Wednesday
May 1, 2019

ARVO Annual Meeting
Registration
Main Lobby
7am – 6pm

Exhibit hours
8:30am – 5pm

All Posters
5 – 6pm

ARVO Classical Concert
8 – 10pm
Vancouver Convention Centre
East 301

ARVO Karaoke Night
9pm – 12midnight
Blackbird Public House
905 Dunsumir St.
(tickets required)
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<th>Time</th>
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<tr>
<td>8:15 – 10am</td>
<td>401</td>
<td><strong>P2X7 receptor: One target for inflammatory responses in different ocular diseases</strong> — Minisymposium [PH, CO, IM, RE, RC]</td>
<td>East 2/3</td>
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<td></td>
<td>402</td>
<td>Retinal Degeneration [RC]</td>
<td>East 8&amp;15</td>
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<td>403</td>
<td><strong>Repurposing drugs for the treatment of retinal diseases</strong> — Minisymposium [RC, BI, RE]</td>
<td>East 11/12</td>
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<td>404</td>
<td>AMD Imaging II [RE]</td>
<td>East Ballroom B</td>
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<td>405</td>
<td>Gene editing &amp; new cell-based and animal models for ocular disease [BI]</td>
<td>East Ballroom C</td>
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<td>406</td>
<td>Corneal imaging and topography [CO]</td>
<td>West 211</td>
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<td>407</td>
<td>ERG: Advances, Disease and Injury [VN]</td>
<td>West 212-214</td>
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<td>409</td>
<td>Epidemiology of Corneal Disease [CL]</td>
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<td>410</td>
<td>Visual Impairment- Impact on Driving and Mobility [LV]</td>
<td>West 221/222</td>
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<td>411</td>
<td>Refraction, Biometry, and Myopia [VI]</td>
<td>West 223/224</td>
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<td>413</td>
<td>Corneal Neuropathy and Neovascularization [CO]</td>
<td>Harbour Ballroom</td>
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<td>10:15am – 12 noon</td>
<td>432</td>
<td>Advanced imaging technologies [MOI]</td>
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<td>433</td>
<td>Blood Flow [PH]</td>
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<td>434</td>
<td>Retinopathy of Prematurity [RE]</td>
<td>East 8&amp;15</td>
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<td>435</td>
<td>Stem Cells and Organoids [RC]</td>
<td>East 11/12</td>
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<td>436</td>
<td><strong>Precision through measurement: Biomarkers in health and disease</strong> — Minisymposium [IM, RE, VN]</td>
<td>East Ballroom A</td>
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<td>437</td>
<td>Diabetic Retinopathy-Screening and Clinical Imaging [RE]</td>
<td>East Ballroom B</td>
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<td>438</td>
<td>Corneal biomechanics, keratoconus and crosslinking [CO]</td>
<td>West 211</td>
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<td>439</td>
<td>Inner Retinal Function [VN]</td>
<td>West 212-214</td>
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<td>441</td>
<td>Retinal disease screening and risk factors [CL]</td>
<td>West 220</td>
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<td>442</td>
<td>Optic Neuropathy [EY]</td>
<td>West 221/222</td>
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<td>443</td>
<td>Myopia Progression and Control: Animal and Clinical Studies [AP]</td>
<td>West 223/224</td>
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<td>444</td>
<td>Imaging [GL]</td>
<td>ARVO Ballroom</td>
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<td>445</td>
<td>Corneal Epithelium in Health and Disease [CO]</td>
<td>Harbour Ballroom</td>
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<td>12:15 – 1:45pm</td>
<td>457</td>
<td>Eye and Brain - the interrelationship and pathology (Second Edition) — SIG [VN, EY, GL, IM, RE, MOI]</td>
<td>East 1</td>
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<td>458</td>
<td>Excellence in sight: enhancing the methodological rigor of clinical research to inform eye care practice and future research — SIG [CL, CO, GL, LE, RE]</td>
<td>East 2/3</td>
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<td>459</td>
<td>Integrating Robotics into Ophthalmic Surgery — SIG [RE]</td>
<td>East 8&amp;15</td>
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<td>461</td>
<td>Choriocapillaris Imaging with OCT Angiography — SIG [MOI, GL, RE]</td>
<td>East Ballroom A</td>
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<td>462</td>
<td>Genetics Group — Spotlight on retinal ciliopathy from genetics to mechanism [GEN]</td>
<td>East Ballroom B</td>
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Symposia, minisymposia and basic clinical lecture highlighted in **boldface**
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<tr>
<td>12:15 – 1:45pm</td>
<td>463</td>
<td>Developing Eye Drops in Ophthalmology: Practical Considerations for Smooth Translation to the Clinic — SIG [GL, AP, IM, LE, PH, RE, RC]</td>
<td>East Ballroom C</td>
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<td>(continued)</td>
<td>464</td>
<td>Scientists as entrepreneurs (or how to apply your science to business)</td>
<td>West 211</td>
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<td>465</td>
<td>How do I tell m(e)y(e) story? Why effective communication is needed now more than ever to increase research funding</td>
<td>West 212-214</td>
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<td>466</td>
<td>Clinician-scientist forum: How to become a successful clinician-scientist</td>
<td>West 217-219</td>
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<td>467</td>
<td>The role of the human microbiome in ocular disease — SIG [IM, RE, GEN]</td>
<td>West 220</td>
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<td>468</td>
<td>Overcoming the challenges of international collaboration in ocular research</td>
<td>West 221/222</td>
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<td>469</td>
<td>Ethical challenges and solutions for CRISPR treatment in human eye disorders</td>
<td>West 223/224</td>
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<td>2 – 2:45pm</td>
<td>471</td>
<td>Cogan Award and Lecture</td>
<td>ARVO Ballroom</td>
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<td>3 – 4:45pm</td>
<td>472</td>
<td>Retinitis Pigmentosa-Clinical [RE]</td>
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<td>473</td>
<td>Neuroprotection [RC]</td>
<td>East 11/12</td>
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<td>474</td>
<td>Ocular surface infection and inflammation [IM]</td>
<td>East Ballroom A</td>
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<td>475</td>
<td>AMD clinical trials [RE]</td>
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<td>476</td>
<td>Advanced therapies for ocular disease [BI]</td>
<td>East Ballroom C</td>
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<td>477</td>
<td>Dry eye clinical [CO]</td>
<td>West 211</td>
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<td>478</td>
<td>Trabecular Meshwork and Ciliary Body [GL]</td>
<td>West 212-214</td>
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<td>479</td>
<td><strong>Physiological biochemistry of the lens</strong> — Minisymposium [LE]</td>
<td>West 217-219</td>
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<td>480</td>
<td>Genetic Epidemiology [CL]</td>
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<td>481</td>
<td>Imaging in Neuro-ophthalmic Disorders [EY]</td>
<td>West 221/222</td>
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<td>482</td>
<td>The choroid in ocular physiology, pathology and myopia [AP]</td>
<td>West 223/224</td>
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<td>483</td>
<td>Surgery and Wound Healing [GL]</td>
<td>ARVO Ballroom</td>
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<td>484</td>
<td>Corneal Stroma Wound Healing and Repair [CO]</td>
<td>Harbour Ballroom</td>
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<td>6:15 – 7:45pm</td>
<td>498</td>
<td>Focal vs global: Is Keratoconus pathology driven by focal corneal tissue changes or is it a global corneal defect influenced by systemic factors? — SIG [CO, BI, GEN, MOI]</td>
<td>East 1</td>
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<td>499</td>
<td>Fluorescence lifetime imaging ophthalmoscopy from bench to bedside — SIG [IM, RE]</td>
<td>East 2/3</td>
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<td>499a</td>
<td>New perspectives on MIGS — SIG [GL]</td>
<td>East 8&amp;15</td>
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<td>499b</td>
<td>Using, fluid biopsies, for decision-making in personalized medicine in ophthalmology — SIG [CO, AP, GL, IM, RE, RC, GEN]</td>
<td>East 11/12</td>
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<td>499e</td>
<td>Wnt Signalling and regenerative medicine for retinal vascular disease — SIG [RE]</td>
<td>East Ballroom C</td>
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<td>499f</td>
<td>Military Relevant Priorities and Strategies for Injury Diagnostics and Treatments — Special Session</td>
<td>West 211</td>
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<td>499g</td>
<td>The Role of the Tie2 Pathway in Ocular Disease — Special Session</td>
<td>West 109/110</td>
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<td>8:15 – 10am</td>
<td>414</td>
<td>Lens Development [LE]</td>
<td>A0001 - A0014</td>
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<td>415</td>
<td>Anatomical changes during ocular morphogenesis and disease [AP]</td>
<td>A0015 - A0045</td>
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<td>416</td>
<td>Structure, function and optics in physiological and pathological myopia [AP]</td>
<td>A0046 - A0089</td>
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<td>417</td>
<td>Peripheral Vision, Perimetry and Cortical Function [VI]</td>
<td>A0101 - A0113</td>
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<td>418</td>
<td>Muller Cells in Health and Disease [RC, GL]</td>
<td>A0278 - A0293</td>
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<td>419</td>
<td>Retinal Trauma, PVR and Mesenchymal Transition [RC]</td>
<td>A0294 - A0306</td>
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<td>420</td>
<td>Amblyopia: Vision Screening and Epidemiology [EY]</td>
<td>A0307 - A0319</td>
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<td>421</td>
<td>Strabismus: Diagnosis and Evaluation [EY]</td>
<td>A0320 - A0336</td>
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<td>422</td>
<td>Prevalence of vision impairment [CL]</td>
<td>A0337 - A0351</td>
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<td>423</td>
<td>Patient perspectives and reported outcomes [CL]</td>
<td>A0352 - A0366</td>
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<td>424</td>
<td>Retinitis pigmentosa (clinical) I [RE]</td>
<td>A0405 - A0431</td>
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<td>425</td>
<td>Retinitis pigmentosa (clinical) II [RE]</td>
<td>A0432 - A0457</td>
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<td>426</td>
<td>OCTA in Ocular, Cerebral and Systemic Diseases/Disorders [MOI, RC]</td>
<td>A0514 - A0562</td>
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<td>427</td>
<td>Adaptive Optics [MOI]</td>
<td>A0563 - A0598</td>
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<td>428</td>
<td>Fundamentals of ocular infection 2 [IM]</td>
<td>B0108 - B0143</td>
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<td>429</td>
<td>Corneal Stroma and Keratocytes [CO]</td>
<td>B0175 - B0186</td>
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<td>430</td>
<td>Corneal Stroma and Keratocytes [CO]</td>
<td>B0187 - B0215</td>
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<td>431</td>
<td>Microbiome, Ocular Surface Diseases [CO, VN]</td>
<td>B0254 - B0302</td>
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<td>10:15am–12 noon</td>
<td>446</td>
<td>Refractive Error. Ocular Biometry and Biomechanics [VI]</td>
<td>A0090 - A0100</td>
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<td>447</td>
<td>Retinal Ganglion Cells and Optic Neuropathies [RC]</td>
<td>A0164 - A0183</td>
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<td>448</td>
<td>Neuroprotection [RC]</td>
<td>A0184 - A0210</td>
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<td>449</td>
<td>Biochemical and molecular mechanisms of age-related macular degeneration [BI, LV]</td>
<td>A0211 - A0242</td>
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<td>450</td>
<td>Retinal disease: molecular mechanisms and gene editing [BI, LV]</td>
<td>A0243 - A0277</td>
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<td>452</td>
<td>Retinal Prostheses [RE]</td>
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<td>453</td>
<td>Macular Diseases Excluding AMD [RE, RC]</td>
<td>A0458 - A0513</td>
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<td>454</td>
<td>Cornea surgery: refractive [CO]</td>
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<td>Corneal Cell and Molecular Biology [CO]</td>
<td>B0216 - B0253</td>
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<td>456</td>
<td>Trabecular Meshwork and Ciliary Body [GL]</td>
<td>B0522 - B0568</td>
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<td>3 – 4:45pm</td>
<td>485</td>
<td>ipRGCs and Circadian Rhythms [VN]</td>
<td>A0114 - A0128</td>
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<td>486</td>
<td>Ganglion cells and Beyond [VN, VI]</td>
<td>A0129 - A0163</td>
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<td>487</td>
<td>Screening and Risk Factors in Diabetic Retinopathy [RE, VN]</td>
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<td>488</td>
<td>Diabetic Retinopathy Imaging [RE, RC]</td>
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<td>489</td>
<td>Diabetic retinopathy, cytokines and growth factors [PH]</td>
<td>B0049 - B0071</td>
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<td>AMD and Antiangiogenic agents [PH]</td>
<td>B0072 - B0107</td>
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<td>491</td>
<td>Cornea and diabetes-related disorders [GEN]</td>
<td>B0303 - B0322</td>
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<td>492</td>
<td>Healthcare Delivery [CL]</td>
<td>B0323 - B0374</td>
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<td>493</td>
<td>Medical education, training, and EHR implementation [CL]</td>
<td>B0375 - B0403</td>
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<td>Imaging I [GL]</td>
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<td>495</td>
<td>Imaging II [GL]</td>
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<td>496</td>
<td>Ocular Blood Flow [GL]</td>
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Poster board numbers correspond to poster location in Exhibit Hall; A = Poster Area A, B = Poster Area B
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Retinal Cell Biology
402 Retinal Degeneration

Moderators: Rui Chen and Beatrice M. Tam

4206 — 8:15 Unfolded Protein Response Regulator, ATF6, is Essential for Stress Survival in Cone Photoreceptors. Wei-Chieh J. Chiang¹, X. Bi¹, H. Kroege², S. Landeres³, L. Cheng³, J. H. Lin³. ¹Pathology, University of California, San Diego; ²Ophthalmology, University of California, San Diego

4207 — 8:30 The Contribution of Endoplasmic Reticulum Calcium Deficiency to Mistrafficking of Cone Outer Segment Proteins in CNG Channel Deficiency. Hongwei Ma¹, E. Yang¹, M. R. Butler¹, J. Rapp¹, Y. Le¹, K. Mikoshiba¹, M. Bie¹, S. Michalakis¹, X. Ding¹. ¹The Department of Cell Biology, Univ of Oklahoma Health Sci Ctr; ²The Department of Physiology, Univ of Oklahoma Health Sci Ctr; ³RIKEN Brain Science Institute; ⁴Center for Integrated Protein Science Munich (CIPSM) and Department of Pharmacy - Center for Drug Research, Ludwig-Maximilians-Universität München

4208 — 8:45 Protective effect of shifting protein degradation from autophagy to proteasome on retinal degeneration in P23H mice. Jingyu Yao¹, Y. Qiu¹, ²L. Jia¹, K. Feathers¹, D. A. Thompson¹, D. N. Zacks¹. ¹Department of Ophthalmology & Visual Science, University of Michigan; ²Department of Ophthalmology, Xiangya School of medicine, The Second Xiangya Hospital

4209 — 9:00 Single cell RNA-Seq to elucidate the mechanism of photoreceptor degeneration heterogeneity in retinal dystrophy. Rui Chen, R. Dharmat, S. Kim, Y. Li. Molecular and Human Genetics, Baylor College of Medicine


4211 — 9:30 A Patient-Specific Point Mutation Mouse Model of X-Linked Retinoschisis by CRISPR/Cas9 System. Mao Shengru¹, Y. Zhou¹, X. Yan¹, ²Y. Li², ³Q. Sun³, J. Chen³, S. Tang³. ¹Schepens Eye Research Institute/MEEI; ²Ophthalmology, Harvard Medical School

4212 — 9:45 AAV2/4-RS1 gene therapy in the retinoschisin knockout mouse model of X-linked retinoschisis. Brittni A. Scruggs¹, ²S. Bhattacharya¹, J. Cherascu¹, V. M. Helms³, ⁴A. Salesiević¹, ²J. Laird¹, ³S. A. Baker³, ²B. Tucker², A. V. Drack³, ⁴Department of Ophthalmology and Visual Sciences, University of Iowa; ⁴Department of Biochemistry, University of Iowa

East 11/12

Wednesday, May 01, 2019 8:15 AM-10:00 AM
Retinal Cell Biology / Biochemistry/Molecular Biology / Retina
403 Repurposing drugs for the treatment of retinal diseases - Minisymposium

Repurposing of drugs used for other indications that may be successful in ameliorating pathogenic pathways important in retinal disease development is emerging as an important strategy for small molecule discovery in industry and academia. This minisymposium will focus on how already identified and approved drugs for other indications are being selected and considered as a potential treatment for retinal diseases. It will include an overview of platforms used in drug discovery, preclinical studies necessary to support the new indication for the drug, as well as protocols used to move forward to clinical trials.

Moderators: Roxana A. Radu, Konstantin Petrakhin and Joanne A. Matsubara

4213 — 8:15 Phenotype based drug discovery for the treatment of retinopathies. Brendan N. Kennedy¹, ²¹Sch of Biomolecular and Biomedical Science, University College Dublin; ²UCD Conway Institute, University College Dublin *CR

4214 — 8:32 Therapeutic potential of targeting ceramides for the treatment of retinal diseases. Nawajes A. Mandal. Ophthalmology, Univ of Tennessee, Health Science Center *CR

4215 — 8:49 FDA-approved drugs to combat inflammation and metabolic dysfunction in macular degenerations. Aparna Lakkaraju. School of Medicine, University of California, San Francisco

4216 — 9:06 Supplementation with alpha lipoic acid to treat geographic atrophy from AMD. Benjamin J. Kim. Ophthalmology, Scheie Eye Institute / UPenn *CR

4217 — 9:23 Repurposing an orally available drug to protect RPE cells and treat geographic atrophy. Alfred S. Levin. Molecular Genetics & Microbio, University of Florida *CR


4223 — 9:15 Retinal morphology and risk factors for the development of macular atrophy during extended follow up in the IVAN trial. Usha Chakravarthy, T. Peto, R. Evans, S. P. Harding, B. Reeves.


4228 — 9:00 Homology-Independent Targeted Integration in Photoreceptors. MANEL LLADO SANTAEULARIA, F. Esposito, C. Iodice, E. Marrocco, A. Auricchio.


The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
4234 — 8:45 A Coincident-Thinning Index for Identification of Keratoconus Based on OCT Pachymetry and Epithelial Thickness Maps. Elias Pavlatos, Y Li, D. Huang. Casey Eye Institute, Oregon Health & Science University *CR

4235 — 9:00 Corneal Higher-order Aberrations in Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis. Osama Ibrahim2, 1, N. Saptarsi2, 1, F. Van Asten2, 1, M. Kwiklis2, 1, K. Sossin2, 1, S. Starostik2, 1, N. Singh2, 1, D. Hernandez2, 1, E. Y. Chew5, 1, A. Singleton4, 1, A. Battle3, 1, D. A. Ferrington4, 1, N. Chatterji4, 1, R. Ratnapriya4, 1, N-NRL, Bldg 6, National Eye Institute; 1Univ Minnesota; 3Johns Hopkins Univ; 1National Institute of Aging; 1National Eye Institute


4238 — 9:45 Spatially-resolved measurement of corneal water content using Brillouin microscopy: A first pilot study of Fuchs’ patients. Amira M. Eltony2, 1, P. Shao2, 1, F. Clouser2, 1, R. Pineda1, 1, S. Yau1, 1. Wellman Center for Photomedicine, Massachusetts General Hospital; 1Harvard Medical School; 1Massachusetts Eye and Ear *CR

Wednesday – Papers/Minisymposia – 4234 – 4250

4240 — 8:30 AAV-induced re-expression of Dp71 in retinal Müller glial cells recovers electrotoretinographic responses in Dp71-null mice. Mirella T. Barbontin1, 1, C. Altendorf1, 2, A. Jaochimshthaler1, 1, A. Libr1, 1, H. Khadoum1, M. J. Roux1, 1, V. Guillonnet1, 1, D. Ventura1, 1, A. Rendon2, 1, J. J. Kremers1, 1. 1Experimental Psychology, University of Sao Paulo; 2Ophthalmology, Semmelweis University; 1Institut de la Vision; 2Neuroscience Paris-Saclay Institute (Neuro-PSI), Université Paris Sud, CNRS, Université Paris Saclay; 3University Hospital Erlangen; 4University of Strasbourg

4241 — 8:45 Rod photoreceptor recovery and pigment regeneration in bright, persistent light. Rikard Frederiksen, A. Morshedian, A. P. Sampath, G. L. Fain. Jules Stein Eye Institute, UCLA

4242 — 9:00 Photopic Negative Response in Carriers and Affected Patients with Leber’s Hereditary Optic Neuropathy. Melanie R. Lalonde1, 1, A. Kantungane1, 1, A. A. Sadun2, 1, S. G. Coupland1, 1, R. Karijl1, 1. Ophthalmology, University of Ottawa Eye Institute, Ottawa Hospital Research Institute; 2Ophthalmology, David Geffen School of Medicine at UCLA; 3Ophthalmology, Doheny Eye Institute *CR

4243 — 9:15 Extracting the ON and OFF Contributions to the Full-Field Photopic Flash Electrotoretinogram Using Serial Logistic Growth Curves. James D. Akula1, 1, L. Ambrosio2, 1, F. Howard1, 1, R. M. Hansen1, 1, A. B. Fulton1, 1. 1Ophthalmology, Boston Children’s Hospital; 2Ophthalmology, Harvard Medical School; 3Psychology, Northeastern University

4244 — 9:30 Effect of Postmortem Time on Ex Vivo Human and Mouse Electroretinogram. Fatima Abbas1, 1, A. M. Hanneke2, 1, F. Vinberg2, 1. 1Department of Ophthalmology, University of Utah; 2Department of Molecular and Experimental Medicine, The Scripps Research Institute

4245 — 9:45 Prolonged cone b-wave on electroretinography is associated with more severe inflammation in non-infectious uveitis. Anna Brouwer1, 1, M. M. van Genderen2, 2, H. Khabou1, 1, M. J. Joachimsthaler1, 1, A. Liber1, 1, H. Khadoum1, M. J. Roux1, 1, V. Guillonnet1, 1, D. Ventura1, 1, A. Rendon2, 1, J. J. Kremers1, 1. 1Department of Ophthalmology, University of Sao Paulo; 2Ophthalmology, Semmelweis University; 1Institut de la Vision; 2Neuroscience Paris-Saclay Institute (Neuro-PSI), Université Paris Sud, CNRS, Université Paris Saclay; 3University Hospital Erlangen; 4University of Strasbourg

4246 — 8:15 Beyond GWAS: Functional genomcis of age-related macular degeneration. Anand Swaroop1, F. Van Asten2, 1, M. Kwiklis2, 1, K. Sossin2, 1, S. Starostik2, 1, N. Singh2, 1, D. Hernandez2, 1, E. Y. Chew5, 1, A. Singleton4, 1, A. Battle3, 1, D. A. Ferrington4, 1, N. Chatterji4, 1, R. Ratnapriya4, 1, N-NRL, Bldg 6, National Eye Institute; 1Univ Minnesota; 3Johns Hopkins Univ; 1National Institute of Aging; 1National Eye Institute

4247 — 8:30 Whole genome methylation profiling of retinal pigment epithelium reveals differential methylation and gene expression associated with AMD. Louise F. Porter1, 2, N. Saptarsi2, 1, Y. Fang1, 1, S. Rathi1, 1, A. I. Den Hollander1, E. de Jong5, 1, S. Clark1, 1, P. N. Bishop4, 1, T. W. Olsen5, 1, T. Liloglu7, 1, V. R. Chavali5, 1, L. Paraoan5, 1Eye and Vision Science, University of Liverpool; 2Ophthalmology, St Paul’s Eye Unit, Royal Liverpool Hospital; 3Centre for Genomic Research, University of Liverpool; 4University of Pennsylvania; 5Radboud University; 6University of Manchester; 7North West Cancer Research, University of Liverpool; 8Mayo Clinic

4248 — 8:45 The effect of genetic variants associated with age-related macular degeneration decreases in individuals aged 90 years and older. Findings from the International AMD Genomics Consortium. Laura Lorés de Motta1, T. Schick2, L. Altay3, C. C. Hoyng2, 1, A. I. Den Hollander2, S. Fauser5, 1Department of Ophthalmology, Donders Institute for Brain, Cognition and Behaviour, Radboud umc; 2Department of Ophthalmology, University Hospital of Cologne

4249 — 9:00 Genome-wide association study on a large multi-ethnic sample identifies new genetic loci that predispose to keratoconus. Alison J. Hardcastle4, 1, P. G. Hysi4, 1, K. Rojas-Lopez4, 1, P. Liskova4, 1, A. E. Davidson4, 1, M. Ali4, K. P. Burdon4, 1, D. O’Brart4, 1, C. Inglehearn4, 1, P. N. Baird4, 1, C. J. Hammond4, 1, S. J. Tuft4, 1. 1UCL Institute of Ophthalmology; 2Moorfields Eye Hospital; 3King’s College London; 4Charles University and General University Hospital; 5University of Leeds; 6University of Tasmania; 7St. Thomas’ Hospital; 8University of Melbourne

4250 — 9:15 Loss of optineurin C-terminus causes significant retinal ganglion cell degeneration. Hannah Webber, H. Huang, L. Li, J. Zhang, P. Zhang, Q. Wang, Y. Hu. Ophthalmology, Stanford 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.
4251 — 9:30  Genetic studies towards determining disease mechanisms in Lmx1b mutant mice. Nicholas Tolman, S. Kneeland, S. Nair, K. MacNicol, S. Cross, K. Kizhatil, S. John.1 The Jackson Laboratory; 2University of California San Francisco; 3University of Edinburgh

4252 — 9:45  Integrative analysis of GWAS and eQTLs proposes new genetic associations and causal genes for Primary Open Angle Glaucoma. Ayellet Segre1, 2, A. Hamel1, 2, J. Roushani1, 2, A. P. Khawaja1, 4, M. J. Simcoe1, 6, C. J. Hammond1, P. G. Hysi1, 4, G. consortium 6, J. L. Wiggs1, 2. 1Ocular Genomics Institute and Department of Ophthalmology, Massachusetts Eye and Ear; 2Department of Ophthalmology, Harvard Medical School; 3NIHR Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 4Department of Public Health and Primary Care, Institute of Public Health, University of Cambridge School of Clinical Medicine; 5Department of Ophthalmology, King’s College London, St. Thomas’ Hospital; 6Department of Twin Research & Genetic Epidemiology, King’s College London, St. Thomas’ Hospital; 7Broad Institute of Harvard and MIT

4253 — 8:15  Medication exposure and cataract risk using a medication-wide association study approach. Qin Qin Liu1, 2, S. Su3, X. Yan4, X. Wang5, L. Zhang6, M. He1, 4. 1Centre for Eye Research Australia; 2University Hospital Geelong, Barwon Health; 3Monash University; 4Ophthalmology, The University of Melbourne

4254 — 8:30  Solid fuel exposure and the development of cataracts. Vikram Paranji1, 2, E. P. Rabinovich1, S. Sharma1, A. Srivastava1, A. Galor2, 4, A. Hackam1, B. H. Jeng1, N. Kumar1. 1University of Miami Miller School of Medicine; 2Bascom Palmer Eye Institute; 3Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Science; 4Ophthalmology, Miami Veterans Administration Medical Center; 5Ophthalmology, University of Maryland; 6Public Health Sciences, University of Miami Miller School of Medicine; 7School of Environmental Sciences

4255 — 8:45  Progression of Scarring in a Cohort of Women in Kongwa Tanzania. Meraf A. Wolle1, B. Munro1, H. Mkocha2, S. K. West1, 2. 1Ophthalmology, Wilmer Eye Institute, Johns Hopkins School of Medicine; 2Kongwa Trachoma Project


4258 — 8:15  Predicting early hazard detection from head scanning magnitude in individuals with hemianopia. Garrett Swan, A. Ahmadi, A. R. Bowers. Schepens Eye Research Institute of Mass Eye and Ear, Dept Ophthalmology, Harvard Medical School

4259 — 8:30  Predictors of driving performance in older adults with and without visual impairment. Joanne M. Wood1, A. A. Black2, K. Mallon1, K. Anstey2, 3. 1School of Optometry, Queensland Univ of Technology; 2School of Psychology, UNSW; 3Neuroscience Research Australia, UNSW

4260 — 8:45  The effect of visual impairment on balance and mobility in adults over age 50. Kiersten Napier-Dovero1, V. Graham1, B. Naimy1. 1Western University, College of Optometry; 2Physical Therapy, California State University, Northridge; 3Special Education and Counseling, California State University, Los Angeles

4261 — 9:00  Fall-related change in fear of falling and physical activity in persons with glaucoma. Sagar Chapagai, A. Mihailovic, D. S. Friedman, S. K. West, P. Y. Ramulu. Wilmer Eye Institute, Johns Hopkins University School of Medicine

4262 — 9:15  Progressive central vision impairment and concern about falling: a longitudinal study. Ursula White1, A. A. Black2, J. M. Wood3, K. Delbaere2. 1School of Optometry and Vision Science, Queensland University of Technology; 2Falls, Balance and Injury Centre, Neuroscience Research Australia

4263 — 9:30  Adaptations for fall preventions in patients with glaucoma. Joseph Da, A. Mihailovic, D. S. Friedman, S. K. West, P. Y. Ramulu. Wilmer Eye Institute, Johns Hopkins School of Medicine


4266 — 8:45  The association between L:M cone ratio, cone opsin genes and myopia susceptibility. Lene A. Høg1, S. Arnegard, J. A. Kuchenbecker2, S. J. Gibson, M. Neitz, J. Neitz, R. C. Baraas1. 1National Centre for Optics, Vision and Eye Care, University of South-Eastern Norway; 2Department of Ophthalmology, University of Washington Medical School

4267 — 9:00  The role of video display viewing in myopia. James A. Kuchenbecker, S. Patterson, M. Neitz, J. Neitz. Ophthalmology, University of Washington

4268 — 9:15  A potential optical mechanism of bifocal contact lenses in myopia control. Yifei Wu1, Q. Ji2, J. Lyu1, G. Yuan2. 1Flaum Eye Institute, University of Rochester; 2Center for Visual Science, University of Rochester; 3The Institute of Optics, University of Rochester

4269 — 9:30  Symmetry of ocular biometry and refraction parameters in 4 year old children. Andrew Carkert1, 2, H. M. Warnken1, A. G. Bingham1, H. Lee1, E. Major1, L. Ogí1, P. Sivasuthan1, S. Hopkins2. 1Optometry and Vision Science, QUT; 2IHBI


4273 — 8:45 Bilateral disc haemorrhages in the United Kingdom glaucoma treatment study (UKGTS): a probabilistic approach to explore a possible systemic pathophysiological mechanism. Georgios Lazaridis, J. Mohamed-Noriega, D. F. Garway-Heath. 1NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 2Centre for Medical Image Computing, University College London; 3Ophthalmology department, Autonomous University of Nuevo Leon (UANL)


4277 — 9:45 A web-based interface for ocular hemodynamics and biomechanics analysis via the Ocular Mathematical Virtual Simulator. Lorenzo Sala, G. Guidoboni, C. Prud'homme, M. Szopos, A. Verticchio, Vercellin, A. B. Stiesky, A. Harris. 1Université de Strasbourg; 2Department of Electrical Engineering and Computer Science, University of Missouri; 3Department of Mathematics, University of Missouri; 4Ophthalmology, Indiana University School of Medicine; 5Université Paris Descartes; 6Ophthalmology, University of Pavia; 7IRCCS - Fondazione Bietti

4278 — 8:15 Epigenetic regulation of miRNA boundaries by Ephrin-A3 in ocular anterior segmental epithelia. Nibal Kaplan, H. Peng, J. Park, W. Yang, S. Getsios, R. M. Lavker. 1Dermatology, Northwestern University; 2Department of Biomedical Science, Hallym University

4279 — 8:30 Pigment Epithelium Derived Factor Secreted by Corneal Epithelial Cells Regulates Dendritic Cell Maturation in Dry Eye Disease. Rohan B. Singh, P. Jha, T. Blanco, A. Amouzegar, R. Dana. Department of Ophthalmology, Harvard Medical School


4281 — 9:00 Isolation and functional characterization of epithelial and dendritic cell released exosomes in the mouse models of corneal epithelial wound healing and sensory nerve regeneration. Fushin X. Yu, N. Gao, P. S. Lee. Dept of Ophthalmology, Wayne State Univ/Kresge Eye Inst

4282 — 9:15 Subconjunctival injection of low-dose mesenchymal stem cells promotes corneal allograft survival in a mouse cornea transplantation model. Thomas Ritter, E. Donohoe, O. Treacy, K. Lynch, X. Chen, G. Fathy, A. E. Ryan, N. Murphy. 1Regenerative Medicine Institute, National University of Ireland Galway; 2Discipline of Pharmacology and Therapeutics, National University of Ireland Galway; 3University Hospital Galway, Department of Ophthalmology, National University of Ireland Galway


4284 — 9:45 Vegf Trap r1r2 Suspended In Semiflourinated Alkanes Inhibits Inflammatory Corneal Hem- And Lymphangiogenesis. Viet Nhat Hung Le, Y. Hou, M. Wit, F. Bock, C. Cursiefen. 1Department of Ophthalmology, University of Cologne; 2Novaliq GmbH

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
Wednesday Posters
8:15 am – 10:00 am

West Exhibition Hall A0001-A0014

Wednesday, May 01, 2019 8:15 AM-10:00 AM

Lens

414 Lens Development

**Moderator: Melinda K. Duncan**

4285 — A0001 Extracellular Domain of Connexin in Cell-cell Adhesion and Lens Development. Zhen Li. Departments of Biochemistry and Structural Biology, University of Texas Health Science Center, San Antonio

4286 — A0002 Genome-wide chromatin mapping and transcriptome analysis reveals chromatin regulation as a novel mechanism for controlling gene expression during lens differentiation. Joshua Disathani1, D. Chausse2, R. Gheyas3, L. A. Brennan4, D. Blanco5, L. Daley5, A. Menko1, M. Kantorov.1 1Charles E. Schmidt College of Medicine, Florida Atlantic University; 2National Institute of Health NIDDK; 3Thomas Jefferson University


4288 — A0004 Comparison of clinical performance between trifocal IOL and EDOF IOL. Yingjie Lin, X. Liang, J. Guo, X. Chen, Z. Dong. Aier School of Ophthalmology, Central South University

4289 — A0005 Developmental expression of zebrafish uBa- and uBβ-crystallin and the effect of their loss by CRISPR gene editing. Mason Posner1, B. Andrew2, K. L. Murray3, E. Kepp4, D. Farquharson2, A. Miller5, L. L. David6. 1Biology, Ashland University; 2Department of Neuroscience, University of Oregon; 3Biochemistry and Molecular Biology, Oregon Health and Science University

4290 — A0006 Transcriptional regulation of Gja8 (Cx50) promoter in lens epithelial and fiber cells. Guannan Zhao1, M. Li, C. Xia1, Y. Zhao1, D. Zheng2, A. Cvekl2, X. Gong1. 1School of Optometry, University of California, Berkeley; 2Tsinghua-Berkeley Shenzhen Institute; 3Department of Ophthalmology & Visual Sciences, Albert Einstein College of Medicine


4292 — A0008 Rbm24 post-transcriptionally controls key transcription factors in mouse eye development. Shaili Patel1, S. Dash1, L. Brastrom1, A. Scott1, D. Slosarski1, S. A. Lachke1. 1Biological Sciences, University of Iowa; 2Stowers Institute; 3University of Iowa

4293 — A0009 Characterization of lens defects in Cap2 knockout mice. Salil A. Lachke1, S. Al Saai1, Y. Xiong1, C. Toensing1, J. Field1. 1Department of Biological Sciences, University of Delaware; 2Department of Systems Pharmacology and Translational Therapeutics, University of Pennsylvania

4294 — A0010 Characterization of epithelial cell proliferation and differentiation in connexin mutant mice. Chun-hong Xia, N. Tjahjono, R. Li, S. Chu, X. Gong. School of Optometry and Vision Science Program, University of California, Berkeley

4295 — A0011 Lanosterol reverses the opacity of congenital cataract patient-specific-lentoid bodies derived from human iPSCs. Qiuli FU, D. Lyu, K. Yao. Eye Center, the 2nd Affiliated Hospital of Zhejiang University

4296 — A0012 Generating lentoids from human iPSCs using an alternative substrate to Matrigel. Yvette Wormstone, M. Wormstone. School of Biological Sciences, University of East Anglia

4297 — A0013 Leucine-rich repeats of PXDN are essential for lens development. Xiaoke Yan, J. Wang, Q. Chen, L. Kuang. Shenzhen Eye Hospital, Jinan University

4298 — A0014 Lamellar Cataract Transcription Analyses Suggest Developmental Delay in The Onset of the Differentiation Program in the Ocular Lens. Rajendra K. Gangalum1, M. Brooks2, D. Kim3, L. Gieser4, A. Swaroop5, S. P. Bhat5. 1Ophthalmology, Stein Eye Institute, UCLA; 2National Eye Institute, N.I.H.; 3Stein Eye Institute, UCLA; 4Molecular Biology Institute and Brain Research Institute, UCLA

4299 — A0015 Patient factors predicting higher rate of failure in pediatric surgical correction of nasolacrimal duct obstruction. Jamie Dietze1, D. Su1. 1Ophthalmology, University of Nebraska Medical Center; 2Ophthalmology, Children’s Hospital and Medical Center

4300 — A0016 Surface Imaging of Parasol™ and Quintess™ Punctal Plugs following extrusion. Abid Haseeb1, D. J. Oh2, O. Thomson3, S. Osmanovic4, D. P. EDWARD4, 1Ophthalmology, University of Illinois at Chicago; 2Research Resources Center, University of Illinois at Chicago; 3King Khaled Eye Specialist Hospital

4301 — A0017 IncobotulinumtoxinA (Xeomin) to treat lower eyelid entropion. Milap Mehta1, E. Ahi2. 1Ophthalmology, Northwestern University; 2Casey Eye Institute

4302 — A0018 Defining the Role of ELOVL6 in Meibogenesis in Mice. Anne McMahon1, S. Yuksei1, A. Wilkerson1, N. Bhat2, I. A. Butovich2. 1Ophthalmology, University of Texas Southwestern Medical Center; 2Graduate School of Biomedical Sciences, University of Texas Southwestern Medical Center

4303 — A0019 Qualitative assessment of human posterior poles procured with the RE-One chamber versus the traditional method. Rahul Raghu1, Y. Shani2, P. E. Fort1, K. Jones1, K. McCoy1, C. Vrba3, C. Zeleny1. 1University Hospitals Eye Institute; 2University of Michigan; 3Eversight

4304 — A0020 Comparison of Orbital Volume in Young Versus Senescent Human Skulls. Kevin Zhang1, C. Hwang2, J. Perry3. 1Case Western Reserve University School of Medicine; 2Cleveland Clinic Cole Eye Institute


4306 — A0022 Ciliary Muscle Thickness in Adults with Down Syndrome. Heather A. Anderson1, M. D. Bailey2, C. Kao1. 1College of Optometry, University of Houston; 2College of Optometry, The Ohio State University; 3Department of Mathematical Sciences, Claremont McKenna College 4CR

4307 — A0023 Diverse eye defects occur by varying the developmental timing of Hedgehog signaling. Nadeen L. Brown, S. Cheema, A. La Torre. Cell Biology and Human Anatomy, University of California Davis

4308 — A0024 Correlation of axial lengths with aqueous humor concentrations of cytokines in eyes with congenital cataract. Pingjun Chang1, F. Zhang2, 1, Y. Zhao1. 1Eye Hospital of Wenzhou Medical University; 2Wenzhou medical university

4309 — A0025 Foxc2 is required in the neural crest for proper development of Schlemm’s Canal. Pieter Norder1, L. Beckmann1, X. Zhang2, H. F. Zhang3, T. Kume1. 1Feinberg Cardiovascular and Renal Research Institute, Northwestern University; 2Biomedical Engineering, Northwestern University

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Wednesday – Posters – 4310 – 4332

**4310 — A0026** Characterization of lymphatic and blood vessels during limbal development. Euon-Ah Ye, Z. Zhang, M. Zhang, L. Chen. Optometry, University of California Berkeley

**4311 — A0027** Higher retinal microvascular fractal dimensions are associated with lower albuminuria in a subset of the UK Biobank population. Euan N. Paterson, C. Cardwell, T. MacGillivray, R. E. Hogg, B. McGuinness, P. Patel, A. Doney, E. Trucco, A. P. Maxwell, G. McKay. 1Centre for Public Health, Queen’s University Belfast; 2The VAMPIRE project, Centre for Clinical Brain Sciences, University of Edinburgh; 3Moorfields Eye Hospital and UCL Institute of Ophthalmology; 4School of Medicine, University of Dundee; 5School of Science and Engineering, University of Dundee

**4312 — A0028** Dynamic retinal arterial oscillations are changed in old and very old adults. Konstantin E. Kolliari, R. Günthner, P. Glaser, F. Schickantz, S. Angermann, T. Grimmert, J. Digel, I. Lanzl, G. Drozdov, H. Hanssen, C. Schmaderer. 1FH Aachen, Biomedical Engineering, University of Applied Sciences; 2Nephrology, Technische Universität München; 3Ophthalmologie, Technische Universität München; 4Peoples’ Friendship University of Russia; 5Sport, Exercise and Health, Universität Basel; 6Psychiatry and Psychotherapy, Technische Universität München


**4314 — A0030** SEAM Organoids Model Iris Muscle Cell Development from the Optic Cup. Bar Nachmani. Icahn School of Medicine at Mount Sinai


**4316 — A0032** Cellular and molecular mechanisms of CASK-linked optic nerve hypoplasia. Konark Mukherjee. VirginiaTech Carilion Research Institute

**4317 — A0033** Spatial Variations in Optic Nerve Mechanical Properties. Andrew Soltz1, M. N. Ruzga2, M. A. Reilly3, K. E. Swindle-Reilly3. 1Biomedical Engineering, Ohio State University; 2Department of Ophthalmology & Visual Science, Ohio State University


**4322 — A0038** Fractal Dimensional Analysis of Choroidal Vasculature using Wide Field Indocyanine Green Angiography. Benjamin K. Young, K. D. Kovacs, R. A. Adelman. 1Ophthalmology and Visual Sciences, Yale University School of Medicine; 2Ophthalmology, Cornell University

**4323 — A0039** Discovering Macrophase Role in Ocular Pathologies Using 3D Bioprinted RPE/Choroid. Russell Quinlin1, M. Song, A. Singh2, M. Doshayn, J. B. Study3, R. Life4, B. Starkey1, A. Werner1, G. Koppau1. 1National Eye Institute, National Institutes of Health; 2NCATS, National Institutes of Health

**4324 — A0040** The TAME cCSC (Treat and Maintain for Eplerenone for chronic Central Serous Chorioretinopathy) Study with the Use of Predictive Biomarkers. Guneet Solodi1, H. D’Souza1, D. Barnas-Alamadari1, H. Mohammadi1, A. Wagner1, K. Kapoor1. 1Ophthalmology, Eastern Virginia Medical School; 2Moffitt Cancer Center; 3Wagner Macula and Retina Center

**4325 — A0041** Corticosteroids and central serous choriotretiopathy: the role of the mineralocorticoid and glucocorticoid receptor in human choroidal endothelial cells. Joost Brinks, E. H. van Dijk, O. C. Meijer, C. Boon. 1Ophthalmology, Leiden University Medical Center; 2Ophthalmology, Amsterdam University Medical Center; 3Endocrinology, Leiden University Medical Center

**4326 — A0042** The Influence of Corticosteroids on Choroidal Endothelial Cells in Central Serous Chorioretinopathy. Rebecca Kaye, D. R. Christensen, A. Lotery. Ophthalmology, University of Southampton

**4327 — A0043** Interactions between Uveal Choroidal Melanocytes and Monocytes in vitro. Maja S. Udovc1, A. L. Ingerslev1, T. Jeps1, C. Faber1, S. J. Clark1, M. H. Nissen1. 1Department of Immunology and Microbiology, University of Copenhagen; 2Department of Ophthalmology, Rigshospitalet; 3Division of Evolution and Genomic Sciences, University of Manchester

**4328 — A0044** Choroidal Thickness in Central Serous Retinopathy in Patients with Active and Inactive Disease. Walter I. Rivera, S. E. Miller, R. Alhabashan, V. H. Gonzalez. 1Valley Retina Institute; 2School of Medicine, University of Texas Rio Grande Valley *CR


West Exhibition Hall A0046-A0089

Wednesday, May 01, 2019 8:15 AM-10:00 AM

**Anatomy and Pathology/Oncology**

**4310 — A0046** Evaluation of peripapillary changes in myopia with sweep source optical coherence tomography. Hua Fan. Retina, Shanghai Aier Eye Hospital

**4331 — A0047** Foveal Thickness in Myopia in Central India. Sheetal L. Bajoria1, V. Nangia2, S. Lamba1, H. Rath1, D. Jain1. 1Ophthalmology, Suraj Eye Institute; 2Retina, Suraj Eye Institute

**4332 — A0048** Sub-foveal choroidal thickness in highly myopic Nepalese subjects. Parash Gyawali1, S. N. Joshi1, R. Kharel (Sitaua)1, S. Mishra1, N. Panade1, A. Kharal1. 1Ophthalmology, Institute of Medicine; 2Center for Eye Research Ireland, Dublin Institute of Technology

**Moderator: Fuensanta A. Vera-Diaz**
4333 – A0049  Effects of low concentration atropine on pupillary size and accommodative amplitude in children with myopia. Huy D. Tran
d, 1 Y. H. Tran, 2 M. Coroneo, 3 D. T. Tran, 1 T. Pham, 1 V. T. Hu1, 4 T. Naqvi
d1, 4 P. Sankaridurg. 4 1The Brien Holden Vision Institute; 2Research and
Innovation, Hai Yen Eye Care; 3Ophthalmology, University of New South Wales; 4Pediatrics,
University of Medicine and Pharmacy at Ho Chi Minh City; 5Ophthalmology, An Sing Hospital;
6School of Optometry and Vision Science, University of New South Wales *CR

4333 – A0050  A metrological approach to the analysis of choroidal thickness by OCT in the context of myopia research. Katharina Breher1, A.
Oehlerndorf2, 3 S. Wahl1, 2 1Institute for Ophthalmic Research; 2Carl Zeiss Vision International GmbH

4333 – A0051  Low dose concentrations of atropine 0.01% and 0.1% increase subfoveal choroidal thickness in young healthy adults. Franklin Bui, X. Zhu, A. Benavente-Perez,
Biological and Vision Sciences, SUNY College of Optometry

4333 – A0052  Effect of 0.05%, 0.025%, and 0.01% atropine eye drops on corneal parameters over one year: Low-concentration Atropine for Myopia Progression (LAMP) Study, Fan Feng Li, S.
Tang, K. Lam, L. Chen, J. YAM. Department of Ophthalmology & Visual Sciences, The Chinese University of Hong Kong

4337 – A0053  The Effect of Long-Term Low-Dose Atropine on Refractive Progression in Myopic Australian School Children. Catherine Dinolfo1, W. Myles, 2 S. A. McFadden. 3 1Faculty of Health, University of Newcastle; 2Faculty of Science, University of Newcastle; 3Hunter Medical Research Institute *CR

4338 – A0054  The effect of hyperopic blur administered one day after low dose (0.01%) atropine on the choroidal thickness of young myopes. Beata P. Sander, M. J. Collins, S. A. Read.
School of Optometry, QUT

4339 – A0055  Effects of short-term imposed optical defocus on central and peripheral eye length and choroidal thickness in healthy subjects. Ingrid O. Mekountchou Koumbo1, 2 F. Conrad1, 2 P. Sankaridurg2, 2 K. Ehrmann1, 2 1The Brien Holden Vision Institute; 2School of Optometry and Vision Science, University of New South Wales


4341 – A0057  Distribution and Association of Peripapillary Choroidal Vascularity Index and Ganglion Cell Inner Plexiform Layer thickness in Myopic Children. Ajay Kumar*, N.
Khandelwal1, D. Bohar1, J. Goh1, J. Lam1, C. Ngor1, R. Agrawal1 1Tan Tock Seng Hospital Singapore; 2Ophthalmology, National University Hospital; 3National University of Singapore

4342 – A0058  Blood perfusion MRI responses of the human choroid to myopic retinal defocus. Safal Khanal1, P. R. Turnbull1, E. Vaghefi1, J. Phillips2, 3 1School of Optometry and Vision Science, University of Auckland; 2Department of Optometry, Asia University

4343 – A0059  The effects of the novel multifocal soft contact lenses on myopic eye’s peripheral refraction while looking at distance and near. Xinjie Mao. optometry center, Wenzhou eye hospital

4344 – A0060  Myopia Control Intervention Produces Absolute, rather than Relative, Treatment Effect Across the Progression Range. Noel A. Brennan1, X. Cheng1, M. A. Bullimore1
1R&D; Johnson & Johnson Vision; 2College of Optometry, University of Houston *CR

4345 – A0061  Modelling of cumulative treatment efficacy in myopia progression interventions. Xu Cheng1, N. A. Brennan1, Y. Touboul1, M. A. Bullimore1 1Johnson & Johnson Vision; 2College of Optometry, University of Houston *CR

4346 – A0062  Relationship of axial length with retinal nerve fiber layer, ganglion cell layer thicknesses and estimated retinal ganglion cell count in myopic preperimetric glaucomatous eyes. Teresa Rolle, A. Mazzucco, B. Bonetti, L. Dallorto, G. Rovera, R. Nuzzi. Surgical Sciences, University of Torino - AOU Città della Salute e della Scienza- Eye Clinic

4347 – A0063  Amphiregulin and Ocular Axial Length. wenbin wei. BEIJING TONGREN HOSPITAL,CMU

4348 – A0064  Retinal autoantibodies in high myopia. Chee Wai Wong1, 2 S. S. Sim1, G. C. Cheung2 1Ophthalmology, Singapore National Eye Centre, Singapore Eye Research Institute; 2Ophthalmology, Duke-NUS graduate medical school

4349 – A0065  Grading of retinal complications in high myopia occurring in Europeans. Anniachen Haarmann1, M. S. Tadjia1, C. Brussee1, G. A. van Rijin1, J. R. Vingerling1, J. Keunen1, C. Boon1, 1, 2 A. J. Geerards2, G. P. Luyten1, V. J. Verhoeven1, 2 C. C. Klaver2 1Ophthalmology, Erasmus MC; 2Ophthalmology & Epidemiology, Erasmus MC; 3Ophthalmology, Radboudumc; 4Ophthalmology, LUMC; 5Ophthalmology, The Rotterdam Eye Hospital; 6Clinical Genetics, Erasmus MC *CR

4350 – A0066  Histomorphometry of the choriocapillaris in high myopia. Songhomtra Panda-Jonas1, J. B. Jonas2 1Augenpraxis Dr. Panda-Jonas Prof, Jonas, Heidelberg; 2Medical Faculty Mannheim, University Heidelberg, Germany *CR


4352 – A0068  Presence and progression of atrophic areas in pathological myopia. Charlotte A. Melzer1, F. Ziemssen1, N. Euter1, C. K. Brinkmann1, H. Agostini1, G. Haeuwer-Frath1, U. Rose1, M. Schargas1, K. Lorenz1, F. G. Holz1, S. Schmitz-Valckenberg1 1Department of Ophthalmology, University of Bonn; 2Department of Ophthalmology, Eberhard Karls University Tuebingen; 3Department of Ophthalmology, University of Muenster; 4Eye Center, University of Freiburg; 5Novartis Germany; 6Asklepios Klinik North-Heidelberg Hamburg; 7Department of Ophthalmology, University of Mainz *CR

4353 – A0069  Detection of Early Changes of Posterior Staphylomas in Children and Young Adults by Ultra-wide-field OCT. Noriko Tanaka1, 2 K. Shinohora1, Y. Yokoi1, K. Uramoto1, H. Takahashi1, Y. Onishi1, S. Horie1, T. Yoshida1, K. Ohno-Matsui1 1Tokyo Medical and Dental University; 2Tokyo Metropolitan Hiroo Hospital; 3Musashino Red Cross Hospital

4354 – A0070  Histology of myopic scleral staphylomas. Jost B. Jonas1, K. Ohno-Matsui1, L. Holbach1, S. Panda-Jonas1 1Ophthalmology, Medical Faculty Mannheim-Heidelberg; 2Department of Ophthalmology and Visual Science, Tokyo Medical and Dental University; 3Department of Ophthalmology, Friedrich-Alexander University Erlangen-Nürnberg *CR


4356 – A0072  Curvature Differences in Myopic Eyes With and Without Staphyloma using OCT. Anthony N. Kuo1 1A. Liu1, C. Wong1, R. P. McNab1, S. Lee1, G. C. Cheung1, S. Saw1, Q. V. Hoang2 1Ophthalmology and Biomedical Engineering, Duke University; 2Duke-NUS; 3Ophthalmology, Duke University; 4Singapore Eye Research Institute; 5Singapore National Eye Centre; 6Singapore Eye Research Institute, Singapore National Eye Centre, Duke-NUS Medical School; 7Ophthalmology, Columbia University Medical Center

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
4357 — A0073 Optic nerve displacements during horizontal eye movements in healthy and high myopic subjects. Xiaofei Wang1, 2, Q. V. Hoang3, 4, S. Chang, L. Iannuzzi5, K. Freund, 6, D. Miled7, 8, M. J. Girard9, 10. 1Beijing Advanced Innovation Center for Biomedical Engineering, School of Biological Science and Medical Engineering, Beijing University; 2Ophthalmic Engineering & Innovation Laboratory, Department of Biomedical Engineering, Faculty of Engineering, National University of Singapore; 3Department of Ophthalmology, Edward S. Harkness Eye Institute, Columbia University College of Physicians and Surgeons; 4Singapore Eye Research Institute, Singapore National Eye Centre; 5Vitreous Retina Macula Consultants of New York; 6Duke-NUS Medical School

4358 — A0074 Length and width of the peripapillary scleral flange in relation to axial length and lamina cribrosa thickness. Shefali S. Jonas1, 2, A. A. Jonas1, 2, J. Holbach1, 2, J. B. Jonas1. 1Augenarztpraxis Dr. Panda-Jonas Prof. Jonas Heidelberg; 2Department of Ophthalmology, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany *CR

4359 — A0075 Differential Regional Stiffening of the Sclera by Collagen Cross-linking. Bola A. Gawargious1, 2, A. Le2, 3, M. Lesgart1, S. Ugardar1, 2, Bola A. Gawargious1, 2, 3. 1Biomechanics and Biophysics; 2Department of Ophthalmology, Medical School of Athens; 3Department of Ophthalmology, University of California, Los Angeles; 4Bioengineering, University of California, Los Angeles

4360 — A0076 Short-term changes in ocular biometry during accommodation in children. Rohan P. Hughes, S. J. Vincent, S. A. Read, M. J. Collins. Contact Lens and Visual Optics Laboratory, Queensland University of Technology

4361 — A0077 Myopic eyes may not expand symmetrically: investigation based on anterior and posterior scleral thickness. Pavan K. Verkicarahal1, R. Dhalal1, K. K. Vuppaboina2. 1Myopia Research - Prof Brien Holden Eye Research Centre, L V Prasad Eye Institute; 2Centre for innovation, L V Prasad Eye Institute

4362 — A0078 Anterior scleral changes with accommodation and convergence. Hamed Niyazmand, S. A. Read, M. J. Collins, D. A. Atchison. Optometry and Vision Science, Queensland University of Technology

4363 — A0079 Distribution of Ocular Biometry and its Relationship to Cycloplegic Refraction in Young Adults: Anyang University Students Eye Study (AUSE). Yunyun Sun, S. Wei, S. Li, N. Wang. Eye Center, Beijing Tongren Hospital, Capital Medical University

4364 — A0080 Peripheral Retinal Profiles and Thickness in Anisomyopia. Enian Kallamata1, N. J. Coletta, 2, G. M. Velonias3, F. A. Vera-Diaz4. 1New England College of Optometry; 2MCPHS Medical School

4365 — A0081 Assessing peripheral visual function in myopia – a qCSF study. Zhipeng Chen1, Z. Liu1, F. Hou1, S. Deng1, S. Zhang1, J. Li1. 1Zhongshan Ophthalmic Center, Sun Yat-sen University; 2Department of Psychology, The Ohio State University; 3Wenzhou Medical University *CR

4366 — A0082 Variance of peripheral refraction in young twins. Dihyenda Pusti1, A. Benito1, J. Taberner01, J. R. Ordoñana1, F. Gonzalez-Javier1, P. Areal1. 1Laboratorio de Optica, Universidad de Murcia; 2Vision and Eye Research Unit, Anglia Ruskin University; 3Murcia Twin Registry, Area of Psychobiology, Universidad de Murcia

4367 — A0083 Peripheral refraction and eye shape measurements using methods based on clinical retinal imaging. Conor Leathy1, K. G. Foote1, J. Straub1, M. H. Chueh1, M. J. Everett1, H. Bagherinia2. 1Carl Zeiss Meditec, Inc.; 2School of Optometry and Vision Science Graduate Group, UC Berkeley *CR


4369 — A0085 Cross-Retinal ERG Responses to Simulated Optical Blur in Myopia. Stephanie Aigbe1, T. Panorgias1, E. Jeong1, C. Otero3, P. White Chocolate. 1Optometry & Vision Science Research Group, University of California, Los Angeles; 2Northeastern University; 3Optometry, University of Washington

4370 — A0086 Investigating the Effect of Axial Myopia on Spatial Summation. Victoria Stapley1, R. Anderson1, 2, K. Saunders1, P. J. Mulholland1, 2. 1Optometry & Vision Science Research Group, Ulster University; 2National Institute for Health Research (NIHR) Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust & UCL Institute of Ophthalmology *CR

4371 — A0087 Remotely monitoring the face-device distance and face illumination using mobile devices: a pilot study. Norberto Lopez-Gill1, M. T. Jaskulski1, R. Salmerón-Campillo1, S. Lara-Canovas1, J. Gonzalez-Mejome1. 1Physics, UNIVERSIDAD DE MURCIA; 2Optometry, University of Indiana; 3Physics, Universidad de Minho *CR

4372 — A0088 Objective Evaluation of Daily Near Activities Distance in Progressive Myopic Children. BURCU NUROZLER TABAKCI1, C. TANRIVERD1, A. KILIC1, M. C. MROCHEN. 1Ophthalmology Department, Istanbul Medipol University; 2VIVIOR AG

4373 — A0089 Feasibility of a simple in vivo scleral tensometer: a finite element model. Christopher Chiu1, S. Kanapathippillai1, P. Sankardurg1, 2, A. Ho1, 2. 1School of Mechanical & Manufacturing Engineering, University of New South Wales; 2Brien Holden Vision Institute; 3School of Optometry & Vision Science, University of New South Wales

West Exhibition Hall A0101-A0113
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Visual Psychophysics/Physiological Optics

417 Peripheral Vision, Perimetry and Cortical Function

Moderator: Henk A. Weeber

4374 — A0101 Dark Chocolate Enhances Multi-focal Electoretinograms Compared to White Chocolate. Jeff C. Rabin, L. Renteria, M. Nguyen, C. Cha, A. Wastani, Optometry, UIW Rosenberg School of Optometry

4375 — A0102 The effect of visual field location and speed on global motion perception in children and adults. Yousef M. Shahin1, K. Meier1, D. Gischi1. 1Department of Ophthalmology & Visual Sciences, University of British Columbia; 2Psychology, University of Washington

4376 — A0103 Participation of different cortical networks in discriminating the number of motor acts and their targets revealed by fMRI. Hiromasa Sawamura2, G. A. Orban1. 1Department of Neuroscience, University of Parma; 2Department of Ophthalmology, University of Tokyo Graduate School of Medicine

4377 — A0104 Mapping contrast sensitivity of visual field with Bayesian adaptive qVFM method. Pengying Xu1, L. A. Lesmes1, D. Yu2, Z. Lu3. 1Adaptive Sensory Technology; 2Psychology, The Ohio State University; 3College of Optometry, The Ohio State University *CR

4378 — A0105 Phosphene Mapping for Intracortical Visual Prostheses. Samuel F. Weisreb1, L. Yang1, G. Kaskhedikar1, R. Sadeghi1, P. Troyk1, G. Dagnelie1. 1Wilmer Eye Institute, Johns Hopkins University School of Medicine; 2Biomedical Engineering, Johns Hopkins University; 3Biomedical Engineering, Illinois Institute of Technology *CR

4379 — A0106 What does an “artificial scotoma” simulate? Mehmet N. Ağaoğlu1, W. Fung, S. T. Chung. School of Optometry, University of California, Berkeley

4380 — A0107 Near-Optimal Combination of Disparity across the Visual Field in Glaucoma. Guido Masetto1, M. Devereux1, R. Liu1, M. Kwon1. 1Department of Experimental Psychology, Justus-Liebig University Giessen; 2Department of Ophthalmology and Visual Sciences, University of Alabama at Birmingham
4381 — A0108 Effects of myopia-associated factors and aging on visual field (VF) subfield sensitivities in normal eyes. Aiko Iwase1, M. Fujii2, Y. Ohnori3, M. Arai3. "Ophthalmology, Tajimi Iwase Eye Clinic; 1Department of Health Sciences, Osaka University; 2Ophthalmology, Kanto Central Hospital, Mutual Aid Association of Public School Teachers. *CR

4382 — A0109 A Reinforcement Learning method for Perimetry Testing. Raphael Szitniman1, S. Kucur2, P. Marquez-Neila1, M. Abegg1, S. Wolf2. "1ARTORG Center, University of Bern; 2Department of Ophthalmology, Bern University Hospital


4384 — A0111 Relationships between handheld Radial Shape Discrimination (hRSD) and Contour Integration Macular Perimetry (CIMP) testing. Meshary Alrumizan, S. P. Harding, P. Knox. "Eye and Vision Science, University of Liverpool *CR


4386 — A0113 Threshold versus intensity functions in two-color perimetry. Matthew P. Simanovic1, N. Avery2, Z. Mammo3. "1Ophthalmology, University of Sydney; 2Vitreoretinal Unit, Sydney Eye Hospital


4389 — A0280 Transcriptome and methylome analyses suggest molecular roadblocks restricting mouse Müller glia regeneration ability. Lin Siyuan, S. Chen. State Key Laboratory of Ophthalmology ZhongShan Ophthalmic Center, Sun Yat-sen University


