

Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO)

The annual meeting of ARVO (Association for Research in Vision and Ophthalmology) was held on May 5-9, 2013 in Seattle, Washington, there were more than 12,000 attendees. The UC San Diego Department of Ophthalmology had its most visible presence yet with over 66 presentations and posters from our faculty, residents and fellows. This was among the highest of any department in the world.



The UC San Diego Department of Ophthalmology and the Shiley Eye Center successfully hosted their first ARVO Networking Event on May 4, 2013 at the Edgewater Hotel in Seattle, Washington. Residents, fellows, faculty and alumni joined in this inaugural opportunity to connect with new and past colleagues from around the world. Professor Pamela A. Sample, Ph.D., who had retired from the department in 2011 after 25 years of glaucoma research specializing in visual function, was honored. More than 80 individuals attended. A listing of department abstracts are below.

Pam A. Sample, Ph.D.



Parag A. Gokhale, M.D. (class of 2000)
& family at the 2013 ARVO Networking Event



Naira Khachatryan, Ph.D. & Akram Belghith, Ph.D.
at the 2013 ARVO Networking Event

Annual Research Day

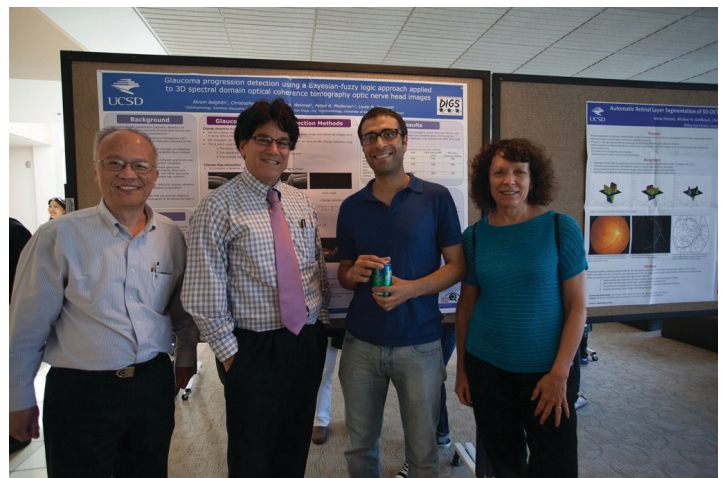
On May 17, 2013, the Department held a Research Day and “ARVO Wrap Up” in the Shiley Eye Center Conference Room. It provided an opportunity for medical students, residents, fellows, staff and faculty to hear and the hear and view the outstanding research that has been conducted in the Department during 2012-13. It also provided an opportunity to engage the scientists in discussion about their projects.



Jeffrey L. Goldberg, M.D. & Robert N. Weinreb, M.D.



Isaac Ezon, M.D., Payam Amini, M.D.,
Cheryl Arcinue, M.D., William Freeman, M.D.,
& Natalia Camacho Espinosa, Ph.D.



John Liu, M.D., Robert N. Weinreb, M.D.,
Akram Belghith, Ph.D., & Linda, Zangwill, Ph.D.

Glaucoma

Syril Dorairaj, Jonathan D. Tung, Mona Moshtaghi, John H. Liu, Robert N. Weinreb

Quantitative Measurement of Sleep Body Position Using a Mobile Device and its Application to the Study of Glaucoma Asymmetry.

John H. Liu, Robert N. Weinreb, Alan R. Hargens

An Estimate of Intracranial Force on the Optic Nerve Head in Healthy Individuals.

Dongwook Lee, Keun-Young Kim, Won-Kyu Ju

Coenzyme Q10 Ameliorates Oxidative Stress and Preserves Mitochondrial Transcription Factor A in Ischemic Retinal Injury.

Myoung Sup Sim, Dongwook Lee, Keun-Young Kim, Robert N. Weinreb, Won-Kyu Ju

Effect of Coenzyme Q10 on Oxidative Stress and Mitochondrial DNA Alteration in a Mouse Model of Glaucoma ARVO 2013 Annual Meeting Abstracts by Scientific Section/Group – Glaucoma.

James D. Lindsey, Karen Xuandao Duong-Polk, Dustin Hammond, Christopher K. Leung, Robert N. Weinreb

Caloric Restriction Protects Against Loss of RGC Differentiation Following Optic Nerve Injury.

Alex S. Huang, Karen Xuandao Duong-Polk, Christopher Heichel, Felipe A. Medeiros, James D. Lindsey, Robert N. Weinreb

Characterization of Primary Open Angle Glaucomatous Sclera.

