha Acharya and Joke de Boer

3853 — 2:45 Clinical patterns and visual outcomes of uveitis and its associated systemic diseases: a 10-year case series in China. Peizeng Yang1, 4, Z. Zhong1, 4, L. Du2, 4, F. Li3, H. Li3, 4, K. He4, 1, C. Wang4, 5, Z. Ye6, 1, J. Qi5, 1, H. Dong3, 1, 4, LiQ. Q. D. Nguyen7, Y. Han1, A. Kijlstra1. 1The First Affiliated Hospital of Chongqing Medical University; 4The First Affiliated Hospital of Zhengzhou University; 1University Eye Clinic Maastricht; 1Department of Ophthalmology, University of California, San Francisco; 4Byers Eye Institute, Stanford University; 1Chongqing Key Laboratory of Ophthalmology and Chongqing Eye Institute

3854 — 3:00 Risk of Overall and Cancer Mortality After Immunosuppression of Patients with Non-infectious Ocular Inflammatory Diseases. John H. Kempen1, 2, C. W. Newcomb3, C. Foster4, 5, D. A. Jabs6, 7, G. Levy-Clarke8, 9, J. M. Buchanich10, 11, H. Sen12, E. B. Suhler13, 14, J. E. Thorne15, 16, N. P. Bhutia17, J. M. Buchanan18, 19, 1Department of Ophthalmology, Massachusetts Eye and Ear, Harvard Medical School; 2MCB Eye Unit; MyungSung Christian Medical Center and Medical College; 3biostatistics and Epidemiology, University of Pennsylvania Perelman School of Medicine; 4Massachusetts Eye Research and Surgery Institute; 5Department of Ophthalmology, Harvard Medical School; 6Ophthalmology and Medicine, Icahn School of Medicine at Mount Sinai; 7Epidemiology, Johns Hopkins Bloomberg School of Public Health; 8Clinical Research, Tampa Bay Uveitis Center; 1Laboratory of Immunology, National Eye Institute, National Institutes of Health; 10Devers Eye Institute; 11Ophthalmology (Casey Eye Institute) and Medicine, Oregon Health & Sciences University; 12Ophthalmology (Casey Eye Institute), Oregon Health & Sciences University; 13Ophthalmology, Portland Veterans Affairs Medical Center; 14Ophthalmology (Wilmer Eye Institute), Johns Hopkins School of Medicine; 15Ophthalmology (Scheie Eye Institute), University of Pennsylvania Perelman School of Medicine; 16Biostatistics, University of Pittsburgh

East 11/12
Tuesday, April 30, 2019 2:45 PM-4:30 PM
Retinal Cell Biology
369 RPE Biology in Health and Disease

Moderators: Aparna Lakkaraju and Olaj Strauss

3846 — 2:45 Enhancement of RPE Characteristics and Anti-EMT by iPS Conditioned Medium. Tini Wang1, 2, J. Gu1, Z. Cui1, S. Tang1, J. Chen1, 2, 1Aier School of Ophthalmology, Central South University; 2Aier Eye Institute

3847 — 3:00 Cooperative roles of NURR1 with RXR and LXR in retinal pigment epithelial (RPE) cells varies as a function of age and age-related macular degeneration (AMD). Goldis Malek1, P. Yao1, 1Ophthalmology and Pathology, Duke University; 1Ophthalmology, Duke University

3848 — 3:15 Organelles of the human retinal pigment epithelium (RPE): morphological subtypes, regional differences, and total 488 nm autofluorescence (AF). Thomas Ach1, C. Wobbe1, R. Heinze1, a. J. Hillenkamp1, C. Curcio1, K. R. Sloan1, K. Bermond1, 1Dept of Ophthalmology, University Hospital Wuerzburg; 2Dept of Ophthalmology, University of Alabama at Birmingham; 3Leibnitz Institute of Photonic Technology; 4Friedrich Schiller University Jena, Institute of Physical Chemistry

3849 — 3:30 Dopaminergic control of constitutive exosome release from in situ RPE. Anna G. Figueroa1, N. R. Congrove2, Y. Liu3, B. S. McKay4, 1Cellular Biology and Anatomy, Augusta University; 2Ophthalmology and Vision Science, University of Arizona

3850 — 3:45 The Immune Response And Zebrafish Retinal Pigment Epithelium Regeneration. Lyndsay L. Leach1, N. J. Hanovic1, A. E. Gabriel1, J. M. Gross1, 2, 1Department of Ophthalmology, University of Pittsburgh School of Medicine; 2Department of Developmental Biology, University of Pittsburgh School of Medicine

3851 — 4:00 Secretion of FGF-2 by the Retinal Pigment Epithelium Contributes to Hyaluronan Deposition in Sorsby's Fundus Dystrophy. Alyson Wolk1, 2, J. H. Qi2, A. Cutler1, M. Ali1, B. A. Bell1, V. Cali1, H. Stoehr1, R. Midura1, V. Hascall1, B. Anand-Apte2. 1Dept. of Molecular Medicine, Case Western Reserve University; 2Dept. of Ophthalmic Research, Cleveland Clinic; 5Dept. of Biomedical Engineering, Cleveland Clinic; 1Institute of Human Genetics, University of Regensburg

East 8&15
Tuesday, April 30, 2019 2:45 PM-4:30 PM
Retinal Cell Biology
368 Retinal Development

Moderators: Cheryl M. Craft and John D. Ash

3839 — 2:45 Optic nerve head development in the embryonic mouse eye. Bernadette Boze1, B. S. Clark1, S. Blackshaw1, N. L. Brown1, 1Cell Biology and Human Anatomy, University of California Davis; 2Ophthalmology and Visual Sciences, Washington University School of Medicine in St. Louis; 3Neuroscience, Johns Hopkins University School of Medicine

3840 — 3:00 Tbx3 is required for normal dorsal retina and retinal blood vessel formation. Andrea S. Vezican1, A. Moon1, M. Zuber1, 1Ophthalmology, Upstate Medical University; 2Geisinger Clinic, Weis Center for Research

3841 — 3:15 Transcriptional regulation within the retinal progenitors that produce cones and horizontal cells. Nicolas Lonfat1, S. Wang1, C. Lee1, P. Kalaoglu1, J. Choi1, P. Park1, C. Cepko1, 1Departments of Genetics and Ophthalmology, Harvard Medical School; 2Howard Hughes Medical Institute; 3Department of Biomedical Informatics, Harvard Medical School

3842 — 3:30 Nuclear Factor I Regulates Proliferation and Specification of Müller glial and Bipolar Cells. Clayton Santiago1, T. Hoang1, D. F. Espinoza1, J. Wang1, J. Qian1, R. M. Gronostajski1, B. Clark1, 1, S. Blackshaw1, 1Neuroscience, Johns Hopkins University School of Medicine; 2Ophthalmology, Johns Hopkins University School of Medicine; 3Ophthalmology, Washington University in St. Louis; 4Biochemistry, University of Buffalo

3843 — 3:45 Fbx11 is indispensable for rod photoreceptor development. Masaya Fukushima1, 2, T. Iwagawa1, M. Aihara1, S. Watanabe1, 1Department of Ophthalmology, The University of Tokyo; 2Division of Molecular and Developmental Biology, The Institute for Medical Science, the University of Tokyo

3844 — 4:00 Embryonic hyperglycemia is linked to a reduction in photoreceptor cells and increase in oxidative stress in the retina. Kayla Titiili1, A. C. Morris. University of Kentucky


*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.


3857 — 3:45 Composite Endpoint Outcomes of the STOP-Uveitis Study: Evaluating the Safety, Tolerability, and Efficacy of Tol Mozumab in Patients with Noninfectious Uveitis. Muhammad Hassan*, M. S. Ormachea*, M. A. Sadqi*, G. Uludag*, S. Mahajan*, M. Halim*, K. Y. Al-Kirve*, J. Bas*, R. Afridi*, M. Hasenreisoglu*, C. Plaza*, M. A. Ibrahim*, D. V. Do*, Y. Sepah*, Q. D. Nguyen*. 1Byers Eye Institute; 2Ophthalmology, Hospital Universitario Austral; 3Ophthalmology, University of Louisville; 4Ophthalmology, Imam Khomein Medical City University Hospital; 5Ophthalmology, Kangbuk Samsung Hospital; 6Sungkyunkwan University School of Medicine; 7Ocular Imaging Research and Reading Center; 8Ophthalmology, Ankara University, School of Medicine; 9Ophthalmology, Hospital Universitario de León

3858 — 4:00 Treatment of non-infectious uveitis that affects the posterior segment with a single intravitreal fluoronolone acetone insert (FAI) – 3-year results. Glenn J. Jaffe. Duke University Eye Center

3859 — 4:15 Twenty-four month outcomes of inflammatory choroidal neovascularization treated with intravitreal anti vascular endothelial growth factors: a comparison between two treatment regimens. Alessandro Invernizzi*, F. Pichi*, R. Symes*, S. Zagora*, S. Erbel*, A. Xhepa*, L. De Simone*, L. Cimino*, M. C. Gillies*, P. J. McCluskey*. 1Eye Clinic, University of Milan; 2Save Sight Institute, University of Sydney; 3Casey Eye Institute, University of California; 4Eye Clinic, University of Florence; 5De León University; 6Eye Clinic - Department of Ophthalmology and Optometry, University of Buenos Aires; 7Institut Cliníc d’Oftalmologia (ICOF), Hospital Clinic de Barcelona; 8L.V.Prasad Eye Institute; 9Department of Biomedical and Surgical Sciences, Section of Ophthalmology, University of Perugia; 10RetinaPro Clinic; 11Department of Ophthalmology, Federal University of Sao Paulo; 12K. Sahni*; 13V. Aronson*; 14O. K. Sandhu; 15D. V. Do*. 1F. Hoffmann-La Roche Ltd; 2AstraZeneca, Inc.; 3Allergan plc; 4American Academy of Ophthalmology; 5Pepose Vision Institute; 6Weill Cornell Medical College; 7Retina Consultants of Houston

3862 — 3:15 The DiMECat Trial: A Prospective, Randomised Clinical Trial Of Intravitreous Bevacizumab vs Triamcinolone in Patients With Diabetic Macular Oedema At The Time Of Cataract Surgery – 12 Month Results. Lyndell L. Lim*, M. Constantinou*, S. Rogers*, S. S. Sandhu*, S. Wickremasinghe*, S. Qureshi*, 1Centre for Eye Research Australia, University of Melbourne; 2Royal Victorian Eye and Ear Hospital

3863 — 3:30 Disorganization of Retinal Inner Layers as a Biomarker in Patients with Diabetic Macular Edema Treated with Dexamethasone Implant. Dinah Zur*, M. Igllick*, A. Sala-Pagdollers*, J. Chhablani*, M. Lupid*, S. Fraser-Beil*, T. S. Mendes*, V. Chaikitmongkol*, Z. Cebeci*, D. Dollberg*, C. Buschi*, A. Invernizzi*, A. Loewenstein*. 1Ophthalmology, Tel Aviv Sourasky Medical Center; 2Sackler Faculty of Medicine, Tel Aviv University; 3University of Buenos Aires; 4Institut Cliníc d’Oftalmologia (ICOF), Hospital Clinic de Barcelona; 5L.V.Prasad Eye Institute; 6Department of Biomedical and Surgical Sciences, Section of Ophthalmology, University of Perugia; 7RetinaPro Clinic; 8Department of Ophthalmology, Federal University of Sao Paulo; 9Retina Division, Department of Ophthalmology, Faculty of Medicine Chiang Mai University; 10Istanbul Faculty of Medicine, Department of Ophthalmology, Istanbul University; 11Department of Ophthalmology, University of Leipzig; 12Eye Clinic - Department of Biomedical and Clinical Science “L. Sacco”, Luigi Sacco Hospital, University of Milan; 13Department of Ophthalmology, Save Sight Institute, University of Sydney


Modestors: Peter K. Kaiser and Noemi Lois


East Ballroom B

Tuesday, April 30, 2019 2:45 PM-4:30 PM

Retina

371 DME Therapies and Outcomes

Moderators: Peter K. Kaiser and Noemi Lois
3866 — 2:45 A bioenergetic crisis in the retinal pigment epithelium contributes to photoreceptor degeneration. Weiyoung Shen, A. Mathai, V. Pye, S. Lee, M. Yan, R. Zhang, L. Zhu, P. Seth, J. L. Danaief, M. C. Gillies. 'Clin Ophthalm & Eye Health, University of Sydney; 'Beth Israel Deaconess Medical Center and Harvard Medical School; 'F. M. Kirby Center for Molecular Ophthalmology, Scheie Eye Institute, University of Pennsylvania

3867 — 3:00 ROI deficiency leads to aged-related retinal degeneration in mice. Chi-Hsiu Liu, Y. Sun, Z. Wang, S. Huang, W. Britton, S. Cho, A. Poblete, J. D. Akula, J. Chen. Ophthalmology, Boston Children’s Hospital

3868 — 3:15 CB2 is essential for autophagy in the retinal pigment epithelium and visual function. Zubair Ahmed, S. Sethna, P. A. Scott, A. P. Giese, T. Duncan, S. Riazuddin, T. M. Redmond, S. L. Bernstein, S. Riazuddin. 'University of Maryland Baltimore; 'University of Louisville; 'National Eye Institute; 'Jinnah Hospital

3869 — 3:30 Structure of a human Retinal Degeneration 3 (RD3) protein, a non-calcium sensor regulator of photoreceptor guanylyl cyclase. Alexander M. Dizhoor, I. V. Peshenko, Q. Yu, S. Lim, D. Cudia, J. Ames. 'Pennsylvania College of Optometry, Salus University; 'Chemistry, University of California Davis