4391 — A0282 Altered glial response in a tenascin-C deficient autoimmune glaucoma mouse model. Susanne Wiemann1, J. Reinhard2, S. Reinehr3, Z. Chir4, S. C. Joachim5, A. Faissner6. "1Cell Morphology and Molecular Neurobiology, Ruhr-University Bochum; 2Experimental Eye Research Institute, University Eye Hospital, Ruhr-University Bochum

4392 — A0283 The differential expression of aquaporin-4 (AQP4) in Müller cells from human macular and peripheral retina. Ling Zhu, Y. You, T. Zhang, M. C. Gillies. "Save Sight Institute, the University of Sydney

4393 — A0284 A theoretical investigation of the role of arachidonic acid in astrocyte vasoactive agent production. Riccardo Sacco1, G. Guidoboni1, A. G. Mauri2, B. A. Siesky3, A. Harris4. "1Mathematics, Politecnico di Milano, Italy; 2Department of Electrical Engineering and Computer Science, College of Engineering, University of Missouri; 3Eugene and Marilyn Glick Eye Institute, Indiana University *CR

4394 — A0285 Anoctamin-1 – a Ca²⁺ dependent chloride channel (CaCC) in Müller cells. Nadine Reichhart1, S. Khâli2, D. C. Otteson3, O. Strauss4. "1Experimental Ophthalmology, Charité Universitätmedizin Berlin; 2College of Optometry Department, University of Houston

4395 — A0286 The stressed optic nerve: gliopathy in hypoxic injury and potential for therapy. Louise A. Mesenier-Louro1, A. Camargo2, A. Shariati1, A. Nathan2, R. Dalal1, V. Kumar3, M. E. Darcode4, V. De Jesus Perez5, Y. J. Liao6. "1Ophthalmology, Stanford University; 2Medicine, Stanford University

4396 — A0287 A Novel Method Facilitates Acute Isolation of Rat Retinal Astrocytes. Paul Cullen, J. G. Flanagan. Optometry, UC Berkeley

4397 — A0288 Extracellular vesicles released by microglia exposed to elevated hydrostatic pressure promote retinal neural cell loss and microglia reactivity. Ana Raquel Santiago1, A. Madaan, M. Naimou2, S. Wang, J. L. Goldberg, E. G. Cameron. Stanford Medicine, Stanford


4399 — A0290 Electrostimulation improves progenitor cell potential of Muller glial cells. Sam Enayati1, H. Aouch4, K. Cho3, L. Lu5, F. Xu6, T. P. Urheim1, D. F. Chen1. "1Schepence Eye Research Institute; 2Department of Medical Biochemistry, Oslo University hospital; 3Office of Research and Development, Edith Nourse Rogers Memorial Veterans Hospital, Geriatric Research Education and Clinical Center; 4Department of Genetics, Genomics and Informatics, University of Tennessee Health Science Center

4400 — A0291 Morphology of a human central bouquet Müller cell explored using 3-dimensional volume reconstruction via connectomics. Deepayan Kar1, R. Singireddy2, J. W. Lichtman1, D. M. Dacey1, C. A. Caccio2. "Vision Science Graduate Program, University of Alabama at Birmingham; 2Department of Ophthalmology, School of Medicine, University of Alabama at Birmingham; 3Department of Molecular and Cellular Biology and Center for Brain Science, Harvard University; 4Department of Biological Structure, University of Washington *CR

4401 — A0292 Alcama is expressed in zebrafish Müller glia following retinal injury. Kristin Allan1, M. Ramos1, R. DiCicco1, A. Yuan1,2. "1Cole Eye Institute; 2Molecular Medicine, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University; 3Ophthamlic Research, Cleveland Clinic Lerner Research Institute

4402 — A0293 Mechanism of BDNF-mediated neuroprotection: critical role of Müller glia in diabetic retinopathy and age-related macular degeneration. Yao-Zheng Le1, F. Qiu1, M. Zhai1,2. "1Medicine/Endocrinology, Unv of Oklahoma Health Sciences Center; 2Cell Biology and Ophthalmology and Harold Hamm Diabetes Center, University of Oklahoma Health Science Centers
Retinal Cell Biology

419 Retinal Trauma, PVR and Mesenchymal Transition

Moderator: Leo A. Kim

4403 — A0294 Quantitative analysis of gliosis, microglia distribution, and cytokine expression profiles in rat retina following acoustic blast overpressure exposure. Lara A. Skelton1, R. S. Allen2, C. Motz2, S. Ramachandran Rao2, M. T. Purdie2, S. J. Fliesser3—1. Research Service, VA Western NY Healthcare System; 2Center for Visual and Neurocognitive Rehabilitation, Atlanta VA Healthcare System; 3Ophthalmology, Biochemistry, and Neuroscience Program, SUNY-University at Buffalo; 2Biomedical Engineering, Georgia Institute of Technology

4404 — A0295 Necroptosis in a murine repeated primary blast injury model. Chloe N. Thomas1, T. S. Rex1, A. Bernardo-Color1, E. Courtie1, G. Essex1, Z. Ahmed1, R. J. Blanch1—1. Neuroscience and Ophthalmology, Institute of Inflammation and Ageing, University of Birmingham; 2Institute of Clinical Research, University of Birmingham; 3Vanderbilt University Medical Center, Vanderbilt Eye Institute; 4Academic Department of Military Surgery and Trauma, Royal Centre for Defence Medicine

4405 — A0296 Raloxifene through its Cannabinoid Type-2 Receptor Inverse Agonism Mitigates Visual Deficits and Pathology after Mild TBI. Anton Reiner1—1. N. Del Mar2, D. Henderson2, A. Perry2, T. Ragsdale2, J. Doty2, J. Driver2, N. Guley2, W. Mitchell1, C. Li2, B. M. Moore1, M. Honig1—1. Ophthalmology, The University of Tennessee Health Science Center; 2Anatomy & Neurobiology, The University of Tennessee Health Science Center; 3Pharmaceutical Sciences, The University of Tennessee Health Sciences

4406 — A0297 Post-trauma therapy with microparticle-mediated delivery of erythropoietin. Alexandra Bernardo Colon1, S. Naguib1, M. Erwin1, T. Kavanagh1, M. Gupta1, C. Duval1, T. S. Rex2—1. Ophthalmology & Visual Science, Vanderbilt Medical Center; 2Biomedical Engineering, Vanderbilt University

4407 — A0298 Galantamine confers neuroprotection in a model of indirect traumatic optic neuropathy. Sarah Naguib1—1, A. Bernardo-Colon2, C. Cencer1, T. S. Rex1—1. Vanderbilt University; 2Vanderbilt University Medical Center

4408 — A0299 Retina microglial activation and functional deficits in an impact concussion mouse model of traumatic brain injury (TBI). Lee E. Goldstein1—1, O. Minaeva1, J. A. Moncaster1, M. Wojnarowicz1, E. Franz1, M. Muijal1, R. D. Ferguson1, I. Arellano2, L. E. Smith1, A. B. Fulton2, B. R. Huber2, D. G. Hunter2, J. Akula2—1. Radiology, Boston University; 2Ophthalmology, Boston Children’s Hospital; 3Physical Sciences Inc.; 4School of Medicine, Boston University

4409 — A0300 Myocardin-related Transcription Factor signaling is required for Myofibroblast Transdifferentiation of retinal pigment epithelial cells. Shunichiro Ueda1—1, K. McDonald2, H. Goto1, S. Tamiya3—2. Ophthalmology, Tokyo Medical University; 3Ophthalmology and Visual Sciences, University of Louisville

4410 — A0301 IL-6 Promotes Proliferative Vitreoretinopathy by Inducing Epithelial-Mesenchymal Transition via the JAK-STAT3 Signaling Pathway. Wei Xiao1, X. Chen2, W. Yang3, X. Deng1—1. Sun Yat-sen University, State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Center


4412 — A0303 Metabolic normalization protects RPE against TGFβ-induced epithelial-to-mesenchymal transition. Magali Saint-Geniez1, S. Satis1, H. Philipose2, M. rosales1—2. 1Graduate Medical Sciences, Boston University School of Medicine; 2Schepps Eye Institute of Massachusetts Eye and Ear; 3Department of Ophthalmology, Harvard Medical School

4413 — A0304 The microRNAs miR-199 and miR-17 inhibit TGFB-induced Epithelial to mesenchymal Transition of ARPE-19 cells. Heiko R. Fuchs1, R. Meister1, C. Framme1—1. Ophthalmology, Hannover Medical School

4414 — A0305 Exosome mediates epithelial mesenchymal transition cascade in retinal pigment epithelial cells. Yao Zhang1—1, H. Li2, H. Bao1, L. Wu1, S. Yang1, H. Yao1, J. Zhang2, G. Xu1, F. Wang1—1. Shanghai tenth people’s hospital; 2Tongji University

4415 — A0306 ARPE-19 cells exhibit different responses to inflammatory stimuli depending on their time in culture. Megan Jabour1, F. Liu1, T. S. Rex1—2. 1shanghai tenth people’s hospital; 2Tongji University

4416 — A0307 Quantitative visual acuity measurement in young children using tablet-based optokinetic nystagmus videography. Monte Mills2—2, E. Ciner2, G. Ying2, E. Daniel3, E. Martin3, S. Meiyappan1, E. DeSonnaz1, L. Peirish1—1. Ophthalmology, Children’s Hospital of Philadelphia; 2Scheie Eye Institute, University of Pennsylvania; 3Optometry, Salus University; 4Vifant, LLC

4417 — A0308 The Refraction Test using Spot™ Vision Screener for Health Examination for 3 year-old Children. Shunya Tatara1—2, F. Maeda1, N. Mizouno1, A. Noguchi1, K. Yoadet1—3. 1Department of Orthoptics and Visual Sciences, Niigata University Health and Welfare; 2Field of Visual Sciences, Graduate School, Niigata University of Health and Welfare; 3Fujieda Municipal General Hospital; 4Department of Ophthalmology, Yaoeda Eye Clinic; 5Division of Ophthalmology and Visual Sciences, Niigata University Graduate School of Medical and Dental Sciences

4418 — A0309 Accuracy of the Red Reflex Test to Detect Unequal Refractive Error. Aldo Vagge3—2, K. L. Mattina1, L. Nelson3—2. 1DINOGMI, University Eye Clinic of Genoa; 2Wills Eye Hospital

4419 — A0310 Vision screening using a photoscreening device doubles referral rate accuracy when compared to the chart method. Joanna Vaughan1, T. Dale1, D. Herrera2, C. Mercado3—1. Casey Eye Institute, OHSU

4420 — A0311 Refractive amblyopia risk factors in a Baltimore school population who failed vision screening: prevalence and association with visual acuity. Megan E. Collins, A. F. Shakarchi1, X. Guo1, M. X. Repka2, D. S. Friedman2—1. Ophthalmology, Johns Hopkins University School of Medicine

4421 — A0312 The Oregon Elks Preschool Vision Screening Program’s follow-up methodology. Daniel Herrera1, T. Dale1, C. Mercado1, J. Vaughan1—1. Casey Eye Institute, OHSU

4422 — A0313 Sight for Kids: Improving the Vision of Children in an At-Risk Population. Saidab Hussif1, S. Yalamanchili1, A. A. Farikll1, S. Erzurum1—1. 1Sight for All United; 2Northeast Ohio Medical University; 3Youngstown State University; 4Eye Care Associates

* 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.
Wednesday Posters
8:15 am – 10:00 am

West Exhibition Hall A0320-A0336
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Eye Movements/Strabismus/Amblyopia/Neuro-Ophthalmology

421 Strabismus: Diagnosis and Evaluation

Moderator: Joanna Black

429 — A0320 Automated assessment of ocular deviations using a consumer-grade eye tracker and 3D display. Tina Y. Gao1, L. M. Hamme2, J. Black3, P. R. Turnbull1, P. Bex4, S. Dai5, S. C. Dakin1. 1School of Optometry and Vision Science, The University of Auckland; 2Department of Psychology, Northeastern University; 3Department of Ophthalmology, Queensland Children’s Hospital; 4Department of Ophthalmology, Auckland District Health Board

430 — A0321 Abnormal temporal integration for stereoscopic vision in intermittent exotropia. Haoran Wu1, 2, X. Li4, 5, Y. Tang4, 5, B. Zhang1, Z. Yang4, 5. 1Aier School of Ophthalmology, Central South University; 2Aier Institute of Optometry and Vision Science; 3Nova Southeastern University

431 — A0322 Longitudinal change in smooth pursuit in patients with intermittent exotropia after strabismus surgery. Miharu Mihara1, 2, A. Shariati1, S. R. Lambert1. 1Byers Eye Institute at Stanford; 2Department of Ophthalmology-Visual Science

432 — A0323 An investigation of anatomical and molecular mechanisms of Congenital Special Forms of Strabismus Based on High-Resolution MRI and High-Throughput Sequencing. Yonghong Jiao1, H. Jia1, Y. Liang1, Y. Liang2, Q. Chang1, H. Wang1, S. Lin1. 1Beijing Tongren Hospital; 2University of Maryland

433 — A0324 Comparison of contrast sensitivity based on the surgical results for intermittent exotropia: success group vs overcorrection group. Soo Jung Lee, H. Kim, J. Park. Haeundae Paik Hospital


435 — A0326 Detection of strabismus by the Spot Photoscreener. Hilary Gaiser. Primary Care, New England College of Optometry

436 — A0327 Did Leonardo da Vinci have Strabismus? Assessment of binocular alignment in a historical figure. Christopher W. Tyler. SK Brain Imaging Center, Smith-Kettlewell Eye Research Institute

437 — A0328 Incidence of strabismus in children initially diagnosed with pseudostrabismus using the Optum® dataset. Won Yeol Ryu1, 2, A. Shariati1, S. R. Lambert2. 1Byers Eye Institute at Stanford; 2Department of Ophthalmology, Dong-A University College of Medicine

438 — A0329 Short-term efficacy of botulinum toxin type A in the treatment of concomitant strabismus in children. Han Su, J. Fu, X. Wu, A. Sun, B. Zhao. Beijing Tongren Eye Center, Beijing Tongren Hospital, Capital Medical University, Beijing Key Laboratory of Ophthalmology-Visual Science

439 — A0330 The Efficacy of horizontal extraocular muscle insertions distances in Ultrasound Biomicroscopy using a combination modalities. Rui Duan1, 2, J. Yang1, 2, J. Liu1, 2. 1Aier School of Ophthalmology, Central South University; 2Aier eye hospital Group Shenyang Aier Eye Hospital

440 — A0331 Extraocular muscle differentiation was inhibited in paralytic esotropia patients. xia qing, J. Yan. Zhongshan Ophthalmic Center, Sun Yat-sen University

441 — A0332 Evaluation of Early and Late Anatomic Alignment Rates in Pediatric Patients with Intermittent Type of Exodeviation. Taisa E. de Carlo, D. Maidauna, I. Jang, M. Rouabhakhzai, N. F. Azar, C. Mocan. Ophthalmology, UIC - IEEE


443 — A0334 Topical use of corticosteroids in the treatment of ocular myasthenia gravis. Minghua Shi. Department of Pediatric Ophthalmology and Strabismus, Hanyang Aier Eye Hospital

444 — A0335 Clinical and genetic analysis for the Chinese patients with CCDDs, yuan wang, J. Jiang, J. Zhu, x. Bai, L. Huang, H. Li, N. Li. Beijing children’s hospital

445 — A0336 Virtual Reality Training Program for the Diagnosis of Strabismus. Hwan Heo1, S. Park1, J. Ryu1. 1Ophthalmology, Chonnam National University Medical School; 2Education, Chonnam National University
West Exhibition Hall A0337-A0351
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Clinical/Epidemiologic Research

422 Prevalence of vision impairment

Moderator: Muhammad Sohail Halim

4446 — A0337 The Ubiquity of Ocular Surface Diseases: Identifying Eye Issues Plaguing Asian Americans. Jai G. Parekh1, 2, D. Patel1, M. Ajaj1, T. Parekh2, S. Parekh1. 1Ophthalmology, The New York Eye & Ear Infirmary of Mt Sinai; 2The Icahn School of Medicine at Mt Sinai, New York; 3EyeCare Consultants Center for Ocular Surface Excellence of New Jersey; 4New York Medical College, New York

4447 — A0338 Evaluation of timely Cerebral Visual Impairment diagnosis at Cincinnati Children’s Hospital Division of Pediatric Ophthalmology. Katherine Castleberry1, P. Cobb1, D. Tadesse1, M. Rice1. Ophthalmology, Cincinnati Children’s Hospital Medical Center; 2Biostatistics & Epidemiology, Cincinnati Children’s Hospital Medical Center


4449 — A0340 Physician interventions for children diagnosed with cerebral visual impairment at Cincinnati Children’s Hospital Medical Center (CCHMC). Melissa L. Rice1, 2, K. Castleberry1, P. Cobb1, D. Tadesse1. Ophthalmology, Cincinnati Children’s Hospital Medical Center; 2Ophthalmology, University of Cincinnati; 3Biostatistics and Epidemiology, Cincinnati Children’s Hospital Medical Center

4450 — A0341 Effectiveness of an educational intervention on glaucoma for a Mandarin-speaking population in Philadelphia: A proof of concept study. Stephanie Wey1, C. Ramsay1, L. Li1, D. Lee2, 1Sidney Kimmel Medical College at Thomas Jefferson University; 2Glaucoma, Wills Eye Hospital

4451 — A0342 Relative influences of clusters of individual characteristics, behavioral patterns and socio-economic status on the risk of age-related eye conditions. Simon Nusinovic1, L. Zhang, M. Chee, X. Chai, Y. Tham, C. Sabanayagam, T. Y. Wong, C. Cheng. Singapore Eye Research Institute

4452 — A0343 Prevalence and Correlates of Vision Impairment and Age-Related Eye Diseases Among Post-Menopausal Women: Study of Women’s Health Across the Nation, Michigan Site. Navasava Kumar2, S. Wood3, D. C. Masch3, 1S. Harlone3, C. Karvenon-Gutierrez3, 2S. Moroz3. 1Department of Ophthalmology and Visual Sciences, University of Michigan; 2Department of Epidemiology, University of Michigan School of Public Health *CR

4453 — A0344 Ophthalmological Care and Eyeglasses Distribution in Brazil’s Countryside: Descriptive and Epidemiological Data of Nearly Five Thousand Patients. Bruna G. Ferreira1, 2, R. F. Toenjes1, P. G. de Sousa1, V. d. Souza2, G. T. Torres2, M. S. Vieira1, 2, A. A. Jamall1, 2, P. H. Rim1, M. Alves1. 1State University at Campinas (UNICAMP); 2Renovatio; 3Duke University

4454 — A0345 A study of incidence of visual disabilities in Asian patients with cerebrovascular accidents. Wing Lau Ho1, J. Lai2, J. Ng3, T. Alice1. Ophthalmology, Grantham Hospital; 2Ophthalmology, University of Hong Kong

4455 — A0346 Prevalence, Causes and Risk factors for Visual Impairment: The African American Eye Disease Study (AFEDS). Bruce Burkemper1, R. McKean-Cowdin1, X. Jiang1, m. torres1, A. Fairbrother-Crisp1, R. Varna1. Southern California EyeCare and Vision Research Institute; 2Preventive Medicine, University of Southern California; 3Ophthalmology, University of Southern California *CR


4457 — A0348 Using head mounted display technology to document the prevalence of trachoma. Sheila K. West1, H. Mochca1, C. Bradley2, R. W. Massof2. 1Johns Hopkins Wilmer Eye Inst; 2Kongwa Trachoma Project

4458 — A0349 Effect of chronic exposure to high ultraviolet radiation on human eyes on the banks of Lake Titicaca, Bolivia. Marcelo Maurillo1, 4, S. Battistella1, A. Reddy2, R. Agrawal2. 1Retina and UV investigator, Instituto Privado de Ophthalmologia; 2Dean McGee Eye Institute; 3Bolivian Institute of Biology of Altitude, IBBA-UMSA University; 4Heading Chief, UV light Study Group; 5Retina Global

4459 — A0350 Visual impairment and spectacle use in university students in central China: The Anyang University Students Eye Study. shifei wei1, Y. Sun, N. Wang. Beijing Institute of Ophthalmology, Beijing Tongren Eye Center, Beijing Tongren Hospital

4460 — A0351 Comparing Eye Care at a Tertiary Eye Care Clinic to a Free Homeless Clinic. Ashlie Bernhisel1, 2, J. B. Hezcko3, B. Slagg3, J. Pettij1, A. T. Vitale2. 1Moran Eye Center; 2Ophthalmology, Shiley Eye Center; 3Ophthalmology, Duke

West Exhibition Hall A0352-A0366
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Clinical/Epidemiologic Research

423 Patient perspectives and reported outcomes

Moderator: Bamini Gopinath

4461 — A0352 The relationship between personality and eye disorders: from neuroticism in dry eye to excitement-seeking and invulnerability in refractive surgery patients. Jelle Velloh1, C. J. Hammonds1, Ophthalmology, Rijnstate Hospital; 2Academic Ophthalmology, King’s College London *CR

4462 — A0353 Are commonly used patient-reported outcome measure (PROM) questionnaires easy to read? Deanna J. Taylor, L. Jones, L. Edwards, D. P. Crabb. Optometry and Vision Science, City University *CR

4463 — A0354 Adherence patterns of glaucoma patients - a qualitative study based on narrative interviewing technique. Stefanie Frech1, M. Ritke2, A. Wolny3, A. Gamael4, A. Alitner1, R. F. Guthoff2, C. Belbig. 1Department of Ophthalmology, Rostock University Medical Center; 2Institute of General Practice, Rostock University Medical Center; 3Ophthalmic Care Unit, Rostock University Medical Center

4464 — A0355 Utility values for central vision with unilateral and bilateral ocular conditions for Korean population. Young Joo Park1, Y. Park2, S. Ahn3, S. Byun4, S. Park5. 1Ophthalmology, Seoul National University Bundang Hospital; 2Medical Research Collaborating Center, Seoul National University Bundang Hospital


4466 — A0357 Estimation of Impact of RPE65-Mediated Inherited Retinal Disease on Quality of Life. Thomas A. Ciulla4, A. Lloyd5, N. Piglowski6, S. Piltuck6, S. Johnson6, M. Buessing6, T. O’Connell6. 1Retina, Midwest Eye Institute; 2Spark Therapeutics (previously); 3Clearside Biomedical; 4Acaster Lloyd Consulting Ltd; 5Spark Therapeutics; 6Medicus Economics *CR
Wednesday Posters
8:15 am – 10:00 am

Wednesday Posters
8:15 am – 10:00 am

4467 – A0358 How patients perceive glaucoma therapy. Christian Wolfram1,2, L. Egger3, N. Pfeiffer4. *Ophthalmology, University Medical Center Mainz; *Ophthalmology, University Medical Center Hamburg *CR

4468 – A0359 Patient-centred care in glaucoma: the patients’ perspective. Panayota Founti1, U. Patel1, R. Mathew2, A. Aubrey1, E. Preston1, T. Withers1, N. Okhravi2, E. Nikita1. *Glaucoma Unit, Moorfields Eye Hospital NHS Foundation Trust; 1Department of Undergraduate Education, Moorfields Eye Hospital NHS Foundation Trust; 1Service Improvement and Sustainability, Moorfields Eye Hospital NHS Foundation Trust

4469 – A0360 The Visual Quality and its Related Life Quality of Pterygium. Jin Yuan1, z. jing2, Z. Lu2, F. Hou1, M. Dorr1, Z. Chen1, S. Zhang2. J. Li4. *cornea, Zhongshan Ophthalmic Center; *zhongshan ophthalmic center; 1Ohio State University; *School of Ophthalmology & Optometry & Eye Hospital, Wenzhou Medical University; 2Technical University of Munich *CR

4470 – A0361 Vision-Specific Quality of Life and Visual Field Loss in the African American Eye Disease Study. Dominic J. Grisafe1, R. McKean-Cowdin1, B. Burket2, M. Barrett1, m. torres1, A. Fairbrother-Crisp1, X. Jiang1, B. Xu1, R. Varna2. *Preventive Medicine, University of Southern California; *Southern California EyeCare and Vision Research Institute *CR

4471 – A0362 Does repeated intravitreal injections impact the quality of life of patients, about 40 patients? SARAH VERRECCHIA1,2,3,4. El Chehab1, R. Chudzinski1, M. Chaperon1, A. Levron1, E. Agard1, C. Dot1. *69008, Desgenettes military hospital; *69004, Croix Rousse University Hospital Center

4472 – A0363 Quality of Life and Psychosocial Aspects in Patients With Ocular Toxoplasmosis: A clinical study in a tertiary care hospital in Brazil. Aristofanes Canamaray Jr 1, C. Muccioli1, L. Silva1, M. Mangeon1, I. Ribeiro. Visual Science, Federal University of São Paulo


4474 – A0365 The Psychosocial Impact of Glaucoma: Preliminary Results on Depression. Michael Groff1,2, B. Choit1, M. Malvankar1,2. St. Joseph’s Health Care London; 1The University of Western Ontario

4475 – A0366 Using patient-reported outcome measures (PROMs) in routine paediatric ophthalmology practice: Knowledge, experience and attitudes of clinicians, Alexandra O. Robertson1, J. Rahi1,2. 1UCL Great Ormond Street Institute of Child Health; 2Great Ormond Street Hospital NHS Foundation Trust, UK

West Exhibition Hall A0405-A0431
Wednesday, May 01, 2019 8:15 AM-10:00 AM

Retina
424 Retinitis pigmentosa (clinical) I

Moderator: Eric A. Pierce

4476 – A0405 Annual change in ellipsoid zone (EZ) length in patients with choroideremia. David G. Birch1,2, K. G. Locke1, Y. Qui1, J. Holt1, D. Kim1, P. Francis1. Retina Foundation of the Southwest; *Ophthalmology, UT Southwestern Medical Center; 4D Molecular Therapeutics *CR


4478 – A0407 Key pathways and genes influenced by a drug, NK-4, in RCS rats. Shihai Liu1, T. Matsuo1, M. Miyaji1, O. Hossya1. Ophthalmology, Medical School and Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University; 2Medical Neurobiology, Graduate School of Medicine, Dentistry, and Pharmaceutical, Okayama University

4479 – A0408 Molecular studies of a novel RPRG gene mutation in a Chinese family with X-linked retinitis pigmentosa. Xinxin Zhang1, Y. Liu1, F. Liu1, T. Yan1, Y. Wang1, Y. He1, C. Liu1, q. liu1, s. lei1, X. Wang1, J. Kong1. China Medical University; 2China Medical University

4480 – A0409 Identification of a novel mutation in the IMPDH1 gene in a Chinese family with Autosomal Dominant Retinitis Pigmentosa. Youjin Wang1, F. Liu1, X. Zhang, Y. Liu, T. Yan, q. liu1, Y. He1, C. Liu1, s. lei1, X. Wang, H. Liu1, J. Kong. China Medical University

4481 – A0410 Mutations in MYO7B gene—a new suspected pathogenic gene—result in Autosomal Recesive Retinal Pigmentosa in a Chinese family. Yanyn He1, X. Zhang, Y. Wang, X. Wang, Y. Liu, T. Yan, F. Liu, q. liu1, C. Liu, s. lei1, J. Kong. China Medical University

4482 – A0411 North-Carolina Macular dystrophy like phenotype in a three generation pedigree wit autosomal dominant inheritance and exclusion of MCRD1. Ulrich Kellner1,2, H. Stohr1, B. Budde1, S. Kellner1,2, S. Weinert1,2, G. Farmand1, B. Lindau1, B. H. Weber1. *AugenZentrum Siegburg, MVZ ADTC Siegburg GmbH; *RetinaScience; *Cologne Center for Genomics, Universität Köln; *Institut für Humangenetik, Universität Regensburg

4483 – A0412 30 Hz Flicker ERG Correlates with Fundus Autofluorescence in Patients with Retinitis Pigmentosa. Thiago Cabral1,2, J. R. Carvalho-Jr1, K. S. Parks1, J. Park1, K. Boudreaux1, R. N. Belfort1, S. H. Tsang1,2. 1Department of Ophthalmology, Columbia University; 2Department of Specialized Medicine - CCS and Ebersb - Cassiano Antonio Moraes University Hospital (HUCAM), Federal University of Espirito Santo; 1Department of Ophthalmology, Federal University of Sao Paulo; 2Jonas Children’s Vision Care and Bernard & Shirley Brown Glaucoma Laboratory, Columbia University; 2Department of Statistics, University of California; 2Department of Ophthalmology, University of Montreal


4485 – A0414 Preserving functional vision through combined treatment of the retina and brain using genetically modified autologous mesenchymal stem cells in a canine model of CLN2 disease. Rebecca Whiting1, G. Robinson1, C. Tracy1, J. Pearce1, J. Ota-Kuroki1, L. Gillespie1, L. Castaner1,2, J. R. Coates1, M. L. Katz1. *Ophthalmology, University of Missouri; *Veterinary Medicine & Surgery, University of Missouri *CR


4488 – A0417 Mutation Screening of Multiple Genes in a Chinese Cohort of Sporadic Patients with Retinitis Pigmentosa. Jiuliang Yang, Z. Yang, L. Huang. University of Electronic Science and Technology of China

4489 – A0418 Whole-exome sequencing identifies a novel homozygous missense variant in REEP6 gene in a retinitis pigmentosa patient complicated with macular hole. Bo Lei. Ophthalmology, Henan Eye Institute, People’s Hospital of Henan
4490 — A0419 Macular retinal vessel density assessment of the superficial, deep plexus and choriocapillaris in patients with retinitis pigmentosa and in healthy individuals using SS-OCT Angiography. Camila Valencia-Pérez1, M. Duch-Hurtado2, D. Salom1, S. A. costa1, M. Nassisi1, M. Mohand Said1, J. Sabel1, CHNO des Quinze-Vingts, DHU Sight Restore, INSERM-DGOS CIC1423; 2 Sorbonne Université, INSERM, CNRS, Institut de la Vision

4491 — A0420 Comparison of two color vision tests in patients with Usher syndrome. Mathias Chapon1, I. S. Audo2, A. Costa1, M. Nassisi1, S. Mohand Said1, J. Sabel1; CHNO des Quinze-Vingts, DHU Sight Restore, INSERM-DGOS CIC1423; 2 Sorbonne Université, INSERM, CNRS, Institut de la Vision

4492 — A0421 A novel mutation in PEX1 gene causes an Usher-like Syndrome with early onset of Retinitis Pigmentosa and Sensorineural Hearing Loss. Maria Rosaria Barillari1, R. Brunetti-Pieretti2, V. Di Iorio1, A. De Benedictis2, A. Nesti2, P. Melli1, N. Angellillo1, G. Cappuccio1, N. Brunetti-Pieretti2, U. Barillari1, S. Banfi1, F. Testa1, F. Simonelli1; Division of Ophthalmics and Audiology, Department of Mental and Physical Health and Preventive Medicine, University of Campania Luigi Vanvitelli; Eye Clinic, Multidisciplinary Department of Medical, Surgical and Dental Sciences, University of Campania Luigi Vanvitelli; Medical Genetics, Department of Precision Medicine, University of Campania Luigi Vanvitelli; Telethon Institute of Genetics and Medicine; Section of Pediatrics, Department of Translational Medical Sciences, University of Naples Federico II

4493 — A0422 Analysis of Macular Vessel Density in Retinitis Pigmentosa with Ring of Hyper-Autofluorescence in the Posterior Pole using OCT-A. Bushra Usmani1, S. A. Shafi1, M. Iftikhar1, K. K. Dansingani1, E. Schönbach2, H. P. Scholl1; Department of Ophthalmology, University of Pittsburgh; Wilmer Eye Institute, Johns Hopkins University; Ophthalmology, University of Basel

4494 — A0423 Evaluation of choroidal characteristics and their association with cystoid macular edema in patients with retinitis pigmentosa. CLAUDIO IOVINO1, 2, A. Au1, S. Violanti1, M. B. Gorini1, D. Sarraf1; Retinal disorders and ophthalmic genetic disorders, Stein Eye Institute, UCLA; Eye Clinic, University of Cagliari

4495 — A0424 Spatial Variation of Rod-Mediated Function in Late-Onset Retinal Degeneration (L-ORD). Brett G. Jeffrey1, L. Hurwitz1, P. A. Sieving2, C. A. Cubras3; Ophthalmic Genetics and Visual Function Branch, National Eye Institute; National Eye Institute; Division of Epidemiology and Clinical Applications, National Eye Institute

4496 — A0425 Phenotype variations of retinal dystrophies caused by mutations in the PDE6B gene (MIM#613801). Le Meur Gayle1, P. Lebran1, M. Giraud1, F. Billaud1, B. BOCUQUET1, M. Delyfer1, D. Lacombe1, S. Bézieau1, I. A. Mennier1, M. Weber1; Ophthalmology Department, University Hospital of Nantes; Molecular Genetics Laboratory, University Hospital of Nantes; Genetic Department, University Hospital of Bordeaux; MAOLYA, Centre for Rare Eye Diseases; INSERM U1051, Institut des Neurosciences; Ophthalmology, University Hospital of Bordeaux

4497 — A0426 Identification of novel PROM1 mutations responsible for autosomal recessive maculopathy with rod-cone dystrophy. Xueling Luo1, J. Liang1, X. Sun1; Shanghai Jiao-Tong University

4498 — A0427 Relationship Between Changes in Densities of Photoreceptor and Retinal Vessel from Patients with Retinitis Pigmentosa. Rui Liu1, D. Paw1, F. Lu1, Z. Jie1; Laboratory for Stem Cell & Retinal Regeneration, Institute of Stem Cell Research, Division of Ophthalmic Genetics, The Eye Hospital, State Key Laboratory for Ophthalmology, Optometry & Visual Science, National Center for International Research in Regenerative Medicine and Neurogenetics, Wenzhou medical university; Ocular Imaging Laboratory, The Eye Hospital, Wenzhou Medical University

4499 — A0428 Non-identical monozygotic twins with RPGR-associated Retinitis Pigmentosa. Anika Nanda1, P. Clouston1, R. E. MacLaren1; Oxford Eye Hospital, Oxford University Hospitals NHS foundation Trust; Oxford Medical Genetic Laboratories; Nuffield department of Clinical Neurosciences, University of Oxford

4500 — A0429 Comparison of structural progression between ciliopathy and non-ciliopathy associated with autosomal recessive retinitis pigmentosa. Christine L. Xu1, V. Takahashi1, M. Apatoff1, J. T. Takiuti1, J. K. Duong1, M. A. P. Percival1, J. T. Takiuti1, J. K. Duong1, M. A. P. Percival1, J. T. Takiuti1, J. K. Duong1, M. A. P. Percival1; Ophthalmology, Columbia University Medical Center; Stanford University

4501 — A0430 Visual Field Progression in Retinitis Pigmentosa. Manlong Xu1, Y. Zhang1, I. M. MacDonald1; Department of Ophthalmology and Visual Sciences, University of Alberta

4502 — A0431 Is Visual Field Assessment Necessary in Retinitis Pigmentosa? Rebecca Cairns1, J. Jackson2, Y. Silvestri3, K. Graham4, G. Silvestri1; Ophthalmology, Belfast Health and Social Care Trust; Optometry, Belfast Health and Social Care Trust

4503 — A0432 Oxalate retinopathy is irreversible despite early combined liver-kidney transplantation in primary hyperoxaluria type 1. Yevgeniya Atiskova, S. Dulz, J. Oh, E. Grabhorn, M. Kemper, F. Brinkert. UKE

4504 — A0433 Novel Incomplete Retinal Vascularization in a Joubert Syndrome patient and an AH11 deletion. Robert K. Koenekoop1, C. Liu1, A. Khan1; McGill Ocular Genetics Laboratory, McGill University Health Centre; McGill University Health Centre

4505 — A0434 The disease course of rhodopsin (RHO)-associated retinitis pigmentosa (RP): a follow-up study. Xuan-Thanh-An Nguyen1, M. Talib1, M. J. van Schooneveld1, C. Van Cauwenbergh1, J. B. ten Brink1, R. J. Florijn1, N. Schalij-Delij1, M. M. van Genderen1, F. P. Cremers1, I. L. van den Borr1, A. A. Thijssen2, C. C. Hoyng3, C. C. Klaver3, A. A. Bergen4, B. P. Leroy4, C. Boom1, Ophthalmology, Leiden University Medical Centre; Ophthalmology, Ghent University and Ghent University Hospital; Center for Medical Genetics; Ophthalmology, Amsterdam UMC, Academic Medical Center; Clinical Genetics, Amsterdam UMC, Academic Medical Center; Bartimeus, Diagnostic Center for complex visual disorders; Human Genetics and Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center; Rotterdam Eye Hospital; Ophthalmology, Erasmus Medical Center; The Netherlands Institute for Neuroscience (NIN-KNAW); Ophthalmology, Radboud University Medical Center

4506 — A0435 Perceived Stress and Biomarkers in Retinitis Pigmentosa. Eva Sobas Abad1, A. Vazquez2, I. Isabela3, C. Lopez4, L. Leal1, S. Pastor1, J. Pastor4; IOBA (Institute of Applied Ophthalmobiology), University of Valladolid, Valladolid, Spain; Nursing school, University of Valladolid, Valladolid, Spain; RETICS (Networks for Cooperative Research in Health), Othared, Instituto de Salud Carlos III, Valladolid, Spain

4507 — A0436 Significant Relationship of Posterior Staphyloma to Choroidal Thickness in nonhighly myopic eyes with Retinitis Pigmentosa. Leila El Mati2, 3, B. Hedi Rais Institute of Ophthalmology; oculeogenetics laboratory

* 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.
4508 — A0437 Emerging Phenotypic Characteristics and Identification of Novel Mutations in Autosomal Recessive Retinitis Pigmentosa (ARRP) Associated with the EYS Gene. Roberto Gattone2, 3, I. Bleicher1, A. Iannaccone1. 1Duke University Medical Center, Duke Eye Center; 2IRCCS-Fondazione Ietti

4509 — A0438 Structural and Functional Abnormalities in Leber Congenital Amaurosis Caused by Mutations in RDH12: A Short-Term Longitudinal Study. Katherine E. Uyhazi1, 2, L. Serrano1, 2, G. Vergilio1, D. J. Pearson1, 2, A. M. Maguire1, 2, J. Bennett1, 2, T. S. Alemán1, 2. 1Ophthalmology, University of Pennsylvania; 2Ophthalmology, Center for Advanced Retinal and Ocular Therapeutics *CR

4510 — A0439 Agreement between eyes and correlation of structural and functional data in patients with Usher Syndrome-associated retinitis pigmentosa. Marco Nassirii1, 2, S. Mohand-Saïdi2, C. Devisme1, C. Da Silva1, C. Bonnet1, C. Zeitz1, S. Marlin1, C. Petit1, B. Bodaghi4, J. A. Sahel1, 2, J. S. Audo1, 2. 1Sorbonne Université, INSERM, CNRS, Institut de la Vision, 17 rue Moreau, F-75012 Paris, France; 2CHNO des INSERM, CNRS, Institut de la Vision, 17 rue Moreau, F-75012 Paris, France; 3Department of Ophthalmology, The Second Affiliated Hospital of Dalian Medical University; 4Ophthalmology, Universitätsklinikum Giessen

4511 — A0440 Identification of a novel mutation in the PRPF8 gene in a Chinese family with Autosomal Dominant Retinitis Pigmentosa. Xiaochen Wang1, 2, Y. He1, X. Zhang1, F. Liu1, 2, Y. Wang1, H. Liu1, Y. Liu1, T. Xie1, J. Kong1. 1Department of Ophthalmology, The Fourth Affiliated Hospital of China Medical University; 2Department of Ophthalmology, The Second Affiliated Hospital of Dalian Medical University

4512 — A0441 Characteristic ocular features in cases of autosomal recessive PROM1 cone-rod dystrophy. Frederick T. Collison1, G. A. Fishman1, 2, T. Nagasak1, J. McCauley2, J. C. Park2, R. Allikmets1, 2. 1Pangere Center for Inherited Retinal Diseases, The Chicago Lighthouse; 2Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago College of Medicine; 3Department of Ophthalmology, Columbia University; 4Department of Pathology & Cell Biology, Columbia University

4513 — A0442 Chromatic Pupillometry for Screening and Monitoring of Retinitis Pigmentosa. Paolo Melillo1, A. De Benedictis1, E. Villani2, M. Ferraro2, E. Iadanza2, M. Gherardelli2, F. Testa1, S. Banfi1, P. Nucci1, F. Simonelli1. 1Eye Clinic, Multidisciplinary Department of Medical, Surgical and Dental Sciences, University of Campania Luigi Vanvitelli; 2Department of Clinical Sciences and Community Health, University of Milan; 3Department of Precision Medicine, University of Campania Luigi Vanvitelli; 4Department of Information Engineering, University of Florence; 5Telethon Institute of Genetics and Medicine

4514 — A0443 Age-related changes in ERG and genotype-phenotype comparison in patients with achromatopsia. Anthony G. Robson1, 2, S. Khodaie1, S. Lewis1, M. Neveu1, 2, A. Calzagli3, 4, A. Webster2, 4, M. Michaelides2, 4. 1Electrophysiology, Moorfields Eye Hospital; 2Institute of Ophthalmology, University College London; 3School of Life and Health Sciences, Aston University; 4Moorfields Eye Hospital

4515 — A0444 Genotype-Phenotype Correlation in Inherited Retinal Diseases Caused By Biallelic CEP290 Variations. Birgit Lorenz1, 2, U. Schneider1, H. J. Bolz1, C. Friedburg1, M. Andrassi-Darida1, M. N. Preisig2, 3. 1Ophthalmology, Justus-Liebig-University Giessen; 2Ophthalmology, Universitaetsklinikum Giessen and Marburg GmbH, Giessen Campus; 3Institute of Human Genetics, University Human School of Medicine Cologne

4516 — A0445 Investigation of macular fundus shape in patients with retinitis pigmentosa using curvature maps constructed from optical coherence tomography. Monika Meinert1, S. Komorri1, S. Ueno1, H. Terasaki2. 1Ophthalmology, University of Lund; 2Ophthalmology, Nagoya University School of Medicine

4517 — A0446 Steeper macula curvature in eyes with non-highly myopic retinitis pigmentosa. Shinji Ueno1, S. Komori1, Y. Ito1, M. Meirter2, H. Terasaki2. 1Ophthalmology, Nagoya Univ School of Med; 2Ophthalmology, University of Lund


4519 — A0448 Retinitis pigmentosa caused by variants in SNNRP200. Imran H. Yasaf1, 2, J. Birtel1, M. Shank1, P. Clouston2, S. M. Downes1, 2, P. Charbel Issa1, 2, R. E. MacLaren1, 2, 3. 1Oxford University; 2Oxford Eye Hospital, John Radcliffe Hospital; 3Department of Ophthalmology, University of Bonn; 4Oxford Medical Genetics Laboratories, Oxford University Hospitals NHS Foundation Trust

4520 — A0449 Prevention of cone degeneration in Retinitis Pigmentosa by engagement of TAM family receptors on RPE. Henry J. Kaplan1, W. Wang1, D. C. Dean1. Ophthal & Vis Science, University of Louisville

4521 — A0450 Optical coherence tomography derived macular volume loss over 5 years in Stargardt disease. Fred K. Chen1, 2, S. Arunachalam1, N. Vallis1, D. Huang1, 2, Y. Chen1, J. A. Thompson1, T. McLaren1, T. Lamey1, 2, J. Roach1, 2, S. McNenachan1. 1Centre for Comparative Genomics, Murdoch University; 2Australian Inherited Retinal Disease Registry, Sir Charles Gairdner Hospital; 3Centre for Ophthalmology and Visual Science, The University of Western Australia; 4Lions Eye Institute


4523 — A0452 Structural Markers Predictive of Visual Acuity in Choroideremia. Kurt Scavelli1, 2, D. Scol2, 2, L. Serrano1, 2, K. E. Uyhazi1, J. I. Morgan1, 2, T. S. Alemán1, 2. 1Ophthalmology, Scheie Eye Institute; 2Center for Advanced Retinal and Ophthalmic Therapeutics, University of Pennsylvania

4524 — A0453 Enhanced autofluorescence ring findings in RPGR-associated retinitis pigmentosa. Won Kyung Song1, 2, A. Nanda1, J. Kapetanovic1, R. E. MacLaren1. 1Nuffield Department of Ophthalmology, University of Oxford; 2Ophthalmology, CHA University; 3Oxford University Hospital NHS foundation Trust, John Radcliffe Hospital

4525 — A0454 Assessing residual cone function in Retinitis Pigmentosa: electrophysiological and optical coherence tomography findings and correlation with visual acuity. Tasneem Ariswalla1, 2, E. E. Cornish1, 2, V. Nguyen3, R. V. Jamieson3, J. R. Grigg3, 1Save Sight Institute; 2Sydney eye hospital; 3Children’s medical research Institute

4526 — A0455 Correlation of Pregnancy and Use of the Oral Contraceptive Pill with Reported Deterioration of Vision in Patients with Inherited Retinal Dystrophies. Evelyn Moore1, S. Alexander1, L. Cashley1, G. Silverstri1. 1Royal Victoria Hospital; 2Queen’s University

4527 — A0456 Is cataract extraction and intraocular lens implant surgery a benefit for patients with Retinitis Pigmentosa. Sharon Alexander1, E. Moore1, L. Cashley1, G. Silverstri1. 1Ophthalmology, Royal Victoria Hospital; 2Queen’s University

4528 — A0457 Multimodal structural disease progression of retinitis pigmentosa according to mode of inheritance. Ruben Juarez1, 2, V. K. Takahashi1, K. S. Park1, T. Takeda1, 2, S. H. Bang1. 1Ophthalmology, Columbia University; 2Weill Cornell Medical College

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

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4530 — A0515 Optical Coherence Tomographic Angiography in Children With A History of Cataract. Zhiangliang Li, S. Liu, Y. Zhao. P. Chang, Y. Zhao. Eye Hospital of Wenzhou Medical University

4531 — A0516 Influence of significant astigmatism error in the quantitative analysis of OCT-A images. Rosal Dolz-Marco1, C. Vincash1, V. Estere2, M. Palomares1, C. Zapata-Rodriguez2, R. Gallego-Pinazo1. 1Department of Ophthalmology, OFTALVIST CLINIC; 2Optics, Optometry and Visual Science, Faculty of Physics, University of Valencia  *CR


4533 — A0518 Relationship between shape of foveal avascular zone determined by OCT angiography and metamorphopsia in epiretinal membrane patients. Hideto Terasaki1,2, H. Shihara1, H. Yamaji2, T. Uno1, S. Yamaoka1, M. Watanabe1, N. Kakizaki1, S. Sonoda1, T. Sakamoto1. 1Kagoshima University, Japan; 2Seikinai Hospital; 3Shirai Eye Hospital; 4Graduate School of Science and Engineering, Kagoshima University

4534 — A0519 Evaluating diurnal changes in choroidal sublayer perfusion in patients diagnosed with epiretinal membrane using optical coherence tomography angiography. Felix Rommel, F. Siegfried, M. Brinkmann, S. Grisanti, M. Ranjar. Department of Ophthalmology, University of Lubeck


4537 — A0522 Study of alterations in retinal and choroidal vasculature after pars plana vitrectomy (PPV) using optical coherence tomography angiography (OCTA). Seun T. Berkowitz, M. Aziz, S. Patel. Vanderbilt Eye Institute, Vanderbilt University School of Medicine

4538 — A0523 Quantification of microvascular changes after pars plana vitrectomy with peeling of the internal limiting membrane in patients with idiopathic macular hole using optical coherence tomography angiography. Peer Lauermann, J. Duell, C. van Oterendorp, H. Hoeranf, N. Feltgen, S. Bennme. Department of Ophthalmology, University Hospital Goettingen


4540 — A0525 Idiopathic Foveal Hypoplasia: Quantitative Analysis Using Optical Coherence Tomography Angiography. Hoang Mai LE1, A. Miere2, A. Peditelli2, E. H. Suchet2. 1Université Pierre et Marie Curie; 2Ophthalmology, Centre Hospitalier Intercommunal de Créteil; 3Université Paris Est Créteil

4541 — A0526 Polyps in Polypoidal Choroidal Vasculopathy appear as Tangled Vascular Structures Using Swept-Source OCT Angiography. Qiu Bo1, Q. Yan1, M. Shen2, M. Song3, M. Sun3, Y. Yu4, Y. P. Z. Rosenfeld5, F. Wang6, X. Sun6. 1Ophthalmology, Shanghai General Hospital; 2Shanghai Jiao Tong University School of Medicine; 3Bascom Palmer Eye Institute; 4Shanghai Key Laboratory of Fundus Diseases

4542 — A0527 Effect of Low-dose Photodynamic Therapy at the Choriocapillaris Level on Optical Coherence Tomography Angiography in Patients with Chronic Central Serous Chorioretinopathy. Elisa Reifelshammer1, L. Bechtel1, N. Feucht, C. Lohmann1, M. Maier. Department of Ophthalmology, Technical University of Munich

4543 — A0528 The association of pachychoroid with regional variations in choroidal structure showing reduced choriocapillaris blood flow. Pedro Fernandez Avellaneda1,2, S. Fragiotta1,2, M. P. Brezzano1, X. Xia1, L. Yannuzzi1, K. Freund1. 1Vitreous Retina Macula Consultants of New York (VRMCNY); 2Ophthalmology, Basuero University Hospital; 3U.O.S.D. Ophthalmology  *CR


4545 — A0530 Integrated evaluation of Full-Thickness Macular Holes by Optical Coherence Tomography Angiography (OCTA) and Micropereimetry. Daniele Bacherini1, M. Savastano2, F. Dragotto2, L. Finocchio3, C. Lenzetti4, A. Bittossi5, F. Giancanti5, F. Barca6, T. Caporossi7, A. Sodi7, G. Virgili8, A. Savastano9, S. Rizzo1. 1Eye Clinic, Careggi, University of Florence; 2Centro Italiano Macula, Rome, Italy

4546 — A0531 Macular Microvascular Changes in Patients With Retinitis Pigmentosa Using Optical Coherence Tomography Angiography. Yousra Falfoul1,2, E. ELLEUCH1, K. El Matri1, H. GHALP7, A. HASSAIR7. 1CHU de Rennes; 2Université Pierre et Marie Curie; 3Ophthalmology, Centre Hospitalier Intercommunal de Créteil; 4Hedi Raies Institute of Ophthalmology, oculogenetic laboratory, LR14SP01; 5LR14SP01, oculogenetic laboratory; 6Department of Family and Community Medicine, Faculty of Medicine Ibn El Jazzar Sousse

4547 — A0532 Changes in Retinal Vessel and Retinal Layer Thickness after Vitrectomy in Macula-off Retinal Detachment Using Swept-source Optical Coherence Tomography Angiography. Yong Un Shin1,2, H. Cho1, M. Seong3, E. Hong4, D. Kim5, M. Kang5. 1Dept. of Ophthalmology, Hanyang University College of Medicine; 2Hanyang University Guri Hospital

4548 — A0533 Foveal avascular zone area quantification using optical coherence tomography angiography after macula-off rhegmatogenous retinal detachment repair. Tatiana Urrea Victoria, J. Bianchi, U. de Dios Cuadras, F. Graue, R. Matsui. Retina, Instituto de Oftalmologia Conde de Valenciana

4549 — A0534 Analysis of Superficial Vascular Density in Retina after Laser Photocoagulation Using Optical Coherence Tomography Angiography. Jung Min Park1, D. Song, S. Lee2. 1Ophthalmology, Maryknoll general hospital; 2Inje University Haeundae Paik Hospital

4550 — A0535 Automated identification of large SS-OCTA choriocapillaris flow deficits in patients with posterior uveitis. Joon-Bom Kim1, Z. Chu2, A. Legocki3, K. R. Wang3, K. L. Peppe3. 1Department of Bioengineering, University of Washington; 2Department of Ophthalmology, University of Washington  *CR

4551 — A0536 Comparison between several optical coherence tomography angiography devices and indocyanine green angiography of choroidal neovascularization. Federico Corvi, M. Cozzi, M. Belotti, D. Nizza, G. Starenghi, A. Giani. Ophthalmology, Luigi Sacco Hospital University of Milan  *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.
4552 — A0537  Bietti crystalline dystrophy: within and beyond the dark atrophy. Qian Li, X. Peng1, S. Zhang2, Q. Yu1, 3; Beijing Institute of ophthalmology; 3Beijing Tongren Eye Center


4554 — A0539  Vessel and perfusion analysis using optical coherence tomography angiography in acute central serous chorioretinopathy. Dominika Podkowinski1, B. Foesl2, A. Mursch-Edelmayer3, S. Bekal, M. Ring, M. Bolz4; Kepler University Clinic, Linz; Johannes Kepler Universität

4555 — A0540  Use of Ocular Coherence Tomography Angiography in Diagnosis of Atypical Macular Telangectasia Type 2. Rahul Komat1, S. Schecher2, P. Halvey2, D. Skondra1. 1Ophthalmology and Visual Sciences, University of Chicago; 2Terry Ernest Ocular Imaging Center, University of Chicago


4559 — A0544  Changes in macular vascular network in multiple sclerosis patients with and without optic neuritis versus healthy subjects using optical coherence tomography angiography (OCTA). Marta Cerdà Ibáñez1, A. Gargallo Benedicto2, C. Valencia-Pérez3, L. Manfreda Domínguez4, A. Duch-Samper1, 4; FISABIO; 1Obispo Polanco Hospital; 2Clinic University Hospital; 3Ophthalmology-Medical School, University of Valencia

4560 — A0545  Optical Coherence Tomography Angiography in Multiple Sclerosis: A Prospective Study. Maurizio Fossarello, P. Napoli, R. Farci. Eye Clinic, University of Cagliari

4561 — A0546  Retinal microvascular health and what it tells us about cognitive function: the Eye Determinants of Cognition (EyeDOC) Study. Alison Abraham1, X. Guo1, X. Kong1, R. Sharrett1, D. Huang, P. Y. Ramulu1. 1Johns Hopkins School of Medicine; 2Epidemiology, Johns Hopkins Bloomberg School of Public Health; 3Casey Eye Institute *CR


4563 — A0548  Retinal changes in early-onset Alzheimer disease. Alice Laughlin2, J. Ringman3, B. S. Ashinmate1, A. Shahideh2, A. H. Kashani1. 1Ophthalmology, Keck School of Medicine, University of Southern California; 2Neurology, University of Southern California *CR

4564 — A0549  Evaluation of ocular perfusion in Alzheimer’s Disease using optical coherence tomography angiography. Natasa Mihailovic1, E. Esser1, F. Schubert1, J. L. Lauermann1, L. Lahme1, A. Johnen1, N. Eter2, T. Duning1, M. Alnawaiseh1. 1Department of Ophthalmology, University of Muenster Medical Center; 2Department of Neurology, University of Muenster Medical Center

4565 — A0550  Evaluation of potential biomarkers in multimodal retinal images for diagnosis of Parkinson’s disease: a pilot study. Paranjit K. Bhullar2, E. Pead1, A. C. Thompson1, S. P. Yoon1, D. S. Grewal1, B. Polakzik2, T. MacGillivray1, E. Trucot2, S. Februs1. 1Department of Ophthalmology, Duke University School of Medicine; 2Trinity College, Duke University; 3Department of Clinical Brain Sciences, University of Edinburgh; 4University of Dundee; 5Queen’s Medical Research Institute *CR

4566 — A0551  Characterizing changes in retinal perfusion in high risk pregnancies with optical coherence tomography angiography. Benjamin R. Lin1, F. Lin1, Z. Daily1, S. Balasubramanian1, I. K. Tsui2, S. Gaw1, C. Janzen1, A. Huang1, S. R. Sadda1, I. A. Tsui1. 1Ophthalmology, Stein Eye Institute; 2Ophthalmology, Doheny Eye Institute; 3Obstetrics/Gynecology, UCLA; 4Obstetrics/Gynecology, UCSF *CR


4568 — A0553  Examination of retinal thickness, vessel density and foveal avascular zone size using optical coherence tomography angiography (OCTA) in children with sickle cell disease. Sally S. Ong1, M. Linz2, F. Han2, A. Scott. 1Ophthalmology, Wilmer Eye Institute; 2Ophthalmology, University of Iowa

4569 — A0554  Choriocapillaris atrophy in ABCA4 retinopathy is secondary to retinal pigment epithelium impairment. Karen S. Park1, 2, J. Rauedge1, J. Sparrrow2, 3, A. Allickmets2, 4, S. H. Tsang1, 2; Jonas Children’s Vision Care and Bernard & Shirley Brown Glaucoma Laboratory, Columbia University; 2Department of Ophthalmology, Columbia University Medical Center; 3Weill Cornell Medical College; 4Departments of Pathology and Cell Biology, Columbia University Medical Center

4570 — A0555  Evaluation of ocular perfusion in patients with atriol fibrillation using optical coherence tomography angiography. Maged Alnawaiseh1, P. Lange1, E. Esser2, N. Mihailovic1, F. Schubert1, L. Eckardt1, N. Eter2; Dept. of Ophthalmology, University of Muenster Medical Center; 2Department of Cardiovascular Medicine, University of Muenster Medical Center


4572 — A0557  Retinal Avascular Foveal Zone as a systemic biomarker to evaluate Inflammatory Bowel disease control. Luis Nakayama1, V. C. Bergamo1, M. L. Conti1, L. Costa2, N. S. Moraes1, O. A. Junior2, 3Retina and Vitreous, Federal University of São Paulo; 4 São Paulo Federal University

4573 — A0558  Impaired retinal capillary perfusion assessed by optical coherence tomography angiography in patients with recent systemic hypertensive crisis. Jan H. Terheyden1, M. W. Wintergerst1, C. Pizarro2, F. G. Holz3, R. P. Finger1. 1Dept. of Ophthalmology, University of Bonn; 2Dept. of Internal Medicine II, University of Bonn *CR


4575 — A0560  Detection of early retinal vascular structural changes of Pre-eclamptic patients using Optical Coherence tomography Angiography. omar helmy1, Y. Nguyen1, D. Alexandrou1, H. Lefwicht, S. Schaaf2. 1Ophthalmology, University of Massachusetts; 2Obstetrics and Gynecology, University of Massachusetts; 3College of Holy Cross; 4University of Rochester

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

4576 — A0561 Familial Hypercholesterolaemia: The Influence Of Lipoprotein Apheresis On Choroid And Retina. An OCT and OCTA Retrospective Study. Elena Pascual1, L. Pannarale1, F. Pacella1, E. Trovato Battaglia1, M. Forastiere1, C. Stefaniutti1. 1Department of Ophthalmology, La Sapienza University of Rome; 2Department of Anatomical, Histological, Forensic Medicine and Orthopaedics Sciences, La Sapienza University of Rome; 3Department of Molecular Medicine, La Sapienza University of Rome

4577 — A0562 Changes in Macular Ganglion Cell Complex Thickness and Vessel Density in Chronic Kidney Disease Detected by Optical Coherence Tomography. XiaoNing Wang1, Y. You2. 1Wenzhou Medical University; 2The First Affiliated Hospital of Wenzhou Medical University

West Exhibition Hall A0563-A0598

Wednesday, May 01, 2019 8:15 AM-10:00 AM
Multidisciplinary Ophthalmic Imaging Group

427 Adaptive Optics

Moderators: Ravi Jonnal and Kazuhiro Kurokawa

4578 — A0563 Assessing interocular symmetry of foveal cone density. Jenna Cava1, R. Mastey1, M. Alphirin1, R. F. Cooper4, J. Carroll2. 1Ophthalmology, Medical College of Wisconsin; 2School of Medicine, Medical College of Wisconsin; 3Psychology, University of Pennsylvania; 4Ophthalmology, University of Pennsylvania

4579 — A0564 In vivo imaging of retinal ganglion cells in the human eye with adaptive optics retinal coherence tomography. Shin Kadomoto1, A. Uji1, Y. Muraoka1, R. Tamiya1, K. Nozato1, A. Tsujikawa1. 1Department of Ophthalmology and Visual Sciences, Kyoto University; 2CANON INC. *CR


4581 — A0566 Generating tomographic retinal cross-sections using non-interferometric Adaptive Optics Ophthalmoscopes - Optical Incoherence Tomography. Pedro Mecé1, E. Gofas Salas1, C. Petit1, A. Chen2, J. A. Sahel3, 4, M. Paques1, 4, K. Grieve2, 4, S. Meimon1. 1Institute Langevin, ESPCI Paris, PSL University; 2ONERA; 3CIC 1423, INSERM, Quinze-Vingts Hospital; 4Institut de la Vision, Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS; 5Quantel Medical; 6Department of Ophthalmology, The University of Pittsburgh School of Medicine *CR

4582 — A0567 Interference effects and cone reflectivity in adaptive optics retinal imaging. Alexander Meadway, L. C. Sinch. Optometry and Vision Science, University of Alabama at Birmingham

4583 — A0568 Automatic discrimination of occult macular dystrophy by deep learning using fundus images of Adaptive Optics Scanning Laser Ophthalmoscopy. Masakazu Hirota1, T. Morimoto1, S. Miyagawa1, T. Miyoshi1, T. Fujikado1. 1Applied Visual Science, Osaka University Graduate School of Medicine; 2Topcon; 3Integrative Physiology, Osaka University Graduate School of Medicine *CR, *

4584 — A0569 Natural history of foveal cone structure in RPE65-associated Leber congenital amaurosis (LCA). Angelos Kalizeios1, N. Kumarani1, M. Georgiou1, N. Singh1, T. Kane2, M. Kasilani3, 4, A. Dubra1. 1Ophthalmology, Boston Children’s Hospital, 2Eye Centre, University College London; 3Moorefields Eye Hospital NHS Foundation Trust; 4Ophthalmology, Stanford University; 5Ophthalmology & Visual Sciences, Medical College of Wisconsin *CR, *