Atsuya Miki, Linda M. Zangwill, Sonia Jain, Feng He, Naira Khachatryan, Naama Hammel, Jeffrey M. Liebmann, Christopher A. Girkin, Felipe A. Medeiros, Robert N. Weinreb

Rates of Retinal Nerve Fiber Layer Thinning in Glaucoma Suspect Eyes.

Daniel Meira-Freitas, Renato Lisboa, Andrew J. Tatham, Linda M. Zangwill, Robert N. Weinreb, Christopher A. Girkin, Jeffrey M. Liebmann, Tammy T. Kuang, Christopher Bowd, Felipe A. Medeiros
The Combined Structure and Function Index as a Predictor of Glaucoma Development.

Tae-Woo Kim, Eun Ji Lee, Robert N. Weinreb

Lamina Cribrosa Reversal after Trabeculectomy: Long-Term Follow-Up Result.

Amir Marvasti, Renato Lisboa, Linda M. Zangwill, Robert N. Weinreb, Felipe A. Medeiros
Diagnostic Innovations in Glaucoma Study (DIGS): Relationship between Disease Severity and Reproducibility of Estimated Number of Retinal Ganglion Cells in Glaucoma.

Tammy Tung-Mei Kuang, Renato Lisboa, Andrew J. Tatham, Linda M. Zangwill, Robert N. Weinreb, Jeffrey M. Liebmann, Christopher A. Girkin, Naira Khachatryan, Naama Hammel, Felipe A. Medeiros
Continuous Likelihood Ratios for Glaucoma Diagnosis Using the Combined Index of Structure and Function.

Louis R. Pasquale, Stephanie Loomis, Brian Yaspan, Jae H. Kang, Robert N. Weinreb, Julia E. Richards, Michael A. Hauser, Jonathan L. Haines, Janey L. Wiggs
Estrogen Pathway Polymorphisms in Relation to Primary Open Angle Glaucoma: A Gender-Specific Analysis from Patients in the United States.

Mijin Kim, Tae-Woo Kim, Robert N. Weinreb, Eun Ji Lee, Je Hyun Seo, Ki Ho Park, Dong Myung Kim
Relation of Spontaneous Retinal Venous Pulsation and Disc Hemorrhage in Open Angle Glaucoma.

Sarwat Salim, Jim Wan, Haiming Du
Comparison of Surgical Outcomes of the Ex-PRESS Glaucoma Filtration Device with Mitomycin C in Phakic and Pseudophakic Eyes.

Akram Belghith, Christopher Bowd, Robert N. Weinreb, Andrew J. Tatham, Atsuya Miki, Felipe A. Medeiros, Linda M. Zangwill
Glaucoma Progression Detection Using a Bayesian-Fuzzy Logic Approach Applied to 3D Spectral Domain Optical Coherence Tomography Optic Nerve Head Images.

Terry Gaasterland, Amy N. Dubinsky, Albert R. La Spada, Kaweh Mansouri, Karl H. Willert, Douglas E. Gaasterland, Michael A. Hauser, Louis R. Pasquale, Janey L. Wiggs, Robert N. Weinreb
Molecular Mechanisms in Primary Glaucoma: POAG-Associated Variant Disrupts MicroRNA Regulation of CDKN2B Expression.

Naama Hammel, Linda M. Zangwill, Atsuya Miki, Sonia Jain, Feng He, Naira Khachatryan, Jeffrey M. Liebmann, Christopher A. Girkin, Felipe A. Medeiros, Robert N. Weinreb
Detecting Glaucomatous Structural Changes in Glaucoma Suspect Eyes Using a Cohort of Stable Glaucoma Patients.

Siamak Yousefi, Akram Belghith, Michael H. Goldbaum, Linda M. Zangwill, Felipe A. Medeiros, Robert N. Weinreb, Renato Lisboa, Christopher Bowd
Quadratic Bayesian Pattern Detection for Detecting Glaucomatous Change in Follow-up SD-OCT RNFL Thickness Measurements.

Michael H. Goldbaum, Siamak Yousefi, Akram Belghith, Linda M. Zangwill, Felipe A. Medeiros, Robert N. Weinreb, Daniel Meira-Freitas, Nima Hatami, Christopher Bowd
A Tree Classification Method for Identifying Normal Eyes, Non-Progressing Glaucoma Eyes, and Progressing Glaucoma Eyes from Spectral Domain OCT RNFL Thickness Measurements.