3870 — 3:45 Factor H-Related Protein 4 (FHR-4) drives complement dysregulation in age-related macular degeneration. Valentina Cipriani, L. Lorès de Motta, F. He, D. Fathalla, S. McHarg, N. Bayant, I. Acar, C. C. Hoyng, S. Fauser, A. Moore, J. R. Yates, P. Morgan, E. de Jong, A. I. Den Hollander, P. N. Bishop, S. J. Clark. 'Queen Mary University of London, William Harvey Heart Centre; 'UCL Institute of Ophthalmology, University College London; 'Department of Ophthalmology, Donders Institute for Brain, Cognition and Behaviour, Radboud university medical centre; 'Division of Evolution and Genomic Sciences, School of Biological Sciences, Faculty of Biology Medicine and Health, University of Manchester; 'Systems Immunity URI, Division of Infection and Immunity, School of Medicine, Cardiff University; 'Department of Ophthalmology, University Hospital of Cologne; 'Roche Pharma Research and Early Development, F. Hoffmann-La Roche Ltd; 'Ophthalmology Department, University of California San Francisco; 'Department of Medical Genetics, University of Cambridge; 'Department of Human Genetics, Donders Institute for Brain, Cognition and Behaviour, Radboud university medical centre; 'Manchester Royal Eye Hospital, Manchester University NHS Foundation Trust, Manchester Academic Health Science Centre

3871 — 4:00 Intracocular VEGF Deprivation Induces Inflammatory and Degenerative Response in Retina. Liu Yang. Department of Ophthalmology, Shanghai First People's Hospital, Shanghai Jiao Tong University School of Medicine

3872 — 4:15 Molecular modeling and global computational mutagenesis of ABCA4 protein show a role of missense changes in Stargardt’s disease. Yuri V. Sergeev, K. Fujinami, B. Falsini, W. M. Zein, K. Goetz, Y. Y. Fujinami, S. Woo, S. Li, M. Bertelli, W. Lee, J. Zernant, B. Allison, A. Webster, M. Michaelides, B. P. Brooks, P. A. Sieving. 'OGVFB, National Eye Institute; 'National Institute of Sensory Organs; 'UCL, Institute of Ophthalmology; 'Universita Cattolica; 'MAGI Euregio; 'Columbia University; 'Moorefields Eye Hospital; 'National Institute of Sensory Organs; 'National University College of Medicine; 'National Eye Institute; 'Southwest Eye Hospital, Third Military Medical University; 'Key Lab of Visual Damage and Regeneration &Restoration of Chongqing


3874 — 3:00 Diurnal corneal thickness variation in Fuchs Endothelial Corneal Dystrophy. Marianne Fritz, V. Grewing, D. Boehringer, P. Maier, T. Lapp, T. Reinhard, K. Wacker. University Hospital Freiburg, Eye Center, Albert-Ludwigs-University of Freiburg

3875 — 3:15 Trinucleotide Repeat Expansion Length as a Predictor of the Clinical Progression of Fuchs Endothelial Corneal Dystrophy. Viridiana Kocaba, Y. Soh, G. Peh Swee, H. M. Hoon, X. Gong, V. V. Mootha, E. N. Vithana, J. S. Mehta. 'Singapore National Eye Centre; 'Ophthalmology Academic Clinical Program, Duke-NUS Graduate Medical School; 'Singapore Eye Research Institute; 'Department of Ophthalmology, University of Texas Southwestern Medical Center; 'McDermott Center for Human Growth and Development, University of Texas Southwestern Medical Center; 'Ocular Genetics Research Group, Singapore Eye Research Institute; 'Tissue and Stem Cell Group, Singapore Eye Research Institute


3878 — 4:00 Feasibility of mTOR inhibitor for the treatment of Fuchs endothelial corneal dystrophy. Genta Nakayama, N. Okumura, T. Oshima, E. Ueda, K. Watanabe, T. Tourtas, U. Schlotzer-Schrehardt, F. E. Kruse, N. Koizumi. 'Doshisha University; 'University of Erlangen-Nürnberg
Tuesday, April 30, 2019 2:45 PM-4:30 PM

West 212-214

Tuesday, April 30, 2019 2:45 PM-4:30 PM

374 Ganglion cells and beyond

**Moderators:** Ming-fai Fong and Dennis M. Dacey

**3880 — 2:45** Multimodal classification of mouse retinal ganglion cell types, Megan L. Zipperer, M. J. Kravitz, B. Borghuis. Anatomical Sciences and Neurobiology, University of Louisville

**3881 — 3:00** Investigating Preferential Activation of Rat Retinal Ganglion Cell Classes with Electrical Stimulation. Molis Yunzab1, A. Soto-Bredaca2, M. Maturana3, H. Meffin4, T. Kameneva5, A. Burkitt6, M. Ibbotson7
1National Vision Research Institute, Australian National University; 2ARC Centre of Excellence for Integrative Brain Function, University of Melbourne; 3Department of Biomedical Engineering, University of Melbourne; 4St Vincent’s Hospital Melbourne, University of Melbourne; 5Engineering and Technology, Swinburne University of Technology

**3882 — 3:15** The spike initiation zone in mouse a Sustained RGCs scales with cell size. Veneeth Raghuram1, P. Werginz2, S. Fried3, A. Biomedical Engineering, Tufts University; 1Neurosurgery, Mass General Hospital-Harvard Medical School; 2Research, VA Boston Healthcare System; 3Institute for Analysis and Scientific Computing Vienna University of Technology

**3883 — 3:30** In vivo classification of macaque foveal ganglion cells through optical recording of responses to chromatic and luminance Bicker. Tyler Godot1, J. E. McGregor2, K. Parkins3, W. H. Merganet3, D. R. Williams3
1Institute of Optics, University of Rochester; 2Center for Visual Science, University of Rochester; 3Flaun Eye Institute, University of Rochester

**3884 — 3:45** The elusive bistratified ganglion cell type of the macaque monkey retina is ON-OFF direction selective. Peter B. Detwiler1, J. Crook2, O. Packer1, F. Robinson1, D. M. Dacey1
1Physiology & Biophysics, University of Washington; 2Biological Structure, University of Washington; 3National Primate Research Center

**3885 — 4:00** Blue-off Cells show Suppressed-by-Contrast Properties in Lateral Geniculate Nucleus of Anesthetized Marmosets. Paul R. Martin1, A. N. Pietersen2, N. Zeuter1, C. D. Eiber3, S. G. Solomon4
1Save Site Institute, University of Sydney; 2Experimental Psychology, University College London; 3School of Medical Sciences, University of Sydney

**3886 — 4:15** Distinct requirements for layer 4 NMDA receptors in experience-dependent visual cortical plasticity. Ming-fai Fong1, P. S. Finnie1, T. Kim1, A. Thomasaeu2, E. S. Kaplan3, E. M. Esch4, S. F. Cooke2, M. F. Bear1
1Massachusetts Institute of Technology; 2Maurice Wohl Institute for Clinical Neuroscience, King’s College London; Center for Integrative Brain Research, Seattle Children’s Research Institute; 3Neuroscience Program, Lafayette College; 4Institut de Neurobiologie de la Méditerranée

**3887 — 2:45** Protein deposition on contact lenses: surface versus bulk. Simin Mosaedi, M. Wilcox. Optometry and Vision Science, University of New South Wales

**3888 — 3:00** Friction and Pro-Inflammatory Cytokine Production in Corneal Epithelial Cell Models. W. G. Sawyer1, A. A. Pitenis2, J. M. Uruena3, S. Hart1
1Mechanical and Aerospace, University of Florida; 2Materials, UC Santa Barbara

**3889 — 3:15** Structural and Functional Corneal Nerve Abnormalities suggest the Neurosensory Origin of Contact Lens Discomfort. Gabriela Dieckmann1, Y. Seyed-Razavi1, N. Koseoglu2, A. Jamalii1, C. Chao1, A. Akhlaghi1, A. Sahin1, S. Cox1, R. Nose1, P. Hamrah2
1Center for Translational Ocular Immunology, Department of ophthalmology, Tufts Medical Center,Tufts Medical School, Tufts University School of Medicine; 2Cornea Service,New England Eye Center, Department of Ophthalmology, Tufts Medical School,Tufts University School of Medicine

**3890 — 3:30** Frictional shear stresses in vitro can trigger apoptotic pathways in human corneal epithelial cells. Angela Pitenis1, J. M. Uruena1, S. Hart1, P. P. Levings1, W. G. Sawyer2
1Materials, University of California, Santa Barbara; 2Mechanical and Aerospace Engineering, University of Florida; 3Ortopaedics and Rehabilitation, University of Florida

**3891 — 3:45** UV protection of contact lenses under outdoor light environments: beach, snow and city. Emiliano Teran1,2, P. De Gracia1, E. Romo-Garcia1, J. Ortega1
1Optometry department, Autonomous University of Sinaloa; 2Physics department, Autonomous University of Sinaloa; 3Chicago College of Optometry, Midwestern University; 4CIDOCS

**3892 — 4:00** In vivo: Effect of compliance in silver lens case contamination. Ananya Datta1, M. Wilcox1, F. Stapleton2
1School of Optometry and Vision Science, UNSW; 2College of Optometry, University of Houston


**3894 — 2:45** Evidence that emmetropization buffers against both genetic and environmental risk factors for myopia. Jeremy A. Guggenheim1, A. Pozarickij1, C. Williams1
1School of Optometry & Vision Sciences, Cardiff University; 2Population Health Sciences, University of Bristol

1Freeeman Spogli Institute, Stanford University; 2Peking University; 3University of Southern California; 4Queens University


**3897 — 3:30** Comparison of myopia-related behaviors between rural and urban schoolchildren in China based on Clouclip™. Longbo Wen1, W. Lan2, Y. Cao2, Q. Cheng2, X. Li3, Y. Wu, L. Li4, H. Zhu5, Z. Yang6. 1Aier School of Ophthalmology, Central South University; 2Beihang University; 3Hangzhou Rejoin Technology Co., Ltd; 4California NanoSystems Institute, Los Angeles, CA, United States
Retinal hemorrhage is an important sign of abusive head trauma in infants, but much is unknown about the underlying biomechanical mechanisms and forces. Such knowledge is critical to accurately diagnosing child abuse. This mini-symposium will begin with a review of the clinical context and multidisciplinary biomechanical research approaches, then define fundamental questions in the field, review some of the work already done, identify key gaps in our understanding, and work in collaboration with the audience to map research priorities going forward.

**Moderators: Donny W. Suh, Brittany Coats and Gil Binenbaum**

### 3898 — 2:45
**Impact of Defocus Incorporated Multiple Segments (DIM5) spectacle lenses on Relative Peripheral Refraction (RPR): a 2-year randomized clinical trial.** Han Yu Zhang, C. S. Lam, W. Tang, C. To. Centre for Myopia Research, School of Optometry, The Hong Kong Polytechnic University *CR, ◊

### 3899 — 4:00
**Combined atropine with orthokeratology in childhood myopia control (AOK) - A randomized controlled trial.** Lap Ki Alex Ng1, 2, Q. Tan1, G. Cheng1, V. Woo1, 3, P. Cho1.
1Ophthalmology, The University of Hong Kong; 2Hong Kong Ophthalmic Associates; 3Hong Kong Laser Eye Centre; 4School of Optometry, Hong Kong Polytechnic University ◊

---

**West 222/224**

**Tuesday, April 30, 2019 2:45 PM-4:30 PM**

**Eye Movements/Strabismus/Ambylopia/Neuro-Ophthalmology / Retina**

**377 Mechanisms and biomechanics of traumatic retinal hemorrhage in children - Minisymposium**

**Moderators: Andrew Carkeet and MiYoung Kwon**

### 3905 — 3:50
**Biomechanical approaches to understanding mechanisms of traumatic retinal hemorrhage.** Brittany Coats. Mechanical Engineering, University of Utah — 4:05 Panel Q&A and open discussion with the audience

### 3906 — 2:45
**What is the best test distance for the Pelli-Robson Chart?** Angela M. Brown, S. M. Njeru, M. Osman. Optometry, Ohio State University

### 3907 — 3:00
**The limits of perception of light by two-photon vision.** Katarzyna Komar1, 2, A. Zielinska1, D. Runinski1, M. Marzejow1, 4, P. Ciak1, L. Kornaszewski1, S. Manzanera1, P. Artal1, M. Wojtkowski1, 3, 4.
1Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University in Torun; 2Baltic Institute of Technology; 3Institute of Physical Chemistry, Polish Academy of Sciences; 4Faculty of Electronics, Telecommunications and Informatics, Gdansk University of Technology; 5Laboratorio de Optica, University of Murcia *CR

### 3908 — 3:15
**Unbiased Threshold Estimates in Bayesian Adaptive qCSF and qFC with Mismatched Psychometric Function Slopes.** Zhong-Lin Lu1, Y. Zhao1, L. A. Lesmes2, M. Dorr3, P. Bex1.
1Psychology, The Ohio State University; 2Adaptive Sensory Technology, Inc; 3Technical University of Munich; 4Northeastern University *CR

### 3909 — 3:30
**Contribution of retinal ganglion cell density to the non-uniform spatial integration across the visual field.** MiYoung Kwon, R. Liu. Department of Ophthalmology and Visual Sciences, University of Alabama at Birmingham

### 3910 — 3:45
**Signal Detection Theory (SDT)-based latent variable analysis of ultra-low vision measures with mixed chance levels.** Gislin Dagnelle1, D. Geruschat, R. W. Massof, C. Bradley. Ophthal-Lions Vision Cntr, Johns Hopkins Univ

### 3911 — 4:00

### 3912 — 4:15
**How does age affect the contributions of head and eye movements to scanning at intersections?** Steven Savage, L. Zhang, G. Swan, A. R. Bowers. Scheepen Eye Research Institute of Mass. Eye and Ear, Department of Ophthalmology, Harvard Medical School

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
### 3919 – 4:15
**Adherence to World Glaucoma Association Guidelines for Surgical Trials in the Era of Microinvasive Glaucoma Surgeries.**
Yvonne M. Buys, D. J. Mathew, B. R. McKay, A. Basilious, A. Belkin, G. E. Trope.
Ophthalmology & Vision Sciences, University of Toronto

**Tuesday Papers/Minisymposia**
2:45 pm – 4:30 pm

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.