4586 — A0571 Assessing Foveal Cone Mosaic in White Dot Syndromes. Muhammad Sohail Hamid1, M. S. Ormaechea2, N. Sredar1, G. Uludag1, M. M. Razeen1, A. N. Tran1, S. Mahajan1, M. Hassan1, R. Afridi1, K. Y. Al-Kirwi1, J. Bae1, D. V. Do1, Y. Sepah1, A. Dubra1, Q. D. Nguyen1. 1Byers Eye Institute, Palo Alto, CA; 2Ophthalmology, Hospital Universitario Austral


4588 — A0573 Identifying transient flow phenomena in retinal capillaries. Phillip A. Bedggood, A. Metha. Optometry & Vision Sciences, University of Melbourne

4589 — A0574 Is it the basal laminar deposits or the basalis deposits? Observation by adaptive optics ophthalmoscopy of punctate hyperreflectivity in geographic atrophy. Chiara M. Eandi1, 2, K. Grieve1, F. Semmlaub1, s. mrejen3, M. Paques1, 4, 5. 1Eye Clinic, University Torino; 2Istituto de la Vision; 3CHNO 15-20

4590 — A0575 Short Wavelength Multiplex Imaging Using the Multimodal Adaptive Optics Small-animal Imager (MAOSI). Yang Liu1, R. D. Ferguson1, M. Mujat1, G. N. Maguluri1, J. D. Akula1, N. Iftimia1. 1Physical Sciences Inc; 2Ophthalmology, Boston Childrens’s Hospital, Harvard Medical School *CR

4591 — A0576 Investigating retinal disease with in vivo near-infrared autofluorescence adaptive optics imaging of retinal pigment epithelium. Elena Gofas Salas1, K. Grieve1, R. D. Ferguson1, J. A. Sahel2, 4, M. Paques4, E. A. Rossi1. 1Vision Institute & Quinze-Vingts Hospital; 2Department of Ophthalmology, University of Pittsburgh; 3Physical Sciences, Inc. *CR

4592 — A0577 Deep learning multimodal detection and classification of cone and rod photoreceptors in adaptive optics scanning light ophthalmoscope images. David Cunefare1, A. Huckenplaher2, E. J. Patterson2, A. Dubra1, J. Carroll1, 4, S. Farsiu1, 2. 1Biomedical Engineering, Duke University; 2Cell Biology, Neurobiology & Anatomy, Medical College of Wisconsin; 3Ophthalmology & Visual Sciences, Medical College of Wisconsin; 4Ophthalmology, Stanford University; 5Ophthalmology, Duke University *CR

4593 — A0578 Evaluating different methods for marking cones in simulated and in vivo retinal images. Suman Adhikari1, G. Musia1, H. Mihrajianmoghadam1, A. W. Schill2, 4, H. M. Queener1, J. Carroll1, 4. 1Optometry, University of Houston; 2Biomedical Engineering, University of Houston; 3Department of Ophthalmology & Visual Sciences, Medical College of Wisconsin

4594 — A0579 Natural history and impact on photoreceptors of subretinal drusenoid deposits in age-related macular degeneration. Xiaolin Wang1, M. Clark1, B. Gu1, C. Witherspoon1, C. Owsley1, 2, C. Curcio1, Y. Zhang1. 1Ophthalmology and Visual Sciences, University of Alabama at Birmingham; 2Doheny Eye Institute, Department of Ophthalmology, University of California - Los Angeles *CR


4596 — A0581 Characterizing spatial and temporal heterogeneity in retinal capillary blood flow. Srividya Neriyanuri1, P. A. Bedggood1, R. A. Symons1, 2, A. Metha1. 1Optometry and Vision Sciences, The University of Melbourne; 2Ophthalmology, The Royal Melbourne hospital

4597 — A0582 Blood Flow Parameters from Computational Fluid Dynamics Modeling Associated with Clotting and Local Neuromotor Dysfunction in Diabetic Microaneurysms. Jennifer K. Sun1, O. Abu-Qamar1, K. Sampali1, W. Fickweller1, L. P. Aiello2, 4, M. Bernabei4, 5. 1Beetham Eye Inst & Eye Rsc Sec, Joslin Diabetes Center; 2Ophthalmology, Harvard Medical School; 3Internal Medicine, University of Missouri; 4The University of Edinburgh; 5University College London *CR

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

4599 — A0584 Longitudinal study of in-vivo Cone Photoreceptor Structural – Functional Changes in Ischemic Diabetic Maculopathy. Nick Mathiak1, K. K. Dansingani1, T. Smith1, M. Michaelides2, P. Coffey1, L. De Cruz1, 1Moorefield’s Eye Hospital & UCL Institute of Ophthalmology; 2UPMC Eye Centre, University of Pittsburgh Medical Centre; 3Casey Eye Institute, Oregon and Health Sciences University; 4UCL Institute of Ophthalmology; 5National Institute for Health Research (NIHR) Biomedical Research Centre for Ophthalmology


4601 — A0586 Aberration corrected in vivo imaging of the retinal cone mosaic using a simple, full-field OCT approach. Helge M. Sudkamp1, D. Hillmann1, P. Koch1, C. von der Burchard1, M. vom Endt1, M. Münst1, R. Birngruber1, J. Roider1, G. Huttmann1, 1Medizinisches Laserzentrum Lübeck GmbH; 2Thorlabs GmbH; 3Augenklinik Kiel, UKSH; 4Institut für Biomedizinische Optik, Universität zu Lübeck *CR

4602 — A0587 Cone photoreceptor structure in RPR-associated retinopathy. Navijit Singh1, T. Kane2, Y. Yang2, J. Toe2, M. Kasili1, A. Kalitzeos2, M. Michaelides1. 1UCL Institute of Ophthalmology; 2Moorefield’s Eye Hospital NHS Foundation Trust *CR

4603 — A0588 Non-correspondence of photoreceptor (PR) morphology and sensitivity in acute zonal occult outer retinopathy (AZOOR)-like retinal lesions as assessed by adaptive-optics optical coherence tomography (AO-OCT) and microperimetry (MP). Lorenz C. Wassermann1, 2, M. Salas1, A. Reummueller1, S. Sasu1, W. Drexler1, M. Pircher1, M. Funk1, U. Schmidt-Erfurth1, A. Pohlreiss1. 1Department of Ophthalmology and Optometry, Medical University of Vienna; 2Vienna Clinical Trial Center, Medical University of Vienna; 3Center for Medical Physics and Biomedical Engineering, Medical University of Vienna

4604 — A0589 Design and fabrication of the first handheld multimodal adaptive optics scanning laser ophthalmoscope. Kristen Hagan1, T. DuBose1, R. Qian1, J. Park1, R. P. McNabb1, J. A. Izzat1, S. Farsiu1. 1Biomedical Engineering, Duke University; 2Biomedical Engineering and Ophthalmology, Duke University; 3Ophthalmology, Duke University Medical Center *CR

4605 — A0590 Quantifying nystagmus in patients with Achromatopsia using image-based tracking with AO-SLO. Thomas Kane1, 2, N. Singh1, M. Georgiou1, A. Dubra2, M. Michaelides1, A. Kalitzeos1. 1Institute of Ophthalmology, UCL; 2Moorfields Eye Hospital; 3Department of Ophthalmology, Stanford University *CR

4606 — A0591 Effect of intraframe motion correction on residual distortion in AO-SLO images. Alexander E. Salmon1, R. F. Cooper1, J. Carroll1. 1Cell Biology, Neurology, & Anatomy, Medical College of Wisconsin; 2Psychology, University of Pennsylvania; 3Ophthalmology, Scheie Eye Institute; 4Ophthalmology & Visual Sciences, Medical College of Wisconsin

4607 — A0592 Volumetric imaging of retinal ganglion cells and inner retinal microstructure using a combined AO-OCT-SLO. Elaine Wells-Gray, S. S. Choi, N. Doble. College of Optometry, Ohio State University

4608 — A0593 Multimodal adaptive optics imaging of ganglion cells in patients with primary open angle glaucoma. Zhuolin Liu1, D. Hammer1, O. Saeedi1. 1U.S. Food and Drug Administration; 2University of Maryland Medical Center *CR

4609 — A0594 Comparing retinal nerve fiber layer thickness between SD-OCT and AO-OCT. Brett King, W. H. Swanson, K. Kurokawa, D. T. Miller. School of Optometry, Indiana University *CR


4611 — A0596 Subclinical features of a Microtropic patient uncovered by using Adaptive optics scanning laser ophthalmoscope (AO-SLO). Ashutosh Richhariya1, S. Kumar1, P. Satgunam2. 1Engineering Group, L V Prasad Eye Institute; 2L V Prasad Eye Institute

4612 — A0597 In vivo characterization of the acceleration process of erythrocytes within human retinal capillaries. Yuhua Zhang1, B. Gu1, X. Wang1, M. D. Twa3, J. Tam4, C. A. Girkin2, S. Samuel Steven1, R. Sadda1. 1Biomedical Engineering, University of California - Los Angeles; 2Department of Ophthalmology and Vision Science, University of Alabama at Birmingham; 3Department of Optometry and Vision Science, University of Alabama at Birmingham; 4National Eye Institute, National Institutes of Health *CR

4613 — A0598 Chromatic Shack-Hartmann wavefront sensor with adaptive optics correction of monochromatic aberrations. Samuel Steven1, V. Akondi2, A. Dubra2. 1University of Rochester; 2Ophthalmology, Stanford University *CR

West Exhibition Hall B0108-B0143
Wednesday, May 01, 2019 8:15 AM-10:00 AM
Immunology/Microbiology

428 Fundamentals of ocular infection 2

Moderators: Edmund Tsoi and Robert M. Shanks

4614 — B0108 IL-1R1 and IL-18 are Essential for Development of Experimental Murine Cytomegalovirus (MCMV) Retinitis in Mice with Retrovirus-Induced Immunosuppression (MAIDS). Jessica Carter1, S. Byfield1, J. Oh1, J. Nemevo1, R. D. Dix2. 1Biology, Georgia State University; 2Ophthalmology, Emory University

4615 — B0109 Human Cytomegalovirus (HCMV) Does Not Induce Necrototos-related Reactive Oxygen Species (ROS) Production Early After Infection of ARPE-19 Cells. Shauntelle Byfield1, J. Carter1, J. Nemevo1, J. Oh1, M. Welch1, R. D. Dix2. 1Georgia State University; 2Ophthalmology, Emory University

4616 — B0110 A Survey of Intraocular Expression of Immune Response Genes During Onset and Progression of Experimental Mouse Cytomegalovirus (MCMV) Retinitis in Mice with Retrovirus-Induced Immunosuppression (MAIDS). Madeline Welch1, J. Carter1, B. Poling1, J. Gardner1, J. Nemevo1, J. Houghton1, R. D. Dix2. 1Georgia State University; 2Ophthalmology, Emory University School of Medicine

4617 — B0111 Evidence for Parathanoct during Development of Experimental Murine Cytomegalovirus (MCMV) Retinitis in Mice with Retrovirus-Induced Immunosuppression (MAIDS). Jay Oh1, J. Carter1, S. Byfield1, R. D. Dix2. 1Georgia State University; 2Ophthalmology, Emory University School of Medicine

4618 — B0112 Loss of Necrotos and Apoptosis Allows Increased Virus Spread Following Corneal Infection with Herpes Simplex Virus Type 1 (HSV-1). Hongyan Guo1, Y. Feng1, L. Daley-Bauer2, R. D. Dix3, E. Mocarski1. 1Georgia State University; 2Microbiology and Immunology, Emory University; 3Ophthalmology, Emory University

4619 — B0113 The absence of Signal peptide peptidase (SPP) affects HSV-1 infectivity in vivo. Shaohui Wang, H. Ghiasi. Cedars Sinai Medical Center

4620 — B0114 Suppression of CD80 in the eye by HSV-1 ICP22 plays a protective role against eye disease. Harry Matundan, U. Jaggi, S. Wang, H. Ghiasi. Surgery, Cedars-Sinai Medical Center

4621 — B0115 Overexpression of CD80 by recombinant HSV-1 negatively affects primary and latent infection in ocularly infected mice. Emaan Madany1, L. Jin1, S. Wang1, H. Ghiasi1. 1Cedars-Sinai Medical Center; 2Oregon State University
4622 — B0116 Role of innate lymphoid cells (ILC1, 2, 3) in herpes simplex virus type 1 (HSV-1) infectivity in vitro and in vivo, Satoshi Hirose, S. Wang, H. Ghiasi. Surgery, Cedars-Sinai Medical Center

4623 — B0117 CCR6+ T cells in the cornea are protective during early HSV-1 infection. John H. Friend, S. Fitzpatrick, R. Lausch, R. Barrington. University of South Alabama

4624 — B0118 Infection with Virulent HSV-1 Strains Preferentially Activates NLRC3, NLRP-12 and IFI-16 Inflammessa Pathways Associated with Severe Inflammatory Corneal Herpetic Disease. Anthony B. Nesburn, P. A. Coulon, N. Dhamushkodi, S. Prakash, R. Srivastava, S. Roy, L. BenMohamed. Gavin Herbert Eye Institute, University of California, Irvine

4625 — B0119 Blockade of LAG-3 Immune Checkpoint Combined with Therapeutic Vaccination Restore the Function of Tissue-Resident Anti-Viral CD8+ T Cells and Protect Against Recurrent Ocular Herpes Simplex Infection and Disease. Ibachir BenMohamed, S. Roy, P. A. Coulon, R. Srivastava. Univ of California-Irvine

4626 — B0120 Topical treatment with an engineered fibroblast growth factor 1 (TTHX1114) decreased inflammatory macrophages in the cornea associated with reduced corneal keratopathy in a mouse model of primary ocular herpes. David Eveleth1, N. Dhamushkodi, R. Srivastava, P. A. Coulon, S. Roy, S. Prakash, L. BenMohamed1. 1Trefoil Therapeutics; 2Laboratory of Cellular and Molecular Immunology, Gavin Herbert Eye Institute, UC Irvine; 3Department of Molecular Biology and Biochemistry, UC Irvine *CR

4627 — B0121 Role of Insulin-like growth factor binding protein-3 (IGFBP-3) in pathogenesis of herpes stromal keratitis (HSK), Susmit Sivas, P. Rao, J. J. Steinel. Ophthalmology, Visual and Anatomical Sciences, Wayne State University School of Medicine

4628 — B0122 Heparanase Activation by Cathepsin-L Is a Trigger for Pro-Inflammatory and Pro-Angiogenic Conditions in the Cornea during Herpes Stromal Keratitis. Deepak Shukla, A. Agelidis, J. Hopkins. Ophthalmic/Visual Sciences, University of Illinois at Chicago

4629 — B0123 Structural Topology Defines Protective CD8+ T Cell Epitopes in the HIV Proteome. Elizabeth Rossin1, G. Gaia1, J. Urbach1, J. Chodosh1, B. Walker1. Massachusetts Eye and Ear; 2Massachusetts General Hospital

4630 — B0124 Chemokine receptors CXCR3 and CCR4 mediate corneal CD4+ T cell homing during herpes simplex virus-1 keratitis. Cecilia Chao1, G. Ortiz1, A. Jamali1, P. Hamrah1. 1Tufts Medical Center; 2UNSW

4631 — B0125 Staphylococcus aureus lysates inhibit HSV-1 infection in Human Corneal Epithelial cells-Transformed and their Transcriptome profiling analysis. Tianlan Lin1, 2. 1Zhongshan Ophthalmic Center, State Key Laboratory of Ophthalmology; 2Sun Yat-sen University

4632 — B0126 Biomimetic nanosponges augment gatifloxacin in reducing retinal damage during experimental MRSA endophthalmitis. Austin Lagrow1, 2, P. Coburn1, F. C. Miller1, 4, C. Landi1, 2, M. Mursalin1, 4, E. Livingston3, 2, O. Amayeni2, 4, Y. Chor1, W. Guo5, L. Zhang6, M. C. Callegan1, 4. 2Ophthalmology, The University of Oklahoma Health Sciences Center; 3Dean McGee Eye Institute; 4Cell Biology, The University of Oklahoma Health Sciences Center; 5Family and Preventive Medicine, The University of Oklahoma Health Sciences Center; 6Microbiology and Immunology, The University of Oklahoma Health Sciences Center; *NanoEngineering, University of California, San Diego

4633 — B0127 The role of Immune Inhibitor A1 metalloprotease in Bacillus endophthalmitis. Erin Livingston1, M. Mursalin1, P. Coburn1, F. C. Miller4, 5, O. Amayeni1, D. Lereclus1, M. C. Callegan1, 2. 1Microbiology and Immunology, Oklahoma University Health Sciences Center; 2Ophthalmology, Dean McGee Eye Institute; 3Cell Biology, Oklahoma University Health Sciences Center; 4Family and Preventive Medicine, Oklahoma University Health Sciences Center; 5Microbiology and the Food Chain, French National Institute for Agricultural Research

4634 — B0128 Removal of a transcription activator for ascorbic acid transport reduces Streptococcus pneumoniae growth in vitro and in vivo. Angela H. Benton, M. E. Marquart. Microbiology and Immunology, University of Mississippi Medical Center

4635 — B0129 Temporal genome-wide co-expression profiling of coding and long non-coding RNA (lncRNA) in experimental staphylococcal endophthalmitis, Ashok Kumar1, S. Singh1, I. Khatri2, P. Singh1. 1Ophthalmology, Visual, and Anatomical Sciences, Wayne State University; 2Innunohematology and Blood Transfusion, Leiden University Medical Center

4636 — B0130 Integrative metabolomics and transcriptomics analysis reveals a Krebs cycle metabolite “itaconate” in promoting inflammation resolution in bacterial endophthalmitis. Sukhvinder Singh1, P. Singh1, S. Giri1, A. Kumar1. 1Department of Ophthalmology, Visual and Anatomical Sciences, Wayne State University School of Medicine; 2Department of Neurology, Henry Ford Health System


4638 — B0132 Galexin 8 impairs TLR4 signaling and dampens innate immune response to P. aeruginosa infection in mouse corneas. Noorjahan A. Panjvani, Z. Cao, A. Ramadan. Ophthalmology, Tufts University Medical School

4639 — B0133 A novel role for cytoskeletal keratin 6A in regulating acute corneal inflammation. Jonathan Chan1, 4, Y. Sun1, K. Bose1, W. Carrera2, K. Tan1. 1Department of Ophthalmic Research, Cleveland Clinic Cole Eye Institute and Lerner Research Institute; 2School of Medicine, Case Western Reserve University; 3Department of Ophthalmology, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

4640 — B0134 Corneal lymphangiogenesis ameliorates corneal inflammation and edema in bacterial keratitis. Akitomo Narimatsu1, 4, T. Hattori1, N. Koike1, K. Tajima1, H. Nakagawa1, Y. Usui1, S. Nakakura1, T. Matsuoto1, H. Goto1. Ophthalmology, Tokyo Medical University, 2Microbiology, Tokyo Medical University; Small Animal Internal Medicine, School of Veterinary Medicine, University of Kitasato; 3Infectious Diseases, Brigham and Women’s Hospital; 4Harvard Medical School

4641 — B0135 TRPV1 positive sensory neurons respond to Pseudomonas aeruginosa, increasing susceptibility to keratitis. Tiffany Lin1, T. Voisin1, P. Baral1, I. Chiu2, G. Pier1, M. G. Gadjeva1. Infectious Diseases, Brigham and Women’s Hospital; Ophthalmology, University of California, San Diego

4642 — B0136 Pseudomonas aeruginosa internalization into corneal stromal kerocytes occurs within 24 hours of corneal infection. Ahmad Elsebai1, 2. 1Academic Ophthalmology, University of Nottingham; 2Ophthalmology, Nottingham University Hospitals

4643 — B0137 The effect of Resovin D1 on Infection keratitis of experimental animal to prevent corneal scar. Ji-Eun Lee2, J. Lee1, S. Lee1, S. Kim1, S. Lee1. 1Ophthalmology, Pusan National University; 2Ophthalmology, Pusan National University; 3Ophthalmology, Konis University Hospital


4645 — B0139 IL-17A Promotes Pseudomonas aeruginosa Keratitis in C57BL/6 Mice Corneas. Rao Me, F. Yu. Ophthalmology, Wayne state university

4647 — B0141 Involvement of Neutrophils in Human Ocular Toxoplasmosis. Liam M. Ashander, S. Lié, Y. Mu, E. Roche, J. M. Furtado, B. Appukuttan, J. R. Smith.

4648 — B0142 Understanding the Role of Retinal Müller Glial Cells in Ocular Toxoplasmosis. Elise Roche, Y. Ma, L. M. Ashander, B. Appukuttan, J. R. Smith.


4650 — B0175 Limbal vascularization and Peter’s anomaly are associated with spontaneous resolution of congenital corneal opacity without surgical management. SOOYEON CHOE, J. Hyon, M. Kim, Y. Yu, J. Oh.


4652 — B0177 Anatomical explanation for the central-peripheral thickness difference in human corneas. Jan Bergmanson, A. Burns, M. Walker.


4656 — B0181 Induction of fibroblast senescence during corneal wound healing. xiaolei wang, L. Yang, Q. Zhou.


4663 — B0188 Laminins, and early corneal epithelial basement membrane (EBM) regeneration. Rodrigo Carlos De Oliveira, P. Saikia, S. E. Wilson.


4666 — B0191 Microenvironmental Control of the Epithelial-Stromal Interactions by Galectin-3-Induced Paracrine Signaling. Nina B. Abusamra, J. Mauris, P. Argueso.


West Exhibition Hall B0187-B0215

Wednesday, May 01, 2019 8:15 AM-10:00 AM

Cornea
430 Corneal Stroma Wound Repair and Healing

Moderators: Ali E. Ghareeb and Cirrus Dehghani


4663 — B0188 Laminins, and early corneal epithelial basement membrane (EBM) regeneration. Rodrigo Carlos De Oliveira, P. Saikia, S. E. Wilson.


4666 — B0191 Microenvironmental Control of the Epithelial-Stromal Interactions by Galectin-3-Induced Paracrine Signaling. Nina B. Abusamra, J. Mauris, P. Argueso.
4671 — B0196 The mechanism of phagocytosis induced by plasminogen on cultured corneal fibroblasts. Tomoko Sato1, K. Sugiyama1, H. Mishima1, S. Kusaka1, T. Nishida1.1Kindai University Faculty of Medicine; 2Oshima Hospital of Ophthalmology

4672 — B0197 Topical ophthalmic formulation to counteract sulfur mustardinduced corneal damage. Nishant Sinha1, R. Tripathi1, S. Gupta1, P. Balne2, N. P. Hesemann1, J. Rodier1, E. A. Giuliano3, P. R. Sinha4, L. M. Martin1, S. S. Chaurasia1, R. R. Mohan1, 2.1University of Missouri; 2Veterinary Medicine & Surgery, University of Missouri; 3Ophthalmology, Harry S. Truman Memorial Veteran Hospital

4673 — B0198 GCLC nanomedicine for mitigation of Acrolein toxicity in the cornea. Prashant Sinha1, R. Tripathi1, S. Gupta1, P. Balne2, R. Tripathi2, E. A. Giuliano4, J. Rodier1, N. P. Hesemann1, S. S. Chaurasia1, R. R. Mohan1, 2.1Harry S. Truman Memorial Veteran Hospital; 2College of Veterinary Medicine, University of Missouri; 3Mason Eye Institute, University of Missouri

4674 — B0199 Id3 gene over-expression in corneal stromal fibroblasts blocks TGFβ-driven fibrosis in an in vitro model. Mikayla Fraunfelder1, 2, S. Gupta1, 2, M. K. Fink1, 2, P. Balne1, 2, R. Tripathi1, 2, P. R. Sinha4, S. Heil3, 2, E. A. Giuliano3, 2, N. P. Hesemann1, 2, S. S. Chaurasia1, 2, R. R. Mohan1, 2, 3.1Harry S. Truman Memorial Veteran Hospital; 2College of Veterinary Medicine, University of Missouri; 3Mason Eye Institute, University of Missouri

4675 — B0200 Autophagy regulates corneal wound healing. Lynn M. Martin1, 2, R. Tripathi1, 2, P. Sinha3, 2, N. Jeyabalan3, P. J. Johnson2, S. S. Chaurasia1, 2, R. R. Mohan1, 2.1Harry S. Truman Memorial Veteran Hospital; 2Department of Veterinary Medicine, University of Missouri; 3GROW Research Laboratory, Narayana Nethralaya Foundation

4676 — B0201 Therapeutic efficacy of different routes of mesenchymal stem cell administration in corneal injury. Sachin Shukla1, 2, S. K. Sahu1, 2, S. Mittal1, E. Elbasyoni1, W. Foulsham1, S. Chauhan1.1Scheepen Eye Research Institute, Massachusetts Eye and Ear Infirmary, Department of Ophthalmology, Harvard Medical School; 2L. V. Prasad Eye Institute


4678 — B0203 Short-term stability of artificial collagen-like peptide polymer implanted in corneal stroma and keratocyte reaction against the implant in rabbits. Nobuyuki Ishikawa1, H. Nose1, I. Ichise1, K. Kuroda2, T. Koide2, S. Saika1.1Ophthalmology, Wakayama Medical University; 2Waseda University; 3Kola-gen Pharma

4679 — B0204 Inhibitory effect of Epigallocatechin-3-gallate on IL-β-induced collagen degradation by corneal fibroblasts. Koji Sagiodka1, H. Mishima1, T. Nishida1, S. Kusaka1.1Ophthalmology, Kindai University Faculty of Medicine; 2Ophthalmology, Yamaguchi University Hospital

4680 — B0205 Pre-activated p38 inhibits phosphorylation of SMAD2 by TGFβ1-activated TGFRR in corneal fibroblasts. Zheng Wang1, A. M. Bernstein2, J. Wolosin1.1ophthalmology, Icahn School of Medicine at Mount Sinai; 2Ophthalmology, SUNY Upstate Medical University

4681 — B0206 Sphingolipids and TGF-β: Seeking out novel treatments for corneal fibrosis. Sarah E. Nicholas1, N. A. Mandal2, D. Karamichos3.1Ophthalmology, University of Oklahoma Health Sciences Center; 2University of Tennessee Health Science Center

4682 — B0207 Study on cryopreservation protocols for human cornea stroma stem cells. Yuzhao Sun1, A. Dos Santos1, A. Balayari1, S. X. Deng1.1The First Affiliated Hospital of CMU; 2June Stein Eye Institute

4683 — B0208 An Ex Vivo Corneal Puncture Model for Assessing Temporary Biomaterial Therapeutics. Eric J. Snider, J. Acevedo, P. Edsall, B. Lund, D. O. Zamora.1Sensory Trauma, United States Army Institute of Surgical Research

4684 — B0209 30 years experience of ringing of acute eye burns. Removing of the corrosive and its decontamination. Norbert Schrage1, N. Wieser1, D. Utthoff1, M. Reim2, M. Dutescu3.1Department of Ophthalmology, University of Missouri-Columbia School of Medicine; 2Departments of Ophthalmology, Harry S. Truman Memorial Veteran Hospital; 3Departments of Veterinary Medicine & Surgery and Biomedical Sciences, University of Missouri-Columbia College of Veterinary Medicine

4685 — B0210 Effects of mesenchymal stem cells encapsulated within crosslinked collagen carrier gels on alkali burns in a corneal organ culture model. Ignacio J. Blanco1, G. Fernandez-Cunha1, S. Hall1, H. J. Lee1, K. Na1, A. R. Djallili1, D. Myung1.1Chemical Engineering, Stanford University; 2Ophthalmology, The University of Illinois College of Medicine; 3Ophthalmology, Stanford University; 4Chemical and Biomolecular Engineering, Gachon University

4686 — B0211 Transient Plasma Membrane Disruption-Induced Calcium Signaling in Corneal Keratocytes. Mitchell A. Watsky1, 2, Z. Chen1, M. McGee-Lawrence3, X. Lu4.1Cellular Biology and Anatomy, Augusta University; 2The Graduate School, Augusta University

4687 — B0212 A Novel Extracellular Matrix-Mimetic Hydrogel for Corneal Regeneration. Vivek Singh1, M. Dalal1, 2, T. Gharat1, S. Selvam1, K. S. Ojha1, T. Bhoumik2, A. Chandru1, V. S. Sangwan1, S. Basu2.1SSR-Stem cell biology laboratory, Prof. Brien Holden Eye Research Center, L V Prasad Eye Institute; 2Cornea and Anterior Segment Services, L V Prasad Eye Institute; 3Center for Ocular Regeneration (CORE), L V Prasad Eye Institute; 4University of Hyderabad; 5Pandorum Technologies Private Limited

4688 — B0213 Corneal Schwann cells differentiate into myofibroblasts after injury. Gwendolyn Schultz1, M. Lopez2, R. Mohan3, P. Bargagna-Mohan.1University of Connecticut School of Medicine; 2University of Saint Joseph

4689 — B0214 KCa3.1 Ion Channel Inhibition Prevents Exuberant Corneal Wound Healing and Ameliorates TGFβ1-induced Corneal Fibrosis. Helena Lam1, S. Gupta1, R. Tripathi1, P. Balne2, S. Heil3, N. Sinha1, N. P. Hesemann1, J. Rodier1, P. R. Sinha4, E. A. Giuliano3, S. S. Chaurasia1, R. R. Mohan1, 2.1Department of Ophthalmology, University of Missouri-Columbia School of Medicine; 2Department of Ophthalmology, Harry S. Truman Memorial Veteran Hospital; 3Departments of Veterinary Medicine and Surgery and Biomedical Sciences, University of Missouri-Columbia College of Veterinary Medicine


West Exhibition Hall B0254-B0302

Wednesday, May 01, 2019 8:15 AM-10:00 AM
Cornae

431 Microbiome, Ocular Surface Diseases

Moderators: Vindu K. Aakalu and Margaretta Calonge

4691 — B0254 The immune-microbiome axis in Keratoconus patient cornea: altered microbiome profile correlates with tear molecular factors and disease severity. Arka Shishra, A. P. Naik1, T. Vaidya1, N. R. Kumar2, S. D’Souza1, P. Kamari2, R. Shetty2, S. Sethu1.1GROW Research Laboratory, Narayana Nethralaya Foundation; 2Cornea, Narayana Nethralaya

*x* 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.
4692 — B0255 Evaluation of a Simplified non-invasive Method for Obtaining Samples from Corneal Ulcers in suspected Microbial Keratitis. Toshi F. Somerville1, T. Neal, C. Corless1, M. Horburgh1, S. Kaye1. 1Department of Eye and Vision Sciences, University of Liverpool; 2Department of Infection and Immunity, Royal Liverpool University Hospital; 3Department of Medical Microbiology, Royal Liverpool University Hospital; 4Institute of Integrative Biology, University of Liverpool; 5St Pauls Eye Unit, Royal Liverpool University Hospital

4693 — B0256 Changes in the ocular surface microbiome (OSM) in patients with Stevens-Johnson syndrome (SJS) and other severe ocular surface diseases (OSD). Paul de Bustros, C. S. Bouchard, M. J. Zilliox, C. Joyce, G. Kuffel, C. Roese Mores. Ophthalmology, Loyola University Medical Center

4694 — B0257 Fortified Post-Thaw Amniotic Membrane with Platelet Lyase Potentiates Cultivation of Limbal Stem Cell. Mohgian Rezaei Kanavi1, S. Karami2, S. Balagholi1, S. Alizadeh1, H. Ahmadi1, R. Dabaghb1. Ocular Tissue Engineering Research Center, Shahid Beheshti University of Medical Sciences, Tehran; 2Department of Ophthalmology, School of Allied Medicine, Tehran University of Medical Sciences, Tehran; 3Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences, Tehran; 4Department of Ophthalmology, Faculty of Medical sciences, Tarbiat Modares University, Tehran

4695 — B0258 Characterization of the ocular microbiome - the importance of contaminant filtration when interpreting 16S rRNA gene sequencing outcome. Jasmine Anderson1, J. Vogt1, K. Holmgaard1, M. Dalgaard1, S. Heggaard1. 1Faculty of Health and Medical Sciences, University of Copenhagen; 2Department of Bio and Health Informatics, Technical University of Denmark; 3Interdisciplinary Basic Metabolic Research in The Maersk Tower, University of Copenhagen; 4Department of Pathology, Rigshospitalet-Blegdamsvej; 5Department of Ophthalmology, Rigshospitalet-Glostrup


4697 — B0260 Intraocular microdisplay projection system for treating corneal blindness. Victoria Fan1, M. Rosenblatt2, M. sun2, C. Yu2. 1Ophthalmology, Stanford University; 2Ophthalmology, University of Illinois Chicago

4698 — B0261 InflammAgeing at Ocular Surface. Clinical and Biomolecular Analyses in ‘Healthy’ Volunteers. Antonio Di zazzo1, a. micera1, m. coassin1, g. varacalli1, w. Fouldsham2, m. De Piano3, S. Bonini1. Ophthalmology, Campus Bio Medico Univeristy; 2Ophthalmology, Schepens Eye Research Institute, Mass. Eye and Ear Infirmary, Harvard Medical School; 3Ibetti Foundation IRCSS


4700 — B0263 Comprehensive miRNA analysis of conjunctival epithelium of Stevens-Johnson syndrome patients in the chronic stage. Mayumi Ueta1, H. Nishigaki1, C. Sotozono1, N. Yokoi1, S. Kinoshita1. Ophthalmology, Kyoto Prefectural University of Medicine; 2Department of Frontier Medical Science and Technology for Ophthalmology, Kyoto Prefectural University of Medicine

4701 — B0264 Does the Peripheral Light Focusing Effect Explain the Strong Nasal Location Preference of Pterygia? Peter E. King-Smith1, T. F. Mauger2, C. G. Begley3, P. Tankam. 1Optometry, Ohio State University; 2WVU Eye Institute; 3School of Optometry, Indiana University

4702 — B0265 Personalized eye dosimeter for instantaneous and cumulative UV burden – first results from real-life application. Christina Grupcheva, M. G. Marinov, D. I. Grupchev. Medical University - Varna

4703 — B0266 The Reducing Adenoviral Patient-Infected Days (RAPID) Study: Safety and Tolerability of One-Time, In-Office Application of 5% Povidone-Iodine in the Treatment of Adenoviral Conjunctivitis. Ellen Shorter1, T. Than1, M. Whiteide1, J. S. Harshaw2, M. Margolis2, S. Johnson1, M. Migone2, C. Moretti2, C. Olson2, A. Hartwick2, J. Huecker2, M. O. Gordon2. 1Ophthalmology and Vision Sciences, University of Illinois at Chicago; 2Carl Vinson VAMC; 3UC Berkeley; 4Illinois College of Optometry; 5Ohio State University; 6Washington University in St. Louis; 7Northeastern State University; 8Fort Sam Houston

4704 — B0267 Development and performance of a microsensor for the ocular health evaluation. Martin Zalaca1, C. Mista1, R. M. Torres1. Centro de Ojos Dr. Lódulo; 2Facultad de Ingenieria, Universidad Nacional de Entre Ríos

4705 — B0268 Modulation of ocular surface tight junction proteins by high glucose. Saleh Alfuraid1, 2, A. Barbarino1, K. Shamloo1, A. Sharma1. 1school of pharmacy, Chapman University; 2Pharmacy college, Northern Border University

4706 — B0269 Involvement of eicosanoid in pterygium. Aihua Hou1, Y. A. Ambaw1, M. Gan2, M. Wen3, L. Tong3. 1Singapore Eye Research Institute, Singapore Eye Research Institute; 2Singapore National Eye Center; 3Yaung Loo Lin School of Medicine, National University of Singapore

4707 — B0270 Prospective study of the ocular manifestations in Epidermolysis Bullosa and Autoimmune Blistering Diseases identifies Dry Eye Disease. Brendon W. Lee1, J. Tan2, M. Radjenovic3, L. Tai4, D. F. Murrell1, M. T. Coronel2. 1Faculty of Medicine, University of New South Wales; 2Department of Ophthalmology, Prince of Wales Hospital; 3Department of Dermatology, St George Hospital

4708 — B0271 Clinical Patterns of Tarsorrhaphy at a Tertiary Eye Care Center. Hong-Gam Le, P. R. Bondica, G. S. Lissner. Ophthalmology, Northwestern University

4709 — B0272 Expression of SPARC and MMP9 in Stevens-Johnson syndrome chronic ocular sequelae undergoing cultivated oral mucosal epithelial transplantation. Renu Venogopal1, S. Sen1, S. Mohnaty1, S. Kashyap1, T. Agarwaly1, J. Kaur2, R. B. Vajpayey1, N. Sharma1. 1Dr.R.P. Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi, India; 2Department of Ophthalmology, All India Institute of Medical Sciences, New Delhi, India; 3Royal Victorian Eye and Ear Hospital, University of Melbourne

4710 — B0273 Biophysical interaction of oleic acid with tear lipids at an air-tear interface. Poonam Madgil. School of Medicine, Western Sydney University

4711 — B0274 Tolerability and efficacy of a 0.6% povidone iodine nanoemulsion (IODIM). Pasquale Aragona, R. Spinella, E. I. Postornio. Biomedical Sciences Eye Clinic, University of Messina

4712 — B0275 Deciphering limbal stem cell microenvironment for optimizing limbal stem cell culture for treating limbal stem cell deficiency. Sudan Puri, M. Sun, K. N. Mutoji, T. F. Gesteira, V. J. Coulson-Thomas. Optometry, University of Houston

4713 — B0276 Ocular Surface impairment in Fabry disease. Chiara Fariselli, M. Fresina, P. Versura, E. C. Campos. S.Orsola Malpighi University Hospital

4714 — B0277 Nanoskin scaffolds for ocular surface reconstruction with mesenchymal stem cells. Magda M. Hata Viveiros1, C. Rainho1, M. Viveiros1, V. Ximenes2, C. Gorgulho2, J. Ramirez2, P. Basnajti3, N. Di Girolamo3, S. Schellini2. 1Universidade Estadual Paulista “Júlio de Mesquita Filho” - UNESP de Botucatu; 2Universidade Estadual Paulista “Júlio de Mesquita Filho” - UNESP de Bauru; 3University of New South Wales; 4Innovatec company *CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
4715 — B0278 Validating animal models of Limbal Stem Cell Deficiency: A histopathological and immunohistochemical study. Abhinav R. Kethiri1, M. Damalia1, K. K. Bokara1, D. Mishra1, S. Basu1, M. R. Ch2, V. S. Sangwan1, F. Singh1, 1SSR-Stem cell biology Laboratory, Prof; 2Bhore Holden Eye Research Center, L V Prasad Eye Institute; 3Manipal Academy of Higher Education; 4University of Hyderabad; 5Center for Cellular and Molecular Biology, Medical Biotechnology Complex, Uppal Road; 6Ophthalmic Pathology Laboratory, L V Prasad Eye Institute; 7Center for Ocular Regeneration (CORE), L V Prasad Eye Institute

4716 — B0279 Corneal blink reflex amplitude and thermal sensation are proportional to corneal surface temperature changes. Ariadna Diaz-Tahoces1,2, E. Velasco1, M. Delicado-Miralles1, F. Aleixandre-Carrera1, M. Acosta1, J. Gallar1,2, 1Instituto de Neurociencias, Universidad Miguel Hernandez-CSIC; 2Instituto de Investigación Sanitaria y Biomedica de Alicante

4717 — B0280 Corneal Epithelial Thickness Measured by AS-OCT as Promising Diagnostic Indicator of Limbal Stem Cell Deficiency. Qingfeng Liang1, Q. Le2, D. Cordova1, S. X. Deng2, 1Ophthalmology, Beijing Institute of Ophthalmology, Beijing Tongren Hospital; 2Stein Eye Institute, David Geffen School of Medicine at UCLA


4719 — B0282 The protective effects of eye wash solution (EYEBON-W®) in the ocular surface damage induced by airborne carbon black exposure. Jong Suk Song1, X. Li2, B. Kang1, Y. Eom1, H. Lee2, 1Ophthalmology, Korea University College of Medicine; 2Yonsei University College of Medicine

4720 — B0283 Relationship between symptoms of ocular surface disease and occupational characteristics: office workers versus construction workers. Manuel Garza Leon1, S. Hernandez2, A. Paz3, P. Marcos4, F. Amparo5, 1Universidad de Monterrey, DICS; 2Cornea, Asociacion para Evitar la Ceguera en Mexico

4721 — B0284 Early ocular surface changes in aniridia-associated keratopathy - insights from anterior segment imaging in children. Neil S. Lagali1, B. Wovra2, F. Fried3, L. Latta4, T. P. Utheim4, E. Wylegala5, B. Seitz5, B. Käsmann-Complex, Uppal Road; 6Department of Ophthalmology, University of Oslo

4722 — B0285 Tear Inflammatory Cytokines Analysis and Clinical Correlations in Diabetes and Non-diabetes with Dry Eye. Hong Qi, R. Liu, B. Ma, Y. Gao, Peking University Third Hospital

4723 — B0286 Ocular pathology elicited by precocious eyelid opening in genetically engineered Prickle 1 knockout mouse model. Dianlei Guo, J. Ru, C. Liu, Zhongshan ophthalmic center


4725 — B0288 Efficacy and safety of Bromfenac 0.09% ophthalmic solution in reducing clinical inflammation and symptoms relief in patients with pterygium I-III. Oscar Olivera Montaño1, L. M. Baiza-Duran, P. D. Muñoz-Villegas, F. García Velez, R. Llamas Velázquez, Clinical Research Department, Laboratorios Sophia S.A. de C.V. *CR, *

4726 — B0289 Remodeling of substance P sensory nerves and TRPM8 cold receptors after corneal experimental surgery. Jiucheng He, T. L. PHAM, A. H. Kakaz, H. E. BAZAN, Ophthalmology & Neuroscience Center, LSU Health Sciences Center

4727 — B0290 Molecular footprints of oxidative stress in corneal injuries of different origin: utilization of human organotypic corneal tissue model. Yulia Kalachny, M. Kinuthia, T. Truong, A. Lapointe, M. Klausner, P. Hayden, MarTek Corporation *CR

4728 — B0291 BIOcular-X Dressings to Stabilize Open Globe Injuries. Lauren A. Costella1, L. Woodard1, K. Broderick1, A. Eismann2, C. Tison1, 1Luna Innovations; 2Medical University of South Carolina *CR

4729 — B0292 Twelve years of Ocular Surface Disease management: clinical characteristics and demographics in Entre Rios, Argentina. Rodrigo M. Torres1, P. G. Lódolo1, 1Ocular Surface & Immunology; basic and clinical research, Centro de Ojos Dr. Lódolo; 2Medical Director, Centro de Ojos Dr. Lódolo

4730 — B0293 Efficacy and long-term outcomes of punctal cauterization for ocular surface disease. Yvonne Wang, R. Dana, Ophthalmology, Massachusetts Eye and Ear

4731 — B0294 Reduced tear film substance P concentration is associated with diabetic peripheral neuropathy. Shyam S. Tummanapalli1, M. Willeox2, T. Issar2, A. Yan3, N. Kwa4, A. Poynter5, A. Krishnan6, M. Markkoul7, 1School of Optometry and Vision Science, University of New South Wales; 2Prince of Wales Clinical School, University of New South Wales; 3Department of Endocrinology, Prince of Wales Hospital

4732 — B0295 Nortriptyline is Effective in Ameliorating Symptoms of Neuropsychiatric Corneal Pain. Mehmet C. Ozmen1,2, G. Dieckmann2, R. Rashad1, D. Paracha1, N. Sanaye1, S. Cox3, M. I. Morkin4, P. Hamrah5, 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

4733 — B0296 Sensory Corneal Nerve Function Testing and Morphological Corneal Nerve Alterations Demonstrate Neurosensory Abnormalities and May Allow for Identification of Patients at Risk of Symptom Development. Yashar Seyedi-Razavi1,2, G. Dieckmann1, N. Koseoglu4, A. Jamali3, A. Akhlaq1, S. Cox3, R. Nose4, A. Sahin1, Z. Salem1, P. Hamrah1, 1Ophthalmology, Tufts Medical Center; 2School of Medicine, Tufts University *CR

4734 — B0297 Distinct immune cell subsets on the ocular surface of dry eye disease and keratocous patients is associated with pathology. Swaminathan Sethu1, A. P. Nair1, s. dousoua2, R. S1, A. Ghosti1, 1GROW Research Lab, Narayana Nethralaya Foundation; 2Cornea and Refractive Surgery, Narayana Nethralaya Post Graduate Institute of Ophthalmology

4735 — B0298 Ocular Surface Changes in Professional Motorsports Athletes: the Exception to the Rule. Maria Grazia Mazzone1, F. Sollignani2, C. Chines3, A. Charté3, S. Barbaino4, 1SIFI SpA; 2Centro Medico DueSoli; 3Hospital Universitari Dexeus, Quironsalud; 4Ocular Surface & Dry Eye Center, Ospedale L. Sacco, University of Milan

4736 — B0299 Ocular surface, tear film and neuroautonomic neuropathy in diabetic patients with Charcot Arthropathy. Gabriel A. Lopes1, M. T. Ferrier1, Y. B. Atala1, M. Viturino1, D. Huarrachi1, D. Borges1, D. Guadagnini1, H. B. Assalini1, M. Parisi1, M. A. Saad1, M. Alves1, 1Ophthalmology, State University of Campinas; 2State University of Campinas

4737 — B0300 Diagnosis of demodex infestation with adhesive tape skin impressions. Milton M. Hom1, S. Schwartz1, J. S. Hartman1, T. Doll1, 1Private Practice; 2Illinois College of Optometry; 3Pacific University College of Optometry *CR

4738 — B0301 The ocular manifestations of Fanconi anemia in a genetic mouse model. Sandrine Joly1, L. Rodriguez1, J. B. Mzomba2, M. Carreau1, V. Fernet1, 1Ophthalmology, Centre de recherche du CHUQ/University Laval; 2Pediatry, Centre de recherche du CHUQ/University Laval

4739 — B0302 Influence of serum from patients with Systemic Autoimmune Disease on IL-8 Expression in Human Corneal Epithelial Cells in Vitro. Omer Iqbal, A. Koli1, C. S. Bouchard, M. Rupa, A. Dhuran, S. Kaja, E. Campbell, Ophthalmology, Loyola University Chicago

 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.
East 1

Wednesday, May 01, 2019 10:15 AM-12:00 PM
Multidisciplinary Ophthalmic Imaging Group

432 Advanced imaging technologies

Moderators: Michael Pircher, Anthony N. Kuo and Yoshiaki Yasuno


4744 — 11:15  Spatially localized photoreceptor ablation in macaque using a femtosecond laser and adaptive optics. Kamal Dhakal1, S. Walters1, C. Schwarz1, J. Strazzieri1, J. E. McGregor1, E. Aboualzadeh1, B. Bateman1, J. J. Hunter1, D. R. Williams2, W. Merigan3, 1Department of Ophthalmic Research, University of Tübingen; 2Flaum Eye Institute, University of Rochester *CR


4746 — 11:45  Structure and Metabolism in the Brains of the Congenitally Blind Using Magnetic Resonance Imaging and Spectroscopy. Kevin C. Chan1, 2, A. J. Charles1, J. Bang1, G. Hamilton-Fletcher1, C. Parra4, M. C. Murphy4, A. C. Nau1, 3, 4Department of Ophthalmology, New York University School of Medicine; 4Department of Radiology, New York University School of Medicine; 5Department of Ophthalmology, University of Pittsburgh; 6Department of Radiology, Mayo Clinic; *Korb and Associates

4747 — 11:50  Ocular Blood Flow in Preeclampsia. Ronald H. Silverman1, R. Urs1, J. A. Ketterling2, B. Y. Yu1, A. Yu3, J. W. Wapner3, S. Bearey2, 3, 4Department of Ophthalmology, Columbia University Medical Center; 5FL. Lizzie Center for Biomedical Engineering, Riverside Research; 6Electrical and Computer Engineering, University of Waterloo; Obstetrics and Gynecology, Columbia University Medical Center

4748 — 12:00  Evaluation Of Circumpapillary And Retinal Vessel Density In Glaucomatous Patients With Visual Field Damage In Superior Or Inferior Hemifield. Antonio Longo1, S. Tripodi1, T. Avitabile1, V. M. Bonfiglio1, D. Scollo1, A. Russo1, L. Franco1, M. Fallico1, N. Castellino3, M. Reibaldi3, 1Eye Clinic, University of Catania; 2Ophthalmology, Grande Ospedale Metropolitano Bianchi-Melacrino-Morelli

4749 — 10:45  Modeling of retinal blood flow based on fundus photos in healthy subjects. Leopold Schmetterer1, J. Chua1, R. M. Werkmeister2, D. Schmidt3, M. Chee4, C. Cheng4, T. Y. Wong4, G. Garhofer5, 6Singapore Eye Research Institute; 7Center for Medical Physics and Biomedical Engineering; 8Department of Clinical Pharmacology

4750 — 11:00  Laser Doppler holography to analyze the flow in the deep choroidal vasculature. Leo Puyo1, 2M. Paques1, 2, M. Fink1, J. A. Sahel1, 2, 3Atlant1, 3ESPCI - Institut Langevin; 3Institut de la Vision; 4Centre Hospitalier National d’Ophtalmologie des Quinze-Vingts, INSERM-DHOS CIC 1423

4751 — 11:15  Red blood cell flux measured in the same retinal capillaries from seconds to months. Andres Guevara-Torres1, 2, 3K. Y. Dholakia1, A. Joseph2, 3, J. B. Schallek1, 4, 5The Institute of Optics, University of Rochester; 6Center for Visual Science, University of Rochester; 7Flaum Eye Institute, University of Rochester *CR


East 2/3

Wednesday, May 01, 2019 10:15 AM-12:00 PM
Physiology/Pharmacology

433 Blood Flow

Moderators: Carol B. Toris and Thomas Yorio

4747 — 10:15  Ocular Blood Flow in Preeclampsia. Ronald H. Silverman1, R. Urs1, J. A. Ketterling2, B. Y. Yu1, A. Yu3, J. W. Wapner3, S. Bearey2, 3, 4Department of Ophthalmology, Columbia University Medical Center; 5FL. Lizzie Center for Biomedical Engineering, Riverside Research; 6Electrical and Computer Engineering, University of Waterloo; Obstetrics and Gynecology, Columbia University Medical Center

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East 8&15

Wednesday, May 01, 2019 10:15 AM-12:00 PM
Retina

434 Retinopathy of Prematurity

Moderators: RV Paul Chan and Cynthia A. Toth


4754 — 10:30  Visual outcomes and optical coherence tomography features in young adults born extremely preterm: The EPICure@19 Study. Siva Balasubramaniam1, S. Jair2, 1 Department of Ophthalmology, New York University School of Medicine; 2Columbia University Irving Medical Center; 3Doheny Eye Institute; 4Ophthalmology, Royal Free London NHS Foundation Trust; 5Academic Neonatology, UCL Elizabeth Garrett Anderson Institute for Women’s Health, University College London; 6Ophthalmology, David Geffen School of Medicine at UCLA; 7Academic Neonatology, UCL Elizabeth Garrett Anderson Institute for Women’s Health, University College London; 8Macular Research Group, University of Sydney *CR
Wednesday Papers/Minisymposia
10:15 am – 12:00 pm

4755 — 10:45 Capturing macular neurovascular development in infants with retinopathy of prematurity. Xi Chen1, C. Viehland2, D. Tran-Viet1, J. A. Itzaj1, C. A. Toth1, 2. Ophthalmology, Duke University; 2Biomedical Engineering, Duke University *CR

4756 — 11:00 Changes in institutional oxygen saturation targets are associated with increased rate of severe retinopathy of prematurity. Tianyu Liu1, L. Tomlinson2, Y. Yu1, G. Ying1, G. Binenbaum2. 1Scheie Eye Institute, Perelman School of Medicine at the University of Pennsylvania; 2Division of Ophthalmology, The Children’s Hospital of Philadelphia

4757 — 11:15 A Proposed 1 to 9 Severity Scale for Vascular Abnormalities in Retinopathy of Prematurity. Sang Jin Kim1, 6, J. Campbell1, M. F. Chiang1. 1Department of Ophthalmology, The Children's Hospital of Philadelphia; 2Pathology, Royal Liverpool University Hospital; 3Pathology, Royal Liverpool University Hospital; 4Department of Medical Informatics & Clinical Epidemiology, Oregon Health & Science University; 5Ophthalmology, Samsung Medical Center, Sungkyunkwan University School of Medicine; 6Aier School of Ophthalmology, Central South University

East 11/12
Wednesday, May 01, 2019 10:15 AM-12:00 PM

4758 — 10:15 Human iPSC derived disease model of USH2A-associated retinitis pigmentosa and the retinal organoid in early stage. Jiansu Chen3, Y. Guo1, Q. Yu1, Z. Cui1, J. Zhang1, H. Ma1, S. Tang4, 5. Aier Eye Institute, #198 Furong Middle Road, Changsha, Hunan 410015, China; 3Institute of Ophthalmology, Medical College, Jinan University, Guangzhou, China.; 4Key Laboratory for Regenerative Medicine of Ministry of Education, Jinan University, Guangzhou, China; 5Centric Laboratory, Medical College, Jinan University, Guangzhou, China.; 6Aier School of Ophthalmology, Central South University

Moderators: Cheryl Y. Gregory-Evans and Jason S. Meyer

4759 — 10:20 Human iPSC derived disease model of USH2A-associated retinitis pigmentosa and the retinal organoid in early stage. Jiansu Chen3, Y. Guo1, Q. Yu1, Z. Cui1, J. Zhang1, H. Ma1, S. Tang4, 5. Aier Eye Institute, #198 Furong Middle Road, Changsha, Hunan 410015, China; 3Institute of Ophthalmology, Medical College, Jinan University, Guangzhou, China.; 4Key Laboratory for Regenerative Medicine of Ministry of Education, Jinan University, Guangzhou, China; 5Centric Laboratory, Medical College, Jinan University, Guangzhou, China.; 6Aier School of Ophthalmology, Central South University


4761 — 10:45 Cone Photoreceptors Fail to Form in ATG6-Related Achromatopsia Retinal Organoids. Heike Kroeger1, W. J. Chiang1, A. Nguyen4, J. H. Lin1, 2. 1Pathology, UC San Diego; 2Pathology, VA Health System

4762 — 11:00 Structural and functional alterations at the photoreceptor-RPE interface lead to disease-associated pathological changes in a hiPSC-derived model of inherited retinal degenerative disease. Rachita Singhi1, C. Tang2, S. Dulvi1, L. Winschel1, J. Han1, C. A. Galloway2, C. Soto3, L. A. MacDonald1. 1Ophthalmology and Biomedical Genetics, University of Rochester; 2Ophthalmology, University of Rochester Medical Center

4763 — 11:15 Lineage specification and molecular characterization of photoreceptor-specific progenitors. Brian G. Ballios1, S. Khalili2, I. Belair-Hickey2, K. Grise1, G. Bernier1, J. Liu1, G. Bader2, V. Wallace1, 4. 1Department of Ophthalmology and Vision Sciences, University of Toronto; 2Department of Molecular Genetics, University of Toronto; 3Centre de recherche, Maisonneuve-Rosemont Hospital; 4Vision Science Research Program, Toronto Western Research Institute

Moderators: Jonas Kuiper and Praveen Patel

4764 — 11:30 Single cell RNA-sequencing elucidates the diversity of human pluripotent stem cell-derived retinal ganglion cells. Kirstin B. VanderWalt1, C. M. Fligor2, J. S. Meyer1, 2. Biology, IUPUI; 3Stark Neuroscience Research Institute

4765 — 11:45 Single-cell transcriptomic analysis of human Nrl null retinal organoids. Donald J. Zack1, A. Kallman1, E. E. Capowski1, A. Kaushik1, L. Chen1, M. Liu1, A. Jansen1, K. Edwards1, C. Berlinicke1, M. Hu1, J. Qian1, E. A. Pierce1, J. Wang1, D. M. Gamm2. 1Ophthalmology, Wilmer Eye Inst, Johns Hopkins Univ; 2Ophthalmology, University of Wisconsin; 3Ophthalmology, Massachusetts Eye and Ear Infirmary; 4Mechanical Engineering, Johns Hopkins University

Wednesday – Papers/Minisymposium – 4755 – 4767

East Ballroom A
Wednesday, May 01, 2019 10:15 AM-12:00 PM

436 Precision through measurement: Biomarkers in health and disease - Minisymposium

Biomarkers are transforming medicine. In their various forms they guide precision diagnosis and treatment, and can be used to delineate health from disease at both an individual and population level. Their discovery is not predicated by an understanding of biological mechanism, but they nonetheless inform a deeper understanding of pathology. Most importantly, biomarkers help us to ensure the right patient gets the right treatment at the right time. In this symposium we explore how characteristic mutations have recently been shown to define ocular malignancy, and look outside the eye to consider the potential for heterogeneity in the human immune response to determine disease susceptibility and outcomes in a diversity of conditions. At a population level, algorithms have now been developed to shape healthcare delivery for common retinal diagnoses based on the automated analysis of images generated using widely available technologies, and this promises to change the landscape of global ophthalmic practice. The goal of the session is to touch on these broad ranging subjects and give an overview of biomarker development in the context of the eye, concluding with a description of how light changes clock gene expression in our circadian pacemaker, and the impact this has on the ultimate biomarker of health (sleep).