Kaweh Mansouri, Robert N. Weinreb, Rene Goedkoop, Mona Moshtaghi, Syril Dorairaj, Ali Tafreshi, John H. Liu
Short Duration Intraocular Pressure Patterns Detected by a Contact Lens Sensor for 24-Hour Recording.

Andrew J. Tatham, Robert N. Weinreb, Linda M. Zangwill, Jeffrey M. Liebmann, Christopher A. Girkin, Felipe A. Medeiros

The Relationship between Cup/Disc Ratio and Estimated Number of Retinal Ganglion Cells.

Cornea and Cataract

Michelle Oboite, S. Stinnett, A.N. Carlson, N. A. Afshari

Insurance, Race, Gender and how they relate to Visual Acuity at the Time of Cataract Surgery.

Ladan Espandar, Tomas Blanco, Rose Mathew, Natalie A. Afshari, Bruce Bunnell, Daniel R. Saban

Human Adipose-Derived Stem Cells Promote Wound Healing of Corneal Epithelial Cells in Vitro.

Karen Alvarez-Delfin, Noelia J. Kunzevitzky, Alejandra D. Weisman, Richard M. Merkhofer, Jeffrey L. Goldberg

A Cell Therapy Approach to Address Corneal Endothelial Dysfunction.

Noelia J. Kunzevitzky, Karen Alvarez-Delfin, Richard M. Merkhofer, Alejandra D. Weisman, Jeffrey L. Goldberg

The Transparency Transcriptome: Gene Expression Profile of Human Corneal Endothelial Cells.

Jessica E. Weinstein, Matthew J. Weiss, Jeffrey L. Goldberg

An Animal Model for Epithelial Downgrowth.

Maria Eugenia Vola Ravina, Renato Lisboa, Patricia Schimchak, Kody J. Kishi, Natalie A. Afshari, David J. Schanzlin

Comparison of the Ocular Response Analyzer and the Belin-Ambrósio Ectasia Display for Detecting Eyes at High Risk of Developing Ectasia after Refractive Surgery.

Kareem Moussa, John Petrowski, Natalie A. Afshari

The Effect of the Presence of Preoperative Silicone Oil, Absence of Prior Corneal Surgery, and Postoperative Scleral Contact Lens Use on Boston Keratoprosthesis Outcomes.

Keith H. Baratz, Ross A. Aleff, Yi-Ju Li, Malinda L. Butz, Simon G. Gregory, Gordon K. Klintworth, W. Edward Highsmith, Natalie A. Afshari, Eric D. Wieben

A Family-Based Investigation of the Role of TCF Trinucleotide Repeat Expansion in Fuchs Endothelial Corneal Dystrophy (FECD).

Yi-Ju Li, Mollie A. Minear, Jacqueline Rimmler, Elmer Balajonda, Michael A. Hauser, R Rand Allingham, Gordon K. Klintworth, Simon G. Gregory, Natalie A. Afshari

An Investigation of Mitochondrial Haplogroups in Fuchs Endothelial Corneal Dystrophy.

Retina

Giulio Barteselli, Su-Na Lee, Igor Kozak, Jay Chhablani, Sharif El-Emam, William Freeman

Navigated Laser Photocoagulation to Reduce Frequency of Bevacizumab Injections (ivB) for Diabetic Macular Edema: 1-Year Results.

Sharif Y. El Emam, Giulio Barteselli, Jay Chhablani, Su-Na Lee, Igor Kozak, Lingyun Cheng, William Freeman

Choroidal Thickness Change Following Intravitreal Bevacizumab Therapy for Wet Age-related Macular Degeneration: Six Months Results.

Igor Kozak, Sharif El-Emam, Lingyun Cheng, Dirk-Uwe G. Bartsch, Jay Chhablani, William Freeman, Nicola G. Ghazi2, J Fernando Arevalo

Fluorescein Angiography versus Superimposed OCT-guided Macular Laser Photocoagulation.

Cheryl A. Arcinue, Feiyan Ma, Giulio Barteselli, Su-Na Lee, Sharif El-Emam, Aubrey L. Doede, Maria Laura Gomez, William Freeman

Aflibercept Rescue of Bevacizumab-or Ranibizumab-Resistant Choroidal Neovascularization in Age-Related Macular Degeneration.

Anatomy/Pathology

Su-Na Lee, Giulio Barteselli, Sharif El-Emam, Huiyuan Hou, Dirk-Uwe G. Bartsch, Lingyun Cheng, William Freeman

Manual Segmentation of Choroidal Volume in Emmetropic and High Myopic Eyes.