---

**380 Structure-Function Relationships**

**Moderators: Michael Sullivan-Mee and Mitchell W. Dul**

#### 3920 — 2:45
**Longitudinal Structure-Function (SF) Relationships in The Macula.**
Stein Eye Institute, UCLA; Department of Computer Science, California State University

**3921 — 3:00**
**Peripapillary RNFL loss precedes Macular GCIPL loss in glaucoma with lower intraocular pressure.**
Department of Ophthalmology, Flinders University; University of Tasmania; Discipline of Ophthalmology, University of Sydney; University of New South Wales; Discipline of Ophthalmology & Visual Sciences, University of Adelaide; Faculty of Medicine and Health Sciences, Macquarie University

#### 3922 — 3:15
**Effects of fundus tracking on structure-function relationship in glaucoma.**
Optometry and Visual Sciences, City, University London; NIHR Biomedical Research Centre, Moorfields Eye Hospital; Eye Clinic, University of Milan; Glaucoma unit, IRCCS GB Bietti Eye Foundation; Department of Ophthalmology, University of Udine; Azienda ospedaliera Sant’Andrea; Ophthalmal & Visual Sciences, University of Iowa

#### 3923 — 3:30
**Constructing an OCT parameter to maximize correspondence with visual field mean deviation.**
Ou Tan, L. Liu, X. Zhang, D. Huang.
Ophthalmology, Oregon Health & Science Univ

### 3919 – 4:15
**A hybrid machine learning model to detect glaucoma using retinal nerve fiber layer thickness measurements.**
EE, AUT; School of Engineering and Technology, University of Washington; Department of Ophthalmology, University of California Los Angeles; University of Tennessee Health Science Center, Department of Ophthalmology

#### 3925 — 4:00
**Widespread Structural and Functional Brain Connectivity Changes and Associations with Balance in Glaucoma.**
Department of Ophthalmology, New York University School of Medicine; Department of Bioengineering, University of Pittsburgh; Department of Ophthalmology, University of Pittsburgh; Department of Radiology, New York University School of Medicine; Department of Kinesiology, East Carolina University

#### 3926 — 4:15
**Handheld Chromatic Pupillometry for Earlier Detection of Functional Loss in Glaucoma.**

---

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
382 Retina/RPE transplantation and Stem Cell

Moderator: Petr Y. Baranov

3927 — A0067 Low immunogenicity and immunosuppressive property of human ES/iPS cells derived neural retina. Suguro Yamazaki1,2, S. Sugita1, S. Moriiuchi1,2, a. kawahara1, A. Kishino1, T. Kimura1, M. Takahashi1, M. Mandai1. Dainippon Sumitomo Pharma; Lab for Retinal Regeneration, Riken *CR

3928 — A0068 Effect of ambient light and BDNF on photoreceptor synaptogenesis after mouse ESC/iPS-derived retinal organoid transplantation. Ryutaro Akiba1, T. Matsuyma1, H. Tu1, T. Hashiguchi1, S. Junki1, S. Yamamoto2, Y. Tabata1, M. Takahashi3, M. Mandai1. Laboratory for Retinal Regeneration, Center for Biosystems Dynamics Research, Riken; Department of Regeneration Science and Engineering Laboratory of Biomaterials, Kyoto University; Ophthalmology and Visual Science, Chiba University Graduate School of Medicine

3929 — A0069 Functional examination of genetically engineered human ESC-retinas transplanted in an immunodeficient rat model with retinal degeneration. Hung-Ya Tu1, S. Yamazaki1,2, a. kawahara1, A. Kishino1, T. Kimura1, M. Takahashi1, M. Mandai1. Center for Biosystems Dynamics Research, RIKEN; Department of Regeneration Science and Engineering Laboratory of Biomaterials, Kyoto University; Ophthalmology and Visual Science, Chiba University Graduate School of Medicine

3930 — A0070 Survival and maturation of iPSC derived retina after transplantation in MHC matched and mismatched nonhuman primate. Hirofumi Uyama1, S. Yamazaki1, Y. Kurimoto1, M. Takahashi1, S. Sugita1, M. Mandai1. Regenerative & Cellular Medicine Office, Dainippon Sumitomo Pharma; Dept of ophthalmology, Kobe City Eye Hospital; Retinal Regeneration, RIKEN BDR developmental biology *CR

3931 — A0071 Safety of autologous bone marrow mesenchymal stem cells subretinal transplantation in diabetic retinopathy patients. Yong Liu1, Q. Liang, Z. Yin. Dept of Ophthalmology, Southwest Hospital

3932 — A0072 Development of Hyaluronan Acid Based Scaffolds to Maintain Stemness in Human Dental Pulp Stem Cell Toward Ocular Regeneration. Tao L. Lowe1, K. K. Niloy1, M. Gulfam1, D. Li1, G. T. Huang1. Pharmaceutical Sciences, Univ of Tennessee Health Science Ctr; Department of Bioscience Research, University of Tennessee Health Science Center

3933 — A0073 HLA A6 iPS cell derived retinal pigment epithelial cells (iPSC-RPE) transplantation. Masayo Takahashi1,2, S. Sugita1,2, Y. Hiroshii1, S. Takagi1, M. Yamamoto2, N. Koide1, H. Sakaguchi1, K. Maruyama1, K. Nishida1, S. Yamakata1, Y. Kurimoto1. Laboratory for Retinal Regeneration, Ctr for Biosystems Dynamics Research, RIKEN; Kobe Eye Center; Ophthalmology, Osaka University Hospital; Centre for Regenerative Medicine, Kyoto University *CR

3934 — A0074 Learning curve of a trained vitreo-retinal surgeon in sub-retinal injections in a rat model: Implications for future clinical trials. Vivek Dave1,4, P. Susaimanickam1, I. A. Miranda1, M. Mariappan1, S. Maddieti1, S. Bassi1, R. R. Pappuru1, S. Jalali1, T. Das1. Vitreoretina, LV Prasad Eye Institute; Sudhakar and Shreepan Ravi Stem Cell Biology Laboratory, Prof. Biren Holden Eye Research Center, LV Prasad Eye Institute; National Center for Laboratory animal sciences, National Institute of Nutrition; Center for Ocular Regeneration, LV Prasad Eye Institute


3936 — A0076 An optimized viscous thermosensitive liquid facilitates subretinal delivery of a nanofibrous scaffold for RPE transplantation. Zhengting Liu1, W. Wei1, X. Lok1, G. Lingam1, X. Su1. Ophthalmology, National University of Singapore; Brain research center for ocular diseases and state key laboratory of trauma, Burns and Combined Injury, Third Military Medical University; Laboratory for Stem Cell Regeneration, Ctr for Biosystems Dynamics Research, RIKEN; Sumitomo Dainippon Pharma Co., Ltd. *CR

3937 — A0077 Cultivation and characterisation of primary retinal pigment epithelial cells on nanofibre scaffolds. Peter Heiduschka1, J. A. Zimmermann1, T. Plagemann1, P. Staief1, M. Himmler1, T. A. Fuchsberger1, N. Eiter1. Univ Eye Hosp Muennster; Dept. Ophthalmology; Institute of Polymer Materials, University of Nuremberg-Erlangen; Ophthalmology, University Hospital Heidelberg

3938 — A0078 Treatment of Macular Degeneration Using Human Somatic Cell Nuclear Transfer Embryonic Stem cell Derived Retinal Pigment Epithelium: 1-Year Results in an Asian Patient. Younghie Song1, D. Lee1, S. Shim1, S. Chong1, S. Choi1, W. Song1. Biomedical Science, College of Life Science, CHA University; Health Sciences and Technology, Samsung Advanced Institute for Health Sciences & Technology; Ophthalmology, Bundang CHA medical center; Hematology-Oncology, Bundang CHA medical center

3939 — A0079 Investigation of material exchange after retinal cell transplantation. Chen Liang, J. Zhang. WestChina Hospital, Sichuan University

3940 — A0080 Early phase clinical trial of human embryonic stem-cell derived retinal pigmented epithelium transplantation in Stargardt disease: 5-year results. Manjit Singh S. Mehra1, J. W. Bainbridge1. UCL Institute of Ophthalmology; Moorfields Eye Hospital


3942 — A0082 A Pilot Study to Evaluate Surgical Implantation of a Protein-Based Artificial Retina in a Rodent. Nicole Wagner1, J. Greco1, D. Cupf1, J. Prater1, B. Gilger1,2. LambdaVision; Powered Research; North Carolina State University *CR

382 Retinal disease epidemiology

Moderators: Roomasa Channa and Ferhina Ali

3943 — A0442 Gender differences in presentation, treatment patterns, and clinical outcomes in central retinal vein occlusion. Delaram Mirzania1, A. S. Thomas1, S. S. Stinnett1, S. Fekrat1. Department of Biostatistics and Bioinformatics, Duke University Medical Center; Duke University School of Medicine; Tennessee Retina; Department of Ophthalmology, Duke University Medical Center *CR

3944 — A0443 Asteroid Hyalosis in United States Adults, Rebecca M. Sieburth1, M. Qui1, S. Mallikarjun1, Y. Shildkrot1. Department of Ophthalmology, University of Virginia; Cole Eye Institute, Cleveland Clinic; McIntire School of Commerce, University of Virginia

3945 — A0444 Using retinal structural measurements derived from optical coherence tomography as clinical endpoints for Stargardt disease - reproducibility assessment and lessons learned from the ProgStar study. Xiaogong Kong1, A. Ho1, B. Muoz2, S. K. West1, R. W. Strauss1, A. Jua1, A. M. Ervin1, J. Cheetham, S. M. Ip1, H. P. Scholl1,4. Johns Hopkins University; Doheny Image Reading Center; Moorfields Eye Hospital; Foundation Fighting Blindness; University of Basel; Institute of Molecular and Clinical Ophthalmology Basel (IOB); Johannes Kepler University Clinic Linz *CR

$\text{\textsuperscript{a}}$ Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
3946 — A0445 Association between Oral Health Levels and Diabetic Retinopathy in a Representative Korean Population. Jaeyoung Seol1, S. Chung2. 1Department of Dental Hygiene, Dong-Pusan University; 2Ophthalmology, Saebeom Eye Hospital

3947 — A0446 Community Income Level and Weather as Barriers to Care in a Resident Intravitreal Injection Clinic. Brett Malbin, H. Chahrouf, X. Lin. Kresge Eye Institute

3948 — A0447 Monocular Status and Protective Eyewear Use Among Patients in a University Retina Practice. Frances Wu, S. Ramanathan. Ophthalmology, UCSF


3950 — A0449 SD-OCT hyper-reflectivity in type 2 idiopathic macular telangiectasia. Traci E. Clemens1, E. Y. Chew2, G. J. Jaffe3, T. Peto4, S. Duwel5. 1The Emmes Corporation; 2National Institutes of Health; 3Duke University Eye Center; 4Queen’s University Belfast

3951 — A0450 Prevalence and severity of macular holes in an ageing population from Northern Ireland. Catherine Jamison, N. B. Quinn, U. Chakravarthy, T. Peto, F. Kee, I. Young, B. McGuinness, R. Hogg. Centre for Public Health, Queen’s University Belfast

3952 — A0451 Acute Retinal Necrosis: Which has a worse prognosis - Herpes Simplex or Varicella Zoster? Vincent Nguyen, B. W. Botsford, A. W. Eller. Ophthalmology, University of Pittsburgh


3954 — A0453 Prevalence of pathologies of the vitreo-macular interface – results from the Gutenberg Health Study. Alexander K. Schuster1, A. K. Khuck2, C. A. Korbi3, B. Stoffel4, S. Nickels5, A. Schulz6, T. Müntzel7, P. Wild8, M. Beutel9, J. Schmidtmann10, K. J. Lackner11, T. Peto12, N. Pfeiffer13. 1Department of Ophthalmology, University Medical Center Mainz; 2Preventive Cardiology and Preventive Medicine, Center for Cardiovascular Medicine, University Medical Center of the Johannes Gutenberg-University Mainz; 3Center for Cardiology I, University Medical Center Mainz; 4Department of Psychosomatic Medicine and Psychotherapy, University Medical Center Mainz; 5Institute for Medical Biostatistics, Epidemiology and Informatics, University Medical Center of the Johannes Gutenberg-University Mainz; 6Institute of Clinical Chemistry and Laboratory Medicine, University Medical Center Mainz; 7Queen’s University Belfast, Centre for Public Health


3956 — A0455 Mobile device application for the clinical diagnosis of white dots syndromes. Alejandro Sanchez-Hoil, c. F. penaranda, C. Valdes. Asociacion Para Evitar la Ceguera en Mexico

3957 — A0456 Retinal detachment in HIV-infected patients with cytomegalovirus retinitis treated with intravitreal ganciclovir. Louisa Lu1, 6, S. Aussayakuhn2, G. N. Holland3, T. Margolis4, D. Heiden5, S. Aussayakuhn6, J. Keenan2. 1Yale School of Medicine; 6Francis I. Proctor Foundation, University of California, San Francisco; 2Department of Ophthalmology, Faculty of Medicine, Chiang Mai University; 3Department of Ophthalmology, Ocular Inflammatory Disease Center, Jules Stein Eye Institute, David Geffen School of Medicine at UCLA; 4Department of Ophthalmology and Visual Sciences, Washington University School of Medicine; 5Institute for Medical Biostatistics, Epidemiology and Informatics, University of California, San Francisco