Moderators: Jonas Kuiper and Praveen Patel

4767 — 10:15 Transforming diagnostics in rare ocular malignancies. Sarah E. Coupland1, 2. 1Molecular and Clinical Cancer Medicine, Univ of Liverpool; 2Pathology, Royal Liverpool University Hospital
4768 – 4785 – Wednesday – Papers/Minisymposia

4768 – 10:35 Harnessing human diversity through the study of functional immune response biomarkers. Darragh Duffy1, 2. 1Institut Pasteur; 2Inserm U1223 *CR

4769 – 11:00 Artificial intelligence: the algorithmic solution to retinal healthcare. Pearse A. Keane1. 1 Moorfields Eye Hospital NHS Foundation Trust; 2Institute of Ophthalmology, University College London *CR


— 11:45 Panel discussion; Q&A

East Ballroom B

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Retina

437 Diabetic Retinopathy-Screening and Clinical Imaging

Moderators: Judy E. Kim and Lyndell L. Lim

4771 – 10:15 Association of Ultrawide Field (UWF) Retinal Vessel Caliber with Diabetic Retinopathy (DR) Severity, Predominantly Peripheral Lesions (PPL) and Retinal Nonperfusion (NP). Siyam Shakrollahi1, M. A. Elmasry1, K. Sampangi1, A. U. Pisig1, O. Abdelal1, G. Robertson1, A. Fleming1, C. M. Pito1, J. K. Sun1, P. S. Silva1, L. P. Aiello1, 2. 1Beetham Eye Institute, Joslin Diabetes Center; 2Department of Ophthalmology, Harvard Medical School; 3Ophthalmology, Cardinal Santos Medical Center; 4Optos PLC; 5Philippine Eye Research Institute, University of the Philippines *CR

4772 – 10:30 Association of Systemic Comorbidities with Predominantly Peripheral Diabetic Retinopathy Lesions (PPL) Identified on Ultrawide Field (UWF) Retinal Imaging. Paola S. Silva1, R. C. Stanton1, 2, M. A. Elmasry1, A. Fleming1, E. Pellegrini1, J. v. Hemert1, D. Tolls1, A. M. Tolson1, D. Lewis4, J. Stainback4, J. D. Cavallerano1, 2, J. K. Sun1, 2, L. P. Aiello1, 2. 1Beetham Eye Institute, Joslin Diabetes Center; 2Department of Ophthalmology, Harvard Medical School; 3Ophthalmology, Cardinal Santos Medical Center; 4Optos PLC; 5Philippine Eye Research Institute, University of the Philippines *CR

4773 – 10:45 Presence of peripheral lesions and correlation to macular perfusion, oxygenation and neurodegeneration in early type II diabetic retinal disease. Julia Hafner1, A. Polleisz1, B. Egner1, E. Fablik1, U. Schmidt-Erfurth1. 1CeMSIS, Institute for Medical Statistics; 2Department of Ophthalmology and Optometry; 3Department of Ophthalmology and Optometry *CR


4776 – 11:30 FDA-authorized autonomous AI for diabetic retinopathy screening in clinical routine. Bianca S Gerendas1, M. Neschi1, M. Michi1, L. Kostiantyn1, G. G. Deak1, Y. Winhofer2, A. Kaatzky-Willer3, M. D. Abramoff3, 4, U. Schmidt-Erfurth1. 1Vienna Research Center, Department of Ophthalmology, Medical University of Vienna; 2Department of Endocrinology, Medical University of Vienna; 3IDxs Inc; 4Department of Ophthalmology and Visual Sciences, University of Iowa *CR

4777 – 11:45 Diabetic Retinopathy in Pregnant Women with Type I and II Diabetes in Metropolitan Melbourne – Prevalence, Adherence and Barriers to the Recommended Eye Screening Guidelines. Felicia Widyaprat1, 2, M. Okada1, 2, S. Rogers2, A. Nankervis4, 5, J. Conn4, 5, L. L. Lim1, 2. 1Ophthalmology, Department of Surgery, University of Melbourne; 2Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 3Royal Victorian Eye and Ear Hospital; 4Department of Diabetes and Endocrinology, Royal Melbourne Hospital; 5Department of Endocrinology Service, Royal Women’s Hospital; 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, Austin Hospital *CR

— West 211

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Cornea

438 Corneal biomechanics, keratoconus and crosslinking

Moderators: Berthold Seitz and Isabelle Brunette

4778 – 10:15 Age-dependent Characteristics of Belin’s ABCD Grading System in 1,000 Patients of the Homburg Keratoconus Center (HKC). Elias Flockerzi1, T. Nau1, U. Kluberspie1, L. Hamon1, T. Eppig1, A. Langenbucher2, B. Seitz1. 1Department of Ophthalmology, Saarland University Medical Center; 2Institute of Experimental Ophthalmology, Saarland University Medical Center


4780 – 10:45 Preliminary Comparisons of Clinical Measures of Corneal and Ocular Stiffness in Normal and Pathologic Cohorts. Cynthia J. Roberts1, A. Mahnoud1, G. Fleming1, M. Ohr2, P. A. Weber1. 1Ophthalmology and Biomedical Engineering, The Ohio State University; 2Ophthalmology, The Ohio State University *CR

4781 – 11:00 3D Assessment of Corneal Crosslinking with Phase-De-correlation OCT. Brecken Blackburn1, J. Murray2, M. R. Ford2, M. W. Jenkins3, W. J. Dupps3, 4, A. M. Rollins1. 1Case Western Reserve University; 2Cleveland Clinic *CR

4782 – 11:15 Effect of proteoglycans on the tensile mechanical properties of the cornea. Ananya Goyal1, A. Olsen1, M. A. Ramirez-Garcia1, Y. M. Khalili1, M. Buckley1. 1Biomedical Engineering, University of Rochester; 2Emory University

4783 – 11:30 Unravelling the downstream signaling cascade of Prolactin-Induced Protein in Keratoconus. Dimitrios Karamichos1, R. Sharif2, K. Ding1, J. Hjordal1. 1Ophthalmology & Cell Biology, University of Oklahoma Health Sciences Center; 2Aarhus University Hospital; 3Biostatistics and Epidemiology, University of Oklahoma Health Sciences Center

4784 – 11:45 PPIP5K2 mutations & Keratoconus in Human Patients and Mouse Models. Yutao Liu1, 2, M. Khaled3, Y. Bykhovskaya1, K. Abu-Amero1, S. B. Smith1, 2, M. A. Watts2, 3, A. Estes2, 3, S. B. Shears4, A. N. Kuo4, Y. S. Rabinovitz1. 1Cellular Biology and Anatomy, Augusta University; 2James & Jean Culver Vision Discovery Institute, Augusta University; 3Surgery, Cedars-Sinai Medical Center; 4Department of Ophthalmology, College of Medicine, King Saud University; 5Ophthalmology, Augusta University; 6Signal Transduction Laboratory, National Institute of Environmental Health Sciences; 7Ophthalmology & Biomedical Engineering, Duke University Medical Center

— West 212-214

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Visual Neuroscience

439 Inner Retinal Function

Moderators: Maureen A. McCall and Teresa Puthussery

4785 – 10:15 Compensation in the primary rod pathway following partial rod loss in the mature retina. Rachel Care1, I. Anastassou2, F. Dunn1. 1UCSF; 2Department of Biology, San Francisco State University
4786 — 10:30 Temporal filtering of light responses at cone to Off bipolar cell synapses in the ground squirrel retina. Steven H. DeVries. Ophthalmology, Northwestern University Feinberg School of Medicine

4787 — 10:45 Retinal thinning of inner layers is associated with visual cortex atrophy in a mouse model of Alzheimer’s disease: a longitudinal in vivo multimodal study, Antonio F. Ambrosio1,2, S. Chiiqueta2, J. Castelhano1,2, M. Ribeiro§1, J. Sereno§1, E. J. Campos§1, P. I. Moreira§1, M. Castelo-Branco§1,3. Coimbra Institute for Clinical and Biomedical Research (iCBR), University Coimbra; 2CNC, Biomedical Imaging and Translational Research (CIBIT), University Coimbra; 3Center for Neuroscience and Cell Biology (CNC), University Coimbra

4788 — 11:00 Role of presynaptic LRIT3 expression in the restoration of dim light vision. Nazarul Hasan1, g. Pangeni1, C. Cobb1, E. R. Nettesheim1, D. M. Lipinski1,2, M. A. McCall1,4, R. G. Gregg1. Biotechnology and Molecular Genetics, University of Louisville; 2Ophthalmology and Visual Sciences, University of Louisville; 3Ophthalmology & Visual Sciences, Medical College of Wisconsin; 4Anatomical Sciences & Neurobiology, University of Louisville; 5Nuffield Laboratory of Ophthalmology, University of Oxford


4790 — 11:30 Cholinergic transmission in the direction selective circuit: Paracrine or synaptic? Santhosh Sethuramanamuj, G. B. Awatramani. Department of Biology, University of Victoria

4791 — 11:45 Cholinergic retinal waves generate slow and rhythmic depolarizations in dopaminergic amacrine cells of the developing retina. Rong-Shan Yan1,2, S. Qiao1,3, Y. Zhong1, D. Zhang1,3. 1Institute of Brain Science, Fudan University; 2Eye Research Institute of Oakland University; 3Department of Ophthalmology and Visual Science, Yale University School of Medicine

West 217-219
Wednesday, May 01, 2019 10:15 AM-12:00 PM
Lens
440 Lens Biochemistry

Moderators: Kirsten J. Lampi and Viviana M. Berthoud

4792 — 10:15 Tpm3.1 prevents the acquisition of the myofibroblast phenotype by lens cells, suppressing cataract development. Justin Parreno, M. Amadeo, V. M. Fowler. Molecular Medicine, The Scripps Research Institute

4793 — 10:30 Do connexin mutants cause cataracts by calcium precipitation? Viviana M. Berthoud1, J. Gao1, P. J. Minogue1, O. Jara1, R. Mathias1, E. C. Beyer1. 1PediatriKs, University of Chicago; 2Physiology and Biophysics, Stony Brook University

4794 — 10:45 Mechanical-sensitive hemichannels regulated by integrins mediates the delivery of glucose and glutathione into lens fiber cells. Jie Liu, M. Riquelme, Z. Li, S. Gu, J. X. Jiang. Biochemistry, University of Texas Health Science Center at San Antonio

4795 — 11:00 Ex Vivo Evidence For The Water Channel And Cell-To-Cell Adhesion Functions Of C-Terminally End-Cleaved Aquaporin-0. Kaulandaiappan Varadaraj, S. S. Kumari. Physiology and Biophysics, Stony Brook University

4796 — 11:15 Structural Characterization of Aquaporin-0 by Native and Hydrogen-Deuterium Exchange Mass Spectrometry, Kevin L. Schey1, W. L. White1, A. E. Farman1, S. R. Harvey1, Y. Ju1, E. M. Panczyk1, V. H. Wysocki1. 1Biochemistry, Vanderbilt University; 2Department of Chemistry and Biochemistry, The Ohio State University

4797 — 11:30 Lens β-crystallins preferentially form hetero-oligomers. Kirsten J. Lampi1, M. Donor2, T. Takata2, C. Vetter2, L. L. David3, J. Prell3. 1Integrative Biosciences, Oregon Health and Science University; 2University of Oregon; 3Biochemistry and Molecular Biology, Oregon Health & Science University; 4Kyoto University

Wednesday – Papers/Minisymposia – 4786 – 4802

West 220
Wednesday, May 01, 2019 10:15 AM-12:00 PM
Clinical/Epidemiologic Research
441 Retinal disease screening and risk factors

Moderators: Spencer D. Fuller and Carol Y. Cheung

4798 — 10:15 Evaluation of a screening algorithm for detection of diabetic retinopathy based on quantification of retinal pathological elements. Stine Byberg1, D. Vistisen1, M. E. Jørgensen1, M. Valerius1, J. N. Hajiari2, H. Lund-Andersen1, 2Steno Diabetes Center Copenhagen; 3Dept. of Ophthalmology, University Hospital Glostrup

4799 — 10:30 Development of a prediction model for advanced age-related macular degeneration using a penalized machine learning approach: the EYE-RISK project. Soufiane Ajana1, A. Cougnard-Gregoire1, B. M. Merle1, T. Verzijden1, M. Meester1, B. Heijblum1, J. M. Calije1, J. Korobelnik1, C. C. Klaver1, J. H. jacqmin-Gadda1, C. Delcourt1. 1Inserm UMR1219-Bordeaux Population Health Research Center, University of Bordeaux; 2Department of Epidemiology, Erasmus Medical Center, Department of Ophthalmology, Erasmus Medical Center; 3Department of Ophthalmology, Radboud UMC; 4Service d’Ophthalmologie, CHU de Bordeaux. *CR

4800 — 10:45 Smartphone-based Retinal Imaging to Characterize Early Functional Retinal Vascular Changes in Diabetic Retinopathy. Carol Y. Cheung1, Y. Wang2, J. H. Liu1, K. Lai1, R. Chang3, T. Y. Wong3. 1Ophthalmology and Visual Sciences, The Chinese University of Hong Kong; 2Department of Ophthalmology, University of California San Diego; 3Tuen Mun Eye Center; 4The Byers Eye Institute, Stanford University; 5Singapore Eye Research Institute, Singapore National Eye Centre. *CR

4801 — 11:00 Cost-Effectiveness of Primary Care-Based Non-Mydriatic Fundus Photography with Automated Retinal Image Analysis Screening Among Low-Income Patients with Diabetes. Spencer D. Fuller, J. Liu, j. kuo, R. Rajagopal. Ophthalmology, Washington University in St. Louis

4802 — 11:15 The costs of screening for sight-threatening diabetic retinopathy. Simon P. Harding1,2, C. J. Sampson1, T. M. Criddle1,2, D. M. Broadbent1,2, M. James1. 1Eye and Vision Science, University of Liverpool; 2St. Paul’s Eye Unit, Royal Liverpool University Hospital; 3Health Economics, University of Nottingham

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.
4803 — 11:30 Extraction of Patient Specific Information from Fundus Images in the Wild. Marion R. Munk1, 2, T. Kurmann1, P. Marquez-Neila1, M. S. Zinkernagel1, S. Wolf1, R. Szmit1. 1Inselspital, University Hospital Bern; 2Ophthalmology, Northwestern University, Feinberg school of medicine; 1ARTORG, University Clinic Bern  *CR

4804 — 11:45 Plasma carotenoids a biomarker of AMD risk: the Alienor Study. Benedicte M. Merle1, A. Cagnard-Gregoire1, J. Korobelnik2, 4, W. Schalch3, S. Eteve3, C. Féart1, C. Samieri1, M. Deluyer3, 2, C. Delcourt1. 1Population Health research center UMR1219, Inserm; 2Service d’Ophtalmologie, CHU de Bordeaux; 3DSM Nutritional Products  *CR

West 221/222
Wednesday, May 01, 2019 10:15 AM-12:00 PM
Eye Movements/Strabismus/Amblyopia/Neuro-Ophthalmology
442 Optic Neuropathy

Moderators: Donny W. Suh, Randy H. Kardon, Steven Laurie and Tonia S. Rex

4805 — 10:15 Predicting Risk of Perioperative Ischemic Optic Neuropathy: A Study Using the US National Inpatient Sample. Steven Roth1, 2, S. Shah1, Y. Chen1, H. Moss3, D. Rubin1, C. Joslin2. 1Anesthesiology, Univ of Illinois; 2Ophthalmology and Visual Science, University of Illinois; 3Anesthesiology, Walter Reed National Military Medical Center; 2Clinical and Translational Sciences, University of Illinois at Chicago; 3Anesthesia and Critical Care, University of Chicago; 2Ophthalmology and Visual Science; Neurology and Neurological Sciences, Stanford University  *CR

4806 — 10:30 rAAV/2-ND4 for the Treatment of Leber Hereditary Optic Neuropathy (LHON): 72-Week Data from the REVERSE Phase III Clinical Trial. Patrick Yu-Wai-Man1, 2, M. Moser3, 4, A. A. Sadun1, 2, Klopstockc, C. Vignal-Clermont4, 5, N. J. Newman1, 2, R. C. Sergott3, 4, V. Carelli3, 4, C. Chevalier1, 5, L. Blouin1, 5, M. Taed1, 5, B. Katz1, 5, J. A. Sahel1, 2. 1Department of Clinical Neurosciences, University of Cambridge; 2Moorefields Eye Hospital; 3Department of Neuro-Ophthalmology, Wills Eye Hospital; 2Departments of Neurology and Ophthalmology, Sidney Kimmel Medical College of Thomas Jefferson University; 2Doheny Eye Institute and Department of Ophthalmology, UCLA; 2Department of Neurology, Friedrich-Baur-Institute, Ludwig Maximilians University of Munich; 2Centre Hospitalier National d’Ophthalmologie des Quinze-Vingts; 3Fondation Ophthalmologique Rothschild; 4Departments of Ophthalmology, Neurology and Neurosurgical Surgery, Emory University School of Medicine; 4Neuro-Ophthalmology Service, Wills Eye Hospital; 1IRCCS Institute of Neurological Sciences of Bologna, Bellaria Hospital; 1Unit of Neurology, Department of Biomedical and Neurormotors Sciences (DIBINEM), University of Bologna; 1GenSight Biologics; 2Institut de la Vision, Sorbonne Universités; 3Department of Ophthalmology, The University of Pittsburgh School of Medicine  *CR,

4807 — 10:45 Erythropoietin in Methanol Associated Optic Neuropathy: A Phase-2 Clinical Trial. Farzad Pakdel. Ophthalmic Plastic & Reconstructive Surgeries, Farabi Hospital, Eye Research Center, Tehran University of Medical Sciences

4808 — 11:00 Optic disc edema and retinal thickness changes in healthy subjects exposed to bedrest differ from astronauts during spaceflight. Steven Laurie1, 2, B. Macas1, 2, S. Lee1, 2, M. Young1, 3, M. B. Stenger1, 3. NASA Johnson Space Center; 2KBRwyle

4809 — 11:15 Elevated Intracranial Pressure Does Not Explain Spaceflight-Induced Optic Disc Edema. Brandon Macias1, S. Laurie1, S. Lee1, D. Martin1, A. Sargsyan1, K. Marshall-Goebel1, D. Ebert1, S. Dulchavsky1, A. Hargens1, M. B. Stenger1. 1KBRwyle / NASA-Johnson Space Center; 2Henry Ford Hospital; 3University of California, San Diego; 4NASA

4810 — 11:30 Progression and pathology of blast-induced secondary indirect traumatic optic neuropathy. Tonia S. Rex, A. Bernardo-Colon, V. Vest, M. Cooper, D. J. Calkins. Ophthalmology & Visual Science, Vanderbilt University Medical Center

4811 — 10:15 Short periods of darkness may reduce compensation for experimentally-imposed defocus in marmosets. Xiaoying Zhu1, P. Yoon2, A. Cervetti2, V. Lin3, A. Pope4, D. Troilo4, A. Nour5, A. Benavente-Perez3. 1Biological and Vision Sciences, State University of New York, College of Optometry; 2State University of New York, College of Optometry  *CR

4812 — 10:30 The complementary inhibitory effects of short wavelength lighting and myopic defocus on eye growth in chicks. Manrong Yu1, 2, C. F. Wildsoet1. 1Ophthalmology, Eye and ENT Hospital of Fudan University; 2School of Optometry, University of California, Berkeley

4813 — 10:45 Predicting the progression of myopia in children. Divya Jagadesh1, 2, R. Y. Weng1, A. Ho1, 2, T. J. Nadavithlith1, 2, C. Fedke1, 2, M. Jong1, 2, P. Sankaridurg1, 2. 1Brien Holden Vision Institute; 2School of Optometry and Vision Science, University of New South Wales

4814 — 11:00 Low-concentration atropine for myopia progression (LAMP) study Phase 2: 0.05% atropine remained the best concentration among 0.05%, 0.025%, and 0.01% atropine over 2 years. Jason YAM, F. Li, S. Tang, L. Chen, C. C. Tham. The Chinese University of Hong Kong

4815 — 11:15 Choroidal Thickness in Myopic Children in the BLINK Study. David A. Berntsen1, A. T. Gostovic2, H. M. Queree1, M. A. Chandler3, J. Huang4, A. D. Nixon5, L. T. Sinnott5, M. Walker1, S. J. Chiu6, S. Farzine7, L. Jordan8, D. O. Mutti9, J. J. Walline10. 1College of Optometry, University of Houston; 2College of Optometry, Ohio State University; 3Biomedical Engineering & Ophthalmology, Duke University  *CR,

4816 — 11:30 Improving the genetic prediction of myopia and refractive error using educational attainment. Neema Ghorbani Mojarad1, C. Williams1, J. A. Guggenheim1. 1School of Optometry and Vision Sciences, Cardiff University; 2Population Health Sciences, Bristol Medical School, University of Bristol


The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Wednesday Papers/ Minisymposia
10:15 am – 12:00 pm

ARVO Ballroom

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Glucoma

444 Imaging

**Moderators:** Linda M. Zangwill, Gadi Wollstein and Anne L. Coleman

**4818 — 10:15** Improved Detection of Optical Coherence Tomography (OCT) Structural Abnormality in Glaucoma (GL) with Combined Sectoral Rim and Retinal Nerve Fiber Layer (RNFL) Criteria. Hongli Yang1,2, H. Luo4, C. A. Hardin1,2, C. Albert1,3, J. Yannaud1, G. Sharpe1, J. Reynaud2,3, S. Demirel1, S. L. Mansberger2, B. Fortune2, S. K. Gardiner2, B. C. Chauhan1, C. F. Burgoyne1,2. 1Optic Nerve Head Research Lab, Devers Eye Institute; 2Devers Eye Institute, Legacy Research Institute; 3Department of Ophthalmology & Visual Sciences, Dalhousie University; 4Department of Ophthalmology, New York University School of Medicine; 5Department of Ophthalmology, University of Pittsburgh; 6Department of Radiology, University of Wisconsin-Madison; 7Department of Ophthalmology and Visual Sciences, University of Iowa; 8McPherson Eye Research Institute, University of Wisconsin-Madison; 9Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison; 10Department of Radiology, New York University School of Medicine

**4823 — 11:30** Non-invasive Detection of Visual Pathway Abnormalities in Genetic Experimental Models of Glaucoma Using Diffusion Tensor MRI. Max Colbert1, Y. van der Merwe1, L. C. Ho2, G. J. McLellan1, S. A. Hurley3, J. H. Finger1, C. Parra1, M. A. Faq1, G. Wollstein1, J. Schuman1, K. C. Chan1,2. 1Optophthalmology, New York University School of Medicine; 2Department of Ophthalmology, University of Pittsburgh; 3Department of Radiology, University of Wisconsin-Madison; 4Department of Ophthalmology and Visual Sciences, University of Iowa; 5McPherson Eye Research Institute, University of Wisconsin-Madison; 6Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison; 7Department of Radiology, New York University School of Medicine

**4824 — 11:45** Trabecular Meshwork Motion in Normal Compared with Glaucoma Eyes. KAI GAO1,2, S. SONG1, M. A. Johnstone1, R. K. Wang3, J. C. Wen2. 1Department of Bioengineering, University of Washington; 2Department of Ophthalmology, University of Washington; 3Department of Ophthalmology, Zhongshan Ophthalmic Center

Harbour Ballroom

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Cornea

445 Corneal Epithelium in Health and Disease

**Moderators:** Mary Ann Stepp, Shivalingappa K. Swamyathan and Han Peng

**4825 — 10:15** Hsa-miR143-3p regulates human corneal epithelial stem cells. Chidambaraman Gowri Priya1, L. Kalaimani1, B. D2, V. Praju1, M. VR1. 1Immunology and Stem Cell Biology, Aravind Medical Research Foundation; 2Bioinformatics, Aravind Medical Research Foundation; 3Cornea and Refractive Surgery Services, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology

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.
4832 — 40909 Optical techniques to study the biomechanics of the anterior eye in people with Marfan syndrome. Juan Tabernero1, C. Otero2, P. Artañ1, S. Pardhan1. ‘Vision and Eye Research Unit, Anglia Ruskin University; 3Laboratorio de Optica, Universidad de Murcia

4833 — 40901 The association between changes in crystalline lens and choroidal thickness before and after cycloplegia. Nickolai G. Nilsen, H. Pedersen, L. A. Hagen, S. J. Gilson, R. B. Cuevas1, A. Pennos1. ‘Department of Ophthalmology, Central South University; 3Vision Research Center, University of Utah

4834 — 40902 Axial length changes in healthy adult eyes. Jos J. Rozema1, 2, S. Ni Dhubhghaill1, 2. ‘Eye care, University of South-Eastern Norway

4835 — 40903 The optical role of pupil size in eye growth and emmetropia. Brian Vohnsen, A. Carmichael Martins, N. Sharmin, S. Qaysi, M. I. Rodriguez Rodriguez. School of Physics, University College Dublin

4836 — 40904 Peripheral retinal contours in emmetropia and myopia using biometric and optical quality parameters. Gabriella M. Velonias1, C. Otero2, E. Kallamata1, F. A. Vera-Diaz1. ‘New England College of Optometry; 3Vision and Eye Research Unit, Anglia Ruskin University

4837 — 40905 Peripheral Refraction in Emmetropic Chinese Children. Zenghua Lin1, W. Lan1, P. Artañ1, Z. Yang1. ‘Aier School of Ophthalmology, Central South University; 3Laboratorio de Optica, Universidad de Murcia

4838 — 40906 Assessing the ocular refraction from a series of through-focus, double-pass aerial images. Pau Santos1, 2, R. Tort1, H. Ginis1, R. Cuesas1, A. Pemnos1. ‘Visiometrics; 3Cd6-Upc, Department of Research, Athens Eye Hospital *CR

4839 — 40907 Refractive error determination based on meridional targets and aberrometry. Thomas W. Raasch. College of Optometry, Ohio State University


West Exhibition Hall A0164-A0183

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Retinal Cell Biology

447 Retinal Ganglion Cells and Optic Neuropathies

Moderators: Meredith S. Gregory-Ksander and Yoko Okunuki


4844 — 40165 Inflammamsonic facilitates ganglion cell loss via pyroptosis and apoptosis in ocular hypertension injury. Valery I. Shestopalov1, 2, A. N. Pronin1, D. G. Pham1, W. A. Lee1, A. E. Reiser1, Z. N. Kozhekbaeva1, G. Musada1, A. Hackam1, G. Dvoriantchikova1, V. Z. Slepak1. ‘Bascom Palmer Eye Institute Dept, Ophtha, Univ.of Miami Miller School of Medicine; 2Cell Biology, University of Miami School of Medicine Ophthalmology; 3Molecular and Cellular Pharmacology, University of Miami School of Medicine Ophthalmology

4845 — 40166 The Role of MEF2 transcription factors in retinal ganglion cell survival and axon regeneration. Xin Xia, M. Bian, S. Shah, K. Chang, C. Sun, C. Yu, C. Knaisel, M. Kapi1off, J. L. Goldberg. Byers Eye Institute, Stanford University

4846 — 40167 Selective retinal ganglion cell vulnerability in model mice exposed to acute intraocular pressure elevation and the potential involvement of the P2X7-receptor. Anna Y. Wang1, K. A. Vessey2, B. V. Bu1, V. H. Wong2, P. Lee2, E. L. Fletcher1. ‘Department of Anatomy and Neuroscience, University of Melbourne; 3Department of Optometry and Vision Sciences, University of Melbourne

4847 — 40168 Calcium dynamics of ganglion cell layer neurons in rd1 mice. Jessica Carr1, 2, W. H. Baldridge1, 2. ‘Clinical Vision Science Program, Dalhousie University; 3Medical Neuroscience, Dalhousie University; 4Ophthalmology & Visual Sciences, Dalhousie University

4848 — 40169 TAF9 RNA polymerase II-P53-TRIAP1 pathway plays an important role to determine cell death fate of retinal ganglion cells after optic nerve ischemia. Yao-Tseng Wen1, R. Tsai1, W. Lin2. ‘Buddhist Tzu Chi General Hospital; 2Dayeh University


4850 — 40171 Retinal ganglion cell type specific susceptibility to glutamatergic excitotoxicity. Ian Christensen1, B. Liu2, N. Yang1, K. Huang1, P. Wang2, N. Tian2. ‘University of Utah; 3VA Salt Lake City Health Care System

4851 — 40172 Harnessing neuroinflammation to promote axon regeneration after optic nerve injury. Qian FENG, K. A. Wong, S. Peterson, L. Benovitz. Boston Childrens Hospital/Harvard Medical School


4853 — 40174 Investigating the effect of the anti-inflammatory agent minocycline on Wid-induced retinal ganglion cell survival and axonal regeneration. Sarah M. Gough1, A. Udib1, T. Carny1, K. Park1, A. Hackam1. ‘Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 2Miami Project to Cure Paralysis, University of Miami Miller School of Medicine

4854 — 40175 Retinal ganglion cell type specific susceptibility to optic nerve injury. Ning Tian1, N. Yang1, P. Wang2. ‘Ophthalmology & Visual Science, University of Utah; 3VA Salt Lake City Health Care System

4855 — 40176 A novel estrogen receptor GPER1 activation promote retinal ganglion cell survival in normal tension glaucoma. QinQin Deng1, Y. Xing1, M. Jiang1, X. Ma2, Q. Zhao2, W. Lu1, X. Lei1, Y. Li1, Y. Shen1. ‘Eye center, Renmin Hospital of Wuhan University; 2Urmqi City Ophthalmology and Otolaryngology Hospital

4856 — 40177 Intraocular inflammation in the endotoxin-induced uveitis model of autophagy-deficient mice. Takahiro Suzuki. Dept of Ophthalmology, Tokai Univ School of Medicine

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Wednesday – Posters – 4857 – 4875

4857 — A0178  Neuroprotective effect of icarin in a rat model of anterior ischemic optic neuropathy. CHIN-TE HUANG1,2, T. Desai1, F. Cheng1, Y. Wen1, R. Tsai1. 1Department of Ophthalmology, Chung Shan Medical University Hospital, School of Medicine, Chung Shan Medical University; 2Institute of Eye Research, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation; 3Institute of Medical Sciences, Tzu Chi University; 4Drug Delivery Lab, Biomedical Technology and Device Research Labs, Industrial Technology Research Institute

4858 — A0179  RGC loss in glaucoma might be slowed by reducing and elevating normal levels of respectively, visual blue and red light, which normally impinges on the retina.. Claudia Núñez-Álvarez1, C. Suárez Barrio1, N. N. Osborne1. 1Neurobiology of the retina, FIO; 2Universidad de Oviedo

4859 — A0180  Analysis of Trabodenoson’s neuroprotective effect in a rodent model of NAION. Y. Guo1, Z. Mehrabyan1, D. S. Albers2, C. C. Rich3, R. A. Baumgartner3, S. L. Bernstein1. 1Ophthalmology, University of Maryland Baltimore; 2ReNeuron; 3Flatley Discovery Lab; 4Aura Biosciences

4860 — A0181  Novel treatment approach via complement factor C5 inhibition in an Experimental Autoimmune Glaucoma model. Sara C. da Piedade Gomes1, S. Reinehr1, C. J. Gassel1, B. Dick1, S. C. Joachim1. Experimental Eye Research Institute

4861 — A0182  In search for the RGC lineage: characterization of R28 cells and the expression of RGC markers. Nikolas Hopkins1, Z. K. Goldsmith2, M. M. Jablonski1, M. W. Wilson3, G. M. Seigel4, Y. M. Morales3,1. 1Hamilton Eye Institute, Ophthalmology, UTHSC; 2Anatomy and Neurobiology, UTHSC; 3Surgery, St. Jude Children’s Research Hospital; 4Center for Hearing and Deafness, University at Buffalo; 5Microbiology, Immunology, and Biochemistry, UTHSC

4862 — A0183  Crystallin downregulation as a converging link between AD and glaucoma induced retinal pathology. Kanishka Toychiev1, N. Chitranshi1, L. Deng2, V. Gupta3, S. L. Graham1. 1Department of clinical medicine, Macquarie University; 2Department of Chemistry and Biomolecular Sciences, Macquarie University

West Exhibition Hall A0184-A0210

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Retinal Cell Biology 448 Neuroprotection

Moderators: Scott M. Taylor and Jennifer B. Phillips

4863 — A0184  Gene regulation dynamics induced by the protein kinase inhibitor, SBJ-051 associated with neuroprotection in light-induced photoreceptor cell death. Byeong-Jin Kim1, J. Wang2, T. Masuda1, M. Liu1, R. Nair1, J. Qian1, D. S. Welsbie1, T. Bannister1, T. Spicer1, L. Scampavia1, G. Trainor1, A. Trainor1, D. J. Zacker1. 1The Wilmer Eye Institute, Johns Hopkins University; 2Chemistry, The Scripps Research Institute-FL; 3Molecular Medicine, The Scripps Research Institute-FL; 4Shiley Eye Institute, UC San Diego; 5BioMotiv

4864 — A0185  The Role of Endoplasmic Reticulum (ER) Calcium Channels in ER Stress and Cone Death in CNG Channel Deficiency. Michael R. Butler1, H. Ma1, F. Yang1, J. Rapp1, Y. Le2, K. Mikoshiba1, M. Bie1, S. Michalakis1, X. Ding1. 1Cell Biology, University of Oklahoma Health Sciences Center; 2RIKEN Center for Brain Science; 3Center for Integrated Protein Science Munich and Department of Pharmacy - Center for Drug Research, Ludwig-Maximilians-Universität München

4865 — A0186  Short-term high-fat diet exacerbates retinal degeneration in the rd10 mouse model of retinitis pigmentosa. Pedro Lax1, O. Kutsyr1, A. Noailles1, M. Company1, V. Maneu1, N. Cuenca1. 1Physiology, Genetics and Microbiology, University of Alicante; 2Optics, Pharmacology and Anatomy, University of Alicante; 3Ramón Monegaff Institute, University of Alicante

4866 — A0187  Decrease of intracellular calcium to restrain rod cell death in retinitis pigmentosa. Valeria Marigo1, M. Kathuer1, L. Huang1, A. Comitato1, D. Schirol1, F. Schwede1, A. Rentch1, P. A. Ekstrom1, F. Paquet-Durand1. 1Life Sciences, Univ of Modena and Reggio Emilia; 2BIOLOG Life Science Institute; 3Lund University; 4Eberhard Karls Universität Tübingen

4867 — A0188  Investigation of the interaction of Sigma1 Receptor (S1R) and NRF2 in cone photoreceptor cells. Shannon R. Barwick2, M. Siddiqui2, B. Marshall2, E. Perry1, J. Wang1, S. B. Smith2. 1Cellular Biology and Anatomy, Medical College of Georgia at Augusta University; 2James and Jean Culver Vision Discovery Institute, Augusta University

4868 — A0189  Norgestrel-treatment does not prevent rod oxidative stress in vivo in dark-reared Pde6brd10 pups. Bruce A. Berkowitz1, R. H. Podolsky1, K. M. Lins-Childers1, S. Roche1, T. G. Cotter2, R. Roberts2. 1Ophthalmology, Visual and Anatomical Sciences, Wayne State University; 2Beaumont Hospital; 3University College Cork

4869 — A0190  Tran-sclera electrical stimulation protects degenerated retina in rd10 mice. Ying Xu1, F. Liu1, J. Dong2, V. Lee2, K. Chiu3, 1GHM Institute of CNS Regeneration, Jinan University; 2Department of Ophthalmology, The University of Hong Kong; 3The State Key Laboratory of Brain and Cognitive Sciences, The University of Hong Kong; 4Department of Pathophysiology, Key Laboratory of the State Administration of Traditional Chinese Medicine, Medical College, Jinan University

4870 — A0191  Neuroprotective actions of growth hormone (GH) in the neuroretina include Notch signaling activation and involves changes in the expression of local growth factors. Carlos G. Martínez-Moreno1, T. S. Fleming2, J. E. Balders-Márquez1, D. Epardo1, M. Carranza1, M. Luna1, S. Harvey1, C. Arámburo1. 1Instituto de Neurobiología, Universidad Nacional Autónoma de México; 2Physiology, University of Alberta

4871 — A0192  Protective effect of a novel HIF inhibitor halofuginone in a murine model of retinal ischemia-reperfusion. Hiroimatsu Kunimi1, Y. Miwa2, Y. Kataoka2, K. Tsutoba4, T. Kurita4. 1Department of ophthalmology, Keio University; 2Photobiology laboratory

4872 — A0193  Assessment of retinal hypoxia by pimonidazole in graded hypoxic rabbit model. Liuhui Luo1, Y. Chen1, J. Martinez2, A. H. Kashani3. 1Ophthalmology, USC Roski Eye Institute; 2University of Southern California Institute of Biomedical Therapeutics

4873 — A0194  INOS-inhibitor treatment leads to cell rescue in a porcine retina organ culture model. Jose Hursi1, A. Malhia1, S. Kuehn1, F. Herns2, S. Sch Nichols2, S. C. Joachim1. 1Research, Eye Hospital Tuebingen; 2Experimental Eye Research Institute, Ruhr-University Bochum,

4874 — A0195  Gap junctional coupling between retinal astrocytes exacerbates neuronal damage in acute ischemic injury. Abduaqodir Toychiev, N. Slavi, K. Batsuuri, M. Srinivas. Biological and Vision Sciences, SUNY College of Optometry

4875 — A0196  Protective effects of staphylococcal nuclease and tudor domain containing 1 (SND1) on retinal photoreceptor cell damage induced by ionizing radiation. Xuyang Yao, L. Yang. Ophthalmology, Peking University First Hospital

*CR Refer to the Program Number in the Commercial Relationships (CR) Index for Disclosures.
4876 — A0197 Intravitreal stanniocalcin-2 reduces photoreceptor degeneration and improves oscillatory potentials with elevated ocular blood flow in retinitis pigmentosa. Min Zhao1, W. Xie1, W. Chen1, T. W. Wei1, L. Kuo1, R. H. Rosa2. 1Medical Physiology, Texas A&M University Health Science Center; 2Biostatistics, Baylor Scott & White Research Institute; 3Ophthalmology, Baylor Scott & White Health

4877 — A0198 Intravitreal injection of novel small molecule proteostasis regulators activates the Unfolded Protein Response in murine retina. David Castillejés2, C. Carvajal1, J. Grandjean1, E. Aguilar1, A. Ouchi1, W. J. Chiang1, L. Wiseman1, J. H. Lin1. 1Department of Molecular Medicine, The Scripps Research Institute; 2Department of Pathology, University of California, San Diego

4878 — A0199 Inhibition of VCP structurally and functionally reconstitutes photoreceptor cells in Rh2™ organotypic retina cultures. Blanca Arango-Gonzalez1, M. Son1, T. Chou2, R. Deshaies1, S. Bolz2, W. Haq1, M. Ueffing1. 1Centre for Ophthalmology, University Eye Hospital Tübingen; 2Department of Pediatrics, Harbor-UCLA Medical Center and Los Angeles Biomedical Research Institute; 3Research, Amgen, Inc.; 4Graduate Training Centre of Neuroscience, Eberhard Karls University of Tübingen. *CR

4879 — A0200 Dipetidyl peptidase-IV inhibition by sitagliptin slows down retinal neurodegeneration in rd10 mice retinas. Oksana Kutsyr1, B. Arango-Gonzalez2, I. Fernandez-Sanchez1, V. Maneu1, P. Lax1, A. F. Ambrosio2, M. Ueffing2, N. Cuenca1. 1Physiology, Genetics and Microbiology, University of Alicante; 2Centre for Ophthalmology, University Eye Hospital Tübingen; 3Optics, Pharmacology and Anatomy, University of Alicante; 4Institute for Clinical and Biomedical Research (iCBR), University of Coimbra

4880 — A0201 Protective role of intraocular lenses under LED illumination. Ignacio Rodriguez-Uría1, A. Fernandez-Vega2, S. Del Olmo-Aguado3, E. Garcia-Perez1, J. Alfonso2, S. Mar1, J. Merayo-Lloves1. 1Instituto Otalmológico Fernandez-Vega; 2Fundación de Investigación Oftalmológica; 3Departamento de Física Teórica, Atómica y Óptica, Universidad de Valladolid

4881 — A0202 Pharmacological interference in the VCP/ERAD/proteasome axis rescues photoreceptor degeneration in Rh2™. Merve Sen1, O. Kutsyr2, S. Bolz3, T. Chou2, R. Deshaies1, B. Arango-Gonzalez2, M. Ueffing1. 1Centre for Ophthalmology, University Eye Hospital Tübingen; 2Department of Physiology, Genetics and Microbiology, University of Alicante; 3Department of Pediatrics, Harbor-UCLA Medical Center and Los Angeles Biomedical Research Institute; 4Graduate Training Centre of Neuroscience, Eberhard Karls University of Tübingen; 5Research, Amgen Inc. *CR

4882 — A0203 Norrin protects photoreceptors against inherited retinal degeneration. Andreas Ohlmann1, S. Eggerstorfer1, C. Eimer1, R. Seitz2, G. Weber1, M. I. Naush1, S. Friglinger1, E. R. Tann1. 1Dept. of Ophthalmology, University of Munich; 2Dept. of Anatomy, University of Regensburg; 3Department of Biomedical Engineering, University of Houston

4883 — A0204 Dietary intake of Coenzyme Q10 is able to slow down retinal degeneration in a model of retinitis pigmentos. Laura Fernandez-Sanchez1, C. Pedrero-Prieto1, O. Kutsyr2, Y. Rabanal-Ruiz1, N. Martinez-Gil1, X. Sanchez-Siuez1, A. Noailles1, P. Lax1, F. Alcaín1, N. Cuenca1. 1Optics, Pharmacology and Anatomy, University of Alicante; 2Department of Medical Sciences, Faculty of Medicine, University of Castilla-La Mancha; 3Physiology, Genetics and Microbiology, University of Alicante

4884 — A0205 Probing the molecular phenotype of the transgenic ischemia-resilient retina by mass spectrometry. Jeff Giddady1, J. J. Guidry3, N. Lawson1, J. C. Harman1, 2. 1Ophthalmology, Louisiana State University School of Medicine; 2Biochemistry & Molecular Biology, Louisiana State University School of Medicine; 3Physiology, Louisiana State University School of Medicine


4886 — A0207 Identification of new survival pathways activated by neurotrophic factors using whole transcriptome analysis of flow-sorted photoreceptors. Jerome E. Roger1, E. Grellier1, L. Gieser1, A. Swaroop1, M. Perron1. 1NEUROPSI, CNRS / CRNS; 2N-NRL, NEI / NIH


4888 — A0209 Impacts of Exogenous CNTF on Synaptic Connections in a Mouse Model of Retinitis Pigmentosa. Kun Do Rhee1, A. A. Hirano2, D. Teng1, C. Lu1, Y. Wang1, X. Yang1. 1Department of Ophthalmology, Jules Stein Eye Institute/UCLA; 2Neurobiology, UCLA; 3The Johns Hopkins University

4889 — A0210 Curcumin nanoparticles are neuroprotective in a mouse model of Alzheimer’s disease. Ehtesham Shamsher1, L. Guo1, B. M. Davis2, V. Luong1, N. Ravidran1, S. Somavarapu1, M. Cordeiro1, 2. 1Institute of Ophthalmology, University College London; 2Imperial College London Ophthalmology Research Group; 3School of pharmacy, University College London; 4Western Eye Hospital

West Exhibition Hall A0211-A0242
Wednesday, May 01, 2019 10:15 AM-12:00 PM
Biochemistry/Molecular Biology

449 Biochemical and molecular mechanisms of age-related macular degeneration

Moderators: J. Arjuna Ramayaka and Michael H. Farkas

4890 — A0211 Blood retinal barrier disruption in non-exudative AMD. Hannah Schultz1, Y. Song1, R. J. Kappahahn1, S. R. Montezuma2, D. A. Ferrington1, J. L. Dunai1. F.M. Kirby Center for Molecular Ophthalmology, Scheie Eye Institute, Perelman School of Medicine at the University of Pennsylvania; 2Ophthalmology & Visual Neuroscience, University of Minnesota

4891 — A0212 A Small Molecule Screen in Zebrafish to Identify Mediators of Retinal Neovascularization. Donald W. Van Fossan. Ophthalmology, UCSD


4893 — A0214 Selective loss of very-long chain polyunsaturated fatty acids in retina of a transgenic model that carries mutations associated with early-onset familial Alzheimer’s Disease. Khanh Do, B. Jun, M. J. Kautzmann, N. G. Bazan. LSU Health Science Center

4894 — A0215 ARMS2 particularly interacts with modulators of ECM affecting migration behavior of human RPE cells. Sabina Honisch, A. Armento, T. Beyer, S. Ulusoy, A. Jacob, K. Boldt, M. Ueffing. Department for Ophthalmology, University of Tuebingen, Institute for Ophthalmic Research

4895 — A0216 HTRA1 gene interaction network informs Age-Related Macular Degeneration (AMD) risk. Leah Owsei1, P. M. Hicks2, J. D. Morgan3, J. Ahr2, G. Silvestri1, J. W. Miller4, J. Park5, m. G. Kotoulou6, I. K. Kim7, L. A. Farrer8, N. B. Haider9, M. M. DeAngelis10. 1Ophthalmology and Visual Sciences, John Moran Eye Center; 2Department of Ophthalmology, Seoul Metropolitan Government Seoul National University Boramae Medical Center; 3Centre for Experimental Medicine, Queen’s University; 4Ophthalmology, Massachusetts Eye And Ear; 5Department of Ophthalmology, University of Thessaly; 6Departments of Medicine, Ophthalmology, Neurology, Epidemiology, and Biostatistics, Boston University; 7Scheeps Eye Research Institute
4896 — A0217 Regulation of HTRA1 activity by CTRP5 may underlie the pathology of Late Onset Retinal Degeneration (L-ORD), Anil K. Chekuri1, K. Zientara-Rytter2, S. Borooah2, M. vonorchikhina1, A. Soto-Hermida1, C. Stanton1, H. Matsui1, M. D’Antonio2, P. Shaw2, D. S. Goodsell1, K. Faerz3, C. Hayward3, S. Subramani2, R. Ayagarg3. 1Shiley Eye Institute, 2Biological Sciences, UCSD, 3Medical Research Council Institute of Genetic Medicine and Molecular Medicine; *Institute for Genomic Medicine; †The Scripps Research Institute

4897 — A0218 HTRA1 is increased in Bruch’s membrane/choroid in a mouse model of L-ORD. Donita Garland1, A. K. Chekuri2, V. R. Chavali2, J. Suk2, S. Borooah2, R. Ayyagari2. 1OGI, Massachusetts Eye and Ear; 2Shiley Eye Institute, University of California San Diego; 3Scheie Eye Institute, Department of Ophthalmology, University of Pennsylvania

4898 — A0219 Molecular and cellular mechanisms in Vn2c3-linked retinal degenerations. Pascal Escher, E. Buda, B. Steiner, D. Kokona, M. S. Zinkernagel, G. Venturini. Ophthalmology, University of Bern


4900 — A0221 Understanding the mechanisms of age-related macular degeneration. Dorota Skowronska-Krawczyk. Ophthalmology, University of California San Diego

4901 — A0222 Mechanisms of transcriptional regulation of ARMS2/HTRA1 locus as risk factor for age-related macular degeneration. Takeshi Iwata, D. Iejima, M. Nakayama. Ophthalmology, University of Bern

4902 — A0223 Bacterial infection promotes spontaneous choroidal neovascularization (sCNV) development in the JR5558 mouse. YU SU1, F. Rossato2, Y. Ng3. 1Schepens Eye Research Institute of Massachusetts Eye and Ear, Harvard Medical School Department of Ophthalmology; 2Ophthalmic Center, Renmin Hospital of Wuhan University

4903 — A0224 SOCS2 enhances ubiquitin-dependent selective autophagy through mTOR signal in RPE. Zai-Long Chi. Laboratory of Neurovascular Biology, The Eye Hospital of Wenzhou Medical University

4904 — A0225 Excitotoxic Pathology: Description Of A Model In The Visual System Of Mice. James Bender1, A. Cronk1, N. Guven2, R. Akinson3, J. Leung4, J. Vickers1, A. King5. 1Wicking Dementia Research and Education Centre; School of Pharmacy, University of Tasmania; 2Santhera Pharmaceuticals

4905 — A0226 miRNA expression profile of ARPE-19 cells and exosomes regulated by oxidative stress. Maria Oltra, L. Vidal, F. Sancho, J. Barcia. Catholic University of Valencia


4907 — A0228 Membrane binding of the main component of lipofuscin, A2E, and its photo-irradiated product. Elodie Boisselier, Q. Schlett, E. Jellad, M. Ouellette, F. Arboleda, J. Ganonica, Y. Ng, P. J. Rochette. Université Laval

4908 — A0229 Relationship between Aqueous humor levels of Silent Information Regulator T1 and Age-related Macular Degeneration. Tatsuya Mimura, E. Watanabe, A. Mizota. Laboratory of Ophthalmology, Teikyo University School of Medicine

4909 — A0230 A novel IL-1 receptor modulator prevents photoreceptor loss in a model of age-related macular degeneration. Rabah Dabouz1, 2, C. José Rivero2, 3, S. Chemtob3, 4. 1Pharmacology & Therapeutics, McGill University; 2Hôpital Maisonneuve Rosemont; 3CHU Sainte Justine; 4Pediatrics & Pharmacology, CHU Sainte Justine; 5Ophthalmology, Optometry and Pharmacology, Université de Montréal

4910 — A0231 Reduced cystatin C secretion in iPS-derived retinal pigment epithelial cells is associated with altered extracellular matrix adhesion and migration. Emil Carlsson1, W. Supharattanasiti2, 3, M. Jackson3, L. I. Paraoan1. 1Eye and Vision Science, Institute of Ageing and Chronic Disease, University of Liverpool; 2Physiology, Faculty of Pharmacy, Mahidol University; 3Musculoskeletal Biology, Institute of Ageing and Chronic Disease, University of Liverpool

4911 — A0232 Mineralocorticoid receptor invalidation in vascular endothelial cells prevents CNV development. Min Zhao1, E. Gelize1, X. Li1, A. Arboleda2, J. Ganonica1, F. Jaisser4, F. Behar-Cohen1. 1INSERM U1138, Team 17, Centre de Recherche des Cordeliers, University Paris Descartes; 2Ophthalmic Biophysics Center, Department of Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine; 3Department of Ophthalmology, University of Lausanne, Jules Gonin Eye Hospital; 4INSERM U1138, Team 1, Centre de Recherche des Cordeliers, Université Pierre et Marie Curie *CR

4912 — A0233 Differential Proteins in the Aqueous Humor from Patients with Drusen and Reticular pseudodrusen. Hyewon Chung1, K. Park2, J. Baek3, D. Lim4, J. o. Lee5. 1Ophthalmology, Konkuk Univ School of Medicine; 2Ophthalmology, Seoul National University College of Medicine, Seoul National University Bundang Hospital; 3R&D Center for Clinical Mass Spectrometry, Seegene Medical Foundation; 4IlSan Paik Hospital, Inje University College of Medicine


4914 — A0235 Expression levels of rare missense variants in CFI found in age-related macular degeneration, atypical uveitic syndrome or both diseases. Sarah de Jong1, E. Volokhina1, 2, S. Nilsson3, B. Bakker4, E. de Jong1, L. van den Heuvel1, 2, A. Blom1, A. I. Den Hollander1, 2Pediatric Nephrology, Radboudumc; 3Laboratory Medicine, Radboudumc; 4Translational Medicine, Lund University; 5Ophthalmology, Donders Institute for Brain, Cognition and Behaviour, Radboudumc *CR

4915 — A0236 Mice with a combined deficiency of SOD1, DJ-1 and Parkin develop spontaneous retinal degeneration with aging. Bogdale Aredo1, B. Chen2, Y. Zhu2, 3, C. X. Zhao2, Y. He2, R. Ufret-Vincenti2. 1Ophthalmology, UT Southwestern Medical Center; 2Shenzhen Key laboratory of Ophthalmology, Shenzhen Eye Hospital

4916 — A0237 An iPS-derived RPE cell repository with high and low genetic AMD risk as model systems to study AMD pathology in vitro. Karolina Ploessl1, A. Lauer2, C. Kiel2, C. Brandl2, 3, F. Grossmann2, 3, B. H. Weber2. 1Institute of Human Genetics, University of Regensburg; 2Department of Medical Epidemiology and Biostatistics, Karolinska Institutet; 3Department of Genetic Epidemiology, University of Regensburg; 4Department of Ophthalmology, University Hospital Regensburg

4917 — A0238 RNA-seq analysis of retinal pigment epithelium indicates elevated protein production at a different circadian time point than lipid metabolism. Elja Louer1, 2, G. Yi3, H. Stunnenberg1, A. I. Den Hollander1, F. Deen2. 1Ophthalmology, RadboudUMC; 2Physiology, RadboudUMC; 3Molecular biology, Radboud 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.
4919 — A0240 Inflammation as an important player in the pathogenesis of hyperhomocysteinemia-induced retinopathy. Amany M. Tawfik1,*, I. Sharma2,*, N. M. Elsherbiny3,*, D. Gutsaev1,*, S. Alhussain1,*, S. Chug2,*, M. Bartoli3,*, M. A. Al-Shabrawey1,*. 1Oral Biology and Diagnostic Sciences, Augusta University, Augusta, GA. 2Culver Vision Discovery Institute, Augusta University, Ophthalmology, Augusta University

4920 — A0241 Variation in amount and processing of exon-skipping RGR-d opsin and sensitivity to GW4869. Zhaoxia Zhang1,*, H. Kochounian2,*, H. Fong1,*. 1Department of Ophthalmology, Keck School of Medicine, USC; 2Doheny Eye Institute; 3Shanxi Eye Hospital; 4USC Roski Eye Institute, University of Southern California

4921 — A0242 Localization of exon-skipping RGR-d opsin and C5b-9 deposits in Bruch’s membrane of mice. Xuan Bao1,*, Z. Zhang1,*, F. N. Russ-Cimerman1,*, A. A. Sadat1,*, C. Buser1,*, X. Li2,*, M. Zhao1,*, H. Fong1,*. 1Department of Ophthalmology, University of Southern California; 2Department of Ophthalmology, Peking University People’s Hospital; 3Shanxi Eye Hospital; 4University of British Columbia

4922 — A0243 CRISPR/Cas9-Mediated Genome Editing to Treat Best Vitelliform Macular Dystrophy. Andrea Milevskovic, B. H. Weber. Institute of Human Genetics, University of Regensburg

4923 — A0244 Investigating the role of Cwc27, a splicing factor, in retinal degeneration. Renae E. Bertrand1,*, J. Wang2,*, J. Cai3,*, Y. Chen2,*, Y. Li2,*, K. Wang3,*, C. Thangavel4,*, K. Xiong2,*, R. Chen2,*. 1Biochemistry, Baylor College of Medicine; 2Human Genome Sequencing Center, Baylor College of Medicine; 3The University of Texas Medical Branch; 4Rice University

4924 — A0245 Direct Conversion of Human Fibroblasts into Retinal Pigment Epithelium-like Cells by Defined Factors. Aiguo Ni, W. Zhang, Y. Fan, B. Mahato, S. Chavala. Pharmacology & Neuroscience, University of North Texas Health Science Center

4925 — A0246 Regulation of RPG (retinitis pigmentosa GTPase regulator) isoform expression by miRNAs: insights into retinitis pigmentosa pathogenesis. Laura Moreno Leon, R. Sikka, W. Zhang, L. Li, H. Khanna. Department of Ophthalmology, UAMS Medical School

4926 — A0247 New insights into the phenotypic spectrum of PROM1-associated retinopathy. Marta del Pozo Valero1,*, I. Martin Merida1,*, B. Jimenez Rolando1,*, A. Arteche1, A. Avila Fernandez1,*, F. Blanco Kelly2,*, R. Riveiro Alvarez3,*, C. Van Caunovenbergh1,*, E. De Baere1,*, C. Rivolta1, B. Garcia Sandoval1,*, M. Horton3,4, C. Ayuso1,*. 1Department of Genetics, Instituto de Investigación Sanitaria–Fundación Jiménez Diaz University Hospital (IIS-FJD); 2Department of Ophthalmology, Instituto de Investigación Sanitaria–Fundación Jiménez Diaz University Hospital (IIS-FJD); 3Center for Medical Genetics, Ghent University and Ghent University Hospital; 4Department of Computational Biology, Unit of Medical Genetics, University of Lausanne; 5Center for Biomedical Network Research on Rare Diseases (CIBERER), ISCIII

4927 — A0248 miR-204 overexpression exerts a protective role in inherited retinal diseases. Sandro Bang1,*, M. Karadi1,*, I. Guadagnino1,*, E. Marrocco1,*, M. Pizzo1,*, R. De Cegli1,*, A. Carissimo1,*, I. Conte1,*, E. Surace1,*. 1Telethon Institute of Genetics and Medicine (TIGEM); 2Precision Medicine, University of Campania “Luigi Vanvitelli”; 3Translational Medicine, Federico II University

4928 — A0249 Investigation of the role of active microRNA in the degrading retina using Ago2 HTS-CLIP. Riccardo C. Natoli1,*, N. Fernando1,*, Z. Feng1,*, H. Patel1,*, K. Hennan1,*, K. Panov1,*, N. Hein1,*, M. Rutar1,*, J. A. Chu-Tan1. 1The John Curtin School of Medical Research, The Australian National University; 2The Australian National University Medical School, The Australian National University; 3School of Biological Sciences, Queen’s University Belfast; 4School of Biomedical Sciences, The University of Melbourne


4930 — A0251 Targeted identification of reported deep-intronic variants in ABCA4 in 224 French Stargardt disease cases. Claire-Marie DHAENENS1,*, M. Khan1,*, A. Devos1,*, C. Pirioü1,*, D. ELMELIK2,*, E. Manders3,*, E. Gereki1,*, Y. Perdona1,*, H. Dollfus1,*, X. Zanolghiti1,*, B. Bocquet1,*, I. A. Meunier1,*, B. Puech1,*, S. defoort1,*, P. F. Cremer1,2. 1University Lille, Inserm UMR-S 1172, CHU Lille, Biochemistry and Molecular Biology Department - UF Génopôthies,; 2Department of Human Genetics, Radboud University Medical Center; 3Centre de Référence pour les affections rares en génétique ophthalmologique, CARGO, Filière Sensgene Hôpitaux Universitaires de Strasbourg; 4Clinique Jules Verne; 5Institut des Neurosciences de Montpellier, INSERM, Université de Montpellier; 6Service d’exploration de la vision et neuro-ophthalmologie, CHRU de Lille


4932 — A0253 Role of the TPR-domain of AIPL1 in its function as PDE6 chaperone. Nikolai Artemyev1,*, L. Xu1,*, R. Yadav1,*. 1Molecular Physiology and Biophysics, University of Iowa; 2Biochemistry and CCOM NMR facility, University of Iowa

4933 — A0254 Unexpected Localization of the DNA Repair Protein Ku80 within the Murine Retina. Brigitte Muller, F. Wagner, L. Laucce, W. Rheinhard, B. Lorenz, K. Stieger. Experimental Ophthalmology, Justus-Liebig-University Gießen


4936 — A0257 DNA sequence alterations at the Isce-I target site in vivo in photoreceptors and RPE cells following AAV mediated gene transfer. Knut Stieger1,*, A. Janisz-Libawski2,*, G. David1,*, V. Christiansen1,*, F. Bärlf2,*, J. P. Neidhardt1,*, B. Lorenz1,*, B. Müller1,*. 1Department of Ophthalmology, Justus-Liebig-University Giessen; 2Faculty of Medicine and Health Science, University of Oldenburg; 3Department of Ophthalmology


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**4938 — A0259** Trends for poorer vision outcomes in nAMD and DME patients with higher aqueous humor levels of IL-6. Yasir Jamal Sepahi1, Q. D. Nguyen2, D. Y. Doi1, B. Day3, E. Wakshal4, I. Stoian2. Byers Eye Institute, Palo Alto, California; Genentech, Inc. *CR, A*

**4939 — A0260** KCNJ13 nonsense mutation causes Leber Congenital Amaurosis (LCA16) in man but is lethal in mouse model, De-Ann M. Pillers1, P. K. Shahi2, B. Pattnaik2. 1Department of Pediatrics, University of Illinois; 2Pediatrics, University of Wisconsin-Madison

**4940 — A0261** NCL is implicated in the XNLI gene splicing and leads to RdCVF expression in retinoblastoma cell lines. Najate Alit-Ali1, F. Blond1, S. Lee2, S. Wang3, D. Cobrinik1, T. D. Leveillard1. 1Institut De La Vision; 2Sabian Research Institute, Children’s Hospital Los Angeles; 3Roski Eye Institute, Keck School of Medicine, USC, Los Angeles, CA, USA *CR

**4941 — A0262** Light Exposure Induces the Synthesis of Sphingosine 1-Phosphate in the Outer Retina. Ryo Terao, M. Honjo, M. Aikara. Department of Ophthalmology, Graduate School of Medicine, Tokyo University, Japan

**4942 — A0263** Precise and Safe Gene Editing in Retinal Pigment Epithelial Cells in vivo. Bikash R. Pattnaik1, P. K. Shahi1, G. Chen5, 6, A. A. Abdeen6, Y. Wang5, 6, K. Saha2, 6, S. Gong5, 2. 1Institute of Molecular and Cell Biology, Agency for Science, Technology and Research (A*STAR); 2Wellcome Trust Centre for Cell-Matrix Research, The University of Manchester; 3LKC School of Medicine, Nanyang Technological University

**4943 — A0264** CRISPR/Cas9-mediated correction of the most recurrent USH2A mutation in patient iPSC. Carla Sanjurjo Soriano1, R. W. Collins1, F. Coppieters1, M. Bausrens2, L. Vuijk1, I. Balikova1, B. P. Leroy2, 2. 1Department of Ophthalmology, Aarhus University; 2Aarhus Institute of Advanced Studies, Aarhus University; 3Department of Ophthalmology, Aarhus University Hospital

**4944 — A0265** Knockout of zebrafish stra6 and rbp4 leads to retinal degeneration phenotypes. Ross F. Colley1. Ophthalmology and Visual Sciences, Medical College of Wisconsin

**4945 — A0266** Effect of single guide nucleotide mismatch in CRISPR/Cas9-mediated disruption of the human rhodopsin gene in vitro. Caroline Peddle1, M. E. McClements1, R. E. MacLaren1. 1University of Oxford; 2Oxford Eye Hospital

**4946 — A0267** Defining the functional sites in LRG1 that are responsible for its role in ocular angiogenesis. Johanna L. Howson1, B. Qin2, H. Murray1, M. Lockhart3, P. Mould1, C. Baldock1, X. Wang1. 1Institute of molecular and cell biology (IMCB), Agency for Science, Technology and Research (A*STAR); 2Wellcome Trust Centre for Cell-Matrix Research, The University of Manchester; 3LKC School of Medicine, Nanyang Technological University

**4947 — A0268** CRISPR/Cas-mediated base editing of the AMD high-risk Y402H complement factor H variant. Alex W. Hewitt1, P. Tran2, M. Mohd Khalid2, A. Peybai1, A. L. Cook1, H. Liang2, R. Wong2, J. E. Craig4, G. Liu1, S. Hung2. 1Department of Ophthalmology, CERA; 2Menzies Institute for Medical Research, University of Tasmania; 3Department of Ophthalmology, Flinders University

**4948 — A0269** Retinal degenerative diseases alter vitreous protein and extracellular vesicle concentrations. Sarah Weber1, Y. Zhao1, T. W. Gardner2, J. M. Sundstrom1. Ophthalmology, Penn State College of Medicine; 2Kellogg Eye Center, University of Michigan Medical School

**4949 — A0270** Non-viral CRISPR-mediated knockout of the Fgfa Gene by delivery of Synthetic gRNA and Cas9 protein. Andreas Holmgard1, R. O. Bak1, A. Askou1, T. Corydon1. 1Department of Biomedicine, Aarhus University; 2Aarhus Institute of Advanced Studies, Aarhus University; 3Department of Ophthalmology, Aarhus University Hospital

**4950 — A0271** Antisense oligonucleotide-based correction of deep-intronic ABCA4 splice mutations using patient-derived fibroblasts and photoreceptor precursor cells. Sarah Naessens1, R. W. Collins1, F. Coppieters1, M. Bausrens2, L. Vuijk1, I. Balikova1, B. P. Leroy2, 2. 1Department of Ophthalmology, Ghent University Hospital; 2Department of Human Genetics and Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center

**4951 — A0272** Expansion of the role and functional characterization of a missense variant in CEP78 associated with cone-rod dystrophy and hearing loss. Giulia Ascarì1, F. Peelman1, N. Lambrechts1, T. Van Laethem1, T. Rossel2, P. Farinelli1, D. Creyten1, I. Balikova1, J. Gerris1, C. Bacher1, C. Rivolta1, S. Walraedt1, B. P. Leroy2, 2. 1Center for Medical Genetics Ghent, Ghent University, Ghent, Belgium; 2Flanders Institute for Biotechnology (VIB), Department of Medical Protein Research, Ghent University Hospital, Ghent, Belgium; 3Department of Ophthalmology, Ghent University Hospital; 4Department of Biology, Section of Cell Biology and Physiology, University of Copenhagen, Copenhagen, Denmark; 5Department of Computational Biology, Unit of Medical Genetics, University of Lausanne, Lausanne, Switzerland; 6Department of Pathology, Ghent University Hospital, Ghent, Belgium; 7Department of Ophthalmology, Ghent University Hospital, Ghent, Belgium; 8Department of Ophthalmology, Free University of Brussels, Brussels, Belgium; 9Gynaecology Department, Ghent University Hospital, Ghent, Belgium; 10Upper Airways Research Laboratory, Ghent University Hospital, Ghent, Belgium; 11Department of Genetics and Genome Biology, University of Wisconsin; 12Department of Ophthalmology, The Children’s Hospital of Philadelphia, Philadelphia, United States

**4952 — A0273** RNA binding proteins in eye development: rmb24a regulates sox2 and leads to microphthalmia and visual processing defects in zebrafish. Lindy Brastrom1, S. Dash1, C. A. Scott1, D. Y. Dawson2, S. A. Lachke3, D. Slusarski. 1Department of Biology, University of Iowa; 2Department of Biological Sciences, University of Delaware; 3Department of Pediatric Dentistry, University of Iowa


**4954 — A0275** Reduced systemic serine levels lead to retinal defects in a mouse model of MacTel. Marin Guntner1, M. Wallace2, R. Fallon1, M. Handel3, K. Eade1, I. Poli1, A. Ideguchi1, M. Kitano1, C. Metallo1, M. Friedlander1. 1The Lowy Medical Research Institute; 2University of California, San Diego; 3The Scripps Research Institute

**4955 — A0276** Stem cell reprogramming towards corneal endothelial cell using CRISPR-dCas9. Guillermo I. Guerrero Ramirez, V. Treviño, J. E. Valdez, J. Zavala, E. Martinez-Leesda. Escuela de Medicina, Tecnologico de Monterrey

**4956 — A0277** Using CRISPR/Cas9 to achieve allele-specific editing of mutant Crx in a mouse model of Leber congenital amaurosis. Kathleen R. Chico1, S. Chew1, J. L. Duncan1, D. A. Lamba1. 1Department of Ophthalmology, University of California San Francisco; 2Buck Institute for Research on Aging