Biochemistry/Molecular Biology

Melina I. Morkin, Ephraim F. Trakhtenberg, Yan Wang, Stephanie Fernandez, Gregory M. Mlacker, Jeffrey L. Goldberg

Regulation of Set- β 's subcellular localization and posttranslational modifications affect axon growth and regeneration.

Astra Dinculescu, Seok-Hong Min, Wen-Tao Deng, Jie Li, Renee C. Ryals, Rachel M. Stupay, Ping Zhu, Bhubanananda Sahu, Radha Ayyagari, William W. Hauswirth

CTRP5 Over-Expression in RPE Cells Leads to Loss of RPE Cell Adhesion and Retinal Degeneration in Wild-type Mice.

Clinical/Epidemiology

Michelle Oboite, Sandra Stinnett, Alan N. Carlson, Natalie A. Afshari

Insurance, Race, Gender and How They Relate to Visual Acuity at the Time of Cataract Surgery.

Linda M. Zangwill, Naira Khachatryan, Sonia Jain, Feng He, Felipe A. Medeiros, Christopher Bowd, Renato Lisboa, Robert N. Weinreb, Jeffrey M. Liebmann, Christopher A. Girkin

Glaucomatous Progression in the African Descent and Glaucoma Evaluation Study (ADAGES).

Naira Khachatryan, Atsuya Miki, Sonia Jain, Feng He, Naama Hammel, Felipe A. Medeiros, Robert N. Weinreb, Jeffrey M. Liebmann, Christopher A. Girkin, Linda M. Zangwill

The African Decent and Glaucoma Evaluation Study (ADAGES): Predictors of Glaucoma Progression in Glaucoma Suspects.

Renato Lisboa, Yeoun Sook Chun, Linda M. Zangwill, Robert N. Weinreb, Peter Rosen, Jeffrey M. Liebmann, Christopher A. Girkin, Felipe A. Medeiros
DIGS and ADAGES: Relationship between Rates of Binocular Visual Field Loss and Vision-Related Quality of Life in Glaucoma.

Genetics

Bhubanananda Sahu, Venkata R. Chavali, John Suk, Rachel Poleman, Akhila Alapati, Bruno Maranhao, Monica M. Jablonski, Dirk-Uwe G. Bartsch, Radha Ayyagari
A Knock-in Mouse Model for Recessive RP-Foveoschisis-Optic Disc Drusen and Nanophthalmos Syndrome Due to a Mutation in the Mfrp Gene.

Yang Sun, Akhilesh Kumar, Michael Conwell, Jingyun Wang, Robert N. Weinreb, Na Luo
Inositol 5-Phosphatases in Primary Cilia Formation in Lowe Syndrome.

John Suk, Akhila Alapati, Kerry Goetz, Santa J. Tumminia, Radha Ayyagari
Molecular Diagnostic Testing by eyeGENE®: Analysis of Patients with Hereditary Maculopathy and/or Cone Rod Dystrophy.

Jacque L. Duncan, Pooja Biswas, Igor Kozak, Mili Navani, Rafael C. Caruso, John R. Heckenlively, Austin Roorda, Radha Ayyagari
Exome Analysis Identified Novel Mutations in the FAM161A Gene in a Family with Recessive Retinal Degeneration.

Pooja Biswas, Bruno Maranhao, Pauline Lee, John Suk, Mili Navani, Shahid Y. Khan, Nadeem H. Butt, Sheikh Riazuddin, S. Amer Riazuddin, Radha Ayyagari
Identification of Causative Mutations in Consanguineous Pedigrees from Pakistan with Recessive Retinal Degeneration by Whole Exome Analysis.

Bruno Maranhao, Pooja Biswas, Gabriel A. Silva, John R. Heckenlively, S. Amer Riazuddin, Pauline Lee, Radha Ayyagari
A Whole Exome Variant Filtering Software for Identification of Disease Causing Variants.

Clement K. Chan, David Sarraf, Prema Abraham, Duy H. Nguyen, Steven G. Lin, Maziar Lalezary, Kang Zhang
Genotype Analysis for Single Nucleotide Polymorphisms Profile of Eyes with Vascularized Pigment Epithelial Detachment due to AMD.

Immunology/Microbiology

James T. Rosenbaum, Dongseok Choi, Christina A. Harrington, Gerald J. Harris, Craig N. Czyz, Valerie A. White, Eric A. Steele, Bobby S. Korn, David J. Wilson, Stephen R. Planck
Identifying and Classifying Nonspecific Orbital Inflammation (NSOI) by Gene Expression Array.