3958 — A0457 Retinal Vein Occlusion after Cataract Surgery: Risk factors, prognosis and 1 year Outcome data. Miguel Kurc1, 2, R. Arora1. 1Ophthalmology, Salisbury NHS Foundation Trust; 2Ophthalmology, University Hospital Southampton

3959 — A0458 Prevalence and associated factors of diabetic retinopathy in a Russian Population. Mukharram Bikbov1, T. Gilmanshin1, R. Zainullin1, G. Kazakbaeva1, E. Rakhimova1, K. Safullina1, S. Panda-Jonas1, I. Russakova1, N. Bolshakova1, G. Bikbova1, J. B. Jonas1. 1Ufa Eye Research Institute; 2Department of Ophthalmology, Medical Faculty Mannheim of the Ruprecht-Karls-University of Heidelberg

3960 — A0459 Noncompliance in retinal clinical trials: an analysis of factors that predict loss to follow up in multiple prospective studies. Brenda Zou1, T. Mitchell1, A. M. Rasakevich1, D. M. Brown1, C. C. Wykoff1. 1Retina Consultants of Houston; 2Blanton Eye Institute, Houston Methodist Hospital & Weil Cornell Medical College; 3Baylor College of Medicine


3962 — A0461 A registry and research database for retinal dystrophies – the RD5000 database. Magda Meester1, M. Vermeer2, C. Boon3, 4, M. M. van Genderen1, C. C. Huyng2, F. P. Cremers2, C. Oomen2, A. A. Thiadens2, J. R. Pott3, M. J. van Schooneveld4, C. C. Klaver2, L. I. van den Born5. 1Ophthalmology, Erasmus MC; 2Ophthalmology, Radboudumc; 3The Rotterdam Eye Hospital; 4The Rotterdam Ophthalmic Institute; 5Ophthalmology, LUMC; 6Ophthalmology, Amsterdam UMC; 7Ophthalmology, UMCU; 8Bartiméus Diagnostic Centre for Complex Visual Disorders; 9Ophthalmology, UMCG; 10Human Genetics, Radboudumc

3963 — A0462 Prevalence of Age-related Macular Degeneration in the Adult Population in Hong Kong: The Hong Kong Eye Survey. Yipin Wang1, A. Ng2, J. Lai1, I. Wong1. 1Ophthalmology, The University of Hong Kong; 2The Hong Kong Ophthalmic Associates

3964 — A0463 Cross-sectional analysis to determine if there is any evidence of retinal degeneration among people with the idiopathic long anterior zonule trait. Daniel K. Roberts1, 2, J. McMahon1, C. Morettin1, T. Newman1, M. F. Roberts1, B. Teitelbaum1, J. Winters2. 1Illinois College of Optometry; 2Epidemiology and Biostatistics, University of Illinois at Chicago


3966 — A0465 Practice Patterns for Evaluation and Management of Sickle Cell Retinopathy. Kapil Mishra, A. Scott. Ophthalmology, Johns Hopkins Hospital


3968 — A0467 Ocular and systemic findings in incontinentia pigmenti in a real-world setting. Duncan Berry, P. Rao, G. Hubbard. Ophthalmology, Emory University

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Tuesday – Posters – 3969 – 3991

3969 — A0468 Retinal vascular caliber and risk of cardiovascular disease: a prospective study in Asians. Ning D. Cheung1,2, M. Chee3, Y. Tham4, T. Y. Wong4, C. Cheng4. 1Singapore National Eye Centre; 2Singapore Eye Research Institute

3970 — A0469 Syndromic inherited retinal dystrophies in a national reference centre specialized in inherited sensory diseases. Isabelle A. Meunier2, B. BOCUQUET2, C. Blanchet2, S. defoort1, A. Roubertie1, M. Willems4, d. genevieve4, P. Blanche1, V. Kalatzis1, c. lematre2. 1Montpellier Hospital - University of Montpellier, National Centre for rare diseases, Inherited sensory disorders; 2University of Montpellier, Institute for Neurosciences of Montpellier - INSERM U1051; 3Institute of ophthalmology - Lille Hospital; 4Department of Medical Genetics, Département de génétique, Maladies Rares et Médecine Personnalisée, Généétique clinique, CHU Montpellier, Université Montpellier, Centre de référence anomalies du développement SORO

3971 — A0470 Retinal pigment epithelium apertures in chronic central serous chorioretinopathy. Enrico Peirretti1, C. Chhablani2, D. Parameswarappa3, M. Pellegrini3, G. Giannaccare3, C. IOVINO1. 1Ophthalmology Resident, Ophthalmology and Visual Sciences, University of Sao Paulo; 2Professor at University of Sao Paulo University with Retcam 3 fundus photos.

3972 — A0471 Reliable and unreliable systematic reviews in retinitis/vitreal conditions. Riaz Qureshi1, J. Le, C. Tivose, L. Rosman, R. Scherer, T. Li. Epidemiology, Johns Hopkins School of Public Health

3973 — A0472 Stargardt Misdagnosis: How Ocular Genetics Helps. Alex V. Levin1, T. A. Guimaraes1, M. B. Ibañez1, J. E. Capasco. pedestal Ophthalm & Ocular Genetics, Wills Eye Hospital

3974 — A0473 Analysis of newborn retinal haemorrhage in a tertiary hospital in Sao Paulo, Brazil with Retcam 3 fundus photos. Murilo U. Polizelli1, B. M. Oliveira2, L. Nakayama3, V. Bergamo4, N. S. Morais5. 1Ophthalmology Resident, University of Sao Paulo; 2Professor at University of Sao Paulo; 3Retina fellow at University of Sao Paulo University; 4Eye Clinic, University of Cagliari; 5LV Prasad Eye Institute; 6Sr. Orsola-Malpighi University Hospital, University of Bologna

3975 — A0474 Minimum Image Gain in the follow up of endophthalmitis. Manuel A. Trujillo-Alvarez1, G. Salcedo-Villanesova2, E. Ibbara3, R. Velez-Montoya4, L. Garcia Arzate5, M. Mayorquin5, C. Becerra-Revollo1. 1Asociacion para Evitar la Ceguera en Mexico; IAP; 2Retina, Asociacion para Evitar la Ceguera en Mexico, IAP; 3Ecography, Asociacion para Evitar la Ceguera en Mexico, IAP

3976 — A0475 The yield of “clinical” genetic testing in inherited retinal disease: experience at the Hospital for Sick Children, Toronto, Canada. Vaishnavi Batmanabane1, A. L. Pearson1, C. Yu, A. Vincent, E. Heon. 1The Hospital for Sick Children

West Exhibition Hall A0476-A0489 Tuesday, April 30, 2019 2:45 PM-4:30 PM

383 Retinal Degenerations - Cilia and Ciliopathies

**Moderator: Theodore G. Wensel**

3977 — A0476 Germline deletion of both CETN2 and CETN3 destabilizes the distal connecting cilium of mouse photoreceptors. Guoxin Ying1, J. M. Frederick, W. Baehr. University of Utah

3978 — A0477 ARL2 GTPase is crucial for development of photoreceptor outer segments by regulating assembly of microtubule. Houbin Zhang2, Y. Zhang3, J. Yang2, Y. Wu2, T. Zou1, L. Liao1, B. Xue1, Z. Yang1. 1Clinical Laboratory, Sichuan Provincial People’s Hospital; 2School of Medicine, University of Electronic Science and Technology of China

3979 — A0478 The role of Rabin8 in the ciliary trafficking of rhodopsin. Danuska Deretic1, B. M. Tam1, T. Fresquez1, O. L. Moritz1. 1Surgery, Univ of New Mexico Sch of Med; 2Ophthalmology, University of British Columbia

3980 — A0479 Loss of CEP290 causes accumulation of inner segment plasma membrane proteins in the outer segment. Seogjin Soo1, B. Datta1, B. Hendrickson1, 2. 1Ophthalmology and Visual Sciences, University of Iowa; 2Institute for Vision Research

3981 — A0480 CEP290 localization in the rod connecting cilium of CEP290+/- mice with fluorescence nanoscopy. Valerie Potter1, M. Robichaux, T. G. Wensel. Baylor College of Medicine

3982 — A0481 The expression of Cdh9 during retinal development and its roles in retinal degeneration. Sumiko Watanabe1, A. Marakami1, T. Iwagawa1. 1Molecular & Developmental Biol, Univ of Tokyo, Inst Med Science; 2Department of Ophthalmology, Juntendo University

3983 — A0482 TULP1 Missense Mutations Cause Variable Retinal Phenotypes. Satyabrata Sinha1, G. Pauer1, N. S. Peachey1, S. A. Hagstrom1. 1Ophthalmic Research, Cole Eye Institute, Cleveland Clinic; 2Louis Stokes Cleveland VA Medical Center

3984 — A0483 Utilizing Zebrafish to Investigate RP1L1-Associated Retinitis Pigmentosa. Nicole C. Noel, I. M. MacDonald, W. Baehr. University of Alberta

3985 — A0484 NudC is critical for outer segment disk size and photoreceptor cell viability. Meredith G. Hubbard1, E. R. Boiter1, L. M. Black2, N. J. Reish3, G. Ying1, W. Baehr1, S. Bolisetty1, A. K. Gross1. 1Optometry and Vision Science, University of Alabama at Birmingham; 2Medicine, Division of Nephrology, University of Alabama at Birmingham; 3Neurology, University of Iowa; 4Ophthalmology/Vision Sciences, University of Utah

3986 — A0485 Murine models of RPGR-mediated X-linked Retinitis Pigmentosa (RP) suggest a common disease mechanism across allelic variants. Roly Megaw, F. McPhie, M. Juongnickel, P. Mill. University of Edinburgh, MRC Human Genetics Unit

3987 — A0486 Ciliary Delivery of the CNG-gated Channel in Rod Photoreceptors. Jillian N. Pearring1, J. R. Wille1, V. Y. Arshavsky2. 1Ophthalmology and Visual Sciences, University of Michigan; 2Ophthalmology, Duke University

3988 — A0487 The ciliopathy protein SANS (Usher syndrome 1G) regulates pre-mRNA splicing by facilitating the maturation of the spliceosomal tri-snRNP complex. Adem YILDIRIM1, S. M. Jovin1, A. Wallisch2, J. Ries3, H. Urlaub4, R. Lührmann2, U. Wolfrum4. 1Molecular Cell Biology, University of Mainz; 2Max Planck Institute for Biophysical Chemistry

3989 — A0488 Antisense oligonucleotides rescue light-induced translocation of α-transducin & arrestin in Usher photoreceptors. Bhagwat V. Alapure1, K. N. Robillard1, J. J. Lentz. Neuroscience Center of Excellence, Louisiana State University Health Sciences Centre

3990 — A0489 Identification of USH2A- and ADGRV1-interacting proteins in photoreceptors. Jun Yang, D. Yu, J. Zou. Moran Eye Center, University of Utah School of Medicine

West Exhibition Hall A0515-A0539 Tuesday, April 30, 2019 2:45 PM-4:30 PM

384 Retinal Microglia and Neuroinflammation

**Moderators: Wai T. Wong and Kip M. Connor**

3991 — A0515 Temporo-spatial distribution and transcriptional profile of retinal microglia cells in the oxygen-induced retinopathy mouse model. Myriam M. Böck1, N. Hagemeyer2, P. Zieglerhofer1, A. Schlecht1, D. Yuasa1, P. Zhang2, S. K. Boneva1, A. Thien1, Y. Laich1, A. Stahl1, G. R. Schlunck1, H. Agostini1, M. Prinz2, C. Lange1. 1Eye Center, Medical Center; 2University of Freiburg; 3Institute of Neuropathology, Medical Faculty, University of Freiburg; 4Institute of Anatomy, Leipzig University; 5Institute of Informatics, University of Freiburg

*® Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.