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West Exhibition Hall A0367-A0380

Wednesday, May 01, 2019 10:15 AM-12:00 PM

**Low Vision Group**

**451 Visual Impairment and Patient Reported Outcomes**

**Moderator:** Ruth M. Van Nispen

**4957 — A0367** Surveying the digital reading behavior of people with low vision. Yuch-Hsun Wu1, C. Granquist2, R. Gage3, M. Crossland4, G. E. Legge5. 1University of Minnesota, Twin Cities; 2U.S. Bank; 3Moorfields Eye Hospital NHS Foundation Trust

**4958 — A0368** Associations between adult attachment style and vision-related quality of life in visually impaired individuals. Irene Ctori1, S. Ahmad1, A. SUBRAMANIAN2, A. Oskis2. 1Optometry and Visual Science, City, University of London; 2Psychology, Middlesex University

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4959 — A0369 First data of a prospective study comparing the impact of Retinitis Pigmentosa linked to Usher Syndrome 1B caused by MYO7A mutations and non-syndromic on daily living one year apart. Karine Becker1, E. Gutman2, C. Segaut-Prevost3, P. Benoit3, C. Cohen3, I. S. Audo4, S. Mohand-Said4, J. A. Sahel4. #Streetlab; #Sanofi; #Department of Genetics, Inst de la Vision; INSERM/UPMC/CNRS/CHNO; #CHNO Quinze-Vingts / CIC Inserm; #Institut de la Vision *CR


4961 — A0371 A comparative analysis of the individuals’ perceptions of illness between glaucoma and age-related macular degeneration patients from a developing country. Natasha F. Cruz, K. Santos, N. Kasahara. Ophthalmology, Irmandade da Santa Casa de Misericordia de Sao Paulo

4962 — A0372 Health State Measurement of Glaucoma Patients. Keenan Nanji1, G. S. Sarohia2, D. Podbielski3, K. Kennedy3. #McMaster University; #Department of Medicine, University of British Columbia; #Ophthalmology, University of Toronto *CR

4963 — A0373 The Relationship between Patients’ Clinical Behavior, Physician Impressions and Glaucoma Progression. Maxwell R. Harley1, K. Malli2, C. Sanvicente3, G. L. Spaeth4, D. Lee5. #Lewis Katz School of Medicine at Temple University; #Glaucoma Service, Wills Eye Hospital

4964 — A0374 The eye of the beholder: understanding discrepancy between visual acuity and self-reported vision in age-related macular degeneration. Priscila Cunha1, J. Zhuang1, J. P. Wright2, D. Madden3, G. G. Potter4, E. M. Lad5, S. W. Coons4, H. Whisson1, 2. #Duke University School of Medicine; #Dartmouth-Hitchcock Medical Center; #Brain Imaging and Analysis Center, Duke University Medical Center; #Department of Ophthalmology, Duke University School of Medicine; #Duke Eye Center, Duke University Medical Center; #Department of Psychiatry and Behavioral Sciences, Duke University School of Medicine; #Department of Medicine, Duke University School of Medicine


4966 — A0376 Comparing person and item measures of the 150-item Ultra-low Vision Visual Functioning Questionnaire (ULV-VFQ) from two separate ULV populations. Oluwemen Olayemi1, M. Maeng2, J. P. Szyk2, G. Dagnelie3. #Johns Hopkins University; #The Chicago Lighthouse for People Who Are Blind or Visually Impaired; #Jesse Brown VA Medical Center *CR

4967 — A0377 Analysis of demographics and person measures from an ultra-low vision questionnaire. Meeva Maeng1, O. Adeyemo2, J. P. Szyk3, G. Dagnelie4. #Forseyth Center for Comprehensive Vision Care, The Chicago Lighthouse; #Johs Hopkins University *CR

4968 — A0378 Visual Function Questionnaire Responses in the Voretigene Neparvovec Phase 3 Trial. Stephen R. Russell1, A. M. Maguire1, J. Bennett1, 2, P. Falabella1, E. H. Sohn1, V. B. Mahajan1, D. C. Chung2, K. Z. Reape1, K. A. High1. #Ophthalmology/Institute for Vision Research, University of Iowa; #Children’s Hospital of Philadelphia; #Ophthalmology, University of Pennsylvania Perelman School of Medicine; #Spark Therapeutics, Inc.; #Ophthalmology and Visual Sciences, Stanford University School of Medicine *CR


4970 — A0380 The Visual Function Index (VF-14) reflects a notable loss in Vision-Related Quality of Life (VRQOL) in Stargardt Disease. Justin T. Zaremba1, Z. Streck1, G. DeBartolomeo2, S. H. Tsang1, C. N. Kay3, T. B. Connor3, M. B. Gori4, P. S. Bernstein5, B. L. Lam6, I. Washington7, H. P. Scholl8, L. Staed9. #Ophthalmology, Alkeus Hospital; #Department of Ophthalmology, University of Wisconsin-Madison; #Department of Ophthalmology, Johns Hopkins University; #Edward Hines, Jr VA Hospital; #Department of Ophthalmology, University of Illinois at Chicago; #Institute for Health Policy and Innovation, University of Michigan-Ann Arbor

4971 — A0381 Honeycomb-shaped subretinal prosthesis enables cellular-scale pixels. Thomas Flores1, T. W. Huang1, M. Bhuckory2, H. Lorach3, Z. Chen4, A. Dalal5, X. Lei6, L. Galambos7, T. Kamins8, K. Mathieson9, D. V. Palanker1. #Stanford University; #Physics, University of Strathclyde *CR

4972 — A0382 Predicting retinal ganglion cell responses to physiologically plausible electrical stimuli. Guenterzek L. Hof1, P. Berens2. #Neurophysys, Natural and Medical Sciences Institute at the University Tübingen; #Institute for Ophthalmical Research, University of Tübingen


4975 — A0385 Depth discrimination in Argus II wearers using a stereo sensor based on two head-mounted cameras. Roksana Sadeghi1, M. Barry2, P. Gibson3, A. Caspi1, A. Roy4, G. Dagnelie2. #Biomedical Engineering, Johns Hopkins University; #Wilsner Eye Institute, Johns Hopkins University School of Medicine; #Second Sight Medical Products; #Advanced Medical Electronics Corporation; #Jerusalem College of Technology *CR

4976 — A0386 Pillar electrodes reduce in vivo stimulation thresholds for subretinal prosthesis. Elton Ho1, T. W. Huang1, X. Lei1, T. Flores1, H. Lorach1, T. Kamins1, L. Galambos1, K. Mathieson1, D. V. Palanker1. #Department of Physics, Stanford University; #Hanssen Experimental Physics Laboratory, Stanford University; #Department of Electrical Engineering, Stanford University; #Department of Applied Physics, Stanford University; #Institute of Photonics, University of Strathclyde; #Department of Ophthalmology, Stanford University *CR

4977 — A0387 Investigation of Cyclic Olefin Copolymer as Packaging Material Candidate for Electrical Retinal Stimulator. Jong-Me Seo1, C. Baek2, S. Bae1, H. Chung1. #Ophthalmology, Seoul National University; #Electrical and Computer Engineering, Seoul National University; #Ophthalmology, Kangnam Sacred Heart Hospital, Hallym University; #Ophthalmology, Chang-Ang University Hospital

4979 — A0389  Cortical response to combined prosthetic and visible stimuli exhibits similarities to natural visual processing. Yossi Mandel1, 2, T. Arens-Arad1, N. Farah1, M. Moshkovitz1, R. Lender1, T. Flores3, D. V. Palanker4, 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; 3Hansens Experimental Physics Laboratory, Stanford University; 4Ophthalmology, Stanford University CR


4981 — A0391  Assessment of the safety of anodic-first chronic electrical stimulation of the rabbit retina for 1 month using a femtosecond laser-induced porous electrode. Yukari Nakano1, Y. Terasawa1, 2, H. Tashiro1, M. Ozawa1. 1Artificial Vision Institute, R&D Div., Nidek Co., Ltd.; 2Materials Science, Nara Institute of Science & Technology; 3Department of Health Sciences, Faculty of Medical Sciences, Kyuushu University; 4Nidek Co., Ltd. CR

4982 — A0392  Surgical feasibility and biocompatibility of the OptoEpiret retinal stimulator. Tibor K. Lohmann1, C. Werner1, P. Raffelberg2, F. Waschkowski3, R. Viga4, R. T. Arens-Arad1, N. Farah1, M. Moshkovitz1, R. Lender1, T. Flores3, D. V. Palanker4. 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; 3Hansens Experimental Physics Laboratory, Stanford University; 4Ophthalmology, Stanford University CR

4983 — A0393  A 44 channel suprachoroidal retinal prosthesis: surgical approach, safety and stability. Penelope J. Allen1, 2, D. A. Nagyam1, S. B. Epp1, S. C. Liu2, N. Barnes3, M. Kolic4, K. A. Young1, E. K. Baglin1, C. J. Abbott1, R. Briggs1, J. Yeoh1, W. K. Kentler1, S. A. Titchener1, M. A. Petoe4, C. E. Williams4. 1Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 2Department of Surgery (Ophthalmology), University of Melbourne; 3Bionics Institute; 4Medical Bionics Department, University of Melbourne; 5Otolaryngology, University of Melbourne; 6School of Engineering, University of Melbourne; 7Data 61, Commonwealth Scientific and Industrial Research Organisation; 8The Australian National University CR

4984 — A0394  Surgical feasibility of newly developed suprachoroidal-transtejunal stimulation (STS) prosthesis in healthy dogs. Takeshi Morimoto1, T. Miyoshi1, T. Saito1, K. Ito1, M. Ozawa1, K. Nishida1, T. Fujikado1. 1Applied Visual Science, Osaka Univ Graduate Sch of Med; 2Integrative physiology, Osaka University Graduate School of Medicine; 3Nidek Co.; 4Ophthalmology, Osaka University Graduate School of Medicine CR

4985 — A0395  Effects of Transcranial direct current stimulation on the Electrically Evoked Potentials of rats. Yasuo Terasawa1, 2, Y. Nakano1, M. Ozawa1. 1Artificial Vision Institute, Nidek Co., Ltd; 2Materials Science, Nara Institute of Science and Technology; 3Nidek Co., Ltd CR

4986 — A0396  A 44 channel suprachoroidal retinal prosthesis: initial functional vision results. Maria Kolic1, E. Baglin1, S. A. Titchener1, C. J. Abbott1, K. A. Young1, M. McGuinness1, R. C. Dawkins1, D. Chiou1, J. Yeoh1, J. Walker4, W. G. Kentler1, N. Barnes1, M. A. Petoe1, L. N. Aytoun1, C. D. Lu1, P. J. Allen1, 2. 1Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 2Ophthalmology, Department of Surgery, University of Melbourne; 3Bionics Institute; 4Medical Bionics, University of Melbourne; 5The Australian National University; 6Data61, Commonwealth Scientific and Industrial Research Organisation; 7Biomedical Engineering, University of Melbourne CR

4987 — A0397  Toxicity of Transition Metal Complex-based Nanophotowatches in Retina. Lan Yue1, 2, Y. Shi1, 3, M. Pribisko4, R. Grubbs3, H. Gray9, R. Chow1, M. Humayun1, 2. 1Rossi Eye Institute, University of Southern California; 2Ginsburg Institute for Biomedical Therapeutics, University of Southern California; 3Elika Neurogenetic Institute, University of Southern California; 4Ophthalmology, Taipei Veterans General Hospital; 5Chemistry, California Institute of Technology; 6Chemistry, California State University Channel Islands CR

4988 — A0398  Micro-coils confinement activation to single cortical columns in V1. Shelley Fried1, 2, S. B. Ryu2, A. C. Paulk3, J. Yang3, M. Ganji4, S. B. Epp1, S. C. Liu2, N. Barnes3, W. G. Kentler1, M. Kolic1, E. K. Baglin1, C. J. Abbott1, L. N. Aytoun1, C. D. Lu1, P. J. Allen1, 2. 1Bionics Institute; 2Medical Bionics, University of Melbourne; 3Graduate School of Biomedical Engineering, The University of New South Wales; 4Department of Pathology, University of Melbourne; 5Data61, Commonwealth Scientific and Industrial Research Organisation (CSIRO); 6Research School of Engineering, Australian National University; 7Department of Biomedical Engineering, University of Melbourne; 8Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 9Ophthalmology, Department of Surgery, University of Melbourne; 10Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 11Ophthalmology, Department of Surgery, University of Melbourne CR

4989 — A0399  Selective activation of ON and OFF RGC input in mouse retina stimulated. Zohreh Hosseinzadeh1, 2, D. L. Ruthbour1, E. Zrenner1. 1Ophthalimic Research, University of Tübingen; 2DFG-Center for Regenerative Therapies Dresden, Technische Universităet Dresden CR

4990 — A0400  Spatio-temporal image modulation for enhancing the quality of vision with potential application in patients with retinal prostheses. Andrew H. Yeung1, D. Subramaniyan1, A. D. Desai1, S. Soltanian-Zadeh1, A. Roy1, L. Vazovic1, M. Sommerv1, S. Furst1, 2. 1Biomedical Engineering, Duke University; 2Ophthalmology, Duke University Eye Center; 3Second Sight Inc. CR

4991 — A0401  A 44 channel suprachoroidal retinal prosthesis: inter-observer reliability measuring electrode to retina distance. Elizabeth K. Baglin1, M. Kolic1, S. A. Titchener1, C. J. Abbott1, M. McGuinness1, K. A. Young1, R. C. Dawkins1, J. Yeoh1, D. Chiou1, M. A. Petoe1, P. J. Allen1, 2. 1Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 2Bionics Institute; 3Medical Bionics, University of Melbourne; 4Ophthalmology, Department of Surgery, University of Melbourne CR

4992 — A0402  Effect of chronic electrical stimulation with a fully implantable electrode on photoreceptor survival in a retinal degeneration model. Carla J. Abbott1, 2, D. A. Nagyam1, 2, O. Burns1, H. Feng1, C. McGowan1, R. H. Guymer1, 2, E. C. Williams1, 2, P. J. Allen1, 2, C. D. Lu1, 2. 1Bionics Institute; 2Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 3Ophthalmology, Department of Surgery, University of Melbourne; 4Department of Pathology, University of Melbourne, St. Vincent’s Hospital; 5Medical Bionics Department, University of Melbourne CR

4993 — A0403  A 44 channel suprachoroidal retinal prosthesis: initial psychophysical results. Matthew A. Petoe1, 2, S. A. Titchener1, 2, M. N. Shivdasani1, 2, D. A. Nagyam1, 2, S. B. Epp1, J. Villalobos1, 2, N. N. Sinclair1, 2, C. E. Williams1, 2, N. Barnes1, 2, W. G. Kentler1, M. Kolic1, E. K. Baglin1, C. J. Abbott1, L. N. Aytoun1, C. D. Lu1, P. J. Allen1, 2. 1Bionics Institute; 2Medical Bionics, University of Melbourne; 3Graduate School of Biomedical Engineering, The University of New South Wales; 4Department of Pathology, University of Melbourne; 5Data61, Commonwealth Scientific and Industrial Research Organisation (CSIRO); 6Research School of Engineering, Australian National University; 7Department of Biomedical Engineering, University of Melbourne; 8Centre for Eye Research Australia, Royal Victorian Eye and Ear Hospital; 9Ophthalmology, Department of Surgery, University of Melbourne CR

4994 — A0404  Characterizing the Visual Cortical Hemodynamic Response in Retinal Prostheses Users. Yingchen He1, S. Sun1, T. Johannsen1, J. Perry2, A. Herrera1, A. Roy1, A. Caspi1, 2, R. Barbour1, S. R. Montezuma1. 1Department of Ophthalmology and Visual Neurosciences, University of Minnesota; 2NIRe Medical Technologies, LLC; 3Second Sight Medical Products, Inc.; 4Department of Electrical and Electronic Engineering, Jerusalem College of Technology; 5SUNY Downstate Medical Center CR
West Exhibition Hall A0458-A0513

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Retina

453 Macular Diseases Excluding AMD

Moderators: Bernhard Baumann and Akito Hirakata

4995 — A0458 Case Series of Bilateral Idiopathic Multiple Pigment Epithelial Detachments. Boris Rosin, E. Banin. Ophthalmology, Hadassah-Hebrew University Medical Center

4996 — A0459 Periperal polyoidal choroidal vasculopathy in Sorsby fundus dystrophy: Report of 2 cases. Laure Van Bol1, I. Balikova1, F. Rasquin1. 1Ophthalmology, Erasme Hospital; 2Ophthalmology, Hôpital Brugmann

4997 — A0460 Reading with macular telangiectasia type 2 – a case of binocular confusion. Tjoe Heeरer1,2, S. Tzardis2, C. A. Egan3, F. G. Holz2, P. Charbel Issa4, S. Degli Esposti1, P. Herrmann2, S. K. Wagner1, M. Fruttiger2, G. S. Rubin1. 1Moorfields Eye Hospital NHS Foundation Trust; 2Department of Ophthalmology, University of London; 3Institute of Ophthalmology, University College London; 4Oxford Eye Hospital, Oxford University Hospitals NHS Foundation Trust; 5Nuffield Laboratory of Ophthalmology, Department of Clinical Neurosciences, University of Oxford

4998 — A0461 Topography Shows Limited Ellipsoid Zone Recovery from Mild Hydroxychloroquine Toxicity. Brandon Pham1, L. De Sisternes2, L. Van der Pol3, M. K. Durbin2, M. F. Marmor1. 1Byers Eye Institute at Stanford; 2Carl Zeiss Meditec

4999 — A0462 Characterizing Retinal-choroidal Anatomosis in Macular Telangiectasia Type 2. Mark P. Breazzano1,2, L. Yannuzzi1, R. F. Spadé1. 1Vitreous Retina Macula Consultants of New York; 2Columbia University College of Physicians and Surgeons

5000 — A0463 Effect and risk of internal limiting membrane peeling for idiopathic epiretinal membrane. Kono Ryota1, Y. H. Mohamed1, A. Maekawa1, A. Toneda2, H. Kinoshita3, Y. Yamada1, E. Tsuki1, A. Fujikawa1, T. Kumagami1, T. Kitaoka1. 1Department of Ophthalmology and Visual Sciences, Graduate School of Biomedical Sciences, Nagasaki University

5001 — A0464 Fundus autofluorescence in macular telangiectasia type 2. Peter Charbel Issa1, L. Paeuleikhoff1, T. Heeren1, K. Balakas2, C. A. Egan3. 1Department of Ophthalmology, Oxford Eye Hospital, University of Oxford; 2Moorfields Eye Hospital, London; 3Department of Ophthalmology, University Hospital Zurich

5002 — A0465 Long-term Outcomes of Half-dose Photodynamic Therapy in Chronic Central Serous Chorioretinopathy. Zhirong Cheng1, S. Babiker2, P. Lenfestey1, N. Beare1, J. A. Pearce1. 1St Paul’s Eye Unit, Royal Liverpool University Hospital

5003 — A0466 Effect of 0.1% Bromfenac for Preventing Macular Edema after Cataract Surgery in Patients with Diabetes. Younghoon Lee1, S. Song1,2, B. Ko1,2. 1Ophthalmology, Konyang university College of medicine; 2Ophthalmology, Konyang university hospital

5004 — A0467 Photodynamic therapy for central serous chorioretinopathy with choroidal neovascularization on optical coherence tomography angiography combined with intravitreal anti-vascular endothelial growth factor therapy or alone. Nao Sonoda1, T. Araki1, Y. Komukai1, H. Iwami1, F. Gomi1. 1Hyogo College of Medicine; 2Iwami Eye Clinic

5005 — A0468 Clinical and Genetic Characteristic of Pachydrusen in Eyes with Central Serous Chorioretinopathy and Normal Subjects. Ayako Takahashi1, Y. Hosoda1, M. Miyake1, A. Oishi1, S. Ooto1, A. Tsyikawika1. 1Department of Ophthalmology, Kyoto University Graduate School of Medicine

5006 — A0469 Micropulsed laser treatment of Central Serous Retinopathy. Davide Allegrini1, G. Montesano1, G. Ricciardelli1, C. Coretti1, M. Ferrara1, M. R. Romanò1. 1Ophthalmology, Humanitas University; 2Ophthalmology, University of Milan

5007 — A0470 Real world anti-vascular endothelial growth factor therapy in myopic choroidal neovascularisation: long term outcomes. Oonagh Crothers1, D. Bhatia1, M. R. Cheema1, J. S. Talks1. 1Newcastle Eye Centre, Royal Victoria Infirmary

5008 — A0471 Eplerenone and Spironolactone Have Similar Efficacy in the Treatment of Chronic Central Serous Chorioretinopathy. David Massop1, S. Bahadorani1, S. Lahoti1, M. Singer1. 1Ophthalmology, University of Texas Health Science Center San Antonio; 2Long School of Medicine, University of Texas Health Science Center San Antonio; 3Medical Center Ophthalmology Associates

5009 — A0472 Visual Outcome Following Intravitreal Anti-VEGF Injection In Eyes With Choroidal Neovascular Membrane Secondary to Chronic Central Serous Chorioretinopathy. Filipa Rodrigues1, H. Khalidi1,2, A. Afshar1, K. Fasler2, G. Casalino2, M. Mousa2, K. Balakas2, P. A. Keane1. 1Medical Retina Department, Moorfields Eye Hospital NHS Foundation Trust; 2NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 3Ophthalmology Department, Faculty of Medicine, Tanta University; 4Department of Ophthalmology, University Hospital Zurich

5010 — A0473 Eplerenone for the treatment of central serous chorioretinopathy: 3 year clinical experience. Daniel Petkovsek1, F. Conti1, D. G. Cherfan1, J. P. Ehlers1, P. K. Kaiser1, A. Schachat1, S. Sharma1, K. S. Sivastava1, A. Rachitskaya1, A. Babiech2, R. P. Singh1. 1Cole Eye Institute, Cleveland Clinic Foundation

5011 — A0474 Predictive Value of Pachyvessels in Patients with Central Serous Chorioretinopathy (CSCR) Treated by Photodynamic Therapy (PDT). Johanna Wiedemann1, V. Simitiska1, L. Altay1. 1Department of Ophthalmology, University of Cologne

5012 — A0475 Predictive factors for metamorphopsia after reduced-fluence photodynamic therapy in central serous chorioretinopathy patients with good visual acuity at baseline. Mayuka Hayashida1, A. Miki1, S. Nakai1, W. Matsumiya1, H. Inai1, S. Kisuha1, M. Nakamura1. 1Kobe University

5013 — A0476 Multimodal Imaging in Best Vitrification Macular Dystrophy. Jose R. Carvalho-Jr1, W. Lee1, M. Paavo1, K. S. Park1, L. Chen1, S. Tsang1, J. R. Sparrow2. 1Hospital das Clinicas de Pernambuco-Empresa Brasileira de Servicos Hospitalares (EBSERH), Department of Ophthalmology, Federal University of Pernambuco; 2Department of Ophthalmology, Columbia University; 3Jonas Children’s Vision Care and Bernard & Shirlee Brown Glaucoma Laboratory, Columbia University

5014 — A0477 Natural History of Recessive Stargardt Disease in Untreated Eyes: An Analysis of Study- and Individual-level Data. Liangbo L. Shen1, M. Sun1, H. Groesse Nardin2, L. V. Del Priore1. 1Department of Ophthalmology and Visual Science, Yale School of Medicine; 2Harvey Cushing/John Hay Whitney Medical Library, Yale University; 3Department of Molecular Biophysics and Biochemistry, Yale University

5015 — A0478 Familial discordance in disease phenotype in siblings with Stargardt disease. Dyon Valkenburg1, E. Runnar1, B. Liefers1, S. Lambert1, C. I. Sanchez2, F. P. Cremer2, N. M. Bax1, C. C. Hoog1. 1Radboud university medical center, Department of Ophthalmology; 2Radboud University Medical Center, Donders Institute for Brain, Cognition and Behaviour, Cognitive Neuroscience Department; 3Radboud university medical center, Department of Radiology; 4Radboud university medical center, Department of Human Genetics

Wednesday – Posters – 5017 – 5043

10:15 am – 12:00 pm


5018 — A0481 Characteristics of hydroxychloroquine retinopathy in African American patients. Robert Carroll, D. Scales, B. L. VanderBeeK. Scheie Eye Institute, University of Pennsylvania

5019 — A0482 Low Signal Intensity Structure in The Choroid Detected in Optical Coherence Tomography Angiography. keichiro tanaka, T. Sekiryu. ophthalmology, Fukushima Medical University


5022 — A0485 Fibulin-3 mutation in mice dysregulates RPE cells and causes exosome markers to accumulation in drusen. Jasmine Geathers, W. Wang, A. Barber, J. M. Sundstrom. Pennsylvania State College of Medicine


5025 — A0488 Quantitative Fundus Autofluorescence in PROM1-Macular Dystrophy. Maarit Van Lee,2, W. Lee, J. Carvalho-Jr,3, S. Tsang,4, R. Allikmets4, J. Sparrow4.1, Columbia University Medical Center, Ophthalmology; 2Helsinki University Eye Hospital; 3Department of Ophthalmology, Federal University of Pernambuco; 4Department of Pathology and Cell Biology, Columbia University Medical Center


5027 — A0490 Visual Field Examinations in Asian Patients with Hydroxychloroquine Retinopathy. Seong Joon Ahn, B. Lee. Ophthalmology, Hanyang University School of Medicine

5028 — A0491 Genetic factors associated with the treatment response to reduced-fluence photodynamic therapy for chronic central serous chorioretinopathy. Akiko Miki1, M. Hayashida2, S. Nakai1, W. Matsunoya1, H. Imai1, S. Kusuhara1, S. Honda1, M. Nakamura1. ophthalmology, Kobe University Graduate School of Medicine; 2ophthalmology, Osaka city university *CR

5029 — A0492 A changeable flap: clinical observation of macular reconstruction after implementation of autologous neurosensory retinal free flap technique(ANRFFT). Z. Liu. study. A0486 Pennsylvania State College of Medicine

5030 — A0493 Characterizing two novel mouse models of Ctrps5/C1qtnf5 to understand disease mechanism in late-onset retinal degeneration. Shyamanga Borooah1, M. voronchikhina1, A. K. Chekuri1, V. R. Chavali1, J. Suk1, Alapati1, D. G. Bartsch1, N. W. Khan1, M. M. Jablonski1, R. Ayagari1. Ophthalmology, University of California San Diego; 2University of Pennsylvania; 3University of Tennessee; 4University of Michigan

5031 — A0494 Dark adaptometry and dark-adapted two-color microperimetry in patients with Pseudoxanthyoma Elasticum. Kristina Hess1, M. Gliem1, M. Pfau1, P. L. Mueller1, J. Birtel2, F. G. Holz1, P. Charbel Issa2, P. Herrmann2. 1Department of Ophthalmology, University of Bonn; 2University of Oxford, Nuffield Laboratory of Ophthalmology *CR


5033 — A0496 North Carolina Macular Dystrophy (NCMD): 50 year follow up of the original family. Fadi Shaya1, 2, R. Wiggins1, 2, J. Avetisjan3, 2, K. W. Small1, 2. 1Macule and Retina Institute; 2Molecular Insight Research Foundation; 3Asheville Eye Associates


5035 — A0498 Selective retina therapy for macular serous retinal detachment associated with tilted disc syndrome. Kumiko Hiyamori1, M. Yamanotora1, T. Kohno1, D. Theisen-Kunde1, R. Brinkmann1, 2, Y. Miura2, 3, S. Honda. 1Ophthalm & Visual Sciences, Osaka City Univ Grad Sch of Med; 2Medical Laser Center Luebeck; 3Institute of Biomedical Optics, University of Luebeck, 4

5036 — A0499 Evaluation of patients with Stargardt disease by Microperimetry and Fundus Autofluorescence: identification of a new biomarker in defining the natural history of disease. Valentina Di lorio1, A. Orrico2, R. Brunetti-Pierri2, M. Filippelli1, P. Melillo1, A. Nesti1, S. Rossi2, A. Auricchio1, F. Simonelli1, F. Testa1. 1Eye Clinic, Multidisciplinary Department of Medical, Surgical and Dental Sciences, University of Campania Luigi Vanvitelli; 2Telethon Institute of Genetics and Medicine.; 3Department of Advanced Biomedicine, University of Naples Federico II *CR


5039 — A0502 Combination therapy with oral mineralocorticoid antagonist and ophthalmic gluocorticoid for non-resolving central serous chorioretinopathy. Der-Chong Tsai1, 2, D. Hwang1, S. Chen1. Ophthalmology, National Yang-Ming University Hospital; 2School of Medicine, National Yang-Ming University; 3Ophthalmology, Taipei Veterans General Hospital


5041 — A0504 Best Disease is a Phenocopy of North Carolina Macular Dystrophy (NCMD / MCDRI). Kent W. Small1, 2, B. Bakall1, E. M. Stone1, R. Wiggins1, N. Uda1, 2, S. Agemy1, F. Shaya1, 2. Molecular Insight Research Foundation; 1Macula and Retina Institute; 2Asheville Eye Associates; 3University of Arizona College of Medicine; 4University of Iowa; 5SUNY Downstate Medical Center University

5042 — A0505 Medical Treatment of Macular Holes. Jared T. Sokol, S. Schechter1, J. V. Giovannozzo2, S. Ittiazz3, A. Farooq1, V. Shahi1, 2, R. Komati1, R. Gentle1, D. Skondra MD, PhD2. 1Pritzker School of Medicine, University of Chicago; 2Ophthalmology and Visual Science, University of Chicago; 3Ophthalmology, New York Eye and Ear of Mount Sinai; 4Retinal Vitreal Consultants; 5University Retina; 6Illinois Eye and Ear Infirmary, University of Illinois at Chicago *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.


5046 — A0509 A Case Series of Spontaneous Opening and Closing Macular Holes Associated with Lamellar Hole Epiretinal Proliferation. Cecile Truong, R. Chen. Ophthalmology, Columbia University Medical Center *CR

5047 — A0510 Etiology, treatment and visual outcomes of patients with choroidal neovascularization under the age of 50. David Xu, A. Obeid, H. J. Levint, D. Matsunaga, A. Gervasio, T. L. Jenkins, R. R. Pandit, A. C. Ho. Retina Service, Wills Eye Hospital; Retina, Mid Atlantic Retina *CR


5049 — A0512 Blue-light reflectance imaging in macular telangiectasia type 2 (MacTel) using two different SLO systems. Ferenc B. Sallo, Y. Rocco, I. Leung, A. M. Dubis, U. E. Wolf-Schnurrbusch, C. A. Egan, T. Petö, T. E. Clemo, D. Paukeikhoff, E. Y. Chev, A. C. Bird. Visual Neuroscience, UCL Institute of Ophthalmology; Hospital Ophthalmique Jules-Gonin; Research & Development, Moorfields Eye Hospital; Ophthalmology, St Franziskus Spital; Inherited Eye Disease, Moorfields Eye Hospital; Ophthalmology, Queens University Belfast; NIHR Biomedical Research Center for Ophthalmology, at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology, London; Ophthalmology, Inselspital, University of Bern; National Eye Institute; Emmes Corporation *CR


West Exhibition Hall B0144-B0174

Wednesday, May 01, 2019 10:15 AM-12:00 PM

Cornea

454 Cornea surgery: refractive

Moderators: Takashi Miyai and Yelena Bykhovskaya


5053 — B0146 Refractive outcomes of sequential versus combined cataract surgery and DMEK in eyes with prior LASIK. Luke Potts, A. Bauer, S. Chen, M. D. Straiko, M. A. Terry. Devers Eye Institute; Lions VisionGift

5054 — B0147 Femtosecond laser versus mechanical microkeratome use for laser-assisted in-situ keratomileusis (LASIK): Systematic Review and Meta-analysis. Nicolás Kahuam-Rodriguez, A. Jimenez-Corona, A. Ibarra. Instituto de Oftalmología Fundación Conde de Valenciana; Centro de Investigación en Ciencias de la Salud (CICSA), Facultad de Ciencias de la Salud, Universidad Anáhuac México, Campus Norte; Epidemiology, Johns Hopkins Bloomberg School of Public Health

5055 — B0148 Intrastromal lenticule rotation (ISLR) for treatment of astigmatism up to 10 Diopters in human corneas. Iben B. Damgaard, A. Ivarsen, A. Hjortdal. Department of ophthalmology, Aarhus University Hospital; Department of Clinical Medicine, Aarhus University

5056 — B0149 Placido topography-guided transepithelial PRK in treat asymmetric keratoconus. Ioay Dass, M. Anticic, A. Frings, B. Seitz, N. Arjdandam. Department of Ophthalmology, Saarland University Medical Center UKS, Homburg / Saar, Saarland Medical; Department of Ophthalmology, Klinikum Klagenfurt, Austria; Department of Ophthalmology, Heinrich-Heine University Düsseldorf, Germany; Sehzentrum für Augenlaser & Augenchirurgie Graz, Austria

5057 — B0150 Evaluation of Regenerating Matrix Agent Therapy (RGTA: Cacicol®) on epithelial cornal healing after photokeratectomy. arthus dreven, C. Burillon, r. mouche, y. boujnah. Hospices civils de Lyon

5058 — B0151 Induced corneal higher-order aberrations and decentration following small-incision lenticule extraction procedure. Tae-im Kim, H. Lee, D. Kang, E. Kim, K. Seo, H. Lee. Ophthalmology, Severance Hospital, Yonsei University; Ophthalmology, International St. Mary’s Hospital, Catholic Kwandong University College of Medicine; Eyereum Eye Clinic


5065 — B0158 Posterior chamber intraocular lens implantation for correction of myopia after excimer laser corneal refractive surgery. Zhou qizhi. Aier school of ophthalmology, Central South University

5066 — B0159 Comparison of clinical outcomes between FDA recommended and modified TMR protocols with topography-guided LASIK. B0149. xuejun fang, x. zhong, D. Wu, f. guo, b. li. Aier School of Ophthalmology, Central South University

5068 — B0161  Sensorless coherent aberrometry by PSF de-scanning with swept source OCT. Rainer A. Leitgeb1, 2, L. Ginner1, A. Kumar2. 1Cir of Med Phys & Biomed Eng, Medical University of Vienna; 2CDL-OPTRAMED, Medical University Vienna *CR

5069 — B0162  Preliminary clinical study of LenSx femtosecond laser-assisted corneal keratotomy on correction of low or moderate astigmatism in intraocular collamer lens implantation. Yanli Peng1, 2. 1Aier School of Ophthalmology, Central South University; 2Chongqing Aier-Mega Eye Hospital, Aier Eye Hospital Group


5071 — B0164  The changes of the anterior corneal surface, posterior surface and total cornea high order aberrations after SMILE or ICL correction for low and moderate myopia. Kangjun Li1, 2. 1The Aier eye institute, Central south university; 2‘XI’AN AIER eye hospital

5072 — B0165  Immediate visual recovery after photorefractive keratotomy with new laser beam profile. David T. Lin1, S. P. Holland, S. Arba Mosquera, A. Covello2. 1Pacific Laser Eye Center; 2SCHWIND eye-tech-solution

5073 — B0166  Quality of Vision Outcomes of Fellow-Performed LASIK and PRK. Kristin Hirabayashi, E. E. Manche. Stanford University *CR

5074 — B0167  Comparing Agreement Between Optical Low-Coherence Reflectometry and Fourier-domain Optical Coherence Tomography during LASIK. Paul Lang, M. roozbehani, O. Golan, J. B. Randleman. University of Southern California


5076 — B0169  Short- and long-term impact of Laser-Induced Refractive Index Change (LIRIC) on corneal nerve distribution in rabbits. Katlin T. Wozniak, S. C. Butler, M. DeMagistris, C. Callan1, W. Knox, J. D. Ellis, K. R. Hultin1, 4. 1The Institute of Optics, University of Rochester; 2Clerio Vision Inc.; 3Flaun Eye Institute, University of Rochester; 4Center for Visual Science, University of Rochester; 5The College of Optical Sciences, University of Arizona *CR

5077 — B0170  Benzalkonium Chloride (BAC) for Transscleral Riboflavin Delivery. Eric R. Mikula, S. Bradford, D. Brown, T. Juhasz. 1J. V. Jester2. 1Ophthalmology, University of California, Irvine; 2Biomedical Engineering, University of California, Irvine


5079 — B0172  First-in-human laser-induced refractive index change (LIRIC) treatment of the cornea. Len Zeleznyak, S. C. Butler, I. G. Cox, K. R. Hultin, J. D. Ellis, W. Knox, K. Walter, J. A. Viskich, G. Quesada, R. Quesada, A. Melendez, J. J. Machado, S. M. MacRae1. 1Clerio Vision, Inc.; 2Ophthalmic Research Consultants; 3Davis Duerh Dean Center for Refractive Surgery, SSM Health Care; 4Clinica Quesada; 5Flaun Eye Institute, University of Rochester; 6College of Optical Sciences, University of Arizona; 7Institute of Optics, University of Rochester; 8ICG Consulting; 9Crystal Clear Vision

5080 — B0173  Keratoconus Concordance in monozygotic twins. Filippos Vingopoulos1, A. J. Kanellopoulos1, 3, 4. 1Laservision Clinical and Eye Institute; 2National & Kapodistrian University of Athens Medical School; 3New York University Medical School *CR

5081 — B0174  Left eye corneal nerves altered by corneal injury in the right eye. Thang L. PHAM, J. He, A. H. Kukucu, H. E. Bazan. Neuroscience Center, Louisiana State University Health Science Center

West Exhibition Hall B0216-B0253
Wednesday, May 01, 2019 10:15 AM-12:00 PM

Cornea

455 Corneal Cell and Molecular Biology

Moderators: James W. Foster and Zala Luznik

5082 — B0216  Influence of psoriasis on VEGF-mediated corneal neovascularization. Fabian Garreis1, E. Beckenbauer, U. Schulte, M. Schicht1, U. Hampel1, F. P. Paulsen1. 1Department of Functional and Clinical Anatomy, Friedrich Alexander University Erlangen-Nürnberg (FAU); 2Department of Ophthalmology, University Medical Center of the Johannes Gutenberg University Mainz

5083 — B0217  Metagenomics in eye banking: first application of Next Generation Sequencing in human donor cornea preservation medium. Dr. Davide Borroni1, 2, M. Parekh1, V. Romano1, T. F. Somervelle4, C. Roche de Bossada4, 5, S. Ferrari1, S. B. Kaye1. 1Ophthalmology, Riga Stradins University; 2St. Paul’s Eye Unit, Royal Liverpool University Hospital; 3Institute of Ophthalmology, University College London; 4International Center for Ocular Physiopathology, The Veneto Eye Bank Foundation; 5Department of Ophthalmology, Hospital Regional Universitario Carlos Haya

5084 — B0218  VEGF Receptor Activation and Ligand Interactions in Neuronal and Endothelial Cells. Joy Sarkar1, Y. Luo1, Q. Zhou1, E. Ivakhnitskaya1, V. H. Guediuli1, M. Rosenbliat1. 1Ophthalmology and Visual Sciences, University of Illinois at Chicago; 2Illinois Eye and Ear Infirmary

5085 — B0219  Characterization of human iPSC-derived corneal endothelial cells. Jiagang Zhao, N. A. Afshar1. Shirley Eye Center, University of California San Diego

5086 — B0220  FGF9 regulates endothelial-to-mesenchymal transition of corneal endothelial cells. JINGWEN YU1, 2, S. Ou1, 2, H. Sun1, 2, H. Wu1, 2, Y. Guo1, M. Zhang1, 2, L. Li1, 2, Y. E. Xi1, 2. 1Eye Institute of Xiamen University; 2Medical College of Xiamen University

5087 — B0221  Comparison and validation of ex vivo and in vitro corneal permeability models. Jenni H. Hakkarainen1, A. Zininauskaitë1, V. Cepal1, R. Valiokas1, G. Kalesnykas1. 1R&D, Experimentica Ltd.; 2Ferentis UAB *CR

5088 — B0222  Detection and Gram Discrimination of Bacteria from Keratitis by Real-Time PCR Assay. Ana Hofging-Lima1, L. Luchesi Jorge1, R. T. Santos1, T. T. Rocchetti1, P. J. Bispo1, 2, M. Z. Zorat Yu1, A. C. Pignatari2. 1Ophthalmology, Unifesp; 2Department of Ophthalmology, University Federal de São Paulo; 3Ophthalmology, Harvard Medical School

5089 — B0223  Autohaemotherapy based on gelosolin (GSN) enrichment supports corneal wound closure and has an anti-inflammatory effect on the ocular surface. Jessica Feldt1, M. Schicht1, F. Garreis1, J. Welss1, U. Schneider2, F. P. Paulsen2, J. Kanellopoulos1, 3. 1Laservision Clinical and Eye Institute; 2Department of Functional and Clinical Anatomy, Friedrich Alexander-University Erlangen-Nuremberg; 3Arthrogen GmbH

5090 — B0224  Topical delivery of Decorin using cell penetrating peptide enhances recovery of alkali burn-induced corneal injury in mice. Deepa N. Talreja, R. Kumar-Singh. Tufts University School of Medicine

5091 — B0225  Mitomycin C-Triggering Nuclear Translocation of Fibulin-1 Contributes to Gene Reduction in Human Corneal Fibroblasts by Microarray Analysis. Tsan-Chi Chen, S. Chang. Ophthalmology, Far Eastern Memorial Hospital

*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.
5092 — B0226 High throughput hypoxia screening system for oxidative stress on ocular surface cell study. Jeongyoon Kim1, H. Kim1, K. Cho2, J. Ju1. 1Dept. of Physics, Dankook University; 2Dept. of Ophthalmology, Dankook University

5093 — B0227 Identification of Herpes simplex virus type 1 by matrix assisted laser desorption/ionization time of flight mass spectrometry (MALDI-TOF MS). Chao Cheng, T. Lin, M. Zhu, K. Wu. Zhongshan Ophthalmic Center, State Key Laboratory of Ophthalmology, The Key Lab of Ophthalmology and Visual Science of Guangdong, Sun Yat-sen University, Guangzhou, China

5094 — B0228 Analysis of Tumor Necrosis Factor Alpha (TNF-α) Expression in Keratoconus Cornea. Khadijah Raza1,2, S. Syed1, M. Azam1, R. Qamar1. 1Boston Latin; 2Biosciences, Comsats University

5095 — B0229 Levels of Wnt6 differentially regulate human limbal stem/progenitor cells. Denise Obi1, H. Mei1, X. Deng1. 1Stein Eye Institute, University of California Los Angeles; 2University of North Carolina Chapel Hill

5096 — B0230 Increased SFK activity enhances wound healing in neurotrophic keratopathy mouse model. Vivian Lee1,2, C. Lin1, Y. Kweon1, X. Yang1, T. Dentchev1, J. Seykora1. 1Department of Ophthalmology, Scheie Eye Inst Univ PA; 2Department of Dermatology, University of Pennsylvania

5097 — B0231 Activation of AMPK promotes human corneal endothelial cell proliferation in vitro. Yiran Wang1, H. Cui2, G. Xu1. 1Shanghai East Hospital, Tongji University; 2Tongji University

5098 — B0232 Nitric Oxide Attenuated Transforming Growth Factor-β induced Myofibroblast Differentiation of Human Keratocytes. BORA YIM1, J. Park1, C. Park1. 1Ophthalmology, Dongguk University Hospital

5099 — B0233 Moxifloxacin induced dose-dependent apoptosis of human corneal endothelial cells via activation of extrinsic caspase pathway. JooHee Park1, B. YIM1. 1Ophthalmology, Dongguk University Hospital

5100 — B0234 QFDE Visualization of Matrix Production by Human Corneal Fibroblasts: A Look at Fibrillogenesis. Ebrahim Ismail1, J. Ruberti1. Bioengineering, Northeastern University

5101 — B0235 Induced Wnt/β-catenin signaling enhances differentiation in Human Limbal Epithelial Stem Cells. Jovana Bisevac1,2, G. Petrovski1,2, M. Moe1,2, A. Noer1. 1Center for Eye Research, Department of Ophthalmology, Oslo University Hospital; 2Institute of Clinical Medicine, University of Oslo

5102 — B0236 Proinflammatory and toxic effects in trigeminal neurons induced by a conditioned medium of corneal epithelial cells exposed to benzoalkonium chloride. Michael-Adrien VITOUX1,2, C. BAUDOIN1, S. Melik Pusradianto1, M. CLARET1, g. camille1, F. Baudouin1, A. REAUX LE GOAZIGO1. 1Institut de la Vision; 2Horus Pharma; 15/20 Hospital *CR

5103 — B0237 The Effect of Hyperglycemia on Gut Microbial diversity, Ocular Surface Inflammation and Corneal Re-epithelialization after Alkaline Chemical Injury in Mice. Yashan Bu1, K. C. Shih2, A. C. Lo2. 1OPthalmology, The University of Hong Kong

5104 — B0238 Effect of Acute Prolonged Exposure to Benzoalkonium Chloride on Structure and Function of Corneal Nerves and Epithelium. Evgenia Ivakhnitskaia1,2, V. Dallacasandrache1, K. Mizerska1, T. Nguyen1, V. H. Guaquiel2, M. Rosenblatt1, H. Hirata1. 1University of Illinois-Chicago; 2Weill Cornell Medical College

5105 — B0239 Tissue-Engineered Recombinant Human Collagen-Based Corneal Substitutes in End Stage keratoconus. Sana Niazi1, H. Niknejad2, F. Najafi2, F. Doroodygar1, A. Sanginabadi1. 1Shahid Beheshiti University of Medical Science; 2Tehran University of Medical Science; 3Iran University of Medical Science

5106 — B0240 KLF4 regulates corneal epithelial cell cycle progression by suppressing canonical TGF-β signaling, and upregulating CDK inhibitors P16 and P27. Anil Tiwari1,2, N. Alexander1, J. S. Gnall1, S. Tien1, P. R. Kinchington1, S. Shivalingappa1, K. 1Ophthalmology, University of Pittsburgh; 2Biological Sciences, University of Pittsburgh

5107 — B0241 HYAL4 and PHB2, involved in the hydrolysis of chondroitin sulfate chains, undergo a subexpression in the cornea of keratoconus patients. Luis M. Quirós1,2, J. Merayo-Lloves1,3, I. Alcalde1, C. Martin1,2, F. Vázquez1,2, J. Alfonso1,4, L. Fernández-Vega1, B. García1,2. 1Instituto Universitario Fernández-Vega, Fundación de Investigación Oftalmológica & Universidad de Oviedo; 2Department of Functional Anatomy, Friedrich-Alexander-University Erlangen-Nürnberg

5108 — B0242 Regulation of oxidative stress in corneal endothelial cells by PRDX-6. Gary S. Peh1,2, M. Lovart1, K. Adhan1, J. S. Mehta1,3. 1Ocular Tissue Eng & Stem Cell Group, Singapore Eye Research Institute; 2Eye-ACP, Duke-NUS Graduate Medical School; 3Singapore National Eye Center

5109 — B0243 Interactions between KRT12 TSS and other genomic loci in corneal limbal epithelial stem cells. Suguru Nakagawa1,2, A. Okabe1, S. Tsutsui1, R. Nakaki1, S. Yamagami2, T. Usui1,2, H. Abruatan1. 1Dept of Ophthalmology, Univ of Tokyo; 2Genome Science Div, RCAST, Univ of Tokyo; 3Dept of Ophthalmology, Saitama Red Cross Hospital; 4Dept of Ophthalmology, Nihon Univ; 5Dept of Ophthalmology, International Univ of Health and Welfare

5110 — B0244 Effect of SOX2 Repression on Corneal Endothelial Cells. Hochul Y1, Y. Shin2, J. Hwang3, T. Chung1. 1Ophthalmology, Hallym University College of Medicine; 2Ophthalmology, Samsung Medical Center, Sungkyunkwan University School of Medicine

5111 — B0245 SP1 and SP3 mediate fibrosis induced by FGF2 in human corneal endothelium independently. JeongGoo Lee1, E. Jang, J. M. Heur1. Ophthalmology, University of Southern California

5112 — B0246 Transcriptional Profiling of Daily Patterns of mRNA Expression in the Murine Cornea. Xiwei Jiao1, D. Lu1, J. Zhang2, Z. Song1, L. Wang1, J. Gu1, Z. Li2. 1Hunan Provincial People’s Hospital and People’s Hospital of Zhengzhou University, 2Hunan Eye Institute, Henan Eye Hospital

5113 — B0247 Comparative analysis of Pellecif marginal degeneration and Keratoconus corneas show divergence in molecular expression and tissue structure. Pooja Khanna1, A. Ghosh2, S. Setha1, A. Sinha Roy1, R. K. Narayan1, N. N. Neterlaya1. 1Department of Functional and Clinical Anatomy, Friedrich-Alexander-University Erlangen-Nürnberg

5115 — B0249 KLF4 Prevents Epithelial-to-Mesenchymal Transition in Human Corneal Epithelia via SMAD2/3 Nuclear Translocation Inhibition of the TGF-β Signaling Pathway. Satoko Fujimoto1, R. Hayashi1, Y. Sasamoto1, S. Harai1, J. Harrington1, M. Tsubikawa1, K. Nishida2. 1Department of Ophthalmology, Osaka University Graduate School of Medicine; 2Department of Stem Cells and Applied Medicine, Osaka University Graduate School of Medicine; 3Division of Genetics, Brigham & Women’s Hospital, Harvard Medical School; 4Structural Biophysics Group, School of Optometry and Vision Sciences, College of Biomedical and Life Sciences, Cardiff University; 5Department of Biomedical Informatics, Osaka University Graduate School of Medicine, Division of Health Sciences *CR
5116  —  B0250  Matrix-Assisted Laser Desorption Ionization (MALDI) Mass Spectrometry Imaging (MSI) of key proteins in corneal samples from Lattice dystrophy patients with TGFBI-H262R and R124C mutation. Anandakishore Venkatramani1, J. S. Mehta2 1Singapore Eye Research Institute; 2Singapore National Eye Centre

5117  —  B0251  Age-related anatomical changes in the cornea of spontaneous type 2 diabetes model rats. Machiko Shinnmura-Tomita1, H. Takano1, N. Kinoshita1, T. Tanaka1, R. Takagi1, M. Kobayashi1, T. Ohta1, T. Sasaie1, M. Shiohara1, A. Kakehashi1 1Ophthalmology, Jichi Medical Univ Saitama Med Ctr; 2Central Pharmaceutical Research Institute, Japan Tobacco Inc.; 3CLEA Japan, Inc.

5118  —  B0252  A Comparative study of Cytotoxicities and Anti-allergic Effects by Topical Ocular Dual-action Anti-allergic Agents. Jong-Soo Lee1, J. Lee2, S. Kim1, J. Lee2 1Medical Research Institute, Pusan National University; 2Ophthalmology, Pusan National University College of medicine; 3Ophthalmology, Pusan National University College of Medicine; 4Ophthalmology, Casey Eye Institute/OHSU

5119  —  B0253  Expression and localization of the Receptor for Advanced Glycation End Products (RAGE) in normal versus keratoconus cornea. jean malecza1, C. GROS5, C. Belville5, 1L. Blanchon2, F. Chiambaretta1, V. Sapir5 1ophthalmology, CHU Clermont-Ferrand; 2GRéD-UMR CNRS 6295 - U1103 INSERM, Universite Clermont Auvergne; 3Biochimie medicale, CHU Clermont-Ferrand

5120  —  B0522  Gene therapy for Glaucoma by CRISPR-Cas9 mediated disruption of Aquaporin 1 in the Ciliary Body. Colin J. Chu1, A. Huang2, A. Quittner3, V. Cusick1, W. Stamer2 1Small Animal Clinical Sciences, School of Veterinary Medicine, University of California; 2School of Optometry, The Hong Kong Polytechnic University; 3School of Medicine, University of Wisconsin

5121  —  B0523  Fluorophotometric determination of aqueous humor flow rates (AHFRs) in a canine model of ADAMTS10-Weill Marchesani syndrome-associated open-angle glaucoma (WMS-OAG). Christine Harman1, K. L. Koehl1, C. B. Toris2, L. B. Teixeira2, A. M. Komaromy3 1Small Animal Clinical Sciences, Michigan State University; 2Ophthalmology and Visual Science, Case Western Reserve University; 3Pathobiological Sciences, University of Wisconsin

5122  —  B0524  Actomyosin contractility and the vimentin cytoskeleton influence giant vacuole life-cycle in Schlemm’s canal endothelial cells. Darryl R. Overby1, A. Spencehauer1, A. Cairoli1, J. M. Sherwood1, A. Yahabikashi1, W. Stamer1, C. Lee2 1Bioengineering, Imperial College London; 2Cell and Molecular Biology, Northwestern University; 3Ophthalmology, Duke University *CR

5123  —  B0525  A new method for en face confocal imaging of Schlemm’s canal inner wall and juxtcanalicular trabecular meshwork. Mini Agh1, J. Bradley1, J. A. Franka1, T. S. Acott1 1Ophthalmology, Casey Eye Institute/OHSU

5124  —  B0526  Autophagy is a regulator of TGFβ-induced fibrogenesis in trabecular meshwork cells. April Nettesheim1, M. Sim2, R. VijayKrishna1, O. H. Bell1, D. Copland1, R. Maswood2, A. Aquaporin 1 in the Ciliary Body. Colin J. Chu1, 1Translational Health Sciences, University of North Texas Hlth Sci Ctr; 2Optometry, University of Houston; 3Optometry, Indiana University School of Medicine; 4Eugene & Marilyn Glick Eye Institute; 5University of North Texas Health Science Center

5125  —  B0527  Nuclear LC3 triggers ribophagy upon cyclic mechanical stretch in human trabecular meshwork cells. Myongsup Sim1, A. Nettesheim1, A. Dixon1, P. B. Liton1 1Ophthalmology, Duke University

5126  —  B0528  JCAD (Junctional Protein Associated with Coronary Artery Disease) is a prominent cell-cell junction protein in the trabecular meshwork. Philip Mzyk1, R. Maddala1, Y. Rao1 1Ophthalmology, Indiana University

5127  —  B0529  Caveolar ultrastructural changes of the trabecular meshwork in primary open-angle glaucoma. Ting-Bo Shui1, A. Spenlehauer1, W. Gao1, Y. Liu1 1Cellular Biology and Anatomy, Duke University School of Medicine; 2Harvard Medical School

5128  —  B0530  Racial disparities of SDFP/Cavin2 expression in human trabecular meshwork. Carla J. Siegfried1, Y. Shui2, Y. Liu1 1Ophthalmology and Visual Sciences, Washington University School of Medicine

5129  —  B0531  Generation of Reversible Immortalized Cell Lines to Model Pseudoxfoliation Syndrome. Coralia Luna1, P. Challa1, U. Schlotzer-Schrehardt1, P. Gonzalez1 1Ophthalmology, Duke University; 2Ophthalmology, University of Erlangen-Nürnberg

5130  —  B0532  New Tools for Understanding Segmental Flow: Generation and Characterization of Trabecular Meshwork High Flow and Low Flow Cell Lines. Julia Staverosky1, R. VijayKrishna1, J. A. Franka1 1Casey Eye Institute, Oregon Health and Science University; 2Optometry, University of Houston

5131  —  B0533  The Role of Phosphoinositides in Aqueous Humor Dynamics via Optogenetic Stimulation in the Trabecular Meshwork. Jorge A. Alvarado1, P. Prosseki2, k. ning1, T. Kowal2, B. Wang1, Y. Hu1, Y. Sun1 1Ophthalmology, Stanford University; 2Palo Alto VA Medical Center

5132  —  B0534  Small molecule inhibitors targeting canonical and non-canonical Wnt signaling have distinct effects on dexamethasone induced phenotypes of primary trabecular meshwork cells. Chi Zhang1, L. U. Sanchez1, J. J. Zheng1 1Ophthalmology, UCLA

5133  —  B0535  The role of Wnt signaling in TGFβ2-induced ocular hypertension. Weiming Mao1,2, N. Rayana3, J. Wu1, A. Roberts2, R. Fudal1 1Ophthalmology, Indiana University School of Medicine; 2Eugene & Marilyn Glick Eye Institute; 3University of North Texas Health Science Center

5134  —  B0536  The role of TGFβ2 on mechano-responsive genes of bovine angular aqueous plexus cells. Jingwen Cai1, K. M. Perkumas2, W. Stamer1, Y. Liu1 1Cellular Biology and Anatomy, Augusta University; 2Duke University

5135  —  B0537  TLR4 signaling in the human trabecular meshwork. Colleen M. McDowell, T. P. Sharma. North Texas Eye Research Institute, Univ of North Texas Hlth Sci Ctr *CR

5136  —  B0538  High-throughput single-cell contraction assay to assess the contractile heterogeneity of primary human trabecular meshwork cells. Luis U. Sanchez1, C. Zhang1, J. J. Zheng1 1Ophthalmology, University of California Los Angeles

5137  —  B0539  Histological Characterization of Transcriptionally Distinct Cell Types in the Human Trabecular Meshwork. Alexi McAdams1, T. van Zyl1, W. Yan1, J. Sanes1 1Massachusetts Eye and Ear; 2Harvard University; 3Harvard Medical School

5138  —  B0540  The effects of a Rho-associated protein kinase (ROCK) inhibitor (Y39983) on human trabecular meshwork cells – a morphological and proteomic study. Sena Sun1, T. Lam1, W. Stamer2, H. Li1, C. Do1, T. To1 1School of Optometry, The Hong Kong Polytechnic University; 2Ophthalmology, Duke University

5139  —  B0541  Activation of αvβ3 integrin in human trabecular meshwork cells enhances Rhoindependent assembly of fibronectin fibrils. Mark S. Fillia1, H. Desikan1, D. M. Peters2 1Pathology and Laboratory Medicine, University of Wisconsin; 2Ophthalmology & Visual Sciences, University of Wisconsin

5140  —  B0542  dCAS9-KRAB inhibits TGFβ2 in trabecular meshwork cells. Naga pradeep Rayana1,2, W. Mao1 1Ophthalmology, Indiana school of Medicine; 2Eugene and Marilyn Glick Eye institute

* 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.
5141 — B0543 Suppression of SPARC in human trabecular meshwork cells upregulates Plasminogen Activator Inhibitor-I. William MacDonald, M. Kang, D. J. Rhee. Ophthalmology and Visual Sciences, Case Western Reserve University


5143 — B0545 Trabecular meshwork cell swelling and osmoregulation is subserved by TRPV4 and TRPM4 cation channels. Jackson M. Baumann1, O. Yarishkin1, M. Lakk1, F. Vasquez-Chona1, D. Krizaji1. 1Department of Biomedical Engineering, University of Utah; 2Department of Ophthalmology and Visual Sciences, University of Utah

5144 — B0546 Inactivation of αvβ3 integrin in talin-1 deficient human trabecular meshwork cells prevents TGFB2 induced increase in fibronectin protein expression. Jennifer A. Faralli1, J. Balas1, M. S. Fillia1, D. M. Peters1,2. 1Pathology and Laboratory Medicine, University of Wisconsin School of Medicine and Public Health; 2Ophthalmology, University of Wisconsin School of Medicine and Public Health

5145 — B0547 Identification of extracellular matrix gene variants in a large glaucoma family and analysis of human trabecular meshwork cells harboring one or more of these variants. Kate E. Keller1, Y. Sun1, Y. Yang1, R. Sykes1, D. Keene1, J. R. Sample1, M. Wirtz1. Ophthalmology, Casey Eye Institute - OHSU; 2Shriners Hospitals for Children; 3Washington State University

5146 — B0548 Cell derived matrices modulate TGFB2 signaling in human trabecular meshwork cells. Felix Yemani1, J. A. Vranka2, V. Raghunathan1,4. 1Department of Basic Sciences, University of Houston College of Optometry; 2Department of Ophthalmology, Casey Eye Institute, Oregon Health and Science University; 3Department of Biomedical Engineering, Cullen College of Engineering, University of Houston


5148 — B0550 Investigating MRTF-A as a novel anti-fibrotic target in trabecular meshwork cells for open angle glaucoma. Afjat Tahir2, J. Lorenz1, D. M. Smith1, M. Rcepha1, R. Thareja1, J. A. West-Mays1. 1Pathology and Molecular Medicine, McMaster University; 2Fraunhofer Institute for Cell Therapy and Immunology IZI; 3McGill University

5149 — B0551 Glycosaminoglycans and Scaffold Morphology Influence Trabecular Meshwork Cell Behavior. Matthew J. Osmond1, M. D. Krebs1, M. B. Panitcheva1. 1Chemical and Biological Engineering, Colorado School of Mines; 2Ophthalmology Department, University of Colorado Denver

5150 — B0552 Glycosylation of SPARC is Critical for Binding to Extracellular Matrix Proteins and Protection from Matrix Metalloproteinase Degradation. Nathaniel Fox, B. Liu, K. Scavelli, A. Castillejos, M. Kang, D. J. Rhee. Ophthalmology, Case Western Reserve University

5151 — B0553 Human Embryonic Stem Cells Differentiate into Trabecular Meshwork Cells. Yiqin Du1, W. Song1, A. KUMAR2. 1Ophthalmology & Developmental Biology, University of Pittsburgh; 2McGowan Institute for Regenerative Medicine, University of Pittsburgh; 3Ophthalmology, University of Pittsburgh; 4Ophthalmology, Xiangya Hospital, Central South University

5152 — B0554 Quantification of Human Trabecular Meshwork Stem Cells in Glaucomatous Donors. Yogapriya Sundaresan1, M. VR1, K. S. R2, G. Chidambaramanathan1. 1Department of Immunology and Stem Cell Biology, Aravind Medical Research Foundation; 2Glaucoma Clinic, Aravind Eye Hospital and Post Graduate Institute of Ophthalmology

5153 — B0555 Media borne factor that stimulates stem cell division following laser trabecuoplasty. Samuel J. Berk1, L. Peterkin1, S. Tehrani1, T. S. Acott1, M. J. Kelley1. 1Department of Biomedical Engineering, Colorado School of Medicine and Public Health; 2Ophthalmology, University of Colorado Denver

5154 — B0556 Effects of Salidroside on Scaffold Morphology of Trabecular Meshwork Cell Extracellular Matrix Expression and Mouse Intraocular Pressure. tao guo1, y. yan1, l. guo1, j. wei1. 1Department of Ophthalmology, Ninth People’s Hospital, Shanghai Jiao Tong University School of Medicine; 2Department of Ophthalmology, Luan Affiliated Hospital of Anhui Medicine University


5156 — B0558 Adenoviral Gene Transfer of TGF-β2 Uregulates Intraocular Pressure through SPARC and Integrin-Linked Kinase in Mice. Jaeyoung Heo, E. Ahadizadeh, Y. Zheng, M. Kang, D. J. Rhee. Case Western Reserve University


5158 — B0560 Hyperbranched cationic glycolgen derivative-mediated IκBα gene silencing regulates the uveoscleral outflow pathway in rats. Yuqing Lan, R. Zeng, J. Li, H. Gong. Sun Yat-Sen Memorial Hospital


5160 — B0562 Ex-vivo cultured human anterior segment model to study the effects of glaucoma factors on trabecular meshwork. Ramesh Kavetti, P. D. Patel, G. Zode. Department of Pharmacology and Neuroscience, University of North Texas Health Science Center

5161 — B0563 Surgical outcomes of trabecular micro-bypass (iStent) surgery performed by ophthalmology resident trainees compared to attending surgeons. Stephen Moster, C. X. Zheng, M. Lin, S. Copparam, D. Lee. Glaucoma, Wills Eye Hospital


5163 — B0565 Histopathology findings in the trabecular meshwork of eyes with glaucoma drainage devices. Jacqueline Coblenz1, N. Saheb1, H. Saheb2, P. Garcia de Alba Graue1, C. Mastromonaco1, M. N. Burnier1. 1Ocular Pathology, McGill University; 2McGill University

5164 — B0566 Improvement of trabecular outflow facility by Netarsudil Ophthalmic Solution in patients with primary open angle glaucoma or ocular hypertension. Arthur J. Sir1, D. Gupta1, A. Kazemi1, H. McKeel1, D. Lopez1, C. Kopczynski1, T. Heath1. 1Mayo Clinic; 2Duke University; 3Aerie Pharmaceuticals Inc.; 4Aerie Pharmaceuticals Inc. *CR

5165 — B0567 Primary open-angle glaucoma: A phenotype with two faces. Michael Giovingo1, N. M. Pfuhler1, I. Bielskus1, P. A. Knepper1. 1Ophthalmology, John H. Stroger, Jr. Hospital of Cook County; 2Ophthalmology and Visual Sciences, University of Illinois at Chicago; 3Ophthalmology, Northwestern University Feinberg School of Medicine
Platelet TLR4 expression in degenerative disease. Paul A. Knepper¹ ², N. M. Pfahler², I. Bielskus², M. Giovingo³, N. J. Volpe¹. ¹Ophthalmology, Northwestern University Feinberg School of Medicine; ²Ophthalmology & Visual Science, University of Illinois at Chicago; ³Ophthalmology, John H. Stroger, Jr. Hospital of Cook County

* 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.
There is increasing evidence supporting the link between eye and brain diseases. Following the success of last year’s SIG, we propose to continue the discussion on this hot topic and to provide updates on new findings in this field. The panel will discuss the phenomenon of bidirectional neurodegeneration in the visual pathway and the potential use of ocular findings as biomarkers for brain pathology. The purpose of the course is to address the importance of considering the eye as a part of the central nervous system and to understand the interrelationships between eye and brain diseases and their clinical implication.