Lens

Jun Kong, Na Yang, Xuedong Li, Yuanyuan Lu, Jinsong Zhang
The Study of Surface Properties of Intraocular Lens by Nanometric Analysis.

Nanotechnology and Regenerative Medicine Group

Karl E. Kador, Enrique Salero, Kristina R. Russano, Lung W. Lau, Jeffrey L. Goldberg
Tissue Engineered Model of the Outer Neural Retina and Retinal Pigment Epithelium.

Nanotechnology

Yan Wang, Akintomide Aparo, Murray Blackmore, Dale P. Brown, Michelle E. LeBlanc, Alyson E. Trillo, Jeffrey L. Goldberg
Regulation of Krüppel-like Transcription Factor (KLF's) Family Members Promotes Potent Axon Regeneration in the Adult Rat Optic Nerve.

Physiology/Pharmacology

Kaihui Nan, Feiyan Ma, Huiyuan Hou, William R. Freeman, Michael J. Sailor, Lingyun Cheng
PLGA Capsulated Porous Silicon Particles for Sustained Intravitreal Delivery of Daunorubicin.

Lingyun Cheng, Huiyuan Hou, Alejandra Nieto, Gordon Miskelly, Dirk-Uwe G. Bartsch, William Freeman, Michael J. Sailor
Correlation between Release of Rapamycin from Porous Silicon (pSi) and the Color Shifting of pSi Monitored by a Digital Camera: A Prototype of Non-Invasive Remote Monitoring System for Intravitreal Drug Release.

Alejandra Nieto, Huiyuan Hou, Michael J. Sailor, William Freeman, Lingyun Cheng
Porous Silicon Microparticle Formulation as an Intravitreal Delivery System for Rapamycin.

Duy H. Nguyen, Hongjun Du, Matthew Bedell, Seanna Grob, Jing Luo, John L. Quach, Peter Shaw, Stephanie Cherqui, Kang Zhang
AAV8 Mediated Gene Therapy for Corneal Cystinosis.

Feiyan Ma, Su-Na Lee, Huiyuan Hou, James Beadle, William R. Freeman, Karl Hostetler, Lingyun Cheng
Intravitreal Long-Lasting Micelle Formulation of Hexadecyloxypropyl-Cidofovir (HDP-CDV) for Cytomegalovirus Retinitis.

Huiyuan Hou, Alejandra Nieto, Feiyan Ma, Su-Na Lee, Kaihui Nan, William R. Freeman, Michael J. Sailor, Lingyun Cheng
Tunable Sustained Intravitreal Drug Delivery System for Daunorubicin Using Oxidized Porous Silicon.

Lin Xie, Lanping Sung

Specific Expression of Erythrocyte Tropomodulin in the Retina of E-Tmod+/lacZ and E-Tmod-/-Mice.

Retinal Cell Biology

Szu-Yu Chen, M.A. Mahabole, E.L. Horesh, S. T. Wester, J.L. Goldberg

Isolation and Characterization of Stem Cells from Human Orbital Adipose Tissues.

Daniel L. Chao, Enrique Salero, Yan Wang, Claude-Henry Volmar, Jeffrey L. Goldberg

Elucidating Molecular Mechanisms of Blood Retina Barrier Permeability.

Martin-Paul G. Agbaga, Blake Hopiavuori, Feng Li, Joel McRae, Richard S. Brush, Nawajes A.

Mandal, Lea D. Marchette, Michael H. Elliott, Radha Ayyagari, Robert E. Anderson

Conditional Depletion of Retinal VLC-PUFAs Causes Retinal Dysfunction.

BO QU, Jonathan Hertz, Roshni D. Patel, Yan Wang, Jeffrey L. Goldberg

Retinal Ganglion Cell Transplantation after Optic Nerve Injury.

Visual Neuroscience

Maureen E. Estevez, Lauren E. Quattrochi, Onkar S. Dhande, Inkyu Kim, Timothy Firman, Rana

Eldanaf, Andrew D. Huberman, David M. Berson

Form and Function of the Three ON-Type Direction-Selective Retinal Ganglion Cells in the Hoxd10 Mouse.

Visual Psychophysics/Physiological Optics

Dirk-Uwe G. Bartsch, Cheryl Arcinue, Feiyan Ma, Lingyun Cheng, William Freeman

Reproducibility of the Rtx1 Adaptive Optics Retinal Camera.