2003 — A0527 Re-establishment of the resident immune population and retinal homeostasis after widespread photoreceptor degeneration. Katrina Rinning, S. Karlen, E. B. Miller, M. E. Burns. Neuroscience, University of California, Davis; Cell Biology and Human Anatomy, University of California Davis

2004 — A0528 Curcumin Protect Retinal Ganglion Cells and Regulating Microglia Activation After Acute Ischemia/Reperfusion in the Mouse Retina. Xing Cao, W. Li, Q. Liu, J. Van houcke, L. K. Moons, K. Hess, S. Siegert. Life Sciences, IST Austria; EFPL


2006 — A0530 Retinal degeneration through microglia dysregulation and autoantibody formation in C-X-C motif chemokine receptor 5 (CXCR5) knock out mice. Anton Lennikov, M. Saddala, A. Mukwaya, H. Huang. Mason Eye Institute, Missouri University; Department of Ophthalmology, Linkoping University; Wilmer Eye Institute, Johns Hopkins University


2008 — A0532 A Role for Insulin-like Growth Factor Binding Protein-like 1 in Microglia. Li Pan, X. Wei, K. Cho, C. Do, F. Chen. School of Optometry, The Hong Kong Polytechnic University; Schepps Eye Research Institute of Massachusetts Eye and Ear, Department of Ophthalmology, Harvard Medical School; Department of Ophthalmology, West China Hospital, Sichuan University


2011 — A0535 On microglia and synaptic integrity of the outer plexiform layer. Kjell Johansson, C. Mohlin. Science, Kristianstad University; Chemistry and Biomedicine, Linneus University, Kalmar

2012 — A0536 Retinal Ganglion cell degeneration in patients with Parkinson disease induce optic nerve bundles remodelling and microglia activation. Xavier Sanchez-Saez, I. Ortuño Lizarrán, T. Beach, G. Serrano, C. Adler, N. Cuenca. Physiology, Genetics and Microbiology, University of Alicante; Banner Sun Health Research Institute; Mayo Clinic Arizona

2013 — A0537 IL-1β conveys neuroprotection via astrocytic IL1R1 signaling following excitotoxic retinal injury. Isabella Palazzo, L. Todd, X. Liu, N. Quan, A. J. Fischer. Biological Structure, University of Washington; Institution for Behavioral Medicine Research, The Ohio State University; Neuroscience, The Ohio State University


2015 — A0539 Effects of the Na-K ATPase blocker digoxin on microglia structure and function in real time in the mouse retina. Ethan D. Cohen, R. J. Brehi, H. Qian, L. Xiu, N. Kedia, H. Vo, Z. Liu, K. Sheal, D. Hammer, J. Hangan. office of Sci & Eng Labs/CDRI, FDA; University of Minnesota; CDFR/OTS/OCP/ DARS, FDA; NEI, NIH; Engineering, University of Maryland College Park; Engineering, George Mason Univ; CDFR/OPQ/OTR, FDA
4017 — B0073 Seeing Heat: Efficacy of a Thermal Camera in the Argus II Retinal Prosthesis System. Rohan Bajaj1, R. Sadeghi1, M. P. Barry1,2, P. Gibson1, A. Caspi4, A. Roy3, G. Dagnelie2. 1Johns Hopkins School of Medicine; 2Biomedical Engineering, Johns Hopkins University; 3Second Sight Medical Products; 4Wilmer Eye Institute; 5Advanced Medical Electronics Corp; 6Jerusalem College of Technology

4018 — B0074 Novel switch-on procedure for the RETINA IMPLANT Alpha AMS provides suitable and stable implant-mediated vision on the first day. Florian Gekeler1, K. Barts-Schmidt1, K. Stingl1, F. Frasch2, N. Cereto1, N. Troelenberg1, T. Rombach3, N. Stutzki3, A. Stett3. 1Institute for Vision Research, University of Tübingen; 2Department of Ophthalmology, University of Tübingen; 3Klinikum Stuttgart; 4Ophthalmology, University of Tübingen; 5Retina implant AG

4019 — B0075 Navigation Assistance From the Low-Vision Enhancement Optoelectronic (LEO) Belt. Nicole Tatro1, I. Andrews2, T. Braun1, S. R. Russell2. 1Institute for Vision Research, University of Iowa; 2Computer Science Engineering, University of Iowa


4021 — B0077 Development of a Cortical Visual Neuroprosthesis for the Blind: Preliminary results. Eduardo Fernandez1, C. Soto1, A. Alfaro1, P. Gonzalez1, A. Lozano1, S. Peña1, M. Grima1, A. Rodil1, A. Alarcon1, J. Roslon1, T. Davies1, R. A. Normann2. 1Instituto de Bioingenieria, Univ of Miguel Hernandez; 2John A. Moran Eye Center, University of Utah

4022 — B0078 Understanding the experiences of working-age and older adults with acquired vision loss who pursue braille training. Natalie Martinello1, W. Wittich1. 1School of Optometry, Université de Montréal; 2CRIR/Centre de réadaptation MAB-Mackay du CIUSSS du Centre-Ouest-de-l’Île-de-Montréal

4023 — B0079 Double-masked, randomized home-use clinical trial of a wearable collision warning device for the blind: preliminary results. Shriniwas Pandulk1, Y. Balliuat, M. Moharre2, A. R. Bowes3, G. Luo3. 1Schepens Eye Research Institute of Mass Eye and Ear; 2Ophthalmology, Harvard Medical School

4024 — B0080 Performance of an Augmented Reality Device on Functional Activities. REBECCA KAMMER1, B. Kim1, B. D. Kuppermann1, D. A. Watola1, T. Tsang1, M. C. Mehta1. 1Ophthalmology, University of California Irvine; 2School of Pharmacy, Chapman University; 3Terry Tsang Optometry; 4Eyedaptic

4025 — B0081 Reading performance using smartphone applications compared to portable electronic magnifiers in simulated visual impairment. Chris Dickinson, A. Al hefi2. Division of Pharmacy and Optometry, University of Manchester


4027 — B0083 Orientation of preferred retinal locus is maintained following changes in simulated scotoma size. Francisco Costela1, S. M. Reeves1, R. L. Woods1,2. 1Ophthalmology, Schepens Eye Research Institute; 2Ophthalmology, Harvard Medical School

4028 — B0084 A Visual-Arts-Based Mobile Health Solution to Promote Brain Health in Older Adults with Low Vision. Olivia Overbury1, M. Hogan1, S. Swaminathan1, N. Lingum2, A. Altschuler1, K. Murphy1,3, W. Wittich2. 1School of Optometry, University of Manchester; 2CRIR/Centre de réadaptation MAB-Mackay du CIUSSS du Centre-Ouest-de-l’Île-de-Montréal


4030 — B0086 Changes in Reported Difficulty with Near Reading following Telehabilitation for Low Vision. Ava K. Bittner1, K. Green1, R. Khan1, A. M. Mistry1, M. J. Barnes1, N. C. Ross1. 1Optomtery, Nova Southeastern University, College of Optometry; 2Stein Eye Institute, UCLA; 3New England College of Optometry


4032 — B0088 Are Patterns of Magnifier Selection Changing in Low Vision Patients? Donald C. Fletcher1, R. Schuchardt2. 1Low Vision Rehabilitation, Envision Vision Rehabilitation Center; 2Ophthalmology, Smith-Kettlewell Eye Research Institute

4033 — B0089 Starting point of visual rehabilitation for patients with retinitis pigmentosa based on visual function and related quality of life. Mayumi Sainiohira1, T. Yamashita1, T. Terasaki1, S. Sonoda1, K. Miyata2, J. Kami1, T. Morimoto1, T. Endo1, T. Fujikado1, Y. Murakami1, Y. Ikeda1, T. Sakamoto1. 1Department of Ophthalmology, Kagoshima University; 2Miyata Eye Hospital; 3Kofu Kyoritsu Hospital; 4Department of Ophthalmology, Kyushu Graduate School of Medical Sciences, Kyushu University; 5Department of Applied Visual Science, Osaka University Graduate School of Medicine; 6Department of Ophthalmology, Osaka University Graduate School of Medicine

4034 — B0090 Factors related to the use of a head-mounted display for individuals with low vision. Marie-Celine Lorenzini1, A. Hamalainen1, W. Wittich2. 1School of Optometry, Université de Montréal; 2Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain

4035 — B0091 Feasibility of using the IReST to assess reading performance in a comparative study evaluating head-mounted display systems. Kyoko Fujiwara1, A. Deemer1, C. Bradley1, R. Chun1, F. S. Werblin2, R. W. Massof3. 1Johns Hopkins University; 2Molecular and Cell Biology, UC Berkeley

4036 — B0092 Design of Smart Head-Mounted Display Technology: A Qualitative Study. S. Sweeta E. Jeganathan1, A. Kamagari1, H. Sherry1, M. Fetter1, J. Gosbee1, S. E. Moroi1, J. D. Welland1, J. R. Ehrlich1. 1Department of Biomedical Engineering, University of Michigan; 2Department of Ophthalmology and Visual Science, University of Michigan; 3Department of Family Medicine, University Of Michigan

4037 — B0093 Can assistive digital technologies boost wellbeing in people with sight loss?. Parisa Esalamolchilar1, K. Hill2, T. H. Margrausen1. 1School of Computer Science and Informatics, Cardiff University; 2School of Psychology, Swansea University; 3School of Optometry and Vision Sciences, Cardiff University

4038 — B0094 Feasibility of testing visual motor function through a smartphone app in a comparative study evaluating head-mounted display systems. Ashley Deemer1, K. Fujiwara1, J. Deremel1, C. Bradley1, R. Chun1, F. S. Werblin2, R. W. Massof3. 1Low Vision Rehabilitation, Johns Hopkins Wilmer Eye Institute; 2Molecular & Cell Biology, University of California Berkeley

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
4040 — B0096 Measurement of functional visual vision in people with ultra low vision using a virtual reality headset. Arathy G. Kartha1, R. Yang1, D. Geruschat1, G. Dagnelie1. 1Department of Ophthalmology, Seoul National University Hospital; 2Department of Ophthalmology, Seoul National University Bundang Hospital; 3Department of Ophthalmology, Seoul National University Hospital

4041 — B0097 Visual rehabilitation after surgery for macula off retinal detachment. Enzo Maria Vingolo1, G. Napolitano1, P. G. Linolli1, S. Scallini1. 1Polo Pontino - Ospedale A.Fiorini Terracina, University La Sapienza - Rome; 2Centro Studi Ipovisione; 3University of Bologna - Policlinico S Orsola Malpighi

4042 — B0098 Enhancement of spatial cognition and brain connectivity in people with low vision and blindness. Lora Likova. Smith-Kettlewell Eye Research Institute


4044 — B0100 Evaluation of a new test of visually-guided navigation. Gary S. Rubin1,2, N. Kumaran1, H. Dunbar1, R. R. Ali1. 1UCL Institute of Ophthalmology; 2NIHR Biomedical Research Centre, Moorfields Eye Hospital; 3Moorfields Eye Hospital *CR


4046 — B0102 Barriers to Referral for Low Vision Services (LVR) by Eye Care Professionals. Jessica Capri, R. K. Zolotis, T. Matchinski. Illinois College of Optometry

4047 — B0103 Causes of visual impairment and blindness in children at a hospital based low-vision center in Israel. Claudia Yahalom, R. Patal, K. Hendler, I. Saadeh, A. Blumenfeld. Ophthalmology, Hadassah University Hospital

4048 — B0104 Natural history of Proliferative Sickle Cell Retinopathy. Akosua Nii, A. Scott. Ophthalmology, Wilmer Eye Institute

4049 — B0105 Retinal Arterioles Adapt to Systemic Hypertension by Maintaining Constant Tension in the Smooth Muscle Cells of the Arteriole Wall. thomas Gast. optometry, indiana unv optometry


4051 — B0107 Metamorphopsia changes after anti-VEGF therapy in branch retinal vein occlusion. Kenichiro Mori1, K. Ishikawa1, Y. Kubo1, Y. Kobayashi1, T. Nakama1, S. Nakao1, S. Yoshida1, K. Sonoda1. 1Kyushu University; 2Kurume University *CR

4052 — B0108 Pattern of Collateral Vessel Development in Eyes with BRVO: An Ultra-widefield Fluorescein Angiography (UWFA) and OCT Angiography (OCTA) study. Hamid Hosseini, I. Cheng, C. Pole, S. D. Schwartz. Retina Division, Stein Eye Institute at UCLA

4053 — B0109 Investigation of the number of intravitreal injections of the anti-VEGF agent using OCT angiography for macular edema due to retinal vein branch occlusion. RYO TOMITA, T. Iwase, Y. Ogasawara, S. Sivra, H. Terasaki. ophthalmology, Nagoya University *CR

4054 — B0110 Factors predictive of retinal detachment resolution in Coats disease: Analysis of 187 eyes in 184 patients at a single center. Chloe T. Khoo1,2, S. Udyave1,2, L. A. Dabvin1, L. S. Lim1, H. Atlay1, M. Mazloumi1, C. L. Shields1. 1Ocular Oncology Service, Willis Eye Hospital; 2Sidney Kimmel Medical College of Thomas Jefferson University

4055 — B0111 Intravitreal Triamcinolone Acetonide in Advanced Coats’ Disease Revisited: The Results of the King Khaled Eye Specialist Hospital International Collaborative Retina Study Group. Wael A. Alsakran1, N. Ghazi1, S. R. Nowlaty1, J. Arevalo1, M. Murat1, E. Abboud1, Y. Alzahrani1, M. A. Alsultanal1. 1King Khaled Eye Specialist Hospital; 2Wilmot Eye Institute; 3Cleveland clinic Abu Dhabi; 4Lebanese American University


4057 — B0113 Clinical outcomes after switch from aflibercept to ranibizumab for macular edema secondary to retinal vein occlusion. Turner D. Wibbelsman1, D. B. Calen1, A. Obeid1, P. L. Mellon1, M. A. Konkoly1, M. R. Velez1, K. Sioufi1, D. S. Borkar1, R. Pandit1, M. A. Kufas1, J. Hsu1, C. Regillo1, A. C. Ho1, O. P. Gupta1, M. J. Spinn1. 1The Sidney Kimmel Medical College at Thomas Jefferson University; 2The Retina Service, Wills Eye Hospital *CR


4059 — B0115 Is Retinal Artery Occlusion a Predictive Factor for Subclinical Coronary Artery Disease?: A Case-Control Coronary Computed Tomographic Angiography Study. Yong Dae Kim1, Y. Kim1, Y. Yoon1, Y. Ko1, M. Ham1, K. Park1, S. Woo1. 1Ophthalmology, Seoul National University Bundang Hospital; 2Ophthalmology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine; 3Cardiology, Cardiovascular Center, Seoul National University Bundang Hospital

4060 — B0116 Elucidating the mechanism of endothelial caspase-9 after retinal vein occlusion. Anna M. Potenski, M. I. Avrutsky1, C. M. Troy1. 1Pharmacology, Columbia University; 2Pathology and Cell Biology, Columbia University; 3Neurology, Columbia University *CR

4061 — B0117 Real-world outcomes in patients with macular oedema secondary to central retinal vein occlusion receiving intravitreal anti-VEGF therapy in a UK public hospital setting. Sarah Ah-Moye1, P. Zalmai1, M. Thorodsson1, M. L. Harris1, R. Asaria1, A. Hunt1, D. Barthelmes1, M. C. Gillies1, V. Nguyen1, H. Mehta1. 1Royal Free London NHS Foundation Trust; 2Macular Research Group, Save Sight Institute, Sydney University and Sydney Eye Hospital; 3University of Zurich *CR