**Moderator:** Vivek Kumar Gupta

**Opening statement + New ocular findings associated with infections in the central nervous system.** Alessandro Invernizzi. Eye Clinic, University of Milan, Fairlight, New South Wales, Australia; Save Sight Institute, Sydney University, Sydney, New South Wales, Australia *CR

**Organizer:** Yuyi You. Save Sight Institute, Sydney University, Sydney, New South Wales, Australia

**The spread of neurodegeneration in the visual system.** Yeni H. Yucel. University of Toronto, Toronto, Ontario, Canada

**Updates on new findings of the transneuronal spread of human neurodegenerative disease.** Yuyi You. Save Sight Institute, Sydney University, Sydney, New South Wales, Australia

**Retinal changes in neurological disorders.** Maya Koronyo-Hamaoud. Alzheimer’s Disease Research Laboratory, CEDARS-SINAI, Los Angeles, CA

**Is it the eye or the brain?** Alfredo A. Sadun. Doheny Eye Center, University of Southern California, Los Angeles, CA

**Organizer:** Alessandro Invernizzi. Eye Clinic, University of Milan, Fairlight, New South Wales, Australia; Save Sight Institute, Sydney University, Sydney, New South Wales, Australia *CR

**Global scientific output is doubling every decade, with 2.5 million new papers published each year. But does this proliferation of papers represent real knowledge growth? The scientific quality of a study is critical factor for determining whether its results can be trusted. However, many factors can undermine the validity of research findings, including insufficient power, small effects and invalid statistical analyses.**

**In this forum, members of Cochrane Eyes and Vision will discuss key findings from recent high-impact Cochrane systematic reviews covering topics such as age-related macular degeneration, diabetic retinopathy, minimally-invasive glaucoma surgery and dry eye disease. These reviews will also be used to illustrate common methodological errors. The implications of these reviews for practice and future research will be discussed.**

**This SIG will provide a forum for researchers, clinicians, methodologists and biostatisticians to consider how methods can be improved, as a basis for enhancing the quality of future clinical research in the field. Attendees will be able to engage in discussing focus areas (e.g. core outcome sets, practice-based registries, etc.) to prioritise moving forward.**

**Moderator:** Tianjing Li

**Critically appraising the literature relating to blue-light filtering intra-ocular lenses for macular health, and essential fatty acid interventions for dry eye disease.** Laura E. Downie. Department of Optometry and Vision Sciences, The University of Melbourne, Parkville, Victoria, Australia

**A snapshot of recent high-impact Cochrane systematic reviews.** Tianjing Li. Center for Clinical Trials and Evidence Synthesis - Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

**Risk of bias and level of equivocality in ophthalmic meta-evidence from the Cochrane Eyes and Vision Group.** Stephanie L. Watson. Discipline of Ophthalmology, Sydney Medical School, Save Sight Institute, The University of Sydney, Sydney, New South Wales, Australia

**Critical appraisal of the literature related to diabetic retinopathy.** Noemi Lois. Wellcome-Wolfson Institute for Experimental Medicine, Queens University, Belfast and the Belfast Health and Social Care Trust, Belfast, Ireland

**Critically appraising the literature relating to imaging devices and their use for diagnosis and monitoring of ocular disease.** Manuele Michelessi. IRCCS - Fondazione GB Bietti, Rome, Italy *CR

**Session Role:** Organizer. Tianjing Li. Center for Clinical Trials and Evidence Synthesis - Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

**Session Role:** Organizer. Laura E. Downie. Department of Optometry and Vision Sciences, The University of Melbourne, Parkville, Victoria, Australia

**Robotic systems have found widespread use in many surgical fields and applications thanks to their high precision, maneuverability, and improved visualization over traditional surgical techniques. However, ocular surgery presents unique challenges: workspace limitations; three-dimensional and high-magnification views of homogeneous and fragile intraocular structures; the inherent minimally invasive nature of intraocular surgery and its instrumentation; and the hindered maneuverability, range, and depth precision required of microsurgical instruments. This has resulted in a delayed adoption of robotic systems into eye surgery.**

This SIG proposes a series of panelist discussions regarding the latest, state-of-the-art progress in robotic eye surgery, including the IRISS system from UCLA and the Precyeyes Surgical System. Each system has evolved using different strategies to address the challenges stated above. The subsequent discussion will be focused on answering the following questions: What are the hurdles facing robotics in eye surgery? How does one overcome them? Where are we headed? Which key applications or developments should be targeted?

**Moderators:** Jean-Pierre Hubschman and Marc D. De Smet

**Organizer:** Marc D. De Smet. Precyeyes B.V., Eindhoven, Netherlands *CR

**Panelist:** Matthew J. Gerber. Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA

**Panelist:** Gerrit J. Naus. Precyeyes B.V., Eindhoven, Netherlands *CR

**Panelist:** Marinko V. Sarunic. School of Engineering Science, Simon Fraser University, British Columbia, Canada

**Organizer:** Jean-Pierre Hubschman. Department of Ophthalmology - Retina Div, Jules Stein Eye Institute - UCLA, Los Angeles, CA
Cilia are microtubule-based structures in almost all vertebrate cells and are very important for transduction of diverse biological signals, especially in sensory organs, brain and kidney etc. Given the pivotal role of sensory cilium in transducing key signals in the highly metabolic photoreceptor, dissection of the biological mechanisms and clinical relevance in diverse retinal ciliopathies is becoming urgently important. So far, ciliopathies and related genetic mutations have been defined in many forms of retinal degenerations. This session will cover latest advancements in the field of genetic ciliopathies in retina from genetics to mechanisms, and discuss a future framework for investigating genetic networks associated with photoreceptor cilia biogenesis and pathology.

**Moderators:** Zi-Bing Jin, Yutao Liu and Susanne Roosing

— 12:15 Social networking to deconvolute photoreceptor cilium (dys-) function. Ronald Roepman. 855 Dept of Human Genetics, Radboud UMC

— 12:35 Mutational load in ciliopathies: from genotype to phenotype. Erica Davis. Duke Center for Human Disease Modeling

— 12:55 Molecular mechanisms responsible for Stargardt macular degeneration linked to mutations in ABCA4. Robert S. Molday. Biochemistry/Molecular Biology, University of British Columbia


— 1:35 Discussion

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This SIG will present an overview of the latest applications of retinal ganglion cells derived from pluripotent stem cells. Areas of emphasis will include the use of these retinal ganglion cells for in vitro modeling of retinal development. Additionally, discussions will center around their translational use as tools for disease modeling and pharmacological screening, including those cells derived from patient samples as well as the use of Crispr/Cas9 gene editing strategies to develop disease models or isogenic controls. Further conversations will discuss the use of these retinal ganglion cells for cellular replacement, including current obstacles to the successful implementation of pluripotent stem cell-derived retinal ganglion cells for this application.

**Moderator:** Jason S. Meyer

Modeling Development and Disease with Human Pluripotent Stem Cell-Derived Retinal Ganglion Cells. Jason S. Meyer. 1Stark Neurosciences Research Institute, Indiana University, Indianapolis, IN; 2Biology, Indiana Univ- Purdue Univ Indianapolis, Indianapolis, IN *CR

Use of human stem cell-derived retinal ganglion cells to study RGC development, survival, and function. Donald J. Zack. 1Department of Ophthalmology, Johns Hopkins University, Baltimore, MD; 2Wilmer Eye Institute, Johns Hopkins University, Baltimore, MD

Rapid Induced-Retinal Ganglion Cells: Fidelity of Differentiation and Efficacy in Transplant. Jeffrey L. Goldberg. 1Byers Eye Institute, Stanford University, Stanford, CA; 2Department of Ophthalmology, Stanford University, Stanford, CA

Modeling human RGC development: Insight into glaucomatous degeneration and therapeutic regeneration. Iqbal Ahmad. University of Nebraska, Omaha, NE

Retinal ganglion cell replacement: overcoming the barriers. Petr Y. Baranov. Schepens Eye Institute, Harvard University, Boston, MA

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In vivo imaging of choriocapillaris (CC) in a routine clinical setting was not possible before the development of optical coherence tomography-based angiography (OCTA). This forum will bring together scientists and clinicians to discuss novel CC OCT imaging strategies and their clinical applications for examining the CC in normal aging, diagnosing diseases, following the natural history of disease, and predicting disease progression. Emphasis will be on interactive panel discussions that focus on the importance of these technological developments in the study of CC abnormalities in human aging and chorioretinal diseases.

1) Instrumentation and Algorithms(Wang, Fujimoto) Discuss challenges and novel techniques to image CC, focusing on technical and physical aspects, with an emphasis on the pitfalls and opportunities.  
2) CC in aging and AMD(Rosenfeld, Waheed, Sadda) Discuss CC imaging in aging and AMD using swept source OCT, with an emphasis on image interpretation and its clinical relevance to the development of AMD.  
3) CC in other diseases(Sadda, Rosenfeld, Waheed) Discuss OCTA imaging of CC in myopic and other eyes, and its clinical relevance and implications


Choriocapillaris in aging and AMD. Philip Rosenfeld. Bascom Palmer Eye Institute, Miami, FL *CR

Choriocapillaris in other diseases. Srinivas R. Sadda. Doheny Eye Institute, CA *CR

Choriocapillaris in aging and AMD. Nadia K. Waheed. New England Eye Center, Boston, MA *CR

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**Wednesday Workshops/SIGs**

**Retinal Cell Biology / Glaucoma / Retina / Visual Neuroscience**

460 Retinal Ganglion Cell Differentiation from Pluripotent Stem Cells: Applications for Studying Development, Modeling Retinal Degeneration, and as a Vehicle for Cellular Replacement - SIG

East Ballroom A

Wednesday, May 01, 2019 12:15 PM-1:45 PM

Multidisciplinary Ophthalmic Imaging Group / Glaucoma / Retina

461 Choriocapillaris Imaging with OCT Angiography - SIG

East Ballroom B

Wednesday, May 01, 2019 12:15 PM-1:45 PM

Genetics Group

462 Genetics Group - Spotlight on retinal ciliopathy from genetics to mechanism
The eye lends itself to local (topical) treatment. However, key requirements in the development of an eye drop is its successful formulation, good safety and tolerability profile and maximal effectivity. This symposium will discuss the potential pitfalls and challenges of eye drop development in ophthalmology, addressing CMC, regulatory and clinical issues with panellists being expert in their field with experience of translating their formulations and research to the clinic.

**Moderator:** Ann Logan

**Introduction.** M Francesca Cordeiro. Glaucoma & Retinal Neurodegrnt Res Grp, Imperial College, UCL IOO, Western Eye Hsp London, London, ENGLAND, United Kingdom *CR

**Differences between medical product and drug development.** Leopold Schmetterer. Singapore Eye Institute, Singapore *CR

**Development pears.** Clive Wilson. Strathclyde University, United Kingdom *CR

**Seeing through the haze.** Uday B. Kompella. University of Colorado Denver, CO *CR

**Commercial perspectives.** Naj Sharif. Santen Inc. CA *CR

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**Wednesday – Workshops/SIGs**

**East Ballroom C**

**Wednesday, May 01, 2019 12:15 PM-1:45 PM**

**Gluacoma / Anatomy and Pathology/Oncology / Immunology/Microbiology / Lens / Physiology/ Pharmacology / Retina / Retinal Cell Biology**

463 Developing Eye Drops in Ophthalmology: Practical Considerations for Smooth Translation to the Clinic - SIG

12:30 From academia to big pharma -- opportunities in science and leadership. Cynthia L. Grosskreutz* 2. Ophthalmology, Novartis Inst for Biomedical Research; 2Ophthalmology, Massachusetts Eye & Ear Infirmary, Harvard Medical School *CR

12:45 Founding a company: from academic discovery to start-up to acquisition. Barbara M. Wrotsko* 1. Ophthalmology, University of Utah; 2Clinical, EyeGate *CR

1:00 The pros and cons of independent consulting. Kathryn S. Crawford* 1. PharmOcu; 2Allysta Pharmaceuticals *CR

1:15 Open Question and Answer

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**West 212-214**

**Wednesday, May 01, 2019 12:15 PM-1:45 PM**

465 How do I tell m(e)y(e) story? - Why effective communication is needed now more than ever to increase research funding

Everyone loves a good story, but what makes a story great? And, more importantly, what makes someone an effective storyteller? This interactive workshop, co-sponsored by ARVO's AOC, MIT and GMC committees, will explore how to harness the power of storytelling to effectively communicate your research. We will feature successful leaders and rising stars in our field who will discuss how to shape your narrative to engage a variety of audiences including experts in your field, funding bodies, patient groups and the general public. Our speakers will share real life examples of how effective communication has helped them build strong and sustainable research programs, launch their careers and make a difference for the patients and communities they serve. Attendees will also learn about resources available to ARVO members including practical advice on dos and don'ts in communicating one’s research. Attendees will have the opportunity to work in small groups to implement strategies and practice the art of storytelling on their own research during the workshop. Attend this timely, practical and interactive workshop, which may even help you get that next grant!

**Moderators:** Teresa Puthussey and Pamela M. Martin

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**West 211**

**Wednesday, May 01, 2019 12:15 PM-1:45 PM**

464 Scientists as entrepreneurs (or how to apply your science to business)

ARVO as an organization has created an ecosystem of shared knowledge, intellectual expertise, and a physical infrastructure that supports entrepreneurship. Learning from entrepreneurs in the vision science field, the workshop panelists will share their stories of how they developed a career mindset to work in this space and find support for their projects. This workshop is designed to help those with ideas learn how to think strategically about the needs of the marketplace and a product’s value to a customer when developing their own technology.

**Moderators:** Terri L. Young and Stella M. Robertson

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

12:15 "Art of multinational collaborative studies - FEMTO approach", Rupesh V. Agrawal\(^1\), 2 Ophthalmology, Tan Tock Seng Hospital, \(^2\)Nanyang Technological University

12:45 Spanish Retinal Dystrophies Network: a 28 years road", Carmen Ayuso. University Hospital Fundación Jiménez Diaz \(*CR\)

1:00 The UNITE Consortium. Richard W. Lee. Bristol and Moorfields (NIHR BRC) \(*CR\)

1:15 Improving clinical training abroad: planting the seed for future research collaborations. Cristos Ifantides. University of Colorado at Denver \(*CR\)

1:30 Discussion

West 223/224

Wednesday, May 01, 2019 12:15 PM-1:45 PM

469 Ethical challenges and solutions for CRISPR treatment in human eye disorders

This workshop will focus on the ethical challenges and potential solutions for CRISPR treatments in human disorders, especially eye disease. The concept of gene editing is not novel, but CRISPR/ Cas9 (Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR-associated Protein 9) seems to be more advantageous than older technologies with higher precision and efficiency. Leading biotech and pharmaceutical companies in the field (such as Editas Medicine, Intellia Therapeutics, and CRISPR Therapeutics) are gearing up toward clinical trials in human subjects with large investment of > $1 billion, indicating the high translational and clinical potential. As the CRISPR technique itself still evolves to become better, we still have to question ourselves whether we are ready to handle the safety and ethics of experimenting CRISPR intervention in human subjects. In this workshop, leading CRISPR scientists will share their extensive clinical and research experience with the vision and ophthalmology community, with special reference to the safety and ethics of this novel method of gene editing in comparison to other technologies.

Moderators: Yuta Liu, Muhammad Abdulrazik and Pedram Hanrath

12:15 Introduction


12:55 Gene editing for the cornea - the options. Tara C. Moore\(^1\), 2 University of Ulster, \(^2\)Avellino Labs \(*CR\)

1-10 Suprachoroidal Delivery for Ocular Gene Transfer. Peter A. Campochiaro. Ophthalmology and Neuroscience, Johns Hopkins Wilmer Eye Inst \(*CR\)

1-25 Q & A

Harbour Ballroom

Wednesday, May 01, 2019 12:15 PM-1:45 PM

Retina / Cornea / Glaucoma / Multidisciplinary Ophthalmic Imaging

470 Advances and Challenges in Utilization of Artificial intelligence in Ophthalmology Research and Clinical Practice - SIG

Artificial intelligence (AI) revolution, including the advent of modern machine learning and deep learning based methods, has had a profound impact on all fields of medicine, including ophthalmology. Today, AI based software can mimic clinicians by diagnosing a multitude of diseases from ocular images with high accuracy. Some go even further, enriching their decision-making paradigm by exploiting big data archives of genetic, electronic health record, and modern high-dimensional imaging resources. Despite all these exciting progresses many misunderstanding about the capabilities, challenges in utilizations, and limitations of these technologies has remained. In this SIG, a panel of academic, clinical, and industry experts will present a brief outline of the current and future perspectives of AI applications in ophthalmology and its limitations. Topics of discussion will also include AI in reading centers and clinical trials, academy-industry collaborations, funding opportunities and hurdles, and common misconceptions about AI.

Moderators: Ygal Rotenstreich and Sina Farsiu

AI from the Ophthalmologist’s perspective. Ygal Rotenstreich. Goldschleger Eye Institute, Sheba Medical Center, Tel Hashomer, Israel; \(^2\)Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel \(*CR\)

Artificial Intelligence in Retinal Image Analysis: Current and Future Perspectives. Delia Cabrera DeBuc. Bascom Palmer Eye Institute, Department of Ophthalmology, University of Miami, Miami, FL

AI in the reading center: Why we need the best analyses where new therapies are being processed first. Ursula Schmidt-Erfurth. Department of Ophthalmology and Optometry, Medical University Vienna, Wien, Austria \(*CR\)

Effective collaboration examples in engineering and medicine. Sam Kavusi. Verily (Google Life Sciences), Google, San Francisco, CA \(*CR\)
Industry Scientists and Ophthalmologists Facing Advances and Challenges in Utilization of AI in Ophthalmology. Sina Farsiu. Departments of Biomedical Engineering and Ophthalmology, Duke University, Durham, NC. *CR

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Pathological angiogenesis is a hallmark of blinding diseases such as diabetic retinopathy and age related macular degeneration. However, only ~1-2% of cells in the retina are vascular cells, with the bulk being of neuronal or glial origin. Our lab has been deciphering the contribution of neurovascular and neuroimmune cross-talk to retinal vascular diseases. In doing so, we identified important roles for neuronal metabolism, cellular senescence and classical guidance proteins such as semaphorins and netrins in retinopathies. Collectively, these findings highlight the role of retinal neurons in retinal vasculopathies and identify potential novel therapeutic targets.

— 2:00  Introduction: Lois EH Smith

— 2:05  Neurovascular and Neuroimmune Communication in Retinal Vascular Disease - Mike Sapieha, PhD
Wednesday, May 01, 2019 3:00 PM-4:45 PM
Retina

472 Retinitis Pigmentosa-Clinical

Moderators: Jacque L. Duncan and Elise Heon

5167 — 3:00  Deep Phenotyping of PDE6C-Associated Retinopathy. Michalis Georgiou1,2, A. G. Robson1,2, N. Hirji1,2, N. Singh1,2, T. Kane1,2, A. Dubra1, J. Carroll1, A. Webster1, A. Kalitkowsk1,2, M. Michaelides1,2.

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

5168 — 3:15  Natural History of the Progression of RPGR-Associated X-Linked Retinitis Pigmentosa (XOLARIS) Study: Cross-Sectional Analysis of Baseline Characteristics. Moreno Menghini1,2, D. G. Birch1, C. Boon1, J. L. Duncan1, M. Fischer4, F. G. Holz1, C. C. Hoyn1, K. N. Khan1, I. A. Meunier1, M. E. Pennesi1, E. K. Sankila1, R. E. MacLaren1,2.

5169 — 3:30  Structure and function in retinitis pigmentosa patients with mutations in RHO vs. RPGR. Katharina G. Foote1, J. J. Wong1, A. E. Boehm1, E. Bensinger1, T. C. Porco1, A. Roorda1, J. L. Duncan1. 1School of Optometry and Vision Science Graduate Group, University of California, Berkeley; 2Department of Ophthalmology, University of California, San Francisco; 3Department of Ophthalmology, Francis I Proctor Foundation

East 8&15

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Retina

473 Neuroprotection

Moderators: John O’Brien and Diana Mitchell

5174 — 3:00  Neuroprotection of retinal ganglion cells by BMSC-derived exosomes. Ben Mead1,2, D. J. Zack1, Z. Ahmed1, S. I. Tomarev1. 1Neuroscience and Ophthalmology, University of Birmingham; 2Section of Retinal Ganglion Cell Biology, National Eye Institute, National Institutes of Health; 3Genetic Engineering and Molecular Ophthalmology, Johns Hopkins University School of Medicine

5175 — 3:15  Soluble CX3CL1 gene therapy improves cone survival and function in mouse models of retinitis pigmentosa. Sean K. Wang, Y. Xia, P. Rana, C. Hong, C. Cepko. Genetics, Harvard Medical School

5176 — 3:30  Zinc and microglia regulate retinal ganglion cell survival and axon regeneration after optic nerve injury. Kimberly A. Wong, S. Peterson, L. Benowitz. Neurosurgery, Boston Children’s Hospital, Harvard Medical School

5177 — 3:45  PARP inhibitors: The protective ways on retinal degeneration. Ayse Sahaboglu1, m. miranda2, S. Durragi3, G. Kayik3, E. Zrenner4. 1Division of Experimental Ophthalmology, University-Eye-Clinic Tuebingen; 2Universidad CEU Cardenal Herrera; 3Department of Biophysics, School of Medicine, Bahcesehir University (BAU)

5178 — 4:00  Potential cancer therapy for activation of metabolic enzyme pyruvate kinase muscle isozyme 2, PKM2, provides photoreceptor neuroprotection. Thomas Wubben, M. D. Pawar, E. Weh, Z. Latryskowska, A. Smith, C. G. Besiri. Ophthalmology and Visual Sciences, University of Michigan

East 11/12

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Retinal Cell Biology

474 Ocular surface infection and inflammation

Moderators: Daniel J. Carr and Ester Carreno

5181 — 3:00  Particulates Mediate Corneal Oxidative Stress, Upregulate Innate Immunity, and Enhance Keratitis. Sandamali Amarasingha Ekanayaka, S. A. McClellan, A. Pitchaikannu, R. Francis, L. D. Hazlett. Department of Ophthalmology, Visual and Anatomical Sciences, Wayne State University School of Medicine

5182 — 3:15  Effects of a novel photochemical antimicrobial therapy for keratitis with an improved riboflavin conjugate on experimentally induced infectious corneal ulceration in rabbits. Ashley Behrens1, A. Tariff, R. Yee, Y. Zhang. 1Ophthalmology, Johns Hopkins Wilmer Eye Inst; 2Molecular Microbiology & Immunology, Johns Hopkins University

Hagag1,2, A. Mitsios1,2, J. Gill1,2, A. Abbouda1, V. Theofylaktopoulos1,2, J. Nunez Do Rio1,2, S. Houston1,2, A. M. Dubis1,2, M. Moosaee1,2, Moorfields Eye Hospital, 3UCL Institute of Ophthalmology

5180 — 4:30  Secondary cone degeneration is prevented by HDAC inhibition. Dragana Trifunovic1, K. Masarini1, A. Armento1, J. E. Roger2, M. Ueffing3, 1Institute for Ophthalmic Research, University-Eye-Clinic Tuebingen; 2Paris-Saclay Institute of Neuroscience, CNRS, Université Paris-Sud, Université Paris-Saclay

East Ballroom A

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Immunology/Microbiology

5171 — 4:00  Assessing relationship between vascular integrity and macular sensitivity in patients with Usher Syndrome. Ahmed M. Haggag1, A. Mitsios1, J. Gill1, A. Abbouda1, V. Theofylaktopoulos1,2, J. Nunez Do Rio1,2, S. Houston1,2, A. M. Dubis1,2, M. Moosaee1,2, Moorfields Eye Hospital; 3UCL Institute of Ophthalmology

5172 — 4:15  Longitudinal phenotypic comparison of syndromic and non-syndromic RP in USH2A-associated retinopathy. Adam M. Dubis1,2, Y. Ang1, A. Mitsios1, J. Gill1, A. Webster1,3, M. Moosaee1,2, 3UCL Institute of Ophthalmology, 4NIHR BRC, 5Moorfields Eye Hospital NHS Trust

5173 — 4:30  AAV2-hCHM Subretinal Delivery to the Macula in Choroideremia: 2 year Results of an Ongoing Phase I/II Gene Therapy Trial. Tomas S. Aleman1,2, R. M. Huckfeldt3, L. Serrano3, G. Vergilio1, D. J. Pearson1,5, K. E. Uyhazi1, S. McCague1, K. Marshall1, D. C. Chung2, E. Liu2, E. A. Pierce2, J. T. Morgan2, J. Bennett1, D. Elliot1, J. Comander1, A. M. Maguire1, 1Department of Ophthalmology, Scheie Eye Institute, University of Pennsylvania; 2Spark Therapeutics; 3Department of Ophthalmology, Massachusetts Eye and Ear, Harvard Medical School; 4The Children’s Hospital of Philadelphia; 5Center for Advanced Retinal and Ocular Therapeutics, Department of Ophthalmology, University of Pennsylvania

5179 — 4:15  Interplay between Histone Methyltransferases Ezh2 and G9a Regulates Retinal Ganglion Cell Gene Expression during Development. Jia Xue1, K. Cho1, L. Wong1, M. Mistry1, J. Hutchinson1, L. Yang2, D. F. Chen2. 1Schepps Eye Research Institute; 2Department of Ophthalmology, Peking University First Hospital; 3Department of Biostatistics, Harvard Chan Biosciences Core

5183 — 4:45  Assessing relationship between vascular integrity and macular sensitivity in patients with Usher Syndrome. Ahmed M. Haggag1, A. Mitsios1, J. Gill1, A. Abbouda1, V. Theofylaktopoulos1,2, J. Nunez Do Rio1,2, S. Houston1,2, A. M. Dubis1,2, M. Moosaee1,2, Moorfields Eye Hospital; 3UCL Institute of Ophthalmology

5170 — 3:45  The Phenotype & Genotype of Usher Syndrome in Ireland. Kirk Stephenson1,2, A. Dockery1, N. C. Wynne1, E. Daughton1,4, G. Silvestri1, F. P. Kennedy1,2, G. Farrar2,3, D. J. Keegan1,4. 1Mater Retinal Research Group, Mater Misericordiae University Hospital; 2School of Genetics, Trinity College Dublin; 3Fighting Blindness; 4The Research Foundation, The Royal Victoria Eye & Ear Hospital; 5Ophthalmology, Belfast Trust

5177 — 3:45  PARP inhibitors: The protective ways on retinal degeneration. Ayse Sahaboglu1, m. miranda2, S. Durragi3, G. Kayik3, E. Zrenner4. 1Division of Experimental Ophthalmology, University-Eye-Clinic Tuebingen; 2Universidad CEU Cardenal Herrera; 3Department of Biophysics, School of Medicine, Bahcesehir University (BAU)
**5183 — 3:30** Putative Carpet Accumulation of Bacterial Peptide N-104 on Model Gram-Negative and Positive Bacterial Membranes. Mohammad Sharifian Gh.,1 M. Ryan2, M. Sorel3, G. Belfort2, G. Georgiev4, G. W. Laurie1. 1Cell Biology, University of Virginia; 2Optics and Spectroscopy, University of Sofia; 3Biological and Chemical Engineering, Rensselaer Polytechnic Institute

**5184 — 3:45** Transient Receptor Potential (TRP)-receptors protect the healthy murine cornea against colonization by *Pseudomonas aeruginosa* and environmental bacteria. Stephanie Wani1, S. Ma2, M. Metrueccio2, D. Bautista3, D. J. Evans4, S. M. Fleiszig2. 1Vision Science, UC Berkeley; 2Optometry, UC Berkeley; 3Molecular and Cell Biology, UC Berkeley; 4College of Pharmacy, Touro University

**5185 — 4:00** The miR-183/96/182 cluster regulates corneal resident macrophages and early response to *Pseudomonas aeruginosa* infection. Shuhin Xia1, L. D. Hazlett1, S. A. McClellan1, c. muraleetharan1, R. Francis1, L. Zhang2, E. van Buren1, J. Buck1. 1Ophthalmology, Visual and Anatomical Sciences, Wayne State University School of Medicine; 2Department of Oncology, Wayne State University School of Medicine

**5186 — 4:15** High-resolution imaging and arabinose reporter induction to study *Pseudomonas aeruginosa* localization within the mouse cornea in situ. David J. Evans1, 2, A. Kroken1, H. Horneman1, M. R. Grosser1, S. M. Fleiszig2. 1College of Pharmacy, Touro University California; 2School of Optometry, University of California Berkeley

**5187 — 4:30** EKC causing human adenovirus D37, its interaction with host proteins and analysis during infection. Jaya Rajajiyap1, A. Ismail2, J. Lee2, G. Singh3, J. Chodosh1. 1Ophthalmology, Massachusetts Eye and Ear; 2Harvard Medical School; 3Toronto University

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**Wednesday — Papers/Minisymposia – 5183 – 5198**

**East Ballroom C**

Wednesday, May 01, 2019 3:00 PM-4:45 PM

**Biochemistry/Molecular Biology**

**476 Advanced therapies for ocular disease**

Moderators: Robert E. MacLaren, Bela Anand-Apte and Juanita Gallar

**5195 — 3:00** Mirtrin gene therapy for the treatment of rhodopsin-related dominant retinitis pigmentosa. Harry O. Orlans1, M. E. McClements1, A. R. Barnard2, C. Martinez-Fernandez dela Camara1, R. E. MacLaren1. 1Nuffield Laboratory of Ophthalmology, University of Oxford; 2Ophthalmology, Imperial College Healthcare NHS Trust; 3Oxford Eye Hospital *CR

**5196 — 3:15** Immuno-phenotyping of X-linked retinoschisis (XLSR) subjects in a Phase I/IIa AA98-8RS1 gene therapy clinical trial reveals baseline differences in systemic immune cell proportions but minimal further changes after vector administration. Alaknanda Mishra1, C. Vijaysarithy1, V. Villasmil2, H. Wiley3, Y. Zeng1, J. Lau1, B. Chaigne-Delalande1, L. Wei1, H. Son1, C. A. Cukras2, P. A. Sieving2. 1Section for Translational Research on Retinal and Macular Degeneration, National Institute of Deafness and Communication Disorders, National Institute of Health; 2National Eye Institute, National Institute of Health


**5198 — 3:45** Restoration of high-sensitivity and adapting vision with a cone opsin. Michael Berry1, A. Holt2, J. Levitz2, A. Salar2, J. G. Flannery1, E. Isacoff3. 1Oregon Health & Science University; 2Molecular & Cell Biology, University of California, Berkeley; 3Helen Wills Neuroscience Institute, University of California, Berkeley

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**Retina**

**475 AMD clinical trials**

Moderators: Philip J. Rosenfeld and Rishi P. Singh

**5188 — 3:00** Higher-Order Optical Coherence Tomography (OCT) Fluid Burden Assessment: Analysis From the OSPREY Extended Phase. Atsuo Uchida1, J. Clark2, S. K. Srivastava3, N. A. Figueiredo4, A. Babich5, K. E. Talcott6, L. Lunasco7, T. Le1, A. Rogozinski1, J. L. Reese1, J. P. Ehlers1. 1Cole Eye Institute, Cleveland Clinic; 2Novartis Pharmaceuticals *CR

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* 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.
**5199 — 4:00** AAV-mediated protein trans-splicing in the retina. *Patricia Tornabene*,1, *I. Trapani*,2, F. Dell’Aquila,1 E. Marrocco,1 C. Gesualdi,1, S. Rossi,1 L. Giaquinto,1 S. Alberti,1 C. Hoyng,6 E. Polischuk5, F. P. Cremers4, E. Surace2,3, F. Simonelli4, A. De Matteis5,6, R. Polischuk5, A. Auricchio5.1 Telethon Institute of Genetics and Medicine (TIGEM); 2Medical Genetics, Department of Translational Medicine, Federico II University; 3Eye Clinic, Multidisciplinary Department of Medical, Surgical and Dental Sciences, University of Campania L. Vanvitelli; 4Department of Human Genetics and Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center; 5Department of Ophthalmology and Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center; 6Department of Molecular Medicine and Medical Biotechnology, Federico II University; 7Department of Advanced Biomedicine, Federico II University

**5200 — 4:15** Safety and long-term efficacy of AAV2-BEST1 gene augmentation therapy in canine model of Best vitelliform macular dystrophies. *Karina E. Guziewicz*,1, A. V. Cidciyan1, B. T. Kendrick1, V. L. Dufour1, G. Rothel1, A. M. Komaromy1, S. Iwabe1, W. Hauswirth2, W. A. Beltran3, S. G. Jacobson2, G. D. Aguirre.1, 2Clinical Sciences and Advanced Medicine, University of Pennsylvania; 3Department of Ophthalmology, University of Pennsylvania; 4Department of Bioengineering, University of Pennsylvania; 5Department of Small Animal Clinical Sciences, Michigan State University; 6Department of Ophthalmology, University of Florida

**5201 — 4:30** Intracorneal AAV Gene Therapy Prevents and Reverses Corneal Clouding in a Murcypolaschiodarosis I Canine Model – Translational Lessons and Promises. *Keiko Miyadera*,1, C. Spector2, L. Conatser3,4, T. Llango3, B. C. Gilger5, M. Hirsch1. 1Department of Clinical Sciences & Advanced Medicine, University of Pennsylvania; 2Gene Therapy Center, University of North Carolina at Chapel Hill; 3Department of Ophthalmology, University of North Carolina at Chapel Hill; 4Department of Clinical Sciences, North Carolina State University

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**5203 — 3:15** The Effects of Ocular Magnetic Neurostimulation on the Corneal Epithelium and Subjective Scores in Dry Eye Patients. *ABRAHAM SOLOMON*,1 H. Ben Eli1, D. Wajnostaj1, D. Smadja1, H. Avizemer1, D. Zadok1. 1Ophthalmology, Hadassah Medical Center; 2Ophthalmology, Shaarei Zedek Medical Center; 3Ophthalmology, Wolfson Medical Center

**5204 — 3:30** Gut dysbiosis in individuals with and without Sjögren’s disease. *leslie small*,1, R. Mendez1, M. Farhangi2, K. M. Cavuoto3, M.D.3, S. Budree1, A. Galor4,5, S. Banerjee4. 1Optometry, Bascom Palmer Eye Institute; 2Openbiome; 3Ophthalmology, Miami Veterans Administration Medical Center; 4Department of Surgery, University of Miami; 5Ophthalmology, Bascom Palmer Eye Institute


**5206 — 4:00** Multi-Center, Randomized, Double- Masked, Parallel-Group, Vehicle- Controlled Phase 2b Dry Eye Disease Clinical Trial to Evaluate Safety and Efficacy of Topical Ocular Reproxalap, a Novel RASP Inhibitor. *John D. Sheppard*. Ophthalmology, Eastern Virginia Medical School

**5207 — 4:15** Change in Dendritiform Cell Density by In Vivo Confocal Microscopy may be used as a surrogate Biomarker for Therapeutic Response in Dry Eye Disease Patients Enriched for Presence of Inflammation: Results from the Therapeutic Response to Anti-inflammatory agents in the Corneal Epithelium (TRACE) Study. *Pedram Hamrahi*,1, 2 A. Akhlaq2, M. C. Ozmen2, 1A. Kheirkhah3, 2M. Aggarwala, B. Cava-1lanti1, R. Mueller1, A. Abbouda2, Z. Saleni1, 2G. Dieckmann3, 2R. Dana1. 1Center for Translational Ocular Immunology, Department of Ophthalmology, Tufts Medical Center; 2Cornea Service, Department of Ophthalmology, New England Eye Center, Tufts Medical Center; 3Ocular Surface Imaging Center, Department of Ophthalmology, Massachusetts Eye & Ear Infirmary, Harvard Medical School; 4Cornea Service, Massachusetts Eye & Ear Infirmary, Department of Ophthalmology, Harvard Medical School

**5208 — 4:30** Exploratory Outcome Measures of the Dry Eye Assessment and Management (DREAM) Study. *Marko Oydanich*,1 J. V. Greiner2, P. Hamrahi3, M. C. Lin4, M. Pistilli5, M. G. Maguire6, G. Ying7, P. A. Ashell8. 1 Rutgers New Jersey Medical School; 2Ophthalmology, Harvard Medical School; 3Ophthalmology, Tufts University School of Medicine; 4Clinical Research Center, School of Optometry - University of California, Berkeley; 5Ophthalmology, University of Pennsylvania Perelman School of Medicine; 6Ophthalmology, University of Tennessee Health Science Center

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**5212 — 3:45** Defined- and Xeno-free differentiation of human iPSCs to functional trabecular meshwork cells. *Wei Zhu*,1, Y. Miao1, H. Duan1, Q. Zhou1, S. Wu1, j. zhang2, N. Wang3, K. Wang4. 1Department of Pharmacology, Qingdao University; 2Qingdao Eye Hospital, Shandong Eye Institute; 3Biotechnology, Imperial College London; 4Aerie Pharmaceuticals

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**5213 — 4:00** In vivo measurement of TM stiffness: proof-of-principle in mice. *C. R. Eberl*,1 G. Li2, C. Lee3, K. Wang4, I. D. Navarro5, J. M. Sherwood6, K. Creso6, S. Farsi7, C. Lin8, W. Stamer9. 1Biomedical Engineering, Georgia Institute of Technology; 2Duke Eye Center; 3Bioengineering, Imperial College London; 4Aerie Pharmaceuticals

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**Glucoma**

**478 Trabecular Meshwork and Ciliary Body**

**Moderators: Donna M. Peters and VijayKrishna Raghunathan**

**5209 — 3:00** Matrix Gla Functions as a Keeper of Physiological Intraocular Pressure (IOP) in the Mouse Eye. *Tereza Borraze*,1 F. Asokan3, M. Sivakumar3, M. R. Falvo4. 1Department of Ophthalmology, University of North Carolina; 2Gene Therapy Center, University of North Carolina at Chapel Hill; 3Physics and Astronomy, Univ of NC at Chapel Hill


**5211 — 3:30** Permeability of cell junctions in the Schlemm’s canal correlates with pressure- dependent phosphorylation of VE-CADHERIN. *Krishnakumar Kizhatil1, D. Sunderland2, G. Clark5, S. John1*. 1The Jackson Laboratory; 2Howard Hughes Medical Institute

**5212 — 3:45** Defined- and Xeno-free differentiation of human iPSCs to functional trabecular meshwork cells. *Wei Zhu*,1, Y. Miao1, H. Duan1, Q. Zhou1, S. Wu1, j. zhang2, N. Wang3, K. Wang4. 1Department of Pharmacology, Qingdao University; 2Qingdao Eye Hospital, Shandong Eye Institute; 3Biotechnology, Imperial College London; 4Aerie Pharmaceuticals

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The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
Wednesday – Papers/Minisymposia – 5214 – 5230

5214 — 4:15 Blockade of the BK-α/β4 potassium ion channel reduces outflow facility in mice. Jacques A. Bertrand1, J. M. Sherwood2, M. Schlicht3, E. Lütjen-Drecoll4, D. Selwood5, W. Stamer6, D. R. Overby7. 1Bioengineering, Imperial College London; 2functional and clinical anatomy, University of Erlangen-Nurnberg; 3Wolfson Institute for Biomedical Research, University College London; 4Duke University

5215 — 4:30 Increased expression of ATF4 in trabecular meshwork elevates IOP and leads to glaucomatous neurodegeneration by increasing secretory protein load of the endoplasmic reticulum. Galub Zode1, R. Kasetti1, P. D. Patel1, P. Muddineni1, V. Sheffield1. 1Department of Pharmacology and Neuroscience, University of North Texas HSC at Fort Worth; 2University of Iowa

5220 — 4:24 Metabolites and homeostasis mediated by gap junction/connexin in vivo. Xiaohua Gong1, 2. 1Vision Sci School of Optometry, University of California, Berkeley; 2UC Berkeley - UCSF Graduate Program in Bioengineering

— 4:41 Q&A

West 220

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Clinical/Epidemiologic Research

480 Genetic Epidemiology

Moderators: Katie Williams and Patrice M. Hicks

5221 — 3:00 Identification of novel serum metabolites associated with intraocular pressure: the Singapore Chinese Eye Study. Ching-Yu Cheng1, 2, S. Thakur1, Y. Tham1, M. Chee3, M. Chee3, X. Cha1, L. Zhou1, C. Sabanayagam1, 2, T. Aung1, 2, 3, T. Y. Wong1, 2. 1Singapore Eye Research Institute, Singapore National Eye Centre; 2Duke-NUS Medical School; 3Singapore Eye Research Institute

5222 — 3:15 The relationship between refractive error, intraocular pressure, and glaucoma in the UK Biobank. Robert Wojciechowski1, 2, P. G. Hysi1, P. Li1. 1Epidemiology, Johns Hopkins School of Public Health; 2Institute for Data Intensive Engineering and Science, Johns Hopkins University; 3Kings College London

5223 — 3:30 Gene-drug interactions alter response to prostaglandin analogue treatment of high intraocular pressure and glaucoma. Pirro G. Hysi1, M. J. Simcoe1, A. P. Khawaja2, C. J. Hammond3. 1King’s College London; 2Moorfields Eye Hospital

5224 — 3:45 Genome-wide association study identifies a novel locus associated with strabismus. Denis Plotron1, J. A. Guggenheim1, C. Williams1. 1School of Optometry and Vision Sciences, Cardiff University; 2School of Social and Community Medicine, University of Bristol

5225 — 4:00 Genetic Epidemiologic Analysis of Hypertensive Retinopathy (HTR) Reveals Unique Risk in a Native American Population. Patrice M. Hicks1, S. Collazo-Melendez2, A. T. Vitale2, W. Self1, M. Hartnett2, P. S. Bernstein2, D. J. Morgan2, M. Feehan2, A. Shakoor1, I. K. Kim1, L. A. Owen1, M. M. DeAngelis1. 1Ophthalmology and Visual Sciences, University of Utah; 2College of Pharmacy, University of Utah; 3Retina Service, Harvard Medical School

— 4:41 Q&A

West 217-219

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Lens

479 Physiological biochemistry of the lens - Minisymposium

This minisymposium will begin with a discussion of cutting edge methods for metabolomics analysis and imaging of metabolites in tissues by imaging mass spectrometry. Applications of these technologies will be presented on metabolism in the lens and how lens metabolism and physiology serves to maintain homeostasis over decades of life. Emphasis will be placed on the effects of aging and cataract.

Moderators: Paul J. Donaldson and Kevin L. Schey

5216 — 3:00 New views on the physiological biochemistry of the lens. Paul J. Donaldson. School of Medical Sciences, University of Auckland

— 3:17 Q&A

5217 — 3:21 Challenges in studying and interpreting the metabolome of the lens. Stephen Barnes. Pharmacology & Toxicology, Univ of Alabama at Birmingham

— 3:38 Q&A

5218 — 3:42 Interactions between the lens and ocular humors: identification and visualisation of antioxidant metabolite uptake and efflux pathways in the lens. Julie C. Lim1, 2. 1Physiology, School of Medical Sciences, University of Auckland; 2New Zealand National Eye Centre, University of Auckland

— 3:59 Q&A

5219 — 4:03 Role of Gap Junctions in the Maintenance of a Reducing Environment in the Lens Nucleus. Midurata Srivivas. Biological Sciences, SUNY College of Optometry

— 4:20 Q&A

5226 — 4:15 Effect of the age of myopia onset, environmental factors and genetic risk on myopia in the CREAM Consortium. Katie Williams1, P. G. Hysi2, S. Sensaki3, W. Tideman4, S. Yazar5, J. Wedenoja6, M. He7, O. Parssinen7, D. A. Mackey1, C. C. Klaver1, C. J. Hammond3, S. Saw4. 1Section of Academic Ophthalmology, King’s College London; 2Myopia Unit, Singapore Eye Research Institute; 3Erasmus Medical Center; 4Lions Eye Institute; 5Central Hospital of Central Finland; 6University of Melbourne

5227 — 4:30 GWAS of corneal biomechanics identifies over 200 novel associated loci providing additional insight into the genetic aetiology of ocular disease. Mark J. Simcoe1, 2, A. P. Khawaja1, 4, C. J. Hammond1, 2, P. G. Hysi1, 2. 1Ophthalmology, King’s College London; 2Department of Twin Research and Genetic Epidemiology, King’s College London; 3Institute of Ophthalmology, University College London; 4Department of Public Health and Primary Care, University of Cambridge

— 4:41 Q&A

West 221/222

Wednesday, May 01, 2019 3:00 PM-4:45 PM
Eye Movements/Strabismus/Ambylopia/Neuro-Ophthalmology

481 Imaging in Neuro-ophthalmic Disorders

Moderators: Heather Moss, Frank A. Proudlock, Bill Morgan and Donny W. Suh

5228 — 3:00 Effect of posterior optic nerve and sheath boundary conditions on globe deformation in high intracranial pressure (ICP) states. Heather Moss1, J. Arash Mehr2, H. Hatami-Marbini2. 1Stanford University; 2University of Illinois at Chicago

5229 — 3:15 Utilization of Retinal Vein Photoplethysmography to Measure Intracranial Pressure. Bill Morgan1, 2, Y. Khoo3, A. Kermode4, C. Lind3, M. Hazelton5, A. Rahman6, D. Yu6. 1Centre for Ophthalmology and Visual Science, University of Western Australia; 2Physiology Pharmacology, Lions Eye Institute; 3University of Western Australia; 4Maths and Statistics, Massey University; 5CR

5230 — 3:30 Reliability and Recommendations for Optimal Settings of Pediatric Circumpapillary Retinal Nerve Fibre Layer Imaging Using Hand-Held Optical Coherence Tomography. Frank A. Proudlock1, S. Shah2, A. Haq3, S. Toufeeq4, Z. Yu5, J. Abbott6, I. Gottlob7. 1Ulverscroft Eye Unit, Neuroscience, Psychology and Behaviour, University of Leicester; 2Moorfields Eye Hospital NHS Foundation Trust; 3Ophthalmology Department, Stoke Mandeville Hospital; 4Ophthalmology Department, Birmingham Children’s Hospital

— 4:41 Q&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.
5231 — 3:45 Automated Classification of Retinal Folds and Wrinkles in En-Face Optical Coherence Tomography Images with Optic Disc Swelling. Jui-Kai Wang 1, M. Islam 1, Y. M. Permeswaran 1, S. Johnson 1, R. H. Kardon 2, M. Garvin 1, 1. Ophthalmology and Visual Sciences, University of Iowa; 1.Center for the Prevention and Treatment of Visual Loss, Iowa City VA Health System; 2.Electrical and Computer Engineering, University of Iowa *CR

5232 — 4:00 Longitudinal Changes of Malarial Retinopathy on Hand-held Optical Coherence Tomography. Zhanhan Tu 1, J. Gormley 2, V. Sethi 1, K. Seydel 1, T. Taylor 1, C. Manda 4, 1. F. A. Proudblock 2, S. P. Harding 2, I. Gottlob 3, 1. Neuroscience, Psychology and Behaviour, University of Leicester; 2.University of Liverpool; 3.University of Michigan; 4.University of Malawi College of Medicine; 1.Lions Sight First Eye Unit, Queen Elizabeth Central Hospital

5233 — 4:15 Optical Coherence Tomography Angiography in Preclinical Alzheimer’s Disease. Ateef van de Kreeke 1, H. T. Nguyen 1, E. Konijnepen 1, J. Tomassen 1, 2. A. den Braber 2, 1. M. ten Kate 1, M. Yaqub 4, B. van Berckel 4. 1.Ophthalmology, Amsterdam UMC, location VUmc; 2.Alzheimer Center, Neurology, Amsterdam UMC, location VUmc; 4.Biological Psychology, VU University Amsterdam; 3.Radiology and Nuclear Medicine, Amsterdam UMC, location VUmc

5234 — 3:00 Mesenchymal stromal cells (MSC) can be cultivated from human choroidal tissue. Audra M. Shadforth 1, N. Alexander 2, D. Harkin 3. 1. Queensland University of Technology; 2.Queensland Eye Institute

5235 — 3:15 Clocks in the choroid: Localization of PER3 in chicks and humans. Falk Schroedi 1, A. Kaser-Eichberger 1, 2. C. Piatz 1, 2, A. Trost 1, C. Runge 1, D. Bruckner 1, B. Bogner 1, L. M. Heinl 1, H. Reitsamer 1, R. A. Stone 1, P. Iwone 1, D. L. Nickla 2. 1. Dept. of Ophthalmology and Optometry, Research Program for Experimental Ophthalmology and Glaucoma Research, Paracelsus Medical University; 2. Dept. of Anatomy, Paracelsus Medical University; 3. Dept. of Ophthalmology, University of Pennsylvania School of Medicine; 4. Dept. of Biomedical Science, New England College of Optometry

5236 — 3:30 Regional changes in human choroidal thickness in response to short-term monocular hemifield myopic defocus. Hosein Hoseini-Yazdi 1, S. J. Vincent, M. J. Collins, S. A. Read. School of Optometry and Vision Science, Queensland University of Technology

5237 — 3:45 choroidal Coll+ perivascular cells are the source of retinoic acid during recovery from induced myopia. Judy A. Summers 1, F. Schroedi 1, 2. 1. Dept of Cell Biology, Univ of Oklahoma Hlth Sci Ctr; 2. Dept of Anatomy, Paracelsus Medical University, Salzburg, Austria; 3. Dept Ophthalmology/Optometry, Research Program Experimental Ophthalmology, Paracelsus Medical University

5238 — 4:00 Indian hedgehog (Ihh) secreted by adult choroid endothelial cells regulates choroidal homeostasis and immune response. Christin Hanke-Gogokhia 1, G. Lehmann 2, 3. Y. Hu 1, R. Bareja 1, M. Ginsberg 1, D. Nolan 1, A. Wojcinski 1, R. F. Mullins 4, G. A. Lutty 8, O. Elemento 3, A. Joyner 7, S. Rafii 6, S. J. Vincent, M. J. Collins, S. A. Read. School of Optometry and Vision Science, Queensland University of Technology

5239 — 4:15 Sustained Depletion of Choroidal Macrophages is Associated with Choroidal Vascular Atrophy and RPE Disorganization. Xiao Yang 1, L. Zhao 1, M. M. Campos 1, M. S. Abu-Asab 1, D. Orloton 1, N. Hotaling 1, K. Bharti 5, W. T. Wong 1. 1. National Eye Institute, National Institutes of Health; 2. National Center for Advancing Translational Sciences, National Institutes of Health

5240 — 4:30 Diabetes alters fenestrations and transcytosis in choriocapillaris: Insight into the pathogenesis of diabetic choroidopathy. Sang A Kim 1, J. Choi 1, A. Kim 1, H. Lee 1, Y. Yoon 1, J. Lee 1. 1. Department of Ophthalmology, Yeungnam University; 2. Asian Medical Center, National Institutes of Health; 3. University of Ulsan College of Medicine; 4. Research Center for Visual Science and Vascular Biology, Yeungnam University College of Medicine

5241 — 3:00 In vitro and in vivo delivery of a sustained release nanocarrier-based formulation of an MRTF/SRF inhibitor in conjunctival fibrosis. Cynthia Yu-Wai-Man 1, 2, S. Larsen 1, R. Neubig 1, K. Lim 1, A. Tagiakakis 1, 1. King’s College London; 2. UCL Institute of Ophthalmology; 3. Vahleich Medicinal Chemistry Core, University of Michigan; 4. Department of Pharmacology and Toxicology, Michigan State University; 5. Edge Hill University


5243 — 3:30 InnFocus MicroShunt for the Treatment of Primary Open Angle Glaucoma: Safety & Preliminary Outcomes at 18 months. Giacinto Triolo 1, 2, B. Barton 1, G. Gazzard 1, 2. 1. Lions Glaucoma Service, Moorfields Eye Hospital; 2. NIHR Moorfields Biomedical Research Centre *CR

5244 — 3:45 IOP fluctuation in primary open angle glaucoma (POAG) receiving canaloplasty (CP) and microcatheter-assisted trabeculotomy (MAT). Chen Xin, h. wang, P. Yin, N. Wang. Beijing Institute of Ophthalmology, Beijing Tongren Hospital


5246 — 4:15 Establishing a New Gold Standard: Improving Outcomes in Trabeculectomy Surgery. Hari Hayaram 1, 2, N. Sriskanth 1, J. Clarke 1, 2. 1. NIHR Moorfields Biomedical Research Centre, UK; 2. Glaucoma Service, Moorfields Eye Hospital *CR

5247 — 4:30 Postoperative visual acuity decrease and recovery after tube shunt procedure for glaucoma. Yingna Liu 1, L. Huang 1, Q. Liu 1, Q. Zhao 1, R. L. Stamps 1, Y. Han 1. 1. Ophthalmology, University of California San Francisco; 2. Stanford University

ARVO Ballroom

Wednesday, May 01, 2019 3:00 PM-4:45 PM

Glaucosa

483 Surgery and Wound Healing

Moderators: Hari Hayaram, Stefano A. Gandolfi and Douglas J. Rhee
Harbour Ballroom

Wednesday, May 01, 2019 3:00 PM-4:45 PM

Cornea

484 Corneal Stroma Wound Healing and Repair

**Moderators:** Kathy K. Svoboda, Mary Ann Stepp and Vickery E. Trinkaus-Randall


5249 — 3:15 Topical corneal application of mesenchymal stem cell-derived exosomes: an evaluation of feasibility, distribution, and safety of administration. Hon Shing Ong1, 2, G. Yam2, T. Goh2, S. Lim1, J. S. Mehta1, 2. 1Corneal and External Diseases, Ophthalmology, Singapore National Eye Centre; 2Tissue Engineering and Stem Cells, Singapore Eye Research Institute; 3Institute of Molecular Biology, A*Star

5250 — 3:30 MyoD gene silencing promotes corneal fibroblast de-differentiation and reversal of fibrosis. Rajiv R. Mohan1, 2, R. Tripathi1, 2, P. Balne3, S. Gupta3, J. Rodier2, 2, S. Heil1, P. R. Sinha1, 2, N. P. Hesemann1, 1, A. Ghosh1, S. S. Chaurasia1, 2. 1Mason Eye Institute and VMTH, University of Missouri-Columbia; 2Harry S. Truman VA Hospital; 3University of Missouri; 4GROW research laboratory, Narayana Nethralaya Foundation

5251 — 3:45 Descemet's basement membrane modulation of corneal fibrosis. Steven E. Wilson1, C. S. Medeiros2, 2, P. Saikia1, R. C. de Oliveira1, L. Lassance1, M. R. Santhiago1, 2. 1Cole Eye Institute, Cleveland Clinic; 2Ophthalmology, University of Sao Paulo; 3Ophthalmology, Federal University of Rio de Janeiro

5252 — 4:00 Collagen XII Regulates Corneal Stroma Stiffness and Myofibroblast Differentiation. Edgar M. Espana1, M. Sun2, D. E. Birk3. 1Ophthalmology, University of South Florida; 2Pharmacology and Physiology, University of South Florida

5253 — 4:15 mTOR Regulates the Differentiation of Corneal Schwann cells into Myofibroblasts. Paola Bargagna-Mohan1, A. Ishii1, G. Schultz1, M. Lopez2, 2, R. banson1, R. Mohan1. 1Neuroscience, University of Connecticut; 2University of Saint Joseph

5254 — 4:30 Proteome of keratocyte-derived versus bone marrow-derived myofibroblasts. Are they different? Paramananda Saikia1, M. Juszczyk2, L. L. Dibble1, R. C. Oliveira1, C. S. Medeiros2, 2, B. Willard1, J. Geeng-Fu1, J. S. Crabb2, J. W. Crabb1, S. E. Wilson1. 1Cole Eye Institute, Cleveland Clinic; 2Ophthalmology, University of Sao

* 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.
Moderator: Sara Patterson

5255 — A0114 Exposure to blue light decreases the number of melanopsin-expressing retinal ganglion cells and nerve fibers in rats. Natalia Ziołkowska1, W. Sienkiewicz2, H. Ziołkowska3, B. Lewczuk1. 1Histology and Embryology, University of Warmia and Mazury, Faculty of Veterinary Medicine; 2Animal Anatomy, University of Warmia and Mazury, Faculty of Veterinary Medicine; 3Pharmacology and Toxicology, University of Warmia and Mazury, Faculty of Veterinary Medicine.

5256 — A0115 The role of salt-inducible kinase 1 in retinal physiology and light responses. Teele Palumaa1, L. Taylor2, M. Nurlanikzy3, B. Yücel1, S. N. Peirson1, R. Foster4, A. Jagannath1. 1Optometry and Vision Science, Ulster University; 2College of Optometry, University of Houston; 3Biological Science, Vanderbilt University; 4Department of Ophthalmology, The University of Houston.

5257 — A0116 Melanopsin-immunoreactive neurons in the fish retina. Tareq Yousef1,2, W H. Baldridge2. 1R&D Light & Vision Sciences, Essilor; 2Department of Ophthalmology, University of Houston.

5258 — A0117 Orexin-A potentiates intrinsic light responses of intrinsically photosensitive retinal ganglion cells in mouse retina. Yong-Mei Zhong1, S. Weng1, W. Zhou1, X. Yang1. 1Institutes of Brain Science and State Key Laboratory of Medical Neurobiology, Fudan University.

5259 — A0118 Light regulates gut microbiome composition and rhythmicity through ipRGCs. Tsung-Hao Lü1, C. Lee1. 1Washington University in St. Louis; 2Life science, National Taiwan University.

5260 — A0119 Endogenous Adenosine-Mediated Suppression of ipRGC Photosponses during Dark Adaptation. Phillip T. Yuhás1, P. Sodhi2, A. Hartwick1. 1Optometry, The Ohio State University College of Optometry; 2BioMotiv.

5261 — A0120 Retinal and visual pathway components mediating light- behavior in a mouse model of phototaxis. Sachin Parikh1, S. Nasimowitz2, M. B. Gorin1, A. Matynia1. 1Ophthalmology, UCLA.

5262 — A0121 Effects of mydriatics on the ipRGC-driven post-illumination pupil response. Sarah C. Flanagan1, K. Saunders1, H. M. Queener2, P. Richardson1, L. A. Ostrin1. 1Optometry and Vision Science, ULster University; 2College of Optometry, University of Houston.

5263 — A0122 Identification of hypoxia-regulated genes and pathways involved in retinal neovascularization by RNAseq analysis of wild type and clock gene knock out mouse retinal Müller cells. Lili Xu1, Q. Liu1, D. G. McMahon1. 1Biological Science, Vanderbilt University; 2Center for Quantitative Sciences, Vanderbilt University.