4062 — B0118 Did the anti-VEGF therapy actually change the long-term prognosis of macular edema in branch retinal vein occlusion patients? SeungHyun Lee, M. Yoon, H. Chiu. Department of Ophthalmology and Inha Vision Science Laboratory, Inha University School of Medicine

4064 — B0120 Comparison of intravitreal dexamethasone implant and anti-VEGF drugs in treatment of RETINAL VEIN OCCLUSION: a meta-analysis of randomized controlled trials. Shuai Ming. Henan Eye Institute, Henan provincial people’s hospital

4065 — B0121 Experience of OZURDEX Intravitreal Implant in Treatment of Post-operative Cystoid Macular Oedema resistant to Topical Therapy. Mya T. Ohn, A. Waghamare, E. Thompson, A. Chandra, N. Karia. Southend University Hospital NHS Trust

4066 — B0122 The potential therapeutic targets for the macular edema in murine retinal vein occlusion model. Anri Nishinaka, S. Namakura, T. Masada, M. Shimazawa, H. Hara. Gifu Pharmaceutical University

4067 — B0123 Clinical manifestation and prognosis of patients of central retinal artery occlusion (CRAO) with cilio-retinal artery sparing. YONGHOON KIM. Seoul National University Bundang Hospital

4068 — B0124 Twenty-four month results of intravitreal ranibizumab for macular edema after branch retinal vein occlusion in a single-center prospective study: visual prognosis and rate of complete resolution of macular edema. MIHO INAGAKI, Y. Hirano, N. Suiuki, Y. Yasuda, M. Kawamura, T. Yasukawa, M. Yoshida, Y. Ogura. Department of Ophthalmology and Visual Science, Nagoya City University Graduate School of Medical Sciences *CR

4069 — B0125 Correlation between initial visit binocular intraocular pressure difference and mean change pressure, and the number of ranibizumab administrations in branch retinal vein occlusion. Kazutaka Hirabayashi, A. Imai, Y. Isato, T. Murata. Shinshu University *CR


4071 — B0127 The Effects Of Topical Dorzolamide Hydrochloride-Timolol Maleate Ophthalmic Solution On Injection Frequency In Patients Receiving Combination Therapy For Retinal Vein Occlusions. Raul F. Membreno1, C. Krambeer, T. Hsiao, M. Singer1. UT Health San Antonio Long School of Medicine; Paul L. Foster School of Medicine; Medical Center Ophthalmology Associates; University of Washington *CR

4072 — B0128 Predictors of Enucleation in Coats Disease: Analysis of 371 Eyes from 361 Patients at a Single Center. Sanika Udyaver1, L. A. Dalvi1, L. S. Lim1, M. Mazlouni1, H. Atalay2, C. Khoo1, C. L. Shields1. Wills Eye Hospital; Ophthalmology, Mayo Clinic

4073 — B0129 AXT107, a Peptide that Disrupts Integrins, Suppresses Vascular Leakage in the Setting of Ocular Inflammation. Raquel Formica1, S. Hackett, Z. Hafizi, A. Miranda, J. J. Green1, A. S. Popel1, N. B. Pandey1, P. A. Campochiaro1. Ophthalmology, Johns Hopkins University Wilmer Eye Institute; Biomedical Engineering, Johns Hopkins University School of Medicine *CR

4074 — B0130 intravitreal injection of conbercept in patients with macular edema secondary to retinal vein occlusion. Longli Zhang, X. Shi, Y. Ke, X. Li. Tianjin Medical University Eye Hospital

4075 — B0131 The role and mechanism of polarized macrophages regulating bone marrow-derived cells in the oxygen-induced retinal neovascularization. Changmei Guo, Y. Wang, Y. Wang. Department of Ophthalmology, Xijing Hospital

4076 — B0132 Investigation of the Effect of Lymphocyte-derived Microparticles on the Activity of Macrophages in the Mouse Model of Oxygen-induced Retinopathy. ChenRongRong Cai1, C. Yang1, P. Hardy1, 2. CHU-Sainte Justine research center; pharmacology, University of Montreal

4077 — B0133 Evaluation of vascular network in macular and peripapillary regions with optical coherence tomography angiography (OCTA) in branch retinal vein occlusion (BRVO). Lulu Chen, M. Yuan, Y. Chen. Ophthalmology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences

4078 — B0134 Comparison of eplerenone versus melatonin as therapeutic options for the treatment of non-resolving and chronic central serous chorioretinopathy. Tomas N. Saddi1, J. P. Rea1, E. Lavaque1, A. L. Gramajo1, C. P. Juarez1, R. E. Rosenberg1, J. D. Luna Pinto1. Retina, Centro privado de ojos romagosa; Retina, Hospital oftalmológico Santa Lucía; Unidad de Investigación y Desarrollo en Tecnología Farmacéutica - CONICET; Departamento de Farmacia, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba; Centro de Estudios Farmacologico y Botanicos; Retina y vitreous, Centro privado de ojos


4080 — B0136 Paramacular thinning in homozygous sickle cell disease is correlated with systemic markers of disease severity. Gilles C. Martin1, V. Broussé1, P. Connes1, D. Grevet1, M. Kossorotoff2, L. Da Costa1, M. De Montalembert1, D. Bremond-Gignac2, P. Vidal3, M. P. Robert1, 2. Ophthalmology - Rare Disease Reference Centre OPTHARA, Necker Enfants Malades University Hospital - APHP; COGNAC-G Sorbonne Paris Cité; Vascular Biology and Red Blood Cell Team, LIRMB Claude Bernard Lyon 1 University; Paediatrics, Necker Enfants Malades University Hospital - APHP; Neurology, Necker Enfants Malades University Hospital - APHP; Biological Haematology, Robert Debre University Hospital

4081 — B0137 Retinal Vein Occlusion in Young Patients: Risk Factors and Management. Jinghua Chen1, B. Mueller II1, A. Hadayer1, S. Schaaf1. Ophthalmology, UT Southwestern Medical Center; Texas Vision & Laser Center; Ophthalmology, Tel-Aviv University; Department of Ophthalmology & Visual Sciences, University of Massachusetts School of Medicine

4082 — B0138 mir-18a-5p suppresses retinal neovascularization by targeting HIF-1α and FGF-1. JiTian Guan1, Z. Chi2. Wenzhou Medical University; The Eye Hospital of Wenzhou Medical University

4083 — B0139 Low-density lipoprotein receptor-related protein 5 (Lrp5) - deficient rats display abnormal development of the retinal vasculature and reduced bone mass. John L. Uebel1, C. R. Diegel2, B. O. Williams1. Calvin College; Van Andel Institute

4084 — B0140 The relationship between structural change of distinct retinal layers and visual prognosis in patients with macular edema secondary to branchial retinal vein occlusion. Atsuko Katsuyama, S. Kusuhara, R. Nishisho, W. Matsumiya, M. Nakamura. Kobe University Graduate School of Medicine *CR

4085 — B0141 Comparing effects of photodynamic therapy in central and peripheral choroideratopathy: Full-dose versus Half-dose versus Half-dose-half-power. Wooyoung Park1, M. Kim1, R. Kim1, Y. Park2. Seoul St. Mary’s hospital; Catholic Institute for Visual Science, College of Medicine, The Catholic University of Korea *CR


* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
4093 — B0409 Porcine Cornea Exposed to Human Whole Blood Induces a ProInflammatory Cytokine Response Which Is Strongly Dependent on Activation of CD5 and CD14. Rukibul Islam1, M. Islam1, P. Nils1, K. T. Hagen2, M. Gonzalez-Andrades1, T. E. Mollines1. 1Department of Immunology, Oslo University Hospital; 2University of Oslo; 3Massachusetts Eye and Ear and Schepens Eye Research Institute; 4Department of Ophthalmology, Harvard Medical School; 5Linnaeus Centre for Biomaterials Chemistry, Linnaeus University; 6Department of Pathology, Oslo University Hospital/University of Oslo; 7Maimonides Biomedical Research Institute of Cordoba (IMI-BIC); 8Department of Ophthalmology, Reina Sofia University Hospital and University of Cordoba; 9Research Laboratory, Nordland Hospital


4095 — B0411 Characterizing Mechanical Properties of Silk Films with Atomic Force Microscopy. Michael Sun1, T. Teng2, Y. Luo2, Q. Zhou1, J. Lee2, M. Rosenblatt1. 1Ophthalmology, University of Illinois at Chicago; 2Bioengineering, University of Illinois at Chicago

4096 — B0412 Static and RCCS dynamic spheroid expansion of Muse cells and the therapeutic potential for corneal scarring wound in mouse and tree shrew. Yonglong Guo1, J. Chen1, Y. Xue1, Q. Yu1, J. Zhang1. 1Key Laboratory for Regenerative Medicine of Ministry of Education, Jinan University; 2Institute of Ophthalmology, Medical College, Jinan University; 3Centric Laboratory, Medical College, Jinan University; 4Key Laboratory of Optoelectronic Information and Sensing Technologies, Guangdong Higher Educational Institutes, Jinan University

4097 — B0413 Biophysical characterization of a simultaneous interpenetrating polymer network composed of crosslinked collagen and hyaluronic acid. Kristiul V. Lai1, H. J. Lee1, S. Hu1, G. Fernandez-Cunha1, D. Myung2. 1Ophthalmology, Stanford University School of Medicine; 2Chemical Engineering, Stanford University; 3Chemical and Biological Engineering, Gachon University *CR

4098 — B0414 Optimized photopolymerizable hydrogel for sealing full-thickness corneal lacerations. Clotilde Junelle1, E. Shizuei San1, Y. Taketani1, Z. Sun1, A. Yang1, N. Annabi1, R. Dana2. 1Schepens Eye Research Institute, Harvard Medical School; 2Chemical and Biomolecular Engineering Department, University of California *CR

4099 — B0415 The stimulatory effect of ROCK inhibitor on rabbit corneal limbal epithelial spheroids and bioprinting. Peiyuan Wang1, Y. Han1, Y. Guo2, Q. Yu1, J. Zhang1, J. Chen1. 1Department of Ophthalmology, the First Clinical Medical College of Jinan University; 2Key Laboratory for Regenerative Medicine of Ministry of Education, Jinan University; 3Centric Laboratory, Medical College, Jinan University; 4Key Laboratory of Optoelectronic Information and Sensing Technologies, Jinan University; 5Institute of Ophthalmology, Medical College, Jinan University; 6Aier Eye Institute


4101 — B0417 Derivation of corneal endothelium from human iPSCs cells. Daniel Pelaez, A. Naranjo, Z. Acosta Torres. University of Miami

4102 — B0418 The effect of mesenchymal stem cells on corneal wound healing after chemical injury: A case serials clinical study. HE HUI1,2, S. Ou1,3, L. Zhang1,2, J. Li1,2, Z. Liu1,3, W. Li1,3. 1The Eye Institute of Xiamen University; 2Medical College of Xiamen University; 3Xiang'an Hospital of Xiamen University

4103 — B0419 Efficacy of bone marrow- versus adipose tissue-derived mesenchymal stem cells in a rabbit model of limbal stem cell deficiency. Jose-Maria Herreras1, S. Galindo1, M. Lopez-Panigau1, C. Garcia-Fazquez2, E. Rey2, M. Calonge1, T. Nieto-Miguel2. 1Department of Ophthalmology, Clinic University Hospital; 2IOBA (Institute of Applied Ophthalmobiology), University of Valladolid; 3CIBER (Biomedical Research Networking Centre in Bioengineering, Biomaterials and Nanomedicine), Carlos III National Institute of Health

4104 — B0420 Low scale production of advanced therapy medicinal products for limbal stem cell deficiency. Alvaro Meana1, S. Berisa1, M. Chacon1, N. Vazquez1, M. P. Medina1, B. Baamonde1, J. Alfonso2, L. Fernandez-Vega3, J. Merayo-Lloves4, J. de la Fuente1. 1Instituto Universitario Fernandez-Vega, Fundacion de Investigacion Oftalmologica & Universidad de Oviedo; 2Instituto Oftalmologico Fernandez-Vega

4105 — B0421 Optimisation of Transportation for Limbal Biopsies and Cultured Limbal Epithelial Cells for Worldwide Treatment of Limbal Stem Cell Deficiency. Sanja Bojic1, F. Figuereido2, M. Lako1. 1Institute of Genetic Medicine, Newcastle University; 2Department of Ophthalmology, Royal Victoria Infirmary, Newcastle University
4106 — B0422  Reduction of Cellular Antigens of Corneal Xenografts by Detergent-based Decellularization Solution and Gamma Sterilization. Mohammad Miraziz Islami1, R. Sharifi1, S. Mamodyhal2, R. Islam3, D. Nahra2, D. B. Abusamra1, Y. Adibnia1, M. Goualamy1, E. I. Paschalis1, J. Kong2, P. Nilsson3, P. Argueso1, T. E. Mollnes1, J. Chodosh1, C. H. Dohlman1, M. Gonzalez-Andrades1, 2, 3, 4
1Department of Ophthalmology, Harvard Medical School, Boston, Massachusetts; 2Department of Ophthalmology, University of Alabama at Birmingham, Birmingham, Alabama; 3Department of Ophthalmology, University of Chicago, Chicago, Illinois; 4Department of Ophthalmology, University of Illinois at Chicago, Chicago, Illinois.