5264 — A0123 Light and dopamine alter properties of horizontal cell feedback to photoreceptors in mammalian retina. Steven A. Barnes1,2, C. F. McHugh1, S. Purohit1, J. C. Grove1, A. A. Hirano1, N. Brecha3. 1Doheny Eye Institute; 2Department of Ophthalmology, UCLA; 3Neurobiology Graduate Program, UCSF; 4Department of Neurobiology, UCLA; 5Veterans Administration, VA GLAHS.

5265 — A0124 The role of tyrosinase in the time course of light-induced cone contraction in the goldfish retina. Sophie Thapa1, W H. Baldridge2. 1Medical Neuroscience, Dalhousie University; 2Ophthalmology & Visual Sciences, Dalhousie University.

5266 — A0125 Characterization of Trpml function in mammalian iris constriction. Shane A. Chambers1, M. T. Walker1. 1Washington University.

5267 — A0126 Blind-spot stimulation with blue light changes pupil size and enhances contrast sensitivity. Hamed Bahmani1,2, Y. Seshadri1, T. T. Schilling1. 1Dopavision GmbH; 2Physiology of Cogntive Processes, Max Planck Institute for Biological Cybernetics.

5268 — A0127 Fundus fluorescein angiography (FFA) in human subjects displays circadian variation. Alan Hopkins1,2, N. Hudson1, S. Doyle1, M. Cahi1, M. Campbell1. 1Smurfit Institute of Genetics, Trinity College Dublin; 2Ophthalmology, Royal Victoria Eye and Ear Hospital; 3School of Medicine, Trinity College Dublin.

5269 — A0128 A highly selective filter of circadian light improves sleep quality and limits the melatonin suppression induced by light at night. Coralie Barrau1, M. Elbaz2,3, E. Poletto1, D. Léger1,2. 1Assistant publique des Hôpitaux de Paris-APHP-Hôtel-Dieu-Centre du Sommeil et de la Vigilance; 2Biological Cybernetics, Max Planck Institute for Human Cognitive and Brain Sciences; 3Centre National de la Recherche Scientifique.


5272 — A0131 Characterization of ganglion cells that express Special AT-rich Sequence Binding Protein 1 (SARBP1) in primate retina. Sammy C. Lee1, 2, P. R. Martin1, 2, U. Grunert1, 2. 1Save Sight Institute and Discipline of Clinical Ophthalmology, The University of Sydney; 2Australian Research Council Centre of Excellence for Integrative Brain Functioning, The University of Sydney.

5273 — A0132 Physiological characterization of lesser known ganglion cell types in primate retina. Todd Appleby1, F. Rieke1, C. Rhoades1, M. B. Manookin1. 1University of Washington; 2Stanford University.

5274 — A0133 Parasol and smooth monostatified ganglion cells in macaque retina. Rebecca J. Girreschi1, S. Patterson1, 2, A. Borri1, J. Anderson1, J. A. Kuchenbecker1, J. M. Ogilvie1, J. Neitz1, M. B. Manookin1, D. Marshak1. 1Department of Biology, Saint Louis University; 2Department of Neurobiology & Anatomy, University of Texas Health Science Center; 3Neuroscience Graduate Program, University of Washington, Seattle; 4Department of Ophthalmology, University of Washington, Seattle; 5University of Washington, Seattle; 6John A. Moran Eye Center, University of Utah.

5275 — A0134 Developing a comprehensive retinal ganglion cell typology using FuncSeq. Jillian Goetz1, G. Schwartz1. 1Ophthalmology, Northwestern University.

5276 — A0135 Achromatic contrast adpatation in parasol and midget ganglion cells of the macaque monkey retina. Yeon Jin Kim1, O. S. Packer1, P. B. Detwiler1, D. M. Dacey1. 1Ophthalmology, University of Washington.

5277 — A0136 Retinal direction-selective circuitry requires FLRT2 and Unc5C for selective laminar dendrite targeting. Cameron L. Prigge1, 2, J. Kay1, 2. 1Neurobiology, Duke University; 2Ophthalmology, Duke University.

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5279 — A0138 Identification of retinal ganglion cells types expressing the transcription factor special AT-rich binding protein 2 (Satb2) in macaque and human. Subha Nasir-Ahmad1, S. C. Lee1, P. Martin1, U. Grunert2. 1Save Sight Institute, The University of Sydney; 2Australian Research Council Centre of Excellence for Integrative Brain Function

5280 — A0139 ON-OFF direction selective ganglion cells in macaque monkey retina are tracer-coupled to an ON-OFF direction selective amacrine cell type. Dennis M. Dacey1, Y. Kim1, O. S. Packer1, P. B. Detwiler2. 1Biological Structure, University of Washington; 2Physiology and Biophysics, University of Washington; 3Washington National Primate Research Center, University of Washington

5281 — A0140 Characterization of correlated spiking pattern in mouse and monkey retinal network. Jungyul Ahn1, Y. Yoo1, Y. Goo2. 1Department of Physiology, Chungbuk National University School of Medicine; 2Department of Electronics Engineering, Incheon National University

5282 — A0141 Temporal properties of the receptive field center of rat retinal ganglion cells in vivo. Nick Johnson1, W. Heine1, C. L. Passaglia1. 1Molecular Pharmacology and Physiology, University of South Florida; 2Beth Israel Deaconess Medical System; 3Chemical and Biomedical Engineering, University of South Florida

5283 — A0142 Multi-Electrode-Recording for classification of retinal ganglion cells for bionic vision: comparison with calcium imaging responses. hamed shabani1, M. Sadeghi1, Z. HosseinZadeh1, E. Zrenner1, D. L. Rathbun1. 1Institute for Ophthalmic Research, University of Tuebingen; 2University of Tuebingen *CR


5285 — A0144 Responses of retinal ganglion cells to electrical stimulation of photovoltaic-powered sub-retinal prosthesis in vitro. Fang-Liang Chiu1, Y. Tsai1, C. Wu1, C. Chiao1. 1Biomedical Electronics Translational Research Center; 2Electronics Engineering, National Chiao Tung University; 3Molecular Medicine, National Tsing Hua University; 4Systems Neuroscience, National Tsing Hua University; 5Life Science, National Tsing Hua University

5286 — A0145 Defocused images affect the multi-neuronal firing patterns in the mouse retina-a multi-electrode array study. Seema Banerjee1, Q. Wang2, K. Pang3, N. Henry4, Y. man5, F. Pan4, 5School of optometry, The Hong Kong polytechnic university; 6Center for myopia research, The Hong Kong polytechnic university

5287 — A0146 Temporal properties of the receptive field surround of rat retinal ganglion cells in vivo. Christopher L. Passaglia1, N. Johnson1, W. Heine1. 1University of South Florida; 2Beth Israel Deaconess Medical Center


5289 — A0148 Location-dependent AIS variations in mouse OFF-α T cells. Paul Wergin1, V. Raghuram1, P. Fried1,2. 1Massachusetts General Hospital, Harvard Medical School; 2Vrije University of Technology; 3Boston VA Healthcare System; 4Tufts University

5290 — A0149 Behavioral responses to visual stimuli in Brn3b knockout mice. Rebecca Lees, T. Badea. National Eye Institute, National Institutes of Health


5292 — A0151 Gap Junctions between Heterotypic RGCs Mix ON and OFF Polarity Signals. Sam Cooler, G. Schwartz. Ophthalmology, Northwestern University


5294 — A0153 Pannexin3 as a novel marker for ganglion cells in the feline retina. Wenyao Wang1, Y. Nan1, I. Iuan1, J. Gao1, K. Du1, Y. Tian1, T. Huang1, M. Pu1. 1Peking University; 2Karolinska Institutet

5295 — A0154 The effect of laminar flow on cultured retinal ganglion cell survival and neurite outgrowth. Matthias Strake1, F. Rehfeldt1, C. Stanisch1, P. Lauermann1, H. Hoerauf1, F. Rehfeldt1. 1Dept. of Ophthalmology, University of Goettingen; 23rd Institute of Physics - Biophysics, Georg-August-University Goettingen

5296 — A0155 Case for Ganglion Cell Segmentation. Steven A. Newman. Ophthalmology, University of Virginia

5297 — A0156 Directional outgrowth of retinal ganglion cell neurites along microchannels on polyacrylamide gels and glass scratches. Christian van Oterendorp1, M. Strake1, P. Lauermann1, C. Stanisch1, C. Fischer1, H. Hoerauf1, F. Rehfeldt1. 1Dept. of Ophthalmology, University of Goettingen; 23rd Institute of Physics - Biophysics, Georg-August-University Goettingen

5298 — A0157 Bilateral enucleations alters the intrinsic excitability of thalamocortical neurons in the dLGN. Ashish Bhandari1, J. C. Smith1, M. J. Van Hook1. 1Neuroscience, University of Nebraska Medical Center; 2Ophthalmology and Visual Sciences, University of Nebraska Medical Center

5299 — A0158 Ocular hypertension alters spiking behavior of neurons in the visual thalamus. Matthew J. Van Hook, S. Fan, L. Reid, T. Goese, J. C. Smith, D. A. Ghate. University of Nebraska Medical Center

5300 — A0159 Hemodynamic responses recorded in V1 to multimodal stimulation using functional near infrared spectroscopy. Uma Shahan1, R. T. Atchison1, S. Denham1. 1Vision Sciences, Glasgow Caledonian University; 2Psychology, University of Plymouth

5301 — A0160 A live animal model of continuously observing the damage of primary visual cortex caused by the optic nerve crush using Two-photon microscope. Zongyi Zhan1, Y. Wu1, Z. Liu1, D. Li1, S. Yang1, L. Huang2, M. Yu1. 1Zhongshan Ophthalmic Center; 2Sun Yat-sen University

5302 — A0161 Pulvinar activation in a case of congenital idiopathic photophobia. Thanasis Panourgias1, D. Lee1, K. Silva1, D. Borsook1, E. A. Moulton1. 1Vision Science, New England College of Optometry; 2Boston Children’s Hospital


* 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.
5305 — B0001 Characteristics of type 1 diabetes patients using continuous glucose monitoring systems and development of retinopathy. Christopher A. Khouri1, A. Ooms2, L. Thangmathesvaran3, P. Khouari4, B. Szirth5. 1Biology, Drexel University; 2Ophthalmology, Rutgers University; 3Biomedical Engineering, Drexel University *CR

5306 — B0002 Influence of Insulin Pump Use and Continuous Glucose Monitors in Type 1 Diabetes Mellitus. Ariel Omiunu1, A. Ooms1, S. Singh1, B. Szirth2, A. S. Khouri1. Rutgers New Jersey Medical School

5307 — B0003 iTeleGEN: Development of a Web-Based Diabetic Retinopathy Education Module. Emily Cole1, P. Bees2, G. L. Gil1, D. Oh2, A. Zolot1, S. Zaid1, R. Chee2, N. K. Sripensa3, N. Valikodath4, A. C. Scanzer2, K. E. Jonas2, J. I. Lim2, J. E. Kim1, J. Campbell2, M. F. Chiang4, R. Charette5. 1Ophthalmology, University of Illinois - Chicago; 2University of Illinois College of Medicine; 3Medical College of Wisconsin; 4Institute of Ophthalmology Conde de Valenciana, Mexico City; 5Memorial Sloan Kettering Cancer Center; 6Department of Ophthalmology, Casey Eye Institute, Oregon Health & Science University; 7Department of Ophthalmology and Visual Sciences, Illinois Eye and Ear Infirmary, University of Illinois at Chicago *CR

5308 — B0004 A Needs Assessment and Development of Video-based Diabetic Retinopathy Patient Education. Osama M. Ahmed1, D. M. Ahmed1, P. Juthani1, K. H. Nwanyanwu1. Yale School of Medicine

5309 — B0005 Diabetic Retinopathy Screening in a Primary Care Setting Using Non-Mydriatic Photography and Automated Retinal Image Analysis Improves Compliance with Follow-Up Ophthalmic Care. James Liu1, V. Shankar2, S. Ramchand3, E. Gibson1, j. kuo2, M. Bhaskaran3, K. Solanki1, P. K. Rao4, T. Meryolis2, E. Fondah2, R. Rajagopala1. 1Washington University in School of Medicine; 2Eyenik, Inc. *CR

5310 — B0006 Screening of diabetic retinopathy by the public health system with a new teleophthalmology programme based on the incorporation of an external reading center. Effectiveness and degree of satisfaction of patients and healthcare professionals. Gabriela Estefania Pacheco Calligori1, L. Lima Modino2, M. Valpuesta Martin2, C. Blando Labrander2, M. López Gálvez3. 1Hospital Clinico Universitario de Valladolid; 2Centro de Atención Primaria de Peñafiel

5311 — B0007 DiabBase Ophthalmic IT-System – a Digitized Health Care System for Diabetic Retinopathy. Martin Breimer1, H. Kalm1, M. Bitzou1, L. Holmquist1, P. Laurén1, D. Skiljic1, M. A. Grönlund2, 3Department of Ophthalmology, Sahlgrenska University Hospital; 4Department of Clinical Neuroscience, Institute of Neuroscience and Psychology, University of Gothenburg


5313 — B0009 Enhancing Risk Assessment in Patients with Diabetic Retinopathy (DR) by Adding Retinal Function Assessment to Structural Information. Mitchell G. Brigelli1, B. Chiang2, 3, A. Y. Mao2, 3, C. Q. Davis1. 1Aerpio Pharmaceuticals; 2Ophthalmology, Emory University School of Medicine; 3Ophthalmology, Atlanta VA Medical Center; 4LKC Technologies Inc *CR

5314 — B0010 The b-wave and the Photopic Negative Response of the Cone Electroretinogram are similarly affected by mild Non Proliferative Diabetic Retinopathy. Angelo M. Minnella1, 2, g. placidi1, V. Pagliel1, G. Gambini2, E. De Siena2, G. Rocca2, A. Caporossi1, 2, B. Falsini1, 2. 1Ophthalmology, Catholic University of Rome; 2Fondazione Policlinico A Gemelli IRCCS

5315 — B0011 Diagnosis of Type 2 Diabetes With Automated Pupilometer System Based On Pupil Chromatic Reflex. Eduardo Nery R. Camilo1, A. Paranthon2, N. Rasoi1, R. M. Coste3, c. r. Silva1, L. R. Tome1, C. G. Camilo1. 1Universidade Federal de Sao Paulo; 2Hospital Geral de Goiania; 3Universidade Federal de Goias

5316 — B0012 Association Between Stage of Diabetic Retinopathy and Iris Thickness. Neal Kansara, I. U. Scott, E. M. Bowie. Ophthalmology, Penn State Hershey Medical Center


5319 — B0015 Adherence to minimum recommended monitoring protocols by patients with mild or moderate diabetic retinopathy. Andrew A. Moshfeghi1, A. Ghanekar2, V. Garmo3, I. Abbass4. 1USC Roski Eye Institute; 2Genentech, Inc. *CR

5320 — B0016 Barriers to treatment in patients newly diagnosed with proliferative diabetic retinopathy. Matt Hill1, I. Abbass2, V. Garmo3, D. Sheinson4, A. Ghanekar2, A. Moshfeghi1. 1University of Texas; 2Genentech, Inc.; 3USC Roski Eye Institute *CR

5321 — B0017 Low serum vitamin D levels correlate with disorganization of retinal inner layers, ellipsoid zone disruption and retinal pigment epithelium alterations in diabetic retinopathy. Sandeep Saxena1, G. Nadri1, A. Kaur1, A. Mahdi1, K. Ahmed2, P. Gang1. 1Ophthalmology, KGs Medical University; 2Ophthalmology, Era Medical University; 3Biochemistry, KGs Medical University

5322 — B0018 Ganglion Cell Complex Measurements with OCT over 3 Years in Type 1 Diabetes Mellitus. Nithisha Prasad1, A. Ooms1, L. Thangmathesvaran2, B. Szirth3, A. S. Khouari1. Rutgers New Jersey Medical School


5325 — B0021 Longitudinal Change in Retinal Layer Thicknesses in Subjects with Proliferative Diabetic Retinopathy Treated with Intravitreal Afiberecept. Sweetha Bindu Velaga1, M. Nittala1, T. Brown1, Z. Hu1, C. C. Wycuff1, M. S. Ip1, S. R. Sadda1. 1Doheny Eye Institute; 2Retina Consultants of Houston *CR

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5326 — B0022 Evaluation of Diabetic Retinal Neuronalopathy (DRN) Pre- and Post-treatment in Patients with Treatment Naive Proliferative Diabetic Retinopathy (PDR). Nicole M. Pumariaga, W. Li. Ophthalmology, Drexel College of Medicine/Hahnemann Univ Hospital
5327 — B0023 Correlation between Optic Disc Retinal Nerve Fiber Layer (RNFL) changes and peripapillary microvascular abnormalities using Optical Coherence Tomography Angiography (OCTA) in diabetic retinopathy. Luisa D. Malheiro, P. M. Baptista, V. Lages, D. Santos, C. Coelho, J. Beirao, A. Meireles, B. Pessoa. Ophthalmology, Centro Hospitalar e Universitário do Porto; Instituto de ciências biomédicas Abel Salazar; Faculdade de Medicina da Universidade de Lisboa, Genetics Laboratory, Institute of Environmental Health
5328 — B0024 Macular Retinal Ganglion Cell thickness and superficial capillary plexus – real correlation in diabetic retinopathy patients. Pedro M. Baptista, I. D. Malheiro, J. Coelho, N. Sanchez, C. Coelho, J. Beirao, A. Meireles, B. Pessoa. Ophthalmology, Centro Hospitalar e Universitário do Porto; Faculdade de Medicina da Universidade de Lisboa, Genética Laboratory, Institute of Environmental Health; Instituto de ciências biomédicas Abel Salazar
5329 — B0025 Correlation between retinal vessel density and retinal layer thickness in eyes with proliferative diabetic retinopathy. Aditya Verma, M. Nittala, V. Selagat, Z. Hu, B. Zhou, S. Lampen, M. S. Ip, C. C. Wykoff, S. R. Sadda. DIIRR, Doheny Eye Institute; Retina Consultants of Houston; David Geffen School of Medicine at UCLA; Doheny Eye Institute CR
5332 — B0028 Comparison of 1-Field, 2-Fields, and 3-Fields Fundus Photography for Detection of Diabetic Retinopathy. Jessica C. Lee, L. Nguyen, P. H. Blouquist. Ophthalmology, The University of Texas Southwestern Medical Center; Ophthalmology & Visual Sciences, Washington University School of Medicine
5335 — B0031 Correlation of peripheral non-perfusion from ultrawide field fluorescein angiography to color ETDRS severity level in eyes with diabetic retinopathy. Ellie CORKery, K. McDaniel, A. Domalpally, B. A. Blodi. University of Wisconsin
5336 — B0032 Correlation of Quantitative Ultra-Widefield Angiometric Metrics and Diabetic Retinopathy Severity Score Improvement Following Aflibercept Therapy in the PERMEATE STUDY. Natalia A. Figueiredo, S. K. Srivastava, M. Hu, J. L. Reese, J. P. Ehlers. Cole Eye Institute, Cleveland Clinic Foundation; Lerner Research Institute, Cleveland Clinic Foundation CR
5339 — B0035 Retinal Capillary Non-Perfusion Relationship to Arteries or Veins as Observed on Widefield Optical Coherence Tomography Angiography: A Pilot Study in Diabetic Retinopathy. Akihiro Ishibazawara, L. R. De Presto, A. Alibhai, M. Arya, O. Sorour, N. Mehta, E. Mould, C. R. Baumal, A. J. Witkin, A. Yoshida, J. S. Duker, J. G. Fujimoto, N. K. Waheed. New England Eye Center, Tufts Medical Center; Ophthalmology, Asahikawa Medical University; Electrical Engineering and Computer Science, and Research Laboratory of Electronic, Massachusetts Institute of Technology CR
5340 — B0036 Comparison of retinal capillary plexus density in patients with or without diabetes mellitus using swept-source optical coherence tomography angiography. Sophie Beka, J. Wendelstein, D. Podkovinskii, M. Ring, M. Bolz. Ophthalmology and Optometry, Kepler University Clinic
5341 — B0037 Retinal vascular geometry measures as prognostic markers for successful panretinal photocoagulation in patients with proliferative diabetic retinopathy. Thomas Lee Torpi, R. Kawasatki, T. Y. Wong, T. Peto, J. Grauslund. Department of Ophthalmology, Odense University Hospital; Department of Clinical Research, University of Southern Denmark; Department of Vision Informatics, Osaka University Graduate School of Medicine; General Cataract and Comprehensive Ophthalmology, Singapore National Eye Center; School of Medicine, Dentistry and Biomedical Sciences, Queen’s University Belfast
5347 — B0043 Optical Coherence Tomography Angiography Parameters And Inner Retinal Layers Thickness Correlation In Type 1 Diabetes Mellitus. Fabio Scarrinì, S. Frontoni, F. Picconì, M. Palmyere, M. Varano, G. Virgilì, M. Parrassano. Ophthalmology, IRCCS - Fondazione Bietti; Endocrinology, Diabetes and Metabolism, S. Giovanni Calibita Fatebenefratelli Hospital, University of Rome Tor Vergata; Physiology and Pharmacology “V. Ersamer”, Sapienza University of Rome; Ophthalmology, Azienda Ospedaliero-Universitaria Careggi

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5348 — B0044  Correlation between middle retinal layers structural changes and deep capillary plexus dropout in diabetic retinopathy. Vinicius S. Karrt1, S. Karrt1, M. Heisler1, N. Page1, T. Yu2, J. Lo3, M. V. Sarunic2, E. V. Navajas1. 1University of British Columbia; 2Simon Fraser University
5349 — B0045  Evaluating signs of microangiopathy secondary to diabetes in different areas of the retina with swept source microangiopathy secondary to diabetes in B0045 University Hospital; 5Centre of Biostatistics and Institute, Cleveland Clinic Foundation; 2Case Epidemiology, Oslo University Hospital Medicine, Akershus University Hospital; 3University Hospital; 2Pediatric and adolescent
5350 — B0046  Quantitative Analysis of Macular Ischemia in Diabetic Retinopathy using OCT Angiography. A. Yasin Alibhai1, S. Chen1, E. Moule1, J. Schottenhammer1, M. Arya1, C. R. Baumal1, A. J. Wiskin2, E. Reichel1, J. S. Duker1, J. G. Fujimoto1, N. K. Waheed1, New England Eye Center, Tufts Medical Center; 2Department of Electrical Engineering and Computer Science/Research Laboratory of Electronics, Massachusetts Institute of Technology; 3Pattern Recognition Lab, Friedrich-Alexander-Universitat Erlangen-Nuremberg
5351 — B0047  Non-invasive assessment of retinal mitochondrial dysfunction in diabetic retinopathy. Raffaele Raimondi1, G. L. Horn1, T. F. Conti1, J. Husse1, R. P. Singh1. 1Case Western Reserve University School of Medicine
5352 — B0048  Retinal vessel oxygen saturation and duration of type 1 diabetes in young adults compared to healthy controls. Nina Velty2, H. Marei2, H. Margeirsdottir1, A. Simeunovic1, M. Heier2, C. Brunberg1, K. Dahl-Jorgensen1, M. C. Moe1, G. Petrovski1. 1Ophthalmology, Oslo University Hospital; 2Pediatric and adolescent Medicine, Akershus University Hospital; 3Faculty of Medicine, University of Oslo; 4Pediatrics, Oslo University Hospital; 5Centre of Biostatistics and Epidemiology, Oslo University Hospital
5353 — B0049  α-Melanocyte-stimulating hormone protects against retinal damage in a murine model of Type II diabetes. Xiaorong Li, Y. Zhang, S. Cai, M. Wu, X. Zhang. Tianjin Medical University Eye Hospital
5354 — B0050  Global Safety Update: Long Term Intraocular Pressure Signals in Patients Receiving the 0.2 μg/day Fluocinolone Acetonide Intravitreal Implant. Caesar Luo. Bay Area Retina Associates *CR
5355 — B0051  Pyrogallol-O-sulfate decreases the expression of pro-angiogenic and pro-inflammatory proteins in diabetic retinopathy. Daniela F. Santos1,2, M. Pais3, G. A. Silva3. 1CEDOC-NMS-UNL; 2UNL, ProRegE PhD Program, NOVA Medical School
5356 — B0052  Oral administration of the novel small molecule drug OCX0063 protects against inflammation and vascular pathology in a rat diabetic retinopathy (DR) model. Roy Chze Khal Kong1, A. Edgley1, E. Chan2, A. J. Cox1, S. Glowlacka3, M. Papadimitriou1, S. F. Khong1,2, D. Kelly1,2. 1Department of Medicine, The University of Melbourne; 2OcecuRx Pty Ltd; 3Centre for Eye Research Australia
5357 — B0053  Alpha-1 Anti-trypsin Modulates Insulin Signaling in RPE cells in an in Vitro Model of Diabetic Retinopathy. Juan E. Gallo1,3, Raffaele Raimondi1, M. Pettigrana1, M. Fernandez Acquer1, G. Ortiz2, M. POTILINSKF. 1Hospital, Hospital Universitario Austral; 2Instituto de Investigaciones en Medicina Trasional, Universidad Austral; 3Instituto de Investigaciones en Medicina Trasional, Universidad Austral; 4Neumonologia, Hospital Cetangrpo
5359 — B0055  Reduction of GLUT1 in the BKS.Lepob ob mouse model of Type 2 diabetes ameliorates retinal pathology and defects in retinal function. Ivy S. Samuel1,2, J. J. Aiol1, T. D. Trobenter1, N. C. Holoman1. 1Research Service, Louis Stokes Cleveland VA Medical Center; 2Ophthalmic Research, Cole Eye Institute, Cleveland Clinic
5362 — B0058  Vitreous and plasma cytokine levels in subjects with advanced proliferative diabetic retinopathy in the Ranibizumab in Diabetic Vitrification (RanVit) Study. Oliver Comyn1, C. Lange1, J. W. Bainbridge1. 1Moorefields Eye Hospital NHS Foundation Trust; 2St George’s Eye Care; 3Eye Center, University of Freiburg; 4University College London Institute of Ophthalmology *CR
5363 — B0059  Transcriptional regulation of TLR4 expression and its protection mechanism on pathological vascular permeability in nonproliferative diabetic retinopathy. Hua Yan, J. Li. Tianjin Medical University
5364 — B0060  Alpha-1 antitrypsin avoids epithelial to mesenchymal transition in ARPE-19 cells in a model of Diabetic Retinopathy. MÁRIÁ CONSTANZA POTILINSKF, J. Salicéa, M. Pettigrana1, E. Chulyanay1, J. E. Gallo1,4. 1Universidad Austral; 2Nanomedicine & Vision, IJMT-Austral-CONICET; 3Farmacología, UBA; 4Oftalmología, Hospital Universitario Austral
5365 — B0061  Effect of lutein in early diabetic retinopathy using the Ins2Akita mice. Amy C. Lo, W. Wang. The University of Hong Kong
5366 — B0062  K+ open pinacidil alleviates microglia activation and alters muler gliosis. Hong Li1,2, H. Xie1,2, H. Ma1, C. Luo1,2, S. Tang1,2. 1Central South University; 2Aier Eye Institute
5367 — B0063  Retinal transcriptome analysis in db/db mice after sodium-glucose cotransporter 2 inhibitor application. Jeeyun Ahn1,2, J. Shin1,2, J. Park1, M. Moon1,2. 1Department of Ophthalmology, Seoul National University College of Medicine; 2Department of Ophthalmology, Seoul Metropolitan Government Seoul National University Borame Medical Center; 3Department of Ophthalmology, Inje University, Seoul Paik Hospital; 4Department of Internal Medicine, Seoul National University College of Medicine; 5Department of Internal Medicine, Seoul Metropolitan Government Seoul National University Boramae Medical Center
5368 — B0064  Effects of Probufol on high glucose-induced expressions of S1P/Keap1/Nrf2/GCLC in the cultured human Müller cells. Zhongping CHEN1,2, C. Li1, S. Ai1, X. Zhou1. 1AIER School of Ophthalmology, Central South University; 2Department of Fundus Oculi, AIER Eye Hospital of Changan; 3Department of Ophthalmology, the Seventh Affiliated Hospital of Sun Yat-sen University
5369 — B0065  Determining immune-related factors of intraocular diseases by artificial intelligence methods. Naoya Nezu1, Y. Usui1, M. Asakage1, H. Shimizu1, M. Ogawa1, N. Yamakawa1, C. Yanagida1, K. Tsubota1, A. Narimatsu1, K. Maryama1, A. Saito1, M. Kuroda1, H. Goto1. 1Ophthalmology, Tokyo Medical University; 2Tokyo Medical University
5371 — B0067  Selective Anti-Plgf Protects Human Retinal Endothelial Cells Against High Glucose. Francesca Lazzara, A. Fidilio, C. B. Platania, F. Conti, S. Salomone, F. Drago, C. Bucolo. Biomedical and Biotechnological Sciences, University of Catania

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5372 — **B0068** Day Regimes of CONbercept on CytokinEs of PDR Patients Undergoing Vitrectomy Trial (CONCEPT)—Effects of preoperativeintravitreal conbercept on cytokines in the vitreous with proliferative diabetic retinopathy. Jinghua Liu, P. Xie, S. Yuan, Z. Hu. Jiangsu Province Hospital

5373 — **B0069** Non-coding Alu RNAs enhance corneal nerve regeneration following ocular surface injury. Jooyoung Cho, G. Botzet, N. Fowler, C. Williams, R. Albuquerque. University of Kentucky

5374 — **B0070** Abnormal Levels of Aqueous Humor Trace Elements in Patients with Cytomegalovirus Retinitis. Jing Feng, Y. Tao. Ophthalmology, Beijing Chaoyang Hospital, Capital Medical University

5375 — **B0071** In Vitro Degradation of Human Vascular Endothelial Growth Factor. Ryan A. Shields, J. Davila, I. H. Schachar. Stanford Hospital

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West Exhibition Hall B0072-B0107

Wednesday, May 01, 2019 3:00 PM-4:45 PM

**Physiology/Pharmacology**

**490 AMD and Antiangiogenic agents**

**Moderators:** Ian F. Pitha and Francesca Lazzara

5376 — **B0072** Endocannabinoids regulate Vascular Endothelial Growth Factor (VEGF) induced endothelium functions through its extracellular domain. Zhengqing Hu, M. LeBlanc, K. Saez-Torres, M. Saint-Geneix, Y. Ng, P. A. D’Amore. 1Scheepens Eye Research Institute; 2Harvard medical school

5377 — **B0073** Protective mechanisms of polyphenolic-enriched extract of plants against H₂O₂-induced oxidative stress in human retinal pigment epithelial cells. Hachemti Nezzar, s. Hermitte, g. goupi, C. Richard, M. Stéphan, E. Pégahrie, H. El Aloui, N. Acrar, a. kocer. 1Ophthalmology Dept., Dubai Health Authority, DH; 2neuroscience, IGNCG-728, Image Guided Clinical Neuroscience and Connectomics.; 3CNRS, LMGE, Université Clermont Auvergne, CNRS, LMGE; 4UMR 547-UPB/INRA PIAF; 5CNRS, SIGMA Clermont, ICCF; 6Centre des Sciences du Goût et de l’Alimentation, Nutrition and eye research group, INRA; 7Laboratoire GRED “Génétique, Reproduction & Développement”, UMR CNRS 6293, INSERM U1103

5378 — **B0074** Nanoceria protect retinal pigment epithelium in the light damaged retina. Annamaria Tisi, G. Parete, M. Passacantando, V. Fatti, R. Maccaroni. University of L’Aquila


5383 — **B0079** The hybrid compound SA-2 is neuroprotective in a rodent model of eye stroke. Adnan Dibas, W. Zhang, S. Chavalas, S. Acharaya. 1Pharmacology & Neuroscience, university of north texas health science center at fort worth; 2North Texas Eye Research Institute *CR

5384 — **B0080** Nanostructured-based soft contact lenses for controlled delivery of ophthalmic drugs. Cesar Torres, N. Wang, N. He. 1Chemical & Biomolecular Engineering, University of Maryland; 2Industrial Science & Technology Network, Inc

5385 — **B0081** BIO201 Protects Retinal Pigment Epithelium Against A2E-Induced Phototoxicity Through A Mechanism Involving The PPARs. Valerie Fontaine, M. Fournié, E. Monteiro, C. Nivoit, S. CAMÉLO, P. Dilda, S. Veiller, J. A. Sahel, R. Laforêt. 1Institut de la Vision; 2Biophytis *CR


5390 — **B0086** Bi-layered Capsule for Sustained Release of Bevacizumab to treat Wet Age-Related Macular Degeneration. Pengfei Jiang, L. Lannutti, M. Ohr, E. K. Swindle-Reilly. 1William G. Lowrie Department of Chemical and Biomolecular Engineering, The Ohio State University; 2Department of Materials Science and Engineering, The Ohio State University; 3Department of Ophthalmology & Visual Science, The Ohio State University; 4Department of Biomedical Engineering, The Ohio State University


5392 — **B0088** A novel sphingosine-1-phosphate agonist, HY-3011, protects porcine retinal pigment epithelial cells from 7-keto Cholesterol induced oxidative damage. Ji-Ye Wei, L. Yin, C. Wei, J. Tombran-Tink, Y. Tan, C. Wei, L. Xu, C. J. Barnstable, C. Wei, X. He, W. He. 1Ophthalmic Drug Innovation Research Institute, He University Eye Hospital; 2Clinical Trials and Clinical Research Center, He Eye Hospitals; 3Community Medicine, University of North Texas Health Science Center; 4Neural and Behavior Science, Penn State University Medical Center at Hershey; 5Internal Medicine, Indiana University Medical Center

5393 — **B0089** Sustained neuroprotective effect of novel Aβ aggregation modulator GAL-101 shown in dry AMD and glaucoma models with transient peak concentrations using eye drops. Hermann Russ, C. Parsons, Y. Barkand, A. L. Pearlman, J. Heier, L. A. Levin, R. N. Weinreb, J. M. Liebmann. 1Science, Galimedix Therapeutics; 2Department of Ophthalmology, Shirley Eye Institute; 3Department of Ophthalmology, Columbia University Medical Center; 4Ophthalmology, Ophthalmic Consultants of Boston; 5Management, Galimedix Therapeutics Inc.; 6Montreal Neurological Institute and Hospital *CR

5394 — **B0090** Sustained in vitro release of bevacizumab from biodegradable silica microparticle-silica hydrogel composite formulations. Panu S. Noppard, L. Puskala, M. Lagström, M. Pääkkö, J. Mikkola, L. Leino. 1DeSitech Ltd; 2School of Chemical Engineering, Aalto University; 3Biosciences, Åbo Akademi University

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5395 – 5416 – Wednesday – Posters

5395 – B0091 Injectable, hydrolytically degradable hydrogel for controllable, sustained protein release in the posterior eye. Chi Ming Laurence Lau, Y. Chau. Chemical and Biological Engineering, The Hong Kong University of Science and Technology


5397 – B0093 Chitosan coated Hyaluronic Acid Antibiotic Transport System (CHATS). Margaret Hubbard1, M. Fullerton1, N. Sahiner2, S. Horsley3, Z. Zhang, R. Ayala4, 5. Ophthalmology, Tulane University; 6Ophthalmology, University of South Florida; 7Texas Women’s University


5399 – B0095 Topical Lifitegrast Inhibits Pathological Ocular Neovascularization. Isabel Franklin1, S. Li Calzi1, B. M. Grant2, D. Cunningham3, A. J. Franklin1. Auburn University; 2University of Georgia; 3University of Alabama at Birmingham; 4Auburn University Consultants; 5Diagnostic and Medical Clinic

5400 – B0096 Efficacy of Ranibizumab plus Aflibercept Therapy with Dexamethasone Intravitreal Injection in Patients with DME. Joao J. Nassaralla1, A. A. Nassaralla1, A. A. Nassaralla1, M. H. Amaro2, J. J. Nassaralla2. Retina, Instituto de Olhos de Goiania; 2Retina, Laser Associated; 3Medical School São Leopoldo Mandic; 4Medical School UFG; 5UniEvangelica Medical School

5401 – B0097 Comparative evaluation of Aflibercept and Ranibizumab on central choroidal subfield thickness (CCST) in patients treated for wet AMD. Kanishka R. Mendis1, 2, J. Rivero1, D. Nawaz1, M. Julien1, A. Haider1, 2. 1Canberra Hospital; 2Canberra Retina Clinic

5402 – B0098 Dexamethasone antigens - a new way to inhibit pathological angiogenesis in zebrafish model. Swiec-Zubilewicz Anna1, K. Danieluk2, 1J. Dolar-Szczyński, M. Osek1, J. Mackiewicz1, 2Department of Retina and Vitreus Surgery, Medical University of Lublin, Poland; 2Centre of Experimental Medicine, Medical University of Lublin, Poland; 3Oftalb *CR

5403 – B0099 The Effect of Multiple Anti-VEGF Injections on Retinal Nerve Fiber Layer (RNFL) Thickness. Petar Ivan1, C. Krambeer, J. M. Ilis1, A. Mendlovitz1, M. Singer2. 1University of Texas Health Science Center San Antonio; 2Medical Center Ophthalmology Associates

5404 – B0100 Aflibercept and Ranibizumab modulate retinal pigmented epithelial cells viability/proliferation and protect them from oxidative stress by mechanisms related to their cross talk with vascular endothelial cells. Stefano De Cilli3, 5, C. Tomi1, S. Vujosevic1, A. Muraca1, S. Fattargiu1, G. Raina1, E. Grossini1. University Hospital Maggiore della Caritá, Novara; 2Health Sciences, University East Piedmont “A.Avogadro”; 3Translational Medicine, University East Piedmont “A.Avogadro”

5405 – B0101 Discovery of ferrochelatase inhibitors as antiangiogenic agents. Kamakshi Sishtla1, 2, S. Lee1, J. Lee1, S. Seo1, T. Corson1, 2. 1Eugene and Marilyn Glick Eye Institute; 2Ophthalmology, Indiana University School of Medicine; 3College of Pharmacy, Gachon University *CR

5406 – B0102 Anti-angiogenic effect of Spironolactone on a model of corneal neovascularization. Clemente Bonnet1, 2, M. Zhao1, M. Seminel1, R. Daileux1, E. Gelize1, J. Bougeres1, 2, F. F. Behar-Cohen1, 2. 1Stein Eye Institute; 2Cochin Hospital; 3Centre de Recherches des Cordeliers

5407 – B0103 Comparison of the effects of intravitreal aflibercept, bevacizumab and ranibizumab on retinal function and vasculature after oxygen-induced retinopathy, wai ching Lam, J. Tsang, A. C. Lo. Ophthalmology and Vision Sciences, University of Hong Kong *CR


5409 – B0105 New technology for administering antiVEGF. Sergio Zaccaria Scalinci1, M. ENRICO1, M. GIOT1, L. SCRORILLI1. 1Ophthalmology, University of Bologna SOrsola Malpighi; 2Ophthalmology, medical University of Sofia; 3Ophthalmology, poliambulatorio santa lucia

5410 – B0106 Dexamethasone 2 receptor activation suppresses VEGF-induced proliferation of primary cultured human retinal microvascular endothelial cells. Jeong-Hyeon Sohn1, N. Akimov1, E. Zediker1, A. Gregory1, S. Ali1, F. Gerilechauglet1, L. Fortepiani4, 1, R. Renteria4, 1. 1Ophthalmology, University of Texas Health Science Center; 2University of the Incarnate Word, Rosenberg School of Optometry; 3Clinically Applied Science Education, University of the Incarnate Word, School of Osteopathic Medicine; 4Cellular and Integrative Physiology, University of Texas Health Science Center

5411 – B0107 A PLGA-Carboxyamidotriazole (CAI) Polymeric Suspension Suppresses Pathological Ocular Angiogenesis in rodent CNV model. Sergio Li Calzi1, 2, CHAKRABORTY3, B. Asare-Bediako1, I. Franklin1, S. Kakumanu1, L. Balenci1, M. B. Grant1, A. Franklin1. 1Ophthalmology and Visual Science, University of Alabama at Birmingham; 2Auburn University; 3None; None *CR

West Exhibition Hall B0303-B0322
Wednesday, May 01, 2019 3:00 PM-4:45 PM

Genetics Group

491 Cornea and diabetes-related disorders

Moderator: Francisco Figueiredo

5412 – B0302 Wnt/PCP signaling in ocular adnexa and pathogenesis. Chunqiao Liu, D. Guo, B. Zou, J. Ru, L. Wei, H. Ouyang. Zhongshan Ophthalmic Center, SYSU, State Key Laboratory of Ophthalmology

5413 – B0303 Low mitogenic conditions maintain the corneal endothelial cell phenotype in vitro. Payton Boere, J. Wu, R. F. Frausto, A. J. Aldave. Cornea Genetics, University of California, Los Angeles

5414 – B0305 Punctiform and Polychromatic Pre-Descemet Corneal Dystrophy: report of two families and the identification of a segregating intronic variant in PDZD8 using whole-exome sequencing. Alice R. Barrington, D. Chang, J. A. A. Aldave. Jules Stein Eye Institute, UCLA

5415 – B0306 Genetic and molecular study of keratoconus in a Brazilian family. Rossen M. Hazarbassanov1, 2, A. Besborodcov1, P. A. Otto2, R. C. Netto1. 1Department of Ophthalmology and Visual Sciences, Paulista School of Medicine, Federal University of São Paulo; 2Department of Genetics and Evolutionary Biology, Instituto de Biociências - Universidade de São Paulo

5416 – B0307 ZEB1 insufficiency causes corneal endothelial cell state transition and altered cellular processing. Anthony J. Aldave1, R. F. Frausto1, D. Chung1, V. Swamy1, H. Duong1, W. Zhang1, P. Boere1, M. Zakharevich1, M. Hanser1, I. Kurtz2, M. Pellegrini3. 1Department of Molecular, Cell and Developmental Biology, UCLA; 2Division of Nephrology, David Geffen School of Medicine at UCLA; 3The Stein Eye Institute, David Geffen School of Medicine at UCLA

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
5417 — B0308 Detection of genes associated with proliferative diabetic retinopathy using Nanostring technique. Alon Zahavi1,2, J. Abu abdil, J. Weiss3, N. Golenberg-Cohen1,1, Ophthalmology, Rabin Medical Center; Ophthalmology, Tel Aviv University; Ophthalmology, Bnai Zion Medical Center; The Krieger Eye Research Laboratory; Technion

5418 — B0309 Blood pressure and early diabetic retinopathy: A Mendelian Randomization study. Yu Huang1, M. Siddiqui2, R. Kwan1, E. Trucco1, C. Palmer1, Division of Population Health and Genomics, Case Western Reserve University School of Medicine; 2Frances Payne Bolton School of Nursing

5419 — B0310 Genetic analysis of self-reported glaucoma from the Health and Retirement Study. Jessica Cooke Bailey1, T. Kinzy2, N. Schiltz3, 1Population & Quantitative Health Sciences, Case Western Reserve University School of Medicine; 2Frances Payne Bolton School of Nursing

5420 — B0311 Variants in myelin regulatory factor (MYRF) cause autosomal dominant nanophthalmos. Lev Prasosov1, S. J. Garnai1, M. Brinkmeier2, B. Emery3, T. S. Alaman4, L. C. Pyle2, B. O. Veleva-Roshe5, R. Sisk2, S. E. Moroi6, S. M. Archer1, L. Winiakka-Buesser1, F. W. Rosza1, G. L. Skatu1, S. Camper1, J. Richards1, Ophthalmology, University of Michigan; 2Harvard Medical School; Scheie Eye Institute; 3Cincinnati Eye Institute; 4Human Genetics, University of Michigan; Dean McGee Eye Institute; 5Human Genetics, Children’s Hospital of Philadelphia; 6Children’s Hospital of Philadelphia; 7Jungers Center for Neurosciences Research, Oregon Health and Sciences University; 8Ophthalmic Genetics Branch, National Eye Institute, National Institutes of Health

5421 — B0312 Leber Congenital Amaurosis associated with GUCY2D variants: A Retrospective Natural History Study in preparation for future Therapies. ZAINA T. BOUZIA1, M. Georgiou1, S. Hull1, A. G. Robson1, A. Webster2, A. J. Hardcastle1, A. Fiorentino1, M. Michaelides1, University College London; Moorfields Eye Hospital *CR

5422 — B0313 Multimodal imaging and electrotetroretinography analysis of end-stage presentations of X-linked retinoschisis. Jesse D. Sengillo1, W. Lee1, J. J. Juarez2, S. H. Tsang3, 1Department of Medicine, Reading Hospital of Tower Health; 2Department of Ophthalmology, Columbia University; 3Jonas Children’s Vision Care, Columbia University

5423 — B0314 Awareness of ophthalmic impairment in a cohort of patients with CNGB1-associated retinitis pigmentosa. Farid Afshar1,2, G. Arno2, R. Ba-Abbad1, S. D. Esposti1, M. Michaelides1, A. Webster1, O. Mahrooi2, 1Institute of Ophthalmology, University College London; 2Genetics service, Moorfields Eye Hospital

5424 — B0315 Ocular phenotype and associations with systemic findings in patients with primary hyperoxaluria type I. Johannes Birtel1, P. Herrmann1, S. F. Garrelts1, S. Dule1, Y. Atisov2, R. M. Diederen1, M. Gliem1, F. Brinker1, F. G. Holz3, C. Boon4, B. Hoppe3, P. Charbel Issa2, 1Department of Ophthalmology, University of Bonn; Center for Rare Diseases Bonn (ZSEB), University of Bonn; 2Emma Children’s Hospital, Department of Pediatric Nephrology, University of Amsterdam; 3Department of Ophthalmology, University Medical Center Hamburg-Eppendorf; 4Department of Clinical Neurosciences, Oxford Eye Hospital, Oxford University Hospitals NHS Foundation Trust, and Laboratory of Ophthalmology; 5Department of Pediatrics, University Children’s Hospital, University Medical Center Hamburg-Eppendorf; 6Department of Ophthalmology, Amsterdam UMC, University of Amsterdam; 7Department of Ophthalmology, Leiden University Medical Center; 8Department of Pediatrics, Division of Pediatric Nephrology, University of Bonn *CR


5426 — B0317 Severe Female Carrier Phenotype in an Irish Pedigree with Novel Massive Deletion in the CHM Gene. Julia Zhu1, K. Stephenson1, A. Dockery1, N. C. Wynne1, G. Farrar1, P. F. Kennay1, G. Silvestri1, D. J. Keegan1, Mater Retinal Research Group, Mater Misericordiae University Hospital; 2School of Genetics & Microbiology, Trinity College Dublin; 3The Research Foundation, Royal Victoria Eye and Ear Hospital; 4Belfast Health and Social Care Trust

5427 — B0318 Clinical and histopathological findings in a family with Meroja’s syndrome carrying a novel gene mutation. JOSE MARIO PEREZPENA-DIAZCONT1, J. Cabral-Macias1, E. O. Graue-Hernandez1, C. J. Zenteno1, O. Chacon1, Unidad de Investigacion, Instituto de Oftalmologia Conde De Valenciana; 2Departamento de Conexa, Instituto de oftalmologia Conde de Valenciana

5428 — B0319 Identification of novel mutations in PITX2 gene in Pakistani and Mexican Families with Axenfeld-Rieger Syndrome. Valeria Lo Faro1, S. Micheal2, S. Noorani Siddiqui3, M. Khan1, P. Wagstaff2, C. Villanueva Mendoza3, N. M. Jansson4, A. A. Berger5, 1Ophthalmology, University Medical Center Groningen; 2Clinical Genetics, Academic Medical Center; 3Ophthalmology, Academic Medical Center; 4Human Genetics, Donders Institute for Brain,Cognition and Behaviour. Radboud UMC; 5Genetics, Asociación Para Evitar la Ceguera en México; 6Pediatric Ophthalmology, Al-Shifa Eye Trust Hospital

5429 — B0320 Anterior segment dysgenesis with cardiac anomalies caused by a novel truncating variant of FOXC1. Maryja R. Ahmed1, S. Sethur1, M. B. Tang1, R. B. Hofnagel1, 1National Eye Institute, National Institutes of Health; 2University of Maryland Baltimore; 3Cincinnati Children Hospital Medical Center

5430 — B0321 Observation of nineteen SLCA41 mutations among 20 Iranian CHED probands and identification of a novel candidate CHED causing gene. Elahe Elahi1, H. Moazzeni2, M. Javadi1, A. Asgari1, M. Panahi-Bazaz2, M. Hosseini Tehrani3, 1School of Biology, University of Tehran; 2Department of Medical Genetics, Tarbiat Modares University; 3Ophthalmic Research Center, Shahid Beheshti University of Medical Sciences; 4Ahvaz Jondishapur University of Medical Sciences; 5Eye Research Center, Tehran University of Medical Sciences

5431 — B0322 Mutations in proteasome 26S subunits, non-ATPase 5 gene (psmd5) cause ocular coloboma and vertebral defects. VIJAY K. KALASKAR1, N. Diaz Torrez2, A. Georgt1, T. Cogliati1, B. P. Brooks1, 1Pediatric, Developmental & Genetic Ophthalmology Section, Ophthalmic Genetics and Visual Function Branch, National Eye Institute, National Institutes of Health; University of Puerto Rico School of Medicine

West Exhibition Hall B0323-B0374 Wednesday, May 01, 2019 3:00 PM-4:45 PM Clinical/Epidemiology Research

492 Healthcare Delivery

Moderator: Varshini Varadaraj

5432 — B0323 Activity-Based Costing of the Intravitreal Injection Procedure. Jonathan Go1, C. Y. Wong2, 1Baylor College of Medicine; 2Department of Ophthalmology, Baylor College of Medicine - Cullen Eye Institute *CR

5433 — B0324 Follow-up Rates at a Free Ophthalmology Homeless Clinic. Lauren Hennein1, K. Spaulding1, V. Karlegan2, A. de Alba Camponaves3, 1Ophthalmology, University of California San Francisco Department of Ophthalmology; 2University of California San Francisco; 3San Francisco State University

5434 — B0325 Association Of Muscular Skeletal Disorders And Visual Fatigue In A Group Of Assistants Medical Users Of Video Terminals. Omar Garcia-Lievano1, L. Hernandez Flores1, L. Sanchez Gonzalez1, F. Colin Romero2, D. Montijo Cigales1, 1Optometria, Instituto Politecnico Nacional; 2Odontologia, Instituto Politecnico Nacional

5435 — B0326 Postoperative follow-up adherence for first-time ophthalmic surgery in the South Bronx. Stephen V. Lau1, A. Mehta2, N. Natanelli1, P. S. Rosenbaum1, 1BronxCare Health System; 2Icahn School of Medicine at Mount Sinai
5436 — B0327 Effectiveness and patient acceptance of novel immersive serious games for population eye health education. Dinesh V. Gunasekeran1, R. Love2, R. Gunasekeran1, B. Chari1, H. Ong1, D. Raje1, H. Mi1, Q. D. Nguyen1, R. V. Agraval1. 1National Healthcare Group Eye Institute, Tan Tock Seng Hospital, Singapore; 2VISRE; 3National University of Singapore; 4Nanyang Technological University (NTU); 5MDS Bioanalytics; 6Byers Eye Institute, Stanford University. *CR

5437 — B0328 The Effect of Digital Media in Eye Care: Improving Patient Education and Compliance. Matthew Ajaj1, D. Patel1, T. Parekh2, S. Parekh3, J. G. Parekh4, 1EyeCare Consultants Center for Ocular Surface Excellence of New Jersey; 2New York Medical College, New York; 3New York Eye and Ear Infirmary of Mount Sinai; 4The Icahn School of Medicine at Mt. Sinai, New York

5438 — B0329 To Compare Patient Satisfaction In Two Different Medical Retina Clinic Settings: Face-to-Face Versus Virtual Clinic. Meriam Islam1, C. Kern1, 2, K. U. Kortuem1, 3, K. Balaskas1, 3, P. A. Keane1, 3, D. A. Sim1, 3. 1Moorfields Eye Hospital; 2Department of Ophthalmology, University Hospital LMU; 3National Institute for Health and Research (NIHR) Biomedical Center

5439 — B0330 Ophthalmic Care Needs Assessment for Indigenous Peoples living in Isolated Environments in French Guiana. thibaut Chapron1, 2, T. Barthelemy3, P. Dalens4, Q. Zhang5, M. Gerard6, P. Broussel7. 1Paris Descartes University; 2Foundation Rothschild; 3Centre Hospitalier Andre Rosemond


5441 — B0332 Engaging patients and clinical stakeholders to increase teleophthalmology use for diabetic eye screening in rural primary care clinics. Yao Liu1, J. Carlsson1, N. Zupan1, T. D. Molfenter1, J. E. Mahoney1, D. Boss1, R. Klein1, T. D. Bjelland2, M. A. Smith1, 2. 1Dept of Ophthalmology and Visual Science, University of Wisconsin, Madison; 2Dept of Family Medicine and Community Health, University of Wisconsin School of Medicine and Public Health; 3Dept. of Medicine, University of Wisconsin School of Medicine and Public Health; 4Mile Bluff Medical Center; 5Dept. of Population Health Sciences, University of Wisconsin School of Medicine and Public Health

5442 — B0333 Decreasing Medical and Surgical Vitreoretinal Physicians for Seniors in Ontario, Canada from 2009 to 2016. Peng Yan1, P. Kertes2, Y. Jin3, 2, S. Jin3. 1Department of Ophthalmology and Vision Sciences, University of Toronto, and Kensingon Eye Institute; 2Dalla Lana School of Public Health, University of Toronto

5443 — B0334 An Adherence Survey into the use of eye drops in Inflammatory Eye Disease. Hedayat Javidi1, 2, N. Poorni1, 2, R. P. Patel1, 2, J. B. Barry1, 2, S. Reza1, 2, P. I. Murray1, 2, 1Academic Unit of Ophthalmology, Institute of Inflammation and Ageing; 2Inflammatory Eye Disease Service, Birmingham & Midland Eye Centre


5445 — B0336 A Conditional Inference Tree for predicting non-Adherence to Post-Ophthalmic Screening Tertiary Referrals in Type-2 Diabetic patients. Alfred Gun1, E. K. Fenwick2, 3, L. E. Lamotheaux1, 4, R. Man1. 1Singapore Eye Research Institute; 2Duke-NUS Medical School

5446 — B0337 Differences in Receiving Eye Care Based on Dementia Status. Suzann Pershing1, M. Goldstein1, V. Henderson1, Y. Lu1, M. Bundorf1, M. Rahmann1, 2, C. Andrews1, 2, J. Stein1. 1Stanford University; 2University of Michigan

5447 — B0338 De-insured Routine Eye Exams Significantly Reduced the Use of Government-insured Optometrists but Increased the Use of Government-insured Primary Care Providers for Ocular Diagnoses. Yaping Jin1, 2, W. Jeon1, R. H. Glazier1, M. Brent1, Y. M. Buys1, 2, G. E. Trope1. 1Ophthalmology & Vis Science, University of Toronto; 2Institute of Medical Science, University of Toronto; 3University of Toronto

5448 — B0339 Publicly available datasets identify priority regions for ocular telehealth intervention. Samantha D’Amico1, 2, N. Benner2, B. Y. Kin1, 3, C. J. Brady1, 3, 1University of Vermont Medical Center; 2Larner College of Medicine at the University of Vermont

5449 — B0340 Performing Ocular Procedures under Oral Sedation in Procedure Rooms: A Cost Analysis. Carrie Cheri1, D. Luther2, T. Acciaiaviti1, M. L. Subramanian1, 2, 1Boston Medical Center; 2Boston University School of Medicine

5450 — B0341 Testing a framework for eye care provision in special educational schools in the UK: are there measurable benefits? Emma McConnell1, S. Black2, J. Little3, J. McClelland4, L. McKerr2, K. Dillenburger1, P. Anketell5, J. Jackson6, K. Saunders7, 1Ulster University; 2Queens University Belfast; 3Royal Victoria Hospital

5451 — B0342 Frequency and source of eyeglass insurance coverage in Ontario: Results from 2003 to 2013/14. Prem Nichani1, 2, G. E. Trope1, 2, Y. M. Buys1, 2, S. N. Markowitz1, 3, S. Y. Liu1, 2, N. A. Afshari1, 3, B. S. Korn1, 4, D. O. Kikkawa1, 4, 1University of California, San Diego School of Medicine; 2Ophthalmology, Shiley Eye Institute, University of California, San Diego; 3Ophthalmology, Division of Ocuofacial Plastic and Reconstructive Surgery, University of California, San Diego; 4Surgery, Division of Plastic Surgery, University of California, San Diego *CR

5452 — B0343 Budget impact analysis of trabecular bypass stenting versus trabeculectomy for the treatment of open-angle glaucoma (OAG) from a German payer perspective. Patricia M. Buchholz1, A. P. Buchholz2, S. Blumenthal, H. Fulvey3, C. Steeds4. 1PBC Consulting; 2Ophthalmology, Städtisches Klinikum Karlsruhe; 3Glaucus Germany GmbH; 4Healthcare Economics and Outcomes Research, Glaukos; 5Valid Insight *CR

5453 — B0344 Epidemiology of patients evaluated at the Emergency Unit of Londrina Eye Hospital - Brazil. Eduardo M. Vidal1, H. P. Sonomiya2, L. I. Silva1, B. Foresti1, M. Silva1, E. Hoyama1, T. Matsu1, N. Hasegawa1. 1Hofalton - Londrina Eye Hospital; 2PUC Londrina


5455 — B0346 Implementing the Save Sight Keratoconus Registry in the hospital setting. Alex Ferdi1, V. Nguyen2, C. Samarawickrama2, S. L. Watson1. 1The University of Sydney, Save Sight Institute; 2Westmead Hospital

5456 — B0347 Cost analysis of disposable versus non-disposable instruments for oculoplastic minor operations. Christine Anggun Putri1, P. Reza1, Z. Currie. Sheffield Teaching Hospitals NHS Trust

5457 — B0348 Early Experience with Canada’s Care1 Tele-glaucoma Program: A Comprehensive, Shared-care Ocular Health Delivery Model. Sara Branson1, A. Y. Ma2, K. Gan1. 1Ophthalmology, Emory University; 2Victoria Eye *CR

5458 — B0349 Cost-effectiveness Analysis of Endonasal Dacryocystorhinostomy using Markov Modeling. Jenny Q. Hu1, C. J. Ment1, N. A. Afshari2, B. S. Korn3, 4, D. O. Kikkawa5, 1University of California, San Diego School of Medicine; 2Ophthalmology, Shiley Eye Institute, University of California, San Diego; 3Ophthalmology, Division of Ocuofacial Plastic and Reconstructive Surgery, University of California, San Diego; 4Surgery, Division of Plastic Surgery, University of California, San Diego *CR

5459 — B0350 Practice patterns for intravitreal injections in Argentina. Results from a national survey of the Argentine Council of Ophthalmology. Julio A. Urretz-Zavalda1, E. Esposito1, N. Crimi1, M. Barros-Centeno1, C. Guantay1, A. Gonzalez-Castellanos2, A. Miranda1, M. Iros1, P. Daponte1. 1Ophthalmology, University Clinic Reina Fabiola, Universidad Catolica de Cordoba; 2Instituto de Microcirugia Ocular Cordoba; 3Argentine Council of Ophthalmology
Wednesday – Posters – 5460 – 5483

5460 – B0351 Nonmydriatic Photographic Screening for Diabetic Retinopathy in Pregnant Patients with Pre-existing Diabetes in a County Population. Malini Veerapaneni, D. Myung, A. Jeles, C. K. Pan. 1, 1Byers Eye Institute, Stanford University; 2Maternal Fetal Medicine, Santa Clara Valley Medical Center; 3Ophthalmology, Santa Clara Valley Medical Center


5462 – B0353 Real-World Use of Artificial Intelligence to Screen for Diabetic Retinopathy at Diabetes Care Clinics. E Simon Barriga, J. Benson1, G. Zamora, J. Lozano, S. C. Nemeth, P. Sole. 1VisionQuest Biomedical; 2Computer Science, The University of New Mexico; 3Clinicas del Azuca *CR


5464 – B0355 Ocular Triage: A Quality Improvement Study For Referral Patients in Ophthalmology Clinic. Abhiniti Mittal, 1, 2, G. Zamora1, M. Ramachandran1, K. Ali1, R. Alshamah1, E. Jamerson1, J. Sparrow1, W. J. Mallon1, A. Katz2, L. Al-Assaad2. 1Ophthalmology, Columbia University Medical Center; 2Globecheck LLC *CR

5465 – B0356 Trends in the prevalence of blindness and national income levels: findings from 157 countries from 1990 to 2015. Andrew F. Smith1, 2, R. R. Bourne1, 3, H. R. Taylor1, 3, J. B. Jonas1, S. Resnikoff, M. Wormstone. 1Medmetrics Inc.; 2Department of Ophthalmology, King’s College London; 3Vision & Eye Research Unit, School of Medicine, Anglia Ruskin University; 4Melbourne School of Population and Global Health, University of Melbourne; 5Department of Ophthalmology, Medical Faculty Mannheim, Heidelberg University; 6Brien Holden Vision Institute; 7School of Biological Sciences, University of East Anglia; 8Cambridge Eye Research Centre, Cambridge University Hospitals

5466 – B0357 Predicting Costs and Disability from the Myopia Epidemic – A Worldwide Economic and Social Model. Chantal Holy, K. Kulkarni, N. A. Brennan. 1Medical Device Epidemiology, Johnson & Johnson; 2R&D, Johnson & Johnson *CR

5467 – B0358 Evaluating the Cost Effectiveness of a Telemedicine-based Diabetic Retinopathy Screening Program in the Bronx. Hasan Muqri1, R. Muhtadi1, J. Tang1, C. Moskowitz1, B. Zarrin1, R. S. Chuck1, 2, U. Mian1, 2. 1Albert Einstein College of Medicine; 2Department of Ophthalmology and Visual Sciences, Montefiore Medical Center

5468 – B0359 Innovative Eye Drop Applicator for Self-Instillation of Eye Drops. Mukesh Taneya1, S. Ch2, K. Ch2, A. Richhariya1. 1Cornea and Anterior Segment Services, L V Prasad Eye Institute; 2Engineering Group, L V Prasad Eye Institute; 3Optometry Department, L V Prasad Eye Institute