4111 — B0427  Characterization of a corneal endothelial injury as a platform for evaluation of corneal endothelial cell delivery. Lauren Cornell1, 2, J. McDaniel3, C. Sprague4, R. D. Glickman1, D. O. Zamora5. 1USAISR; 2Ophthalmology, UTHSCSA

1Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago, Chicago, Illinois, United States; 2Department of Medicine, Medicine and University of Wisconsin Carbonc Cancer Center, University of Wisconsin-Madison, Madison, Wisconsin, United States; 3Department of Immunology, Massachusetts Eye and Ear and Schepens Eye Research Institute, Boston, Massachusetts; 4Department of Ophthalmology, Maimonides Biomedical Research Institute of Brooklyn, Brooklyn, New York; 5Department of Ophthalmology, University of Illinois at Chicago, Chicago, Illinois; 6Research Institute, E stemmed from the active cell culture process of Corneal Keratocytes. The cell proliferation and differentiation of these keratocytes were analyzed using Flow Cytometry, Live-Cell Video Microscopy, and Immunofluorescence.

4113 — B0429  Enhancing cornea wound healing by using silk films with engineering nano-topographies and extracellular proteins. Yuncin Luo1, V. H. Guayqil1, M. Rosenblatt.
1Ophthalmology, University of Illinois at Chicago, Chicago, Illinois; 2Biology, Northern Illinois University, DeKalb, Illinois.

4114 — B0430  Biochemical, thermal and anatomical characterization of the decellularized corneal scaffold. Itza A. Uribe Santa Maria1, 2, D. Chavarria-Bolaños1, M. Alvarez-Perez1. 1Tissue Engineering Laboratory, DEPEL, Facultad de Odontología, UNAM; 2FES-Iztacala, UNAM; 3UCR, LANOTEC

4115 — B0431  Characterization of a novel biomaterial for the repair or replacement of pathological cornea. Guiseppe Chandrasekher, S. BHATTACHARYA. Pharmaceutical Sciences, South Dakota State University


4117 — B0433  3D-hemi-cornea wound healing model for pre-clinical testing. Daniel Kampik1, I. Taraw1, H. Han1, H. Wallas1, F. Groeber-Becker1, J. Hillenkamp1, C. Lotz1. 1Department of Ophthalmology, University of Wurzburg, Wurzburg, Germany; 2Translational Center Regenerative Therapies | TLZ-RT, Fraunhofer ISC

1Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago; 2Department of Cellular Biology, University of Georgia

4119 — B0435  Characterization of a collagen-based engineered corneal endothelium. Maria Dolores Montalvo, J. Zavala, W. Ortega-Lara, J. Valdez-Garcia. Tecnológico de Monterrey (ITESM)

4120 — B0436  Normal Human Corneal Induced Pluripotent Stem Cell-Derived Retinal Progenitor Cells as a Model to Study Human Retinal Diseases. Roy Joseph1, O. P. Srivastava1, R. R. Pfister2. 1Department of Optometry and Vision Science, University of Alabama at Birmingham; 2Eye Research Foundation

4121 — B0437  Kinetics of the deswelling process of corneal grafts with dextran-containing culture medium before keratoplasty. Loïc Hamon1, L. Daus1, S. Mauver1, K. Schulz2, F. Asi1, A. Langenbuecher2, B. Seitz1. 1Department of Ophthalmology, Saarland University; 2Department of Experimental Ophthalmology, Saarland University; 3LIONS Cornea Bank Saar-Lor-Lux, Trier/Westpfalz, Saarland University Medical Center


4123 — B0439  Novel gene expression identifies regenerative potential in adult corneal stem cells. Martha L. Funderburgh, I. Khandaker, J. L. Funderburgh. Department of Ophthalmology, Univ of Pittsburgh Sch of Med

4124 — B0440  Organotypical 3D corneal equivalents from decellularized materials. Julia Fernández-Pérez1, M. Ahearn2. 1Trinity Center for Bioengineering, Trinity College Dublin; 2Department of Mechanical and Manufacturing Engineering, Trinity College Dublin

4125 — B0441  In Vivo examination in NZW rabbits of The CorNeat Kpro- a novel keratoprosthesis. Gilad Litvin1, 2. 1Ein Tal; 2CorNeat Vision

4126 — B0442  Limbal stem cell characterization and use for the restoration of cornea transparency. Julia I. Khoroshaya1, O. I. Aleksandrova1, G. Pisugina1, D. Perepelchikova1, T. Mashel1, K. Zhurenkov1, A. S. Dubovikov2, A. V. Besushko2, N. Mikhailova1, M. Blinova1. 1Cell Technologies Center, Institute of Cytology of the Russian Academy of Science; 2Ophthalmology, Kirov Military Medical Academy

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.

249

2:45 pm – 4:30 pm

Tuesday Posters – 4106 – 4126

Tuesday – Posters

244 pm – 4:30 pm
4127 — B0443 Demographic and clinical features of patients with Limbal Stem Cell Deficiency (LSCD) enrolled in HOLOGORE, a European prospective trial. Rudy M. Nuitte1, F. Figueiredo2, P. Rama3, d. harmriner2, b. duchesne4, P. Fournier6, O. Gris1, H. Hoffart1, G. guelle1, C. Macaluso2, E. Messmer4, A. Pocobelli4, E. Wylegala2, G. Pellegrini11, J. Hofer11, N. Narwani11, D. Cortez11, I. Yang11, J. stark11, G. Goyvaerts1, J. Tsubota12, S. Lee12, C. Yuan12, K. Tsubota13, S. Thys1, I. Pintelon1, P. Schor14, P. Schor14, Ophthalmology and Visual Sciences, University of Cambridge

4132 — B0448 Correlation between corneal endothelial cell morphology parameters and confluence in a two-phase culture system. Jorge E. Valdez, M. Montulvo, C. Calzada-Rodriguez, A. Rodriguez-Ramirez, I. Cárdenas-Rodríguez, J. Zavala. Escuela de Medicina, Tecnologico de Monterrey

4140 — B0456 Transdifferentiating reconstructed human epidermis (RHE) to corneal epithelium through retinoic acid. Christian Lotz1, R. Seliger1, L. Lineta1, D. Akyurek1, F. Groebner-Becker1. Translational Center Regenerative Therapies, Fraunhofer ISC; 1Tissue engineering and regenerative medicine, University hospital Würzburg

4141 — B0457 Effects of Media Composition on the Phenotype of Oral Mucosal Epithelial Cell Sheet Cultured for Corneal Epithelium Reconstruction. Fawzia Bardag-Gorce1, K. Narwani1, D. Cortez2, I. Yang3, J. Stark3, M. Garcia1, A. Diaz4, J. Oliva5, Y. Nihara5, TGPS, LA BioMed at Harbor UCLA Medical Center; 1Pathology, Los Angeles Biomedical Research Institute; 2Los Angeles Biomedical Research Institute *CR

4142 — B0458 Development of a simple method to generate transparent collagen gel compatible with corneal cells. Jingjng You1, Y. Song2, M. Huq1, L. Wen1, C. Petsoglou1, G. Sutton3, J. Save Sight Institute, University of Sydney; 2School of Optometry and Vision Science, University of New South Wales; 3NSW Tissue Bank, South East Local Health District

4143 — B0459 The OBSERV platform (Ophthalmic Bioreactor Specialized in Experimental Research & Valorization): simulation of a DMEK. Gilles Thuret4, E. Crouzet3, C. Perrache3, M. Garcia2, M. Trone2, F. Forest2, P. Gain1, J. He2. Ophthalmology, University Hospital of St-Etienne; 1Ophthalmology, University Hospital of St-Etienne; 2Transplant Research Program, Boston Children’s Hospital; 3Scheepens Eye Research Institute, Mass Eye and Ear *CR

4144 — B0460 Injection of umbilical endothelial progenitor cells with Y-27632 to repair corneal endothelium injury. Chanyi Shao, W. Zhang, F. Yu, Y. Fu, X. Fan. Department of Ophthalmology, Shanghai Ninth People’s Hospital, Shanghai Jiao Tong University School of Medicine

4145 — B0461 Developing a novel ocular adhesive for corneal perforations. Ines P. Barroso1, A. Ghag1, S. Razie1, S. Cox1. Chemical Engineering, University of Birmingham; 1Ophthalmology, Institute of Inflammation and Ageing, University of Birmingham

4146 — B0462 Human Limbus-derived Mesenchymal/Stromal Stem Cell Therapy for Superficial Corneal Pathologies: Two-Year Outcomes. Sayan Basu1, M. Damala1, T. Vakkol1, M. Niragor1, V. Singh1. 1Cornea and Anterior Segment Services, L V Prasad Eye Institute; 2Center for Ocular Regeneration (CORE), L V Prasad Eye Institute *CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
4147 — B0463 Production of human bioinks and 3D bioprinter to fabricate corneal tissues. MAIROBI P. MEDINA1, A. Meand1, A. PRIERES2, S. LLAMES3, M. Chacon4, N. Vazquez4, C. Nuñez1, J. BLAZQUEZ1, S. GONZALEZ1, J. CABEYAS2, D. ALVAREZ3, M. FERNANDEZ1, P. MARTIN4, L. Fernández-Vega1, J. Merayo-Lloves1. 1Instituto Universitario Fernández-Vega, Fundación de Investigación Oftalmológica, Universidad de Oviedo; 2Centro de Investigación Biomédica en Red Enfermedades Raras (CIBERER) U714; 3Fundación Prointente; 4IZERTIS, 1Instituto Oftalmológico Fernández-Vega

4148 — B0464 Evaluation of the effects of Rho Kinase Inhibitor on corneal nerve regeneration in vivo using confocal microscopy. Sonja Mertsch1, I. Neumann1, G. Geerling1, S. regeneration in vivo using confocal microscopy. 1Eye clinic Duesseldorf; 2Laboratory for Experimental Ophthalmology, Department of Ophthalmology Oldenburg

4149 — B0465 Electrosprun PCL-collagen nanofiber membranes as substitutes for posterior lamellar keratoplasty. Marcus Himmler1, 2, D. Thieme1, 2, F. Kuenig1, P. Stajiej1, D. Dippold1, 2, D. W. Schaber1, 2, T. A. Fuchsburger1, 2, Institute for Polymers Materials, Friedrich-Alexander University Erlangen-Nuernberg; 3Bavarian Polymer Institute, Friedrich-Alexander University Erlangen-Nuernberg; 4Department of Plastic and Hand Surgery, Friedrich-Alexander University Erlangen-Nuernberg; 5Department of Ophthalmology, Heidelberg University Hospital

4150 — B0466 Ocular manifestations of chordin-like 1 (Chdrl1) knockout mice. Yang Liu1, M. Warnari2, D. A. Sullivan3, S. Hann4, D. Chen1, 3, 4, 5. 1Scheepens Eye Research Institute, MEE, HMS; 2Department of Genetics, Harvard Medical School, Orthopaedic Research Laboratories, Boston Children’s Hospital; 3Department of Ophthalmology, Chinese Academy of Medical Sciences & Peking Union Medical College Hospital

4151 — B0467 Development of patient-derived iPSC disease models of TGFBI corneal dystrophies. Beatriz Sanchez1, A. E. Davidson1, K. Mathusamy1, S. J. Tuff1, 2, 5, 6, 7, A. J. Hardcastle1, 2, 8, 9. 1Institute of Ophthalmology, University College London; 2Moorfields Eye Hospital

4152 — B0468 Characterizing the role of Caveolin1 in Limbal and Corneal Epithelium during Homeostasis. Judith Ziegler1, 2, L. L. Wong1, 2, M. H. Elliott1, 2. 1The University of Oklahoma Health Sciences Center; 2Dean McGee Eye Institute

4153 — B0469 Phenotypic variation of transition zone in human posterior limbus. Gary Hin-Fai Yam1, X. Seel1, E. Benson1, G. S. Peh1, J. S. Mehta1. 1Singapore Eye Research Institute; 2Renovo Neural *CR

4154 — B0470 Primary cilia deficiency in neural crest cells leads to Anterior Segment Dysgenesis (ASD) by disruption of the Indian Hedgehog signaling pathway in the pericellular mesenchyme. Céline Portal1, Q. Liu1, P. Y. Lwigale1, C. Iomini1, 2, 3. 1Ophthalmology, Icahn School of Medicine at Mount Sinai; 2Biostem, Rice University; 3Cell, Development and Regenerative Biology, Icahn School of Medicine at Mount Sinai

4155 — B0471 TGF beta signaling in stromal is essential for corneal development. Yen-Chiao Wang1, Y. Zhang1, L. Yeh1, C. Liu1, 2. 1Indiana University School of Optometry; 3Department of Ophthalmology, Chang-Gung Memorial Hospital Linko

4156 — B0472 Modeling of limbal stem cell differentiation using human pluripotent stem cells. Heli Skottman1, M. H. Vattulainen1, K. Viiri1, T. Ilmarinen1. 1Faculty of Medicine and Health Technology, Tampere University

4157 — B0473 Construction and application of tissue engineered corneal epithelium from human embryonic stem cells. Jia Hu1, 2, H. Sun1, 2, S. Ou1, 2, X. He1, 2, Z. Zhao1, 2, Y. Qiu1, 2, V. Jeyalatha1, 2, P. Reinach1, Z. Liu1, 2, W. Li1, 2, 3. 1Eye institution of Xiamen university; 2Medical Sciences & Peking Union Medical College of Medicine; 3Departments of Ophthalmology and Optometry, Wenzhou Medical University; 4Xiang’an Hospital of Xiamen University

4158 — B0474 Roles of Disabled-2 in Anterior Segment Development and Corneal Opacity. Wensi Tao1, 2, J. Tse1, A. L. Sabater1, D. Pelaz1, 2, X. Xu1, 2, 3, 4, 5, 6. 1ophthalmology, Bascom Palmer Eye Institute, University of Miami; 2Cell Biology, University of Miami