5469 – B0360 Reporting and enrollment of women and racial minorities in ophthalmic clinical trials. Mariam Hamid, S. Orlov, L. De Lott1, J. J. Li1, M. A. Woodward1. 1Henry Ford Hospital; 2University of Michigan; 3University of Michigan Kellogg Eye Center *CR

5470 – B0361 Compliance with Two-Identifier Protocols for Patient Verification. erik sweet, C. Spak, J. Weizer. Kellogg Eye Center


5472 – B0363 Comparison Of The Cost Of Topical Therapy For Glaucoma Between Generic And Brand Medicines In Mexico. Ernesto V. Vidaurre Mora, U. Moreno, G. Lazcano, J. Jiménez Romín. Asociación para Evitar la Ceguera


5474 – B0365 The accuracy of acute eye referrals in Glasgow, Scotland. Neil Strang1, A. Khatoon1, G. Loffler1, D. Gilmour2. 1Vision Sciences, Glasgow Caledonian University; 2Glasgow Centre for Ophthalmic Research, Gartnavel general Hospital

5475 – B0366 A realist evaluation of collaborative care models. Belinda K. Ford1, 2, A. J. White3, 1, L. Keay4, 1. 1Eyel Health Program, The George Institute for Global Health; 2Ophthalmology Department, Westmead Hospital; 3Sydney Medical School, University of Sydney; 4Optometry and Vision Science, UNSW

5476 – B0367 C-EYE-C: Collaborative Care Between Optometrists and Ophthalmologists at a Major Sydney Hospital. Andrew J. White1, 2, B. K. Ford1, 3, B. Angell1, G. Liew2, 3, L. Keay1. 1University of Sydney; 2Ophthalmology, Westmead Hospital; 3The George Institute for Global Health

5477 – B0368 Assessing the Demand for Teleophthalmology in Florida Emergency Departments. Samantha Ayoob1, J. Tusher1, E. Tsui1, P. Shah1, S. Rath1. 1NYU School of Medicine; 2Department of Ophthalmology, University of California San Francisco; 3Department of Ophthalmology, NYU Langone Health; 4Department of Ophthalmology, University at Buffalo

5478 – B0369 Characterizing Geographic Variation in Surgical Management of Rhegmatogenous Retinal Detachment. Daniel Vail, S. Pershing. Stanford University School of Medicine

5479 – B0370 Intravitreal Injections Among Medicare Part B Beneficiaries, 2012-2016. Dallin Andersen1, P. Ludwig1, A. Janot1. 1Ophthalmology, University of Nebraska Medical Center; 2Creighton University School of Medicine; 3Vitreoretinal Institute

5480 – B0371 Expanded teleglaucoma clinics. An opportunity to manage the increasing demand for glaucoma care with safety and efficiency. Eleni Nikita, K. Kortuem1, 2, S. Fasolo1, D. Tsoukas1, D. Sim2. 1Glaucoma Service, Moorfields Eye Hospital NHS Foundation Trust; 2 Moorfields Eye Hospital NHS Foundation Trust; 3University Eye Hospital Munich

5481 – B0372 The Bolivian Diabetic Retinopathy (BOLDR) Project for screening and management of patients with diabetic retinopathy (DR) in underserved areas. Anthony C C M1, R. Cortes Arce1, M. Murillo Sasamoto1, G. Kaidonis1, R. N. Agrawal1. 1Retina, Fundación Boliviana de Oftalmología; 2Instituto Privado de Oftalmología; 3Ophthalmology, University of California, San Francisco; 4Retina Global; 5Fundación Boliviana de Oftalmología

5482 – B0373 Risk Factors for the Incidence of Uveitis in a National Medical Claims Database. Brian C. Toy2, Y. Zhang2, S. Amin1, N. A. Rao2, K. Iapal2, S. A. Seabury1, 2. 1Ophthalmology, USC Roski Eye Institute; 2Leonard D. Schaeffer Center for Health Policy and Economics, University of Southern California *CR

5483 – B0374 Cost Analysis of a Novel Comprehensive Tele-ophthalmology Program in VA Primary Care Clinics. Arthur C. Guyton1, A. Y. Ma2, B. Wojciechowski1, C. L. Dismuke3, K. Hunt1, A. Howell3. 1Belinda K. Ford1, 2, A. J. White1, 2, L. Keay1. 1Eyel Health Program, The George Institute for Global Health; 2Ophthalmology Department, Westmead Hospital; 3Sydney Medical School, University of Sydney; 4Optometry and Vision Science, UNSW

*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.
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<td><strong>Wednesday Posters</strong></td>
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<td>3:00 pm – 4:45 pm</td>
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<td>493 Medical education, training, and EHR implementation</td>
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<td><strong>Moderators:</strong> Elaine M. Tran and Thomas S. Hwang</td>
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<td>5484 — B0375 Evaluation of Ophthalmology Residency Program Websites: Analysis of Contents of 111 Programs in the United States.</td>
<td>Poyi Wu1, E. C. Namoglu, J. L. Chien1,4, A. Gu1, M. P. Ghassibi1, D. Belyea1, G. Sun1.</td>
<td>Cleveland Clinic Lerner College of Medicine; 1College of Liberal and Professional Studies, University of Pennsylvania; 2Department of Medicine, Medstar Harbor Hospital; 3Department of Ophthalmology, Weill Cornell Medical College; George Washington University School of Medicine and Health Sciences; 4Department of Ophthalmology, Hofstra Northwell School of Medicine</td>
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<td>5485 — B0376 Gender Trends in Presenters at Ophthalmology Conferences 2015-2017.</td>
<td>Sejal Patel1, T. Truong1, I. Tsui1, J. Rosenberg1.</td>
<td>1Ophthalmology, Montefiore Medical Center; 2UCLA</td>
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<td>5486 — B0377 Private Equity Acquisitions in Ophthalmology in the United States.</td>
<td>Elobeid1, S. Bhidya1, G. Lelli1, L. P. Casalino1.</td>
<td>1Healthcare Policy and Research, Weill Cornell Medicine; 2Ophthalmology, Weill Cornell Medicine</td>
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<td>5487 — B0378 Student Authorship Effects on Scholarly Impact in Ophthalmology, munizay paracha1, M. L. Subramanian1.</td>
<td>1Department of Ophthalmology, Boston Medical College; 2Boston University School of Medicine</td>
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<td>5488 — B0379 Evaluation of American Society of Ophthalmic Plastic &amp; Reconstructive Surgery (ASOPRS) Surgeons' Social Media Presence and Online Reviews.</td>
<td>Viterbi Family Department of Ophthalmology, University of California, San Diego; 2Department of Ophthalmology, Casey Eye Institute, Oregon Health &amp; Science University; 3Department of Medical Informatics and Clinical Epidemiology, Oregon Health and Science University; 4Division of Health Services Research and Development, Veterans Administration San Diego Healthcare System</td>
<td>1University of Massachusetts Medical School; 2University of Rochester; 3University of California, San Diego; 4Division of Health Services Research and Development, Veterans Administration San Diego Healthcare System</td>
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<td>5490 — B0381 Gender Representation on Ophthalmic Journal Editorial Boards.</td>
<td>M. Obri1, J. H. Hornik1, D. G. Miller1.</td>
<td>1Department of Ophthalmology, Hofstra Northwell School of Medicine; 2Radiology, Boston Medical Center; 3University of California, San Diego; 4Department of Medical Informatics and Clinical Epidemiology, Oregon Health and Science University; 5Department of Ophthalmology, Casey Eye Institute, Oregon Health &amp; Science University</td>
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<td>5491 — B0382 Gender Representation on Ophthalmic Leadership Boards.</td>
<td>Amy Lu1, M. L. Camacci1, A. Answine1, E. M. Bowie1, E. Lehman1, I. U. Scott1, S. Pantonelli1.</td>
<td>1Department of Medicine, Medstar Harbor Hospital; 2Department of Ophthalmology, Weill Cornell Medical College; George Washington University School of Medicine and Health Sciences; 3Department of Ophthalmology, Hofstra Northwell School of Medicine</td>
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<td>5492 — B0383 Burnout, Professional Fulfillment and Intent-to-Leave Among Ophthalmologists: A National Study.</td>
<td>Tava Kosovsky1, M. C. Higgins2, D. Marchalik1, M. Trockel1, S. Rowe1.</td>
<td>1Boston University School of Medicine; 2Ophthalmology, Weill Cornell Medicine; 3Department of Ophthalmology, UTHSCSA Long School of Medicine; 4Nebraska Medical Center; 5Department of Ophthalmology, Hofstra Northwell School of Medicine</td>
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<td>5493 — B0384 Comparison of Patient Volumes between Academic and Private Practice Retinal Specialists.</td>
<td>Harrison Sculli1, A. G. Miller1, M. Obri1, C. X. Miller1, J. H. Hornik1, D. G. Miller1.</td>
<td>1Boston University School of Medicine; 2Ophthalmology, Weill Cornell Medicine; 3Department of Ophthalmology, UTHSCSA Long School of Medicine; 4Nebraska Medical Center; 5Department of Ophthalmology, Hofstra Northwell School of Medicine</td>
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<td>5494 — B0385 Optometrists’ knowledge and attitudes towards prescribing blue-light blocking ophthalmic devices.</td>
<td>Sumeer Singh1, A. J. Anderson1, L. E. Downie1.</td>
<td>1Department of Optometry and Vision Sciences, The University of Melbourne</td>
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<td>5496 — B0387 Improving Access to Healthcare by Implementing LEAN principles in an Ophthalmology Clinic.</td>
<td>Wendy Ma1, o. helmy1, I. Beganski1, D. Alexandron1, S. Leeman1, S. Schaaf1.</td>
<td>1University of Massachusetts Medical School; 2University of Rochester</td>
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<td>5497 — B0388 Length and similarity of consecutive ophthalmology encounter notes in the electronic health record.</td>
<td>Abigail E. Huang1, 2, M. Hribar1, H. L. Dusek1, M. Millen1, R. El-Kareh1, E. Nadleman1, S. L. Robbins1, C. W. Heichel1, A. S. Camp1, B. S. Korn1, J. E. Lee1, D. O. Kikkawa1, C. A. Longhurst1, M. F. Chiang1, M. Hribar1, L. Ohno-Machado1, 2</td>
<td>1Department of Ophthalmology, Hofstra Northwell School of Medicine; 2Department of Ophthalmology, Hofstra Northwell School of Medicine; 3Division of Health Services Research and Development, Veterans Administration San Diego Healthcare System</td>
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<tr>
<td>5499 — B0390 Sleep, Activity, and Burnout in Ophthalmology Residents.</td>
<td>Shu Feng1, G. Deitz2, R. N. van Gelder1, S. Menda1.</td>
<td>1Ophthalmology, University of Washington; 2Division of Health Services Research and Development, Veterans Administration San Diego Healthcare System</td>
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<tr>
<td>5500 — B0391 Trends among top 100 researchers in ophthalmology during 1968-2018.</td>
<td>Eric R. Smith1, A. G. Miller1, M. Obri1, J. H. Hornik1, D. Y. Rowland1, D. G. Miller1.</td>
<td>1Department of Ophthalmology, Hofstra Northwell School of Medicine; 2Department of Ophthalmology, Casey Eye Institute, Oregon Health &amp; Science University; 3Department of Medical Informatics and Clinical Epidemiology, Oregon Health and Science University</td>
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Wednesday – Posters – 5505 – 5521

3:00 pm – 4:45 pm


5508 — B0399 Analysis of a Scribe’s Impact in an Academic Ophthalmic Clinical, Samuel Leeman, o. helmy, S. Schaal. Ophthalmology, UMASS Medical School


West Exhibition Hall B0404-B0453

Wednesday, May 01, 2019 3:00 PM-4:45 PM

Glaucoma

494 Imaging I

Moderators: Felipe A. Medeiros and Yeni H. Yucel


5514 — B0405 A Novel Outreach Program—Using a Portable Fundus Camera for Glaucoma Screening, Bela Parekh, R. Venkatesh. Aravind Eye Care Systems

5515 — B0406 Displacement of retinal blood vessels within or at the edge of the optic disc following intraocular pressure reduction. Goji Tomita, T. Takumi, N. Enomoto, K. Ishida. Ophthalmology, Toho Univ Ohashi Med Ctr


5517 — B0408 Relationship between refractive error and peripapillary retinal nerve fiber layer thickness in pediatric glaucoma suspects. Inae Jung, L. Machen, D. Cao, C. Mocan. University of Illinois at Chicago

5518 — B0409 Bleb morphology in anterior segment OCT after Xen-Implantation. Claudia Thieme, R. Burk. Department of Ophthalmology Bielefeld

5519 — B0410 Longitudinal Analysis of the Bruch’s Membrane Opening Morphometrics in Glaucoma. Mahadev Bhalla, M. Heisler, S. X. Han, M. V. Sarnic, M. F. Beg, P. Mackenzie, S. Lee. University of British Columbia; Simon Fraser 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.

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5522 — B0413 OCTA-measured vessel density and RNFL thickness in glaucomatous eyes with and without optic disc hemorrhage. Haksu Kyung1, E. Ghabari1, S. Moghimip, H. Hou1, R. Penteado1, P. Manalastas1, C. Bowd1, L. M. Zangwill1, R. N. Weinreb1, J. Proudfoot1. 1Dept of Ophthalmology, UCSD Shiley Eye Institute; 2Ophthalmology, National Medical Center; 3Heidelberg Engineering *CR

5523 — B0414 Lamina cribrosa shift is associated with preferential location of glaucomatous damage in myopic open-angle glaucoma. SeokHwan Kim1, K. Lee1, M. Kim2. 1Ophthalmology, Boramae Medical Center; 2Dongguk University Ilsan Hospital

5524 — B0415 The agreement between Bruch’s membrane opening minimum rim width and peripapillary retinal nerve fiber layer thickness in different stages of primary open angle glaucoma. Ping Huang, N. Crawford, W. Li. Ophthalmology, Drexel University College of Medicine

5525 — B0416 Whole-image, peripapillary total and peripapillary capillary vessel densities in glaucoma: pilot study of an automated software. Ana I. MIGUEL1, B. Silva1, J. Legeai1, M. Haddad1. 1Ophthalmology, Polyclinique de la Baie; 2CINTEST: Center for Health Technology and Services Research, Faculty of Medicine of Oporto University

5526 — B0417 Annual rates of change of mRNFL, mGCIP, and cpRNFL in various stages of glaucoma. Masayuki Inazuka, A. Sawada, H. Inazuka, T. Tamanoto. Ophthalmology, Gifu University Graduate School of Medicine, Gifu, Japan

5527 — B0418 Characterizing morphological changes of RGCs with longitudinal in vivo imaging in a model of experimental glaucoma. Delaney Henderson1, J. R. Vianna1, M. Hooper1, S. Farrell1, B. C. Chauhan1. 1Ophthalmology and Visual Sciences, Dalhousie University; 2Medical Neuroscience, Dalhousie University *CR

5528 — B0419 Number of Anterior Segment OCT Images Required to Capture Anatomical Variations in Angle Closure Eyes: The Chinese American Eye Study, Charles DeBoer1, J. Shaw1, A. Pardeshi1, R. Varma1, B. Xu1. 1Ophthalmology, University of Southern California; 2Southern California EyeCare & Vision Research Institute *CR

5529 — B0420 Retinal perfusion 6 months after trabeculectomy as measured by optical coherence tomography angiography. Claudia Lommatzsch1, K. Rothaus1, J. Koch1, C. Heinz1, 2, S. Grisanti1. 1Department of Ophthalmology, St. Franziskus Hospital; 2Department of Ophthalmology, University of Essen; 3Department of Ophthalmology, University of Luebeck *CR, *CR

5530 — B0421 The association between demographic parameters and Bruch’s membrane opening diameter in pediatric glaucoma suspects. Clem Myo1, J. Jung2, L. Machi1. 1Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago; 2University of Illinois at Chicago, College of Medicine

5531 — B0422 Differences in Anterior Chamber Angle Assessments Between Gonioscopy, EyeCam, and Anterior Segment OCT: The Chinese American Eye Study. Benjamin Xu1, A. Pardeshi1, B. Burkenper1, G. M. Richter1, S. C. Liu1, R. McKean-Cowdin1, R. Varma1. 1University of Southern California; 2Glaucoma Center of San Francisco

5532 — B0423 The Lamina Cribrosa Global Shape Index and Its Application in Glaucoma. Nicholas Tan1, Y. Tham1, S. Thakku1, B. Mani1, T. Aung1, M. J. Girard2, C. Cheng2. 1Singapore Eye Research Institute; 2Singapore National Eye Centre

5533 — B0424 Identification of Schlemm’s Canal by Anterior Segment Optical Coherence Tomography in patients with High Myopia. Taiheki Nomura1, T. Yoshida1, M. Aihara1, K. Oho-Matsu1. 1Tokyo medical and dental university; 2Ookubo hospital; 3University of Tokyo *CR


5535 — B0426 Glaucoma at a glance? Novel data visualisation for glaucoma progression analysis. Timothy E. Yap1, B. M. Davis2, M. Cordeiro1, E. M. Normando1. 1Ophthalmology, Imperial College London; 2UCL Institute of Ophthalmology *CR

5536 — B0427 Determination of ocular blood-flow velocity by plane-wave ultrasound and correlation with ocular perfusion pressure. Mukul Mohanty1, 2, B. Y. Yi1, A. Yu1, I. Michalopoulos1, L. Al Aswad1, D. Blumberg1, C. De Moraes1, J. M. Liebmann1, G. Cioffi1, R. H. Silverman1. 1Ophthalmology, Columbia University Medical Center; 2F. L. Lizziz Center for Biomedical Engineering, Riverside Research; 3Electrical and Computer Engineering, University of Waterloo

5537 — B0428 Localized Retinal Nerve Fiber Layer Defect Location Among Red-Free Fundus Photographs, En Face Structural Images, and Cirrus HD-OCT Maps. Ji-Hye Park, Y. Kim, C. Yoo. Korea University Medical Center


5539 — B0430 Detecting glaucomatos change with magnetic resonance imaging of the brain primary visual cortex. Akio Yamada1, K. Omodaka1, Y. Iutewaki1, N. Himori1, I. Matsuda1, T. Yasuyuki1, T. Nakazawa1. 1Ophthalmology, Tohoku University; 2Department of Nuclear Medicine and Radiology, Tohoku University *CR

5540 — B0431 Border Tissue Morphology is Spatially Associated with Focal Lamina Cribrosa Defect and Deep-Layer Microvasculature Dropout in Open-Angle Glaucoma. Jong Chul Han, D. Park, E. Lee, C. Kee. Samsung Medical Center, Sungkyunkwan University

5541 — B0432 Glaucoma detection with OCT and nerve photographs in a population-based telemedicine program: findings, diagnostic accuracy and influencing factors. Alfonso Antonio Lopez1, P. V. Jutti1, K. Nolivos1, A. Herranz2, Z. Vega-Lopez2, E. Ayala3, A. Martinez-Palmer3, L. Alarcon4, V. Popovski4, M. Pazos Lopez4, S. Khaoudi4, K. Sotelo4, N. Zmuc4, V. Garcia4, M. Comas4, X. Castells4. 1Universitat Internacional de Catalunya, Institut Catalá de Retina and Parc Salut Mar; 2Parc de Salut Mar; 3Hospital Vall d’Hebron; 4Institut Català de Retina; 5Hospital Clinico de Barcelona; 6Zumc Pharma Consulting *CR


5543 — B0434 Confocal analysis of corneal nerves reflecting a primary peripheral neural change in normal tension glaucoma. Ziyuan Liu, W. Wang. ophthalmology, peking university third hospital

5544 — B0435 Asymmetry analysis of optical coherence tomography angiography images of the macula in glaucoma patients and healthy controls. Corey A. Smith1, M. E. West1, G. Sharpe1, L. M. Shuba2, P. E. Rafuse2, M. T. Nicolela1, B. C. Chauhan2. 1Ophthalmology and Visual Sciences, Dalhousie University; 2Nova Scotia Health Authority *CR


5547 — B0438 Detection of progressing areas of retinal nerve fiber layer in advanced glaucoma using optical coherence tomography. Devon Joiner1, X. Li1, M. Eguíar1, E. Tsimis1, A. Sun1, C. De Moraes, R. Ritchi, D. C. Hood.2 Columbia University; *Ophthalmology, New York Eye and Ear Infirmary *CR

5548 — B0439 Novel Macular Bayesian Deviation Map for Differentiation Between Healthy and Glaucoma eyes. Linda M. Zangwill1, F. A. Medeiros2, R. N. Weinreb1, A. Belghith1,2 *Viterbi Family Department of Ophthalmology, UC San Diego Shiley Eye Institute; *Ophthalmology, Duke University *CR

5549 — B0440 Correlation between Anterior Segment OCT and Novel 360° Angle Imaging. Xin Yang1, Y. Shi1, K. Marion1, B. Francis1, S. R. Sadda1, V. Chopra1.1 First Affiliated Hospital of Zhengzhou University; *Doheny Eye Institute; *Ophthalmology, University of California, San Diego; *Harkness Eye Institute, Columbia University; *Ophthalmology, University of Alabama, Birmingham *CR

5550 — B0441 Beta and Gamma Parapapillary Atrophy (PPA) Zone Areas in Myopic Eyes With and Without Glaucoma. Rohith Voora1, M. Moghadam1, J. H. Lee1, C. Bowd1, J. Proudfoot1, S. Moghim1, P. C. Manalastas, M. Christopher1, J. M. Liebmann1, C. A. Girkin1, R. N. Weinreb1, A. Belghith1, L. M. Zangwill1, *Viterbi Family Department of Ophthalmology, University of California, San Diego; *Harkness Eye Institute, Columbia University; *Ophthalmology, University of Alabama, Birmingham *CR


5552 — B0443 Optical Coherence Tomography (OCT) Optic Nerve Head (ONH) Neural Canal Direction, Obliqueness and Minimum Cross-sectional Area in Highly Myopic versus Age-Matched Healthy Eyes. Jin Wook Jeoung1, H. Yang1, S. K. Gardiner2, Y. Wang3, S. Hong1, M. J. Girard2, C. A. Hardin3, P. Wei1, J. Vianna1, B. C. Chauhan4, C. F. Burgoyne1,2 *Devers Eye Institute Optic Nerve Head Research Laboratory, Legacy Research Institute; *Devers Eye Institute Discoveries in Sight Research Laboratories, Legacy Research Institute; *Ophthalmology, Seoul National University Hospital; *Ophthalmology, Beijing Tongren Hospital; Department of Ophthalmology, the Catholic University of Korea; Department of Biomedical Engineering, National University of Singapore; Department of Ophthalmology and Visual Sciences, Dalhousie University *CR


5554 — B0445 Angular location of retinal nerve fiber layer defect in myopic open-angle glaucoma: a comparison between the Bruch’s membrane opening and the disc as a reference point. Esuno Baku1, K. Lee2,3, M. Kim1, S. Kim1,2 1Seoul National University Hospital; 2Seoul National University Boramae Medical Center; 3Dongguk University Ilsan Hospital


5557 — B0449 Lymphatic Drainage of Subconjunctival Blebs in Porcine Eyes. Sindhu Saraswathy1, G. Akiyama1,2, E. Barron1, A. Huang1,2. *Ophthalmology, Doheny Eye Institute; Department of Ophthalmology, University of California, Los Angeles, CA *CR

5558 — B0449 Novel deep learning based algorithm for Macula and Optic Nerve Head segmentation versus Cirrus Optical Coherence Tomography in identifying glaucoma. Suria Sudhakaran Manni1, J. D. Oakley1, D. B. Russakoff1, R. Chang. *Voxeleron LLC; *Byers Eye Institute, Stanford University *CR

5559 — B0450 Colour Doppler Velocimetry of Central Retinal Artery in Glaucomatous and Normal Subjects. Harmeet S. Waraich1, 2. *Ophthalmology, Suraj Eye Institute; *Glaucoma, Suraj Eye Institute

5560 — B0451 Retinal Metabolic Analysis of Peripapillary Capillary Perfusion Before and After Glaucoma Drainage Device Implantation. Eleni M. Drivas1,2, S. Dangula1, M. Mavrommati1, J. Andrade1, R. B. Rosen1,2, J. F. Panarello1,2. New York Eye and Ear Infirmary of Mount Sinai; 1Icahn School of Medicine at Mount Sinai


5562 — B0453 Effects of Dry Eye on Ocular Coherence Tomography in Glaucoma. Scott Schwartz1, M. M. Hom1,2. *Dr. Schwartz Optometrist and Associates; *Private Practice *CR

5563 — B0454 The accuracy of spontaneous venous pulsation assessment in discriminating glaucoma from glaucoma suspects. Sahar Sharifi1, A. Agar1, K. A. Rose1, M. Golzan1. 1University of Technology Sydney; 2Ophthalmology, Prince of Wales Hospital; 3Ophthalmology, University of New South Wales

5564 — B0455 Choosing the appropriate ocular imaging technique confers an accurate and complete diagnosis of iris lesions, possible risk factor for ocular hypertension. ROXANA URSEA. Eye Section, Phoenix Veteran Administration HCS

5565 — B0456 Central and paracentral anterior chamber depth for diagnosis of angle closure spectrum disease. Jack Phai, J. Tong1, B. Zangerl1, M. Hennessy1, J. L. Le1, M. Kalloniatis1, *Optometry and Vision Science, Centre for Eye Health; *Ophthalmology, Prince of Wales Hospital

5566 — B0457 Glaucoma in Myopia, its Features and Correlations: Findings From Central India. Deepthi Jan1, H. Rath1, G. Ambekar1, V. Nagvi1. *Ophthalmology, Suraj Eye Institute; *Glaucoma, Suraj Eye Institute

5567 — B0458 The Use of Anterior Segment OCT AOD and TISA Parameters as an Objective Way to Evaluate the Angle (Pilot Study). Poonam Misra, L. Al-Aswad, S. Daly, D. Blumberg, R. H. Silverman. Ophthalmology, Columbia University Medical Center

5568 — B0459 The effects of estrogen deficiency on the peripapillary retinal nerve fiber layer thickness. Thasarat S. Vajaranant1, J. Hallak1, J. Baker1, L. Pasquale1, P. Maki. *Ophthalmology and Visual Sciences, University of Illinois at Chicago; Department of Ophthalmology, Icahn School of Medicine at Mount Sinai; Department of Psychiatry, University of Illinois at Chicago

5569 — B0460 Ungradable non mydriatic fundus photography in community eye screening. Prateek Gajwani1, D. Zhao1, E. Guallar1, M. Wahl1, J. David2, N. Dostal1, D. S. Friedman1. *Johns Hopkins University; *Wilmer Eye Institute, Johns Hopkins University

5570 — B0461 Segmented layer analysis by macular spectral-domain optical coherence tomography (SD-OCT) for early detection of exfoliation glaucoma. Gozde Hondur1, S. Bayraktar1, D. Ozkoyuncu1, E. Sen1, U. Elgin1, G. Tezel1. *Ulucanlar Eye Research & Training Hospital; *Ophthalmology, Columbia University

Moderators: Ki Ho Park and Alon Harris

West Exhibition Hall B0454-B0504

Wednesday, May 01, 2019 3:00 PM–4:45 PM

Glaucoma

495 Imaging II

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.
**5571 — B0462** A 3D Deep Learning System for Detecting Glaucomatic Optic Neuropathy from Volumetric and En Face Optical Coherence Tomography Scans, anran ran1, X. Wang2, L. Lu3, P. Chan4, R. Chang5, S. Sudhakaran Mannil6, H. Chen2, P. Heng5, C. C. Than7, C. Y. Cheung2. 1Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong; 2Department of Computer Science and Engineering, The Chinese University of Hong Kong; 3Ophthalmology, Byers Eye Institute, Stanford University *CR

**5572 — B0463** Accommodative Ciliary Muscle Contraction: Choroid And Lens Thickness Measurements, Mary Ann Croft1, T. Nork2, J. P. McDonald1, P. L. Kaufman1, 2. 1Ophthalmology, Univ of Wisconsin-Madison; 2Wisconsin National Primate Research Center, University of Wisconsin-Madison *CR

**5573 — B0464** Machine Learning for Prediction of Visual Field Progression, Kourosh Nouri-Mahdav1, Y. Mohammadzadeh1, A. Rabiolo1, J. Caprioli1, S. Yassa2. 1Ophthalmology, Stein Eye Institute; 2Ophthalmology, University of Tennessee Health Science Center *CR

**5574 — B0465** Differential cross-sectional neuroretinal rim configuration characteristics between optic disc pallor and glaucomatous excavation, Eun Jung Lee, J. Han, D. Park, C. Kee. Ophthalmology, Samsung Medical Center

**5575 — B0466** Morphometric detection of angular loss of nerve fiber bundles in glaucoma patients, Per G. Soderberg1, Z. Yu1, C. Sandberg2. 1Neuroscience, Uppsala university; 2Ophthalmology, Gävle regional hospital

**5576 — B0467** Regional Sectoral Thinning of Macular OCT in Glaucoma, Krishi Peddada1, S. Paulose, R. Sangani, T. Ben Ami, W. Li. Drexel University

**5577 — B0468** A Deep Learning Algorithm to Quantify Neuroretinal Rim Loss from Optic Disc Photographs, Atulie C. Thompson, A. A. Jammad, F. A. Medeiros. Duke Eye Center *CR

**5578 — B0469** Variation of Optic Disc Ovaity Index by Horizontal Duction, Tae-eun Lee, I. You, Y. Park. Chonbuk National University

**5579 — B0470** Association between serum lipid parameters and retinal nerve fiber layer characteristics, Qingying Jin1, 2, T. Ebert1, 3, A. Tönjes1, 4, K. Wirkner1, M. Wong1, D. Li1, N. Banisadat1, C. Enzenbach1, 3, M. Blueher1, 4, M. Stumvoll1, 4, J. Thiery1, 5, M. Loeffler1, 4, C. Engel1, 4, F. Rauchser1, 4, T. Elze1. 1Department of Psychology, Jilin University; 2Scheepens Eye Research Institute, Harvard Medical School; 3Department of Endocrinology, Nephrology and Rheumatology, Leipzig University; 4IFB Adiposity Diseases, Leipzig University Medical Center; 5Leipzig Research Centre for Civilization Diseases (LIFE), Leipzig University; 6Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University; 7Institute of Laboratory Medicine, Clinical Chemistry and Molecular Diagnostics, Leipzig University *CR


**5581 — B0472** Wide-field Trend-based Progression Analysis (TPA) of progressive nerve fiber layer (RNFL) and ganglion cell inner plexiform layer (GCIPL) thinning for detection of glaucoma progression. Christopher K. Leung, Z. Wu, C. Lin. 3/F, University Eye Center, The Chinese University of Hong Kong *CR

**5582 — B0473** Impact of Cataract on Repeatability of Measurements of Macular Inner Retinal Thickness with Spectral-domain Optical Coherence Tomography in Glaucoma eyes. Dai sake Shiba, S. Adachi, E. Hiran o, Y. Ota, T. Ono, K. Iuki, K. Tsubota. Ophthalmology, Keio University School of Medicine

**5583 — B0474** Tracking of disease progression over time with optic nerve diffusion tensor imaging and retinal nerve fiber layer thickness in macaques with experimental glaucoma. Aldric Hama1, N. Takahashi1, T. Natsume1, C. Kitazawa2, Y. Itami1, I. Hayashi1, M. Shimazawa1, H. Hara1, H. Takamatsu1. 1Hamamatsu Pharma Research, Inc.; 2Gifu Pharmaceutical University *CR

**5584 — B0475** Progressive optic disc change as documented with confocal scanning laser tomography in glaucoma suspects and their influence on OCT measured retinal nerve fiber layer thickness values compensated with a multivariate model. Hemma Resch1, A. B. Hommer1, F. Schwarzhans1, P. Fuchs1, F. Frommlet1, C. Voss1. 1Ophthalmology and Optometry, Medical University of Vienna; 2Albergaless 39, Vienna; 3CEMSIS, Medical university of Vienna *CR

**5585 — B0476** Flicker Analysis of Infrared Reflectance Optic Nerve Head Images in Patients with Open-Angle Glaucoma. Won Hyuk Oh1, J. Park2, K. Kim1. 1Ophthalmology, Sangeye Paik Hospital; 2Ophthalmology, Seoul Paik Hospital; 3Ophthalmology, Eulji General Hospital

**5586 — B0477** Color-Code classification versus continuous data by Spectral Domain-Optical Coherence Tomography for detecting glaucoma: Multicenter Italian Glaucoma Imaging Study (MIGIS). Manuele Michelest1, I. Riva1, E. Martinis1, M. Figuzzi1, F. Frezzotti1, L. Aquilil2, G. Manni3, I. Quarunta4, S. Miglior1, C. Posareliti1, S. Fazio1, F. Oddone1. IRCCS – Fondazione GB Bietti; 2U.O. Ophthalmology, Sassuolo Hospital; 3Ophthalmology, Department of Neurosciences, University of Pisa; 4Department of Medicine, Surgery and Neuroscience, University of Siena; 5Ophthalmology Clinic, Department of Medicine and Aging Science, University G. d’Annunzio of Chieti-Pescara; 6DSCMT, University of Rome, Tor Vergata; 7Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia; 8Department of Ophthalmology, University Bicocca of Milan

**5587 — B0478** Reliability study of manual and automated trabecular-iris angle measurements and 360° angle map, Duriye D. Sevg1, 2, H. Wu3, A. Tas4, G. Ayas1, M. Comert1, S. Tilmaz1, S. Torun1, O. Esengur1, Y. Demirlenk1, R. Helms2, F. H. Orge1. 1Ophthalmology, University Hospitals Cleveland Medical Center; 2Koc University School of Medicine; 3Case Western Reserve University

**5588 — B0479** Objective Assessment of Progressive Macular Changes in Glaucoma. Eduardo M. Normando1, 2, B. M. Davis1, T. E. Yap1, M. Cordeiro1, 2, 3. 1CORIG, Imperial College London; 2Ophthalmology, Western Eye Hospital; 3Visual Neuroscience, UCL Institute of Ophthalmology

**5589 — B0480** Withdrawal Deep Machine Learning Employing a Convoluted Neural Network Distinguishes Glaucomatous Optic Nerves Using Fundus Images and Biological Parameters. Shahin Yazdani1, M. Nasiri1, H. Talebi1, M. Khosravi1. 1Department of Ophthalmology, SBUMS, Ophthalmic Research Center; 2Ocular Tissue Engineering Research Center, SBUMS; 3Department of Electrical Engineering, Amir kabir University of Technology


**5591 — B0482** Analysis of wide-field macular OCT angiography with Euclidian distance measurement helps visualize vascular deficits in glaucoma eyes. Diogo F. Muller1, M. Chaves-Samaniego1, A. Acosta1, Y. Shi1, G. Gregori1, P. J. Rosenfeld1, 2, L. E. Vázquez1. 1Ophthalmology, Bascom Palmer Eye Institute; 2Bascom Palmer Eye Institute

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
5592 — B0483 Inter-grader and Intra-grader Reliabilities of Graders and an Automated Algorithm for Cup-Disc Ratio Grading in Fundus Photographs. Wei Han Tong1, M. Romero1, V. Lim1, S. Loon1, S. Yu1, D. Xiao1, Y. Kanagasigam, V. T. Koh1. 1Ophthalmology, National University Hospital Singapore; 2Commonwealth Scientific and Industrial Research Organisation, Australia

5593 — B0484 Clinical diagnosis system of glaucoma based on deep learning algorithm. Ruiqi Pang1,2, h. liu1, i. li1, l. qiao1, h. wang1, s. Li1, M. Xu1, N. Wang1, 1 Beijing Tongren Hospital; 2Capital Medical University; 3Beijing Institute of Ophthalmology, Beijing University

5594 — B0485 Detecting progression on local areas of retinal nerve fiber layer in glaucoma suspects and early glaucoma using optical coherence tomography. Melvi Eguid1, X. Li1, D. Joiner2, E. Tsamis2, C. De Moraes3, R. Ritch1, D. C. Hood2. 1Ophthalmology, New York Eye and Ear Infirmary; 2Psychology, Columbia University; 3Ophthalmology, Columbia University 2 Ophthalmology University of New York Eye and Ear Infirmary 2 *CR

5595 — B0486 Can healthy eyes with global cprNFL thickness in the bottom 5th percentile be distinguished from glaucomatous eyes? Zane Z. Zembrorai1, E. Tsamis2, C. De Moraes2, R. Ritch3, D. C. Hood2. 1Biomedical Engineering, Columbia University; 2Ophthalmology, Columbia University; 3Ophthalmology, Columbia University; 4Ophthalmology, New York Eye and Ear Infirmary 2 *CR

5596 — B0487 Optic nerve head prelaminar tissue schisis: a sign of glaucomatous deformation? Eugene Lowry1, S. L. Mansberger1, S. K. Gardiner1, H. Yang1, F. G. Sanchez1, D. S. Sanders1, S. Demirel1, C. F. Burgoyne1, B. Fortune1. Ophthalmology, Devers Eye Institute 2 *CR

5597 — B0488 Effect of Tripletic En Face Image Averaging on Radial Peripapillary Capillary Assessment in Glaucoma and Glaucoma Suspects using Optical Coherence Tomography Angiography. Andrew J. Nelson1, Z. Chu1, R. Chang1, A. Reznik1, B. Xu1, R. K. Wang1, G. M. Richter1. 1Keck School of Medicine of USC; 2Bioengineering, University of Washington; 3Ophthalmology, USC Roski Eye Institute 2 *CR

5598 — B0489 Long-term follow-up of peripapillary atrophy in a cohort of patients with progressive normal tension glaucoma. Clemente Maria Idic1, J. Mohamed-Norieg1, B. Ning1, H. Jayaram1, D. Kamal1, N. Strouthidis1, F. F. Garway-Heath. 1NIHR Biomedical Research Centre at Moorfields Eye Hospital NHS Foundation Trust and UCL Institute of Ophthalmology; 2Medical School, Sapienza, University of Rome; 3Departamento de Ofthalmologia, Hospital Universitario, UANL 2 *CR

5599 — B0490 Diagnostic Assessment of RNFL Segmentation using a Hybrid Deep Learning Approach. Jonathan D. Oakley1, S. S. Manil2, D. B. Russakoff3, R. Chang1, 1Voxeleron LLC; 2Byers Eye Institute, Stanford University 2 *CR


5601 — B0492 Longitudinal changes in choroidal thickness and neuroretinal parameters in glaucoma. Lucas A. Torres1,2, V. R. Lanoose3, J. Quach1, G. Sharpe1, D. Hutchinson1, L. M. Shaba1, M. Nicoleta1, B. C. Chauhan1, J. R. Viana1. 1Ophthalmology, Dalhousie University; 2Ophthalmology, University of Sao Paulo 2 *CR

5602 — B0493 Comparison of Macular and RNFL Rates of Progression in Eyes with Advanced Glaucoma. Anne L. Coleman1, A. Rabio1, V. Mohammdazadeh, S. K. Law1, G. Caprioli1, K. Nouri-Mahdavi1. Jules Stein Eye Institute, UCLA 2 *CR

5603 — B0494 Assessing optic nerve microstructural integrity in asymmetric glaucoma using diffusion MRI. Junqian Xu1, J. Kim1, S. Thomas1, S. Song1, J. B. Serle2. 1Radiology, Icahn School of Medicine at Mount Sinai; 2Ophthalmology, Icahn School of Medicine at Mount Sinai; 3Radiology, Washington University School of Medicine

5604 — B0495 Correlation of retinal ganglion cell metrics made in vivo using SD-OCT versus ex vivo using quantitative histology in Diversity Outbred mice. Michael G. Anderson1,2, A. Hedberg-Buenz1,2, C. van der Heide1, K. Meyer2, K. Lee1, M. D. Abramoff2, 1Molecular Physiology and Biophysics, University of Iowa; 2Center for the Prevention and Treatment of Visual Loss, Iowa City VA Health Care System; 3Electrical and Computer Engineering, University of Iowa; 4Ophthalmology and Visual Sciences, University of Iowa

5605 — B0496 Longitudinal Changes in Optical Coherence Tomography Angiography (OCTA) Vessel Density and Thickness in Glaucoma Eyes with Focal Lamina cribrosa Defects. James A. Proudfoot1, M. Suh1, R. N. Weinreb2, C. Bowd1, P. Manalastas1, E. Ghahari1, S. Moghim1, R. Penteado2, H. Hou1, L. M. Zangwill1. 1Ophthalmology, Inje University College of Medicine; 2Viterbi Family Department of Ophthalmology, University of California San Diego 2 *CR

5606 — B0497 Non-invasive in vivo imaging and quantification of human aqueous outflow. Tasneem Kathir1, P. A. Meyer2, J. Lushbaek3, I. Manyakin1, Y. Mushkaq1, K. R. Martin3. 1University of Cambridge; 2Ophthalmology, Cambridge University Hospitals NHS Foundation Trust; 3Glaucome Unit, Sydney Eye Hospital; 4Discipline of Ophthalmology, University of Sydney

5607 — B0498 Optic Nerve Blood Oxygenation Mapping Under Caffeine Effect. Vasile Diaconu1, M. Macgregor1, L. Michaud1. Ecole D’optometrie, University of Montreal 2 *CR


5609 — B0500 Comparing anterior segment optical coherence tomography with gonioscopy performed by glaucoma experts and general ophthalmologists in angle closure suspects. Bruno Esporcatte1, G. H. Bujaraf1, N. S. Yamaginori1, R. Vessani1, L. Melo Jr1, N. Alleman1, J. M. Tavares1. Ophthalmology, Federal University of Sao Paulo

5610 — B0501 Facilitating Glaucoma Diagnosis With Inter-eye Neuroretinal Rim Asymmetry Analysis Using Spectral-Domain Optical Coherence Tomography. mahmoud A. Jayed1. Harvard Medical School

5611 — B0502 Diagnostic Performance of Optic Nerve Head Hemoglobin Levels Measurement in Eyes With Early Primary Open Angle Glaucoma. Carolina de Carvalho1, A. SCORALICK2, D. T. Dias1, C. Gracitelli1, S. Dorairaj1, A. Paranhos1, F. Kanadani2, 1Glaucoma, Instituto dos Olhos Ciencias Medicas; 2Glaucoma, Hospital Medicina dos Olhos; 3Glaucoma, Instituto dos Olhos Ciencias Medicas; 4Glaucoma, Universidade Federal de Sao Paulo; 5Glaucoma, Mayo Clinic

5612 — B0503 Lamina cribrosa depth and mean cup depth changes in the setting of trabeculectomy in patients with open angle glaucoma. Facundo G. Sanchez1, D. S. Sanders1, B. Fortune1, S. K. Gardiner1, N. Lowry1, S. L. Mansberger1. Devers Eye Institute, Legacy Health, Discoveries in Sight Research Laboratories

5613 — B0504 Glaucomatous maculopathy: thickness differences on intraretinal macular layers between ocular hypertension and early primary-open angle glaucoma using 8x8 posterior pole program of SD-OCT. Jose Javier Garcia-Medina1, M. Del-Rio-Vellolillo1, M. D. Pinazo-Duran1, V. Zanón-Moreno1, M. P. Villegas-Perez1. 1University of Murcia; 2University Hospital La Arrixaca; 3Surgery, University of Valencia; 4Area of Health Sciences, Valencian International University; 5University Hospital Morales Meseguer; 6Oftalmologia Celular y Molecular, University of Valencia; 7University Hospital Reina Sofia

X 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.
5614 — B0505 Retinal Vessel Diameters and Optic Disk Morphology: a population-based study. Qing Zhang1, C. Xin1, Y. ZHANG1, C. GUO2, N. Wang1. 1Ophthalmology, Beijing Eye Institute of Ophthalmology, Beijing Tongren Eye Center, Beijing Tongren Hospital, Capital Medical University, Beijing Ophthalmology and Visual Science Key Lab, Beijing, China; Department of Epidemiology, School of Public Health, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109-2029.


5617 — B0508 Novel morphometric analysis of higher order structure of human radial peripapillary capillaries. Ted Maddess1, M. Barbosa1, S. Ahrn1, T. Chan-Ling1. 1John Curtin School, Neuroscience, Australian National University; 2Anatomy and Histology, University of Sydney. *CR

5618 — B0509 Retinal capillary blood flow, blood pressure, and ocular perfusion pressure in healthy and glaucomatous females. Rana Torabi1, A. Harris2, A. Vercicchio Vercellini1, B. Wirostko3, G. Eckert1, J. Eikenberry1, C. Yung1, A. Ng1, C. Jonescu-Cuapers5, B. A. Siesky1. 1Indiana University School of Medicine; 2Ophthalmology, University of Pavia; 3Moran Eye Center; 4Ophthalmology, University Hospitals of Geneva. *CR

5619 — B0510 Lowering of intraocular pressure does not affect volumetric blood flow rate of ipsilateral ophthalmic artery in ocular hypertension. Gauti Johannesson1, S. Qvarlander2, A. Wählin1, K. Ambarki1, P. Hallberg1, A. Eklund1, C. Linden1. 1Dept. of Clinical Sciences, Ophthalmology, Umeå University; 2Dept. of Radiation Sciences, Biomedical Engineering, Umeå University.

5620 — B0511 Relationship between Visual Field Sensitivity and Retinal Blood Flow Measurements by Doppler Optical Coherence Tomography Flowmeter in Primary Open Angle Glaucoma. taka-fumi yoshioka1, Y. Song2, K. Takahashi3, T. Tani1, M. Akiba2, J. Sakaki1, S. Nakamura1, K. MINAMIDE2, S. Ishiko1, Y. Yanagi2, A. Yoshida1. 1Department of ophthalmology, Asahikawa Medical University; 2R&D Division, Topcon Corporation; 3Singapore National Eye Center. *CR

5621 — B0512 Retinal oxygen extraction is altered in patients with primary open angle glaucoma. Anton B. Hommer1, D. Schmidt1, K. Fondo2, A. Batu1, R. M. Werkmeister1, G. Garhofer1, L. Schmetterer1, 4. 1Medical University, Department of Clinical Pharmacology; 2Private office; 3Medical University, Center for Medical Physics and Biomedical Engineering; 4Singapore Eye Research Institute, Singapore Eye Research Institute.


5624 — B0515 Effects of Timolol and Latanoprost on Ocular Perfusion Pressure in Eyes of Healthy Volunteers. Ajay Kolli1, D. Reed3, J. Gilbert1, C. B. Toris2, A. J. Sit1, F. Galait1, A. Kazemi1, D. C. Musch1, S. E. Moroi1. 1University of Michigan; 2Case Western Reserve; 3Mayo Clinic; 4University of Nebraska. *CR

5625 — B0516 Choroidal Blood Flow Baroregulation in Primary Open Angle Glaucoma (POAG). Wulff-Dieter Ulrich1, K. Wernecke2, A. Moeller1, C. Ulrich1, K. E. Kotliar1, C. Erb1. 1clinical office Borna; 2Sostana GmbH; 3Aachen University of Applied Sciences; 4Augenklinik am Wittenbergplatz. *CR

5626 — B0517 The Impact of Trans-lamina Cribrosa Pressure Difference on Choroidal Thickness and Optic Disc Structure. Xiangxiang Liu1, Y. Saw2, Y. Wang3, N. Wang4. 1Beijing Tongren Hospital, Capital Medical University; 2Beijing Institution of Ophthalmology, Beijing China.

5627 — B0518 Differences in transliminar pressure difference and ocular hemodynamic parameters between normal-tension glaucoma, high-tension glaucoma, ocular hypertension patients and healthy subjects. Lina Stanavvyte1, I. Januleviciene1, A. Daveckait1, A. Harris2, A. Raganuska1. 1Eye Clinic of Kaunas Medical Academy, Lithuanian University School of Health Sciences; 2Eugene and Marilyn Glick Eye Institute, Indiana University School of Medicine; 3Health Telematics Science Institute Centre, Kaunas University of Technology.

The Commercial Relationships (CR) Index for Disclosures and the Clinical Trial (CT) Registration Index are at arvo.org/program-summary.
West Exhibition Hall
Wednesday, May 01, 2019 5:00 PM-6:00 PM

497 All Posters and Networking
**Wednesday – SIGs/Special Sessions**

**East 1**

Wednesday, May 01, 2019 6:15 PM-7:45 PM  
Cornea / Biochemistry/Molecular Biology / Genetics / Multidisciplinary Ophthalmic Imaging

**498 Focal vs global: Is Keratoconus pathology driven by focal corneal tissue changes or is it a global corneal defect influenced by systemic factors? - SIG**

In Keratoconus (KC), focal corneal thinning and protrusion occurs which worsens in severity over time and is diagnosed by corneal topography. The presence of local inflammatory changes (high MMP9) in KC and factors involved in remodelling of the collagen matrix (low LOX and Collagen expression) are associated with severity. However, it is not understood why KC is localised to a focal centered zone. This focal ectasia may be driven by changes in the corneal structure mediated by differential gene expression regulated at the cone, although underlining genetic changes and systemic factors may play a role. This question of a focal defect versus a generalised corneal weakness or systemic predisposition is a topic of debate in order to guide future treatment.

Collagen cross linking (CXL) treatment of KC is applied to whole cornea and not just the ectatic zone. Customised CXL procedures are emerging that target more energy at the ectatic zone. However, how effective will customised treatment be? How will the systemic risk factors influence the outcomes of such treatments or should global corneal and adjunct systemic treatment such as anti-inflammatory, anti-allergic, etc be considered?

**Moderators:** Arkasubhra Ghosh and Vishal Jhanji  
**Organizer:** Arkasubhra Ghosh. Molecular Signalling and Gene Therapy, Narayana Nethralaya Foundation, Bangalore, India  
**Organizer:** Vishal Jhanji. University of Pittsburgh, PA

**Non Linear Optical (NLO) and Acoustic Radiation Force Elastic Microscopy (ARFEM) of Keratoconus Corneas. James V. Jester. University of California Irvine, CA**

**Focal or global: clinical and biomechanical features in Keratoconus to be considered for collagen crosslinking. James B. Randleman. USC Roski Eye Institute, CA**

**Panelist:** Rajiv R. Mohan. University of Missouri-Columbia, MO  
**Panelist:** Yutao Liu. Augusta University, GA

**Local molecular changes driving focal ectasia in Keratoconus. Sharon D Souza. Narayana Nethralaya, India**

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**East 2/3**

Wednesday, May 01, 2019 6:15 PM-7:45 PM  
Immunology/Microbiology / Retina

**499 Fluorescence lifetime imaging ophthalmoscopy from bench to bedside - SIG**

Fluorescence lifetime imaging ophthalmoscopy (FLIO) is an imaging technology measuring fluorescence lifetimes of endogenous retinal fluorophores. In contrast to fundus autofluorescence which measures the intensity of endogenous fluorophores, FLIO measures the time a fluorophore spends in an excited state before returning to the ground state. In the last years considerable progress has been made to identify disease specific fluorescence lifetime patterns and to identify fluorescence lifetime dominating fluorophores. Several groups have investigated fluorescence lifetimes from basic research to clinical application.

In this special interest group we aim to gather the current knowledge and discuss recent findings from the lab and from the clinics. Furthermore, common standards will be discussed from in vitro measurements to clinical research, in order to further advance FLIO research from bench to bedside.

**Moderator:** Martin S. Zinkernagel

**Fluorescence lifetimes in the healthy eye. Martin S. Zinkernagel. Dept of Ophthalmology, University Hospital Bern, Bern, Switzerland **

**Fluorescence lifetime imaging ophthalmoscopy in hereditary retinal diseases. Chantal Dysli. Dept of Ophthalmology, University Hospital Bern, Bern, Switzerland **

**Principles of fluorescence lifetime imaging ophthalmoscopy. Martin Hammer. University Hospital Jena, and Center for Biomedical Optics and Photonics, University of Jena, Jena, Germany, Germany **

**Panelist:** Lydia Sauer. University of Utah, John A. Moran Eye Center, Salt Lake City, Utah, United States, UT **

**Panelist:** Srinivas R. Sadda. Doheny Eye Institute; Department of Ophthalmology, University of California-Los Angeles, CA **

**Panelist:** Sebastian Wolf. Dept of Ophthalmology, University Hospital Bern, Bern, Switzerland **

**FLIO. Martin S. Zinkernagel. Dept of Ophthalmology, University Hospital Bern, Bern, Switzerland **

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**East 8&15**

Wednesday, May 01, 2019 6:15 PM-7:45 PM  
Glaucoma

**499a New perspectives on MIGS - SIG**

With the arrival of a plethora of new and evolving MIGS procedures, glaucoma specialists currently are fortunate to have various surgical options that aim to recovery of the function of the aqueous outflow system in different ways. MIGS presents good IOP control and few complications. With the development of MIGS, there recently is a stirring of interest in aqueous outflow system, because the choices beg for the accurate diagnostics to identify the specific site of resistance rising within the drainage system. Thus, we propose the SIG on MIGS in ARVO. In this session, we invited surgeons, clinical professors and experimental scientists to report their latest studies

**Moderator:** Ningli Wang

**The mystery behind MIGS. Ningli Wang. Ophthalmology, Beijing Tongren Eye Center, Beijing, China**

**Exploring mechanisms of action of the micropulse laser through use of a novel imaging platform and correlation of multiple imaging modalities including high-resolution OCT. Murray A. Johnstone. University of Washington, WA**

**The potential mechanism of distal pathway of aqueous outflow system. Sayoko Moroi. University of Michigan, MI**

**The lymphatic characteristics of Schlemm’s canal. La Chen. Univ of California, Berkeley, CA**

**Mechanism for the Increase in Aqueous Humor Outflow Facility by Placing Glaucoma Devices in Schlemm’s Canal. Haiyan Gong. Boston Univ School of Medicine, MA**

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

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<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Room</th>
<th>Panel</th>
<th>Topic</th>
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<td>6:15 pm – 7:45 pm</td>
<td>East Ballroom C</td>
<td>Room</td>
<td>Retina</td>
<td><strong>499e Wnt Signalling and regenerative medicine for retinal vascular disease - SIG</strong></td>
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<td>Organizer Michael Trese MD, FARVO, RE section, Oakland University William Beaumont School of Medicine</td>
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<td><strong>Purpose:</strong> To familiarize the participants with Wnt signaling and how it affects the retinal development and possible regeneration of retina vascular and neuronal elements destroyed by retinal vascular disease.</td>
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<td><strong>Committed Presenters:</strong></td>
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<td>Moderator:</td>
<td>Michael Trese MD</td>
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<td>Panelists:</td>
<td>Eric Nudelman MD PhD University of California San Diego</td>
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<td>Wnt signaling Norrin and Wnt driven</td>
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<td>Norrin driven Wnt signaling and retinal endothelial barrier proteins</td>
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<td>Repair and Regeneration of retinal endothelial cells</td>
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<td>Repair and regeneration of retinal neuronal tissue</td>
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<td>Commercial interests:</td>
<td>Michael Trese MD Retinal Solutions co founder equity</td>
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<td>Kimberly Drenser MD PhD Retinal Solutions co founder equity</td>
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<td>6:15 pm – 7:45 pm</td>
<td>East Ballroom B</td>
<td>Room</td>
<td>Immunology/Microbiology / Anatomy and Pathology/Oncology / Genetics / Glaucoma / Immunology/Microbiology / Retina / Retinal Cell Biology</td>
<td><strong>499d Pathogenesis of TB-associated uveitis: current status and future directions - SIG</strong></td>
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<td>Pathogenic mechanisms of TB-associated uveitis remain ill-defined due to insufficient evidence from clinical samples and animal models. This SIG will list out key questions in this area, recent developments and future directions for research.</td>
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<td>The discussion will start with a global overview of TB-associated uveitis (TBU) and current evidence on the direct role of Mycobacterium tuberculosis in the eye. The next two talks will highlight the systemic (peripheral blood) and intraocular/vitreous immune signatures that have recently been reported in TBU. Following the presentations, the strengths and weaknesses of each hypothesis (direct and indirect role of the organism) will be discussed with members of the audience. The discussion will try to draw a separation between mycobacterial and inflammatory manifestations of TBU, and the differences in approach to their diagnosis and management. Attendees who have pre-submitted questions/brief points, will be included in this discussion. At the end of the meeting, members of the audience should be able to appreciate existing gaps in our understanding of pathogenesis of ocular tuberculosis and identify focus areas for future research.</td>
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<td><strong>Moderator:</strong> Soumyava Basu</td>
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<td>Topic:</td>
<td>Intraocular immune response in TBU. Soumyava Basu. LV Prasad Eye Institute, Bhubaneswar, OrissA, India</td>
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<td>Topic:</td>
<td>TB-associated uveitis: global prevalence, clinical signs and histopathology. Narsing A. Rao. University of Southern California, USC Roski Eye Institute, Keck School of Medicine, Los Angeles, CA</td>
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<td>Topic:</td>
<td>Systemic immune response in TBU: does it represent the eye. Rina La Distia Nora. Department of Ophthalmology, University of Indonesia &amp; Cipto Mangunkusumo Hospital Kirana, Jakarta, Indonesia</td>
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<td>Commercial interests:</td>
<td>Michael Trese MD Retinal Solutions co founder equity</td>
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<td>Kimberly Drenser MD PhD Retinal Solutions co founder equity</td>
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<td>Panelists:</td>
<td>Assoc. Retinal Consultants, P.C., Royal Oak, MI; Retinal Immunology &amp; Inflammation, Oakland University, Rochester, MI *CR</td>
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<td>Topic:</td>
<td>Repair and regeneration of retinal endothelial cells. Kimberly A. Drenser. Assoc. Retinal Consultants, P.C., Royal Oak, MI; Retinal Immunology &amp; Inflammation, Oakland University, Rochester, MI *CR</td>
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<td>Topic:</td>
<td>Norrin driven and Wnt driven Wnt signalling. Eric Nudelman. Ophthalmology, University of California San Deigo, San Diego, CA</td>
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<td>Topic:</td>
<td>Norrin driven Wnt signalling and Barrier proteins. David Antonetti. Ophthalmology, University of Michigan, Ann Arbor, MI</td>
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**References:**

- Aim: Personalized medicine in ophthalmological therapy depends on availability of “response markers” in the eye. Aqueous humor and vitreous samples are potential and easily accessible sites for “fluid biopsies” prior to and during therapy. Aim of this SIG is to discuss risks and benefits of “fluid biopsy-based decision trees” for guiding personalized therapies in AMD, glaucoma and corneal graft rejection.

**Moderators:** Sascha Fauser and Claus Cursiefen

**Aqueous humor samples for decision making in glaucoma therapy:** pilot data. Claus Cursiefen. Dept of Ophthalmology, University of Cologne, Koln, Germany

**Analysis of complement components in AMD. Anneke I. Den Hollander.** Redboude Institute, Netherlands

**Cytokine changes after laser treatment in patients with Diabetic macular edema. Edoardo Midena.** University of Padova, Italy

**Proteomics of fluids in patients in retinal disease to guide therapeutic decisions. Marius Ueffing.** University of Tuebingen, Germany
The military recognizes that the diagnosis and treatment of combat ocular trauma injuries is a critical medical capability shortfall. Engagement with academic, industry, interagency, and other partners is vital to obtain the necessary diagnostics and treatments for this capability gap. Ocular injuries sustained during combat are often in austere environments, presenting a unique challenge regarding both the severity of the injury and the timely access to definitive care. These vision-related gaps are considered a critical problem area for the Army that requires discussion surrounding clinical guidelines and strategies, ocular injury diagnostics, and treatments. Exploring these operational constraints will facilitate a better understanding of what solutions could be applied by the military to address these injuries as close to the point of injury as possible.

**Moderator: Heuy-Ching H. Wang**

— 6:15 The Vision Center of Excellence (VCoE) - Mark Reynolds, Vision Center of Excellence (VCoE)/Defense Health Agency, J-9

— 6:35 Understanding Military Capability-Gap Based Research - David Zamora, US Army Institute of Surgical Research (USAISR)

— 6:50 Developing Return to Duty Solutions for the Warfighter to Preserve and Treat Visual Dysfunction after Combat Injuries - Arthi Amin, U.S. Medical Research and Materiel Command / Clinical and Rehabilitative Medicine Research Program (CRMRP)

— 7:05 Product Development Considerations for Ocular Injury Solutions - Leigh Alexander, US Army Medical Materiel Agency (USAMMA)

— 7:20 How to Seek DoD Vision Research Funding - Quntian Wang, Congressionally Directed Medical Research Programs (CDMRP)

The Tie2 pathway is a key regulator of endothelial cell function. Under normal conditions Tie2, a transmembrane receptor found in endothelial cells in the retinal vasculature and in Schlemm’s canal, is maintained in an active state by the angiopoietin-1 ligand. In pathologic states Tie2 activity is decreased by angiopoietin-2 and vascular endothelial protein tyrosine phosphatase (VE-PTP), resulting in increased vascular permeability, neovascularization, and increased IOP. Integrin α5β1, which is upregulated in activated endothelial cells, binds Tie2 maintaining an extra-junctional location; inhibition of α5β1 allows Tie2 to relocate to cell junctions facilitating its phosphorylation, even by the weak agonist angiopoietin-2. Recently genetic studies have implicated Tie2 suppression in glaucoma and preclinical data have shown that Tie2 activation modulates intraocular pressure (IOP). Multiple therapeutic approaches to maintaining Tie2 activation are under investigation to treat retinal vascular diseases and glaucoma. In this symposium the biology of the Tie2 pathway, results of preclinical and clinical studies demonstrating the beneficial effects of Tie2 activation will be reviewed, and innovative new approaches targeting Tie2 in retinal vascular diseases and glaucoma will be discussed.

**Moderators: Janey L. Wiggs and Peter A. Campochiaro**

— 6:15 The biology of the Tie2 pathway and its role in retinal vascular disease - Peter A. Campochiaro, Wilmer Eye Institute, Johns Hopkins University

— 6:33 Results of clinical trials testing the effects of Tie2 activation in neovascular AMD - Arshad M. Khanani, Sierra Eye Associates

— 6:51 Genetic studies implicating Tie2 suppression in glaucoma - Janey Wiggs, Mass Eye & Ear Infirmary

— 7:09 The role of Tie2 signaling in aqueous outflow and control of IOP; implications for new glaucoma treatments - Kevin Peters, Aerpio Pharmaceuticals