4159 — B0475 Disruption of Cxcl12-Cxcr4 chemokine signaling alters neurovascular patterning during ocular development. Peter Y. Lwigale. BioSciences, Rice University

West Exhibition Hall B0518-B0557

Tuesday, April 30, 2019 2:45 PM-4:30 PM

Cornea

389 Tear film, Lacrimal and Meibomian Glands

Moderators: Matilda F. Chan, James V. Jester and Driss Zoukhir

4160 — B0518 The mechanical effects of external pressure and freezing stimulation on meibomian gland morphology in rats. Youngson Eom1, B. Kang1, X. Li1, S. Choi1, S. Ha1, H. Hwang1, H. Lee1, S. Baek1, H. Kim1, J. Song1. 1Ophthalmology, Korea University College of Medicine; 2Chuncheon Sacred Heart Hospital, Hallym University, South Korea; 3Yonsei University College of Medicine

4161 — B0519 Hyaluronan regulates Meibomian gland morphogenesis. Mingxia Sun1, 2, P. Puri1, G. J. Parfit2, K. N. Mutoji1, 2, T. F. Gesteira1, 2, J. C. Coulson-Thomas1, 3. 1Optometry, University of Houston; 2European Cancer Stem Cell Research Institute


4163 — B0521 Influence of nonpolar lipids chain length on the stability of Tear Film Lipid Layer: a molecular level view by employing in silico modeling. Lukasz Cwiklik1, K. Riedlova1, A. Olzynska1, T. Dolejsova1, 2, P. Daul1, J. Garrigue1. 1Institute of Physical Chemistry, Czech Academy of Sciences; 2Department of Genetics and Microbiology, Faculty of Science, Charles University; 3Novagali Innovation Center, Santen SAS *CR

4164 — B0522 Protein expression and functional characterization of muscarinic receptors in myoepithelial cells isolated from rat lacrimal gland. Martin Johnson, M. Winder. Pharmacology, University of Gothenburg

4165 — B0523 Role of mucins in the pathogenesis of dry eye associated with graft versus host disease (GVHD). Kiamars Shamloo, A. M. Barbarino, S. Alfuraih, A. Sharma. School of Pharmacy, Chapman University

4166 — B0524 Evaluation of the vitamin D3 levels in tear and blood of college students practicing indoor and outdoor physical activities. RENATO G. LECIA1, 2, F. Scorza1, C. Scorza1, R. Vincentini1, D. Freitas1, A. Hoffing de Lima1, F. Fonseca1, 2. 1OPHTHALMOLOGY, UNIFESP; 2OPHTHALMOLOGY, FACULDADE DE MEDICINA DO ABC; 3Neurology, UNIFESP; 4Faculdade de Medicina do ABC; 5UNIFESP

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures. *CR Refer to the Program Number in the Clinical Trial (CT) Registration Index.
4167 — B0525 Digital frequency domain approach for pO2 sensing with a microfluorometer developed for transcorneal measurements. Deanna Rankin1, V. Akshata2, M. Thanuja1, S. Lingesh1, Y. Povrozni2, B. Barbier2, S. Murugan1, S. Ranganathan1, S. P. Srivivas1.
1Indiana University; 2Computer Science, DSCE College; 3Chemical Engineering, CIT; *ISS Inc

4168 — B0526 Parameter Estimation for Tear Film Breakup Dynamics. Rayanne A. Luke1, R. J. Braun1, T. A. Driscoll2, D. Antvi1, C. G. Begley3.
1Mathematical Sciences, University of Delaware; 2School of Optometry, Indiana University

4169 — B0527 Simple Models of Tear Break Up (TBU) and Fluorescence. Richard J. Braun1, A. Manchel, R. A. Luke, C. Begley. School of Optometry, Indiana University

1Ophthalmology, Nassau University Medical Center; 2Department of Life Sciences, New York Institute of Technology; 3Ophthalmic Consultants of Long Island

4171 — B0529 Objective assessment of tear film dynamics with a novel optical method. Harilaos Ginis1, M. Kouris1, D. Theotoka1.
1Department of Clinical Metrology R&D, Johnson and Johnson Vision Care, Inc.; 2R&D, Johnson and Johnson vision care, Inc. *CR

1Clinical Metrology R&D, Johnson and Johnson Vision Care, Inc.; 2R&D, Johnson and Johnson vision care, Inc. *CR


1Institute of Physics, Universidad Autonoma de San Luis Potosi; 2Instituto de Oftalmologia Conde de Valenciana

4175 — B0533 Side-by-side comparison of branching and elongation patterns of cholesteryl esters of human and mouse meibum. Seher Yuke1, N. Bhat1, A. Wilkerson1, A. McMahan1, J. Wojcik1, J. A. Butovitch1.
1Department of Ophthalmology, University of Texas Southwestern Medical Center; 2Graduate School of Biomedical Sciences, University of Texas Southwestern Medical Center; 3Centro Oftalmologico de Valencia

4176 — B0534 Feasibility of Silicon quantum dots to study dynamics of the tear film lipids. Sidra Sarwar1, P. Mars1, R. Tilley1, J. Gooding2, M. Stapleton1, M. Wilcox1, M. Roy1.
1School of Optometry and Vision Science, University of New South Wales; 2School of Chemistry, University of New South Wales

1School of Optometry, University of California, Berkeley; 2Optometry, Clinical research center, UC Berkeley

4178 — B0536 Using molecular dynamics simulations to build a nanoscale in silicone model of the tear film lipid layer. Riku Paananen1, L. Cwiklik1.
1University of Helsinki; 2J. Heyrovsky Institute of Physical Chemistry of the Czech Academy of Sciences


1Cell Biology and Histology, University of the Basque Country; 2Servicio Central de Análisis, Facultad de Ciencia y Tecnologia, University of the Basque Country; 3Department of Physiology, Faculty of Medicine and Nursing, University of the Basque Country; 4Department of Quimica Organica II, Facultad de Ciencia y Tecnologia, University of the Basque Country; 5Department of Ophthalmology, University of the Basque Country

4181 — B0539 Topical Lacritin Peptides ‘N9-C/6’ and ‘N94’ Stabilize and Display Long Residence Time in the Tear Lipid Layer. Gordon W. Laurie1, J. Romano1, M. Odric1, D. Ryan2, K. Sia1, G. Georgiev3.
1University of Virginia; 2Fort Belvoir; 3University of Sofia *CR

4182 — B0540 Automatic tear film and tear meniscus parameter assessment in healthy subjects with ultrahigh-resolution OCT. Hannes Stegmann1, V. Aranha dos Santos1, A. Messner1, D. Schmidt1, G. Garhofer2, L. Schnettere1, R. M. Werkmeister1.
1Center for Medical Physics and Biomedical Engineering, Medical University Vienna; 2Department of Clinical Pharmacology, Medical University Vienna; 3Singapore Eye Research Institute, Singapore National Eye Centre; 4Christian Doppler Laboratory for Ocular and Dermal Effects of Thiomers, Medical University Vienna

4183 — B0541 Does inducing tear hyperosmolarity cause a change in inflammatory marker levels? Edward Ian Pearce1, A. Almutairi1, S. Alshammari1, S. Hagan1, L. Madden1.
1Vision Sciences, Glasgow Caledonian University; 2Department of Optometry, King Saud University, Riyadh; 3Department of Optometry and Vision Science, Qassim University *CR

4184 — B0542 Experimental study on SMILE-derived corneal stromal lenticule punctal plug for the treatment of rabbit dry eyes. Ying Zhou1, J. Li1, K. Li1, G. Tan1.
1Department of Ophthalmology, The First Affiliated Hospital of University of South China, Hengyang, 421001, China; 2Department of Ophthalmology, Xi’an No.4 Hospital; 3Department of refractive surgery, Xi’an AIER eye hospital

1Brien Holden Vision Institute; 2Whitaker International Foundation; 3School of Optometry and Vision Science, University of New South Wales *CR

4186 — B0544 The Use of Optical Coherence Tomography to View Eyelid Margin Vasculature. khashayar nattagh, J. Schallhorn. Ophthalmology, University of California San Francisco *CR

4187 — B0545 Effects of Mesenchymal Stem Cells Derived Exosomes on Ultrastructure of Corneal Epithelium and Function of the Tear Film in dry eye BALB/c Mice. Juan Li1, Y. Zhou1, Q. Long1.
1Department of Ophthalmology, Xi’an No.4 Hospital; 2Department of Ophthalmology, The First Affiliated Hospital of University of South China; 3Department of Neurosurgery, Xi’an Central Hospital

4188 — B0546 Comparisons between Harderian glands and Harderianized lacrimal glands in mice. Masataka Ito1, M. Takeuchi1, J. Imaki1.
1Developmental Anatomy, National Defense Med College; 2Ophthalmology, National Defense Med College

4189 — B0547 A novel approach to identifying dry eye disease using acoustically-driven microfluidic extensional rheometry. Laura E. Downie1, J. Lee1, E. Makrai1, A. McDonnell1, L. Yoo1.
1Department of Optometry and Vision Sciences, The University of Melbourne; 2School of Engineering, RMIT University *CR

4190 — B0548 Short-term High Fructose Intake Reprograms the Transcriptional Clock Rhythm of the Murine Extraorbital Lacrimal Gland. Dingli Lu1, C. Lin1, X. Jiao1, Z. Song1, J. Gu1, Z. Li1.
1Henan Eye Institute & Henan Eye Hospital, Henan Provincial People’s Hospital and People’s Hospital of Zhengzhou University; 2Key Laboratory for Regenerative Medicine&Jinan University Medical School, International Ocular Surface Research Center and Institute of Ophthalmology

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.

252

4192 — B0550 Changes in tear dynamics after surgical treatment for nasolacrimal duct obstruction: Comparative study between dacryocystorhinostomy and bicanalicular nasal intubation. Sayuri Okamoto, T. Kamao, A. Mitani, X. Zheng, A. Shiraishi. Ophthalmology, Ehime University, Graduate School of Medicine

4193 — B0551 The effect of sex on the genomics and lipidomics of Meibomian glands in humans: Created equal? Nita Bhat¹, K. Iani², R. Mancini³, J. Wojtowicz³, I. A. Butovich⁴. ¹Department of Ophthalmology, University of Texas Southwestern Medical Center; ²Centro Oftalmologico de Valencia

4194 — B0552 Elongase of Very Long Chain Fatty Acids-3 (Elov3) Is Critical for Meibum Biosynthesis in Mice. Amber Wilkerson, N. Bhat, A. McMahon, I. A. Butovich. Ophthalmology, UT Southwestern Medical Center

4195 — B0553 The α₁- adrenergic agonist, phenylephrine, increases tear cathepsin S secretion through a Rab27a-independent pathway. Runzhong Fu¹, S. Janga², M. Edman³, F. Yarber³, S. F. Hamm-Alvarez³. ¹Pharmacology and Pharmaceutical Sciences, School of Pharmacy, University of Southern California; ²Department of Ophthalmology, Roski Eye Institute, Keck School of Medicine, University of Southern California

4196 — B0554 Tear biomarkers for Parkinson’s disease in basal versus reflex tears. Maria C. Edmar¹, S. Reddy Janga², D. Freire³, D. Feigenbaum³, W. Mack³, C. T. Okamoto³, M. F. Lew³, S. F. Hamm-Alvarez³. ¹Department of Ophthalmology, Keck School of Medicine of USC; ²Department of Neurology, Keck School of Medicine of USC; ³Department of Pharmacology and Pharmaceutical Sciences, USC School of Pharmacy; ⁴Department of Preventive Medicine, Keck School of Medicine of USC

4197 — B0555 Characteristics of Dry Eye Patients with Severe Meibomian Gland Dropout. Matthew Henderson¹, V. Y. Bunya², I. Macchi³, M. Sulewski³, S. Orlin³, M. Maisaro-Giordano³. ¹Scheie Eye Institute, University of Pennsylvania; ²Dipartimento Di Oftalmologia, Clinica Accredidata Fabia Mater

4198 — B0556 Expression of inflammatory mediators and goblet cells-specific markers in eyes with glaucoma when exposed to preserved and unpreserved eye drops. Javier Moreno-Montanes¹, I. Gutierrez¹, G. Carracedo¹, M. Guirao Navarro¹, A. Guarnieri¹, E. Carnero¹. ¹Ophthalmology, Clinica Universidad de Navarra.; ²Biochemistry and Molecular Biology IV, University Complutense

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.

* Refer to the Program Number in the Clinical Trial (CT) Registration Index.
The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at [arvo.org/program-summary](http://arvo.org/program-summary).
West Exhibition Hall
Tuesday, April 30, 2019 4:45 PM-5:45 PM

391 All Posters and Networking

* Refer to the Program Number in the Clinical Trial (CT) Registration Index. *CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
The 2018 Champalimaud Vision Award recognizes the extraordinary scientific advances made by the 2018 Award winners led to the successful treatment of a genetic cause of childhood blindness, a version of Leber Congenital Amaurosis, and demonstrated the potential for future developments in gene therapy to cure other inherited diseases. Their work resulted in the first gene therapy cure for an inherited human disease. This research opens the way to revolutionary new treatments for genetic conditions. 2018 Awardees: Jean Bennett, MD, PhD and Albert M. Maguire, MD, Scheie Eye Institute, University of Pennsylvania School of Medicine and Children’s Hospital of Philadelphia Robin Ali, PhD and James Bainbridge MD, PhD, Institute of Ophthalmology of the University College London and Moorfields Eye Hospital Samuel G. Jacobson, MD, PhD and William W. Hauswirth, PhD, Scheie Eye Institute, University of Pennsylvania School of Medicine and University of Florida College of Medicine Michael Redmond, PhD, National Eye Institute, U. S. National Institutes of Health