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Sacramento, California
October 3, 2015
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Crowne Plaza Hotel
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November 15, 2015
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American Academy of Ophthalmology
Las Vegas, Nevada
The UC Davis Eye Center Honor Roll, which includes our lifetime and annual donors, will be
featured in our Fall/Winter issues here forth.
Thank you for your support!
For more information on supporting the Eye Center, please contact Holland Adams at 916-
734-6435 or hradams@ucdavis.edu

UC Davis Eye Center
4860 Y Street, Suite 2400
Sacramento, CA 95817

Web: www.ucdmc.ucdavis.edu/eyecenter | Facebook: UC Davis Eye Center
Bringing Diversity in Science Together

One of the most remarkable aspects of working in an institution like UC Davis is the array of scientific talent that is collocated on our campuses. In the traditional university setting, investigators in different fields are often “siloed” in their areas of interest, having minimal crosstalk with other investigators. Here at UCD, the Eye Center faculty has been proactive in seeking out talent in areas traditionally outside of vision science. This has had the effect of revitalizing our approach to challenges in vision research.

Engineering, bioengineering, veterinary medicine, physiology, biochemistry, genetics, materials science, computer sciences, are but a few of the areas outside of ophthalmology that have become foci of collaboration, bringing novel approaches to solving the problems of eye disease. Veterinary ophthalmology is a particularly good example of an area that provides great opportunities to study human disease and its management through animal models. Yet another example is the EyePod, featured in this issue – a collaborative effort that brings together Vision Scientist with diverse talent.

The list of publications from 2014 in the current issue of enVISION reflects the amazing diversity of contributions to vision science at UCD.

With the growth of vision science at UC Davis, this type of creative cross-fertilization will undoubtedly increase, sustaining and augmenting the vitality and creativity of the investigators at our institution. The future for us and for our patients is a bright one.

Sincerely,

Mark J. Mannis, MD, FACS
Professor and Chair
Department of Ophthalmology & Vision Science
UC Davis Eye Center
Faculty Honors and Awards

Mark Goldman, Ph.D.
Appointed Howard Hughes Medical Institute Professor

Mark J. Mannis, M.D.
Cornea Society Castroviejo Medal Recipient

Mark Mannis, Eye Center Chair, receives the 2014 Castroviejo Medal

Mark J. Mannis, MD, FACS was the recipient of the 2014 Castroviejo Medal. This award, established in 1975 and named after the father of modern corneal transplant surgery, is awarded by the Cornea Society in the United States. The medal recognizes outstanding lifetime achievement and contributions to the field of corneal surgery and external disease. Dr. Mannis is the most recent recipient of this award for his leadership and contributions to his field.

Christopher J. Murphy, D.V.M, Ph.D.
OTSS Career Achievement Award

Christopher J. Murphy has been named recipient of the 2015 Career Achievement Award in Ocular Toxicology from the OTSS (Ocular Toxicology Specialty Section of the Society of Toxicology). This prestigious award is given for contributions to the field of ocular toxicology and for the depth and breadth of scientific contributions in the field. Dr. Murphy is recognized for his leadership in the field of ocular toxicology, mentorship of young scientists in the field, and influence on key regulatory and safety decisions. The award attests to his leadership and service to the discipline.

Mark J. Mannis, M.D.
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Glenn Yiu, M.D., Ph.D.
2014 Evangelos S. Gragoudas Award

2014 American Academy of Ophthalmology Best Poster Award
Biomedical science in the 21st century is widely understood to have entered the translational era: that is, a time of translating the advances in scientific understanding of events at the molecular and cellular levels into effective therapeutic strategies for treating disease. Many of the amazing tools that have been developed for laboratory investigations are not adaptable to studies in living organisms. For example, in the laboratory, we can induce a stem cell to differentiate into a particular adult cell type, tantalizing us with the dream of functional tissue regeneration. This is not so straightforward in the living organism.

In the eye, retinal ganglion cells, which transmit all visual information gathered by the photoreceptors of the eye along their axons to the brain, are the cells that are damaged in glaucoma, optic neuropathies and other blinding diseases. Replacement of these damaged cells with stem cells would be an appropriate therapy. However, science generally lacks the ability to observe the integration of a transplanted stem cell at its proper location in the target in the living organism, to follow the time course of its structural differentiation, and then to determine if the cell is functioning properly, information that would be necessary in order for us to replace diseased cells. In fact, many reasonable treatment strategies suffer from our inability to measure effectiveness of the treatment at the cellular level. The ability to do so would vastly improve our ability to monitor how gene therapy, drug treatment, dietary change, and manipulation of the immune system to name but a few, affect treatment of diseased tissues.
Particularly impressive performance is achieved by the Adaptive Optics SLO, which achieves sub-micrometer resolution imaging: this exquisite capability is well illustrated by EyePod images of microglia, the resident immune cells of the central nervous system (figure 3).

Supporting therapeutic initiatives.

Fluorescence images of a single retinal ganglion cell expressing a fluorescent protein in a living mouse taken over 8 months. The leftmost image shows a wide-field (50 degrees visual angle) view centered on the optic nerve head; bright lines are axons of cells whose cell bodies lie outside the viewing field. Magnified images of the cell in the red box reveal its dendrites and axons are shown in the three other panels; the images were colorized. The scale bar represents 100 μm, about twice the thickness of a human hair. (The mouse was provided by Nadean Brown, associate professor of Cell Biology & Human Anatomy, who investigates ganglion cell development.)

Having achieved its goal of long-term, single-cell resolution imaging, the EyePod team is now intensely engaged in applying its technology to disease models and therapeutic initiatives. EyePod data have contributed in the past 6 months to a number of NIH and California Institute of Regenerative Medicine grant applications, including those by Anna La Torre, PhD (Asst Professor of Cell Biology; ESC-derived retinal ganglion cell transplantation therapy), Marie Burns, PhD (Prof. of Ophthalmology & Neuroscience; role of microglia in degenerative eye disease), Kit Lam, MD, PhD (Prof. & Chair of Molecular Medicine; nanoparticle therapeutics in an ocular model of glioblastoma), Jan Nolta PhD (Prof. of Hematology & Oncology, Director, Stem Cell Program and Institute for Regenerative Cures; long-term survival and function of intracocularly transplanted neuronal stem cells), and a steadily increasing number of research papers. Importantly, these efforts are not directed solely at eye disease and therapy, but rather more broadly at any research that uses the eye as model system for the study of central nervous system diseases.

Investments in Science and Engineering (RISE) program (http://research.ucdavis.edu/research/gc/rise/eye-pod/). The team, headed by Edward Pugh, includes Ophthalmology faculty members Robert Zawadzki (who serves as the EyePod managing director), Marie Burns and John Werner, as well as faculty from a number of other departments. The EyePod incorporates a suite of state-of-the-art imaging technologies, including a custom widefield optical coherence tomography (OCT) and custom multichannel confocal scanning laser ophthalmoscopy (SLO), all of which provide cellular-level resolution imaging (figures 1, 2).

EyePod imaging

The EyePod is a small animal ocular imaging facility whose express goals are to “achieve long-term, single-cell resolution imaging of cells in the retina, and support UCD scientists who investigate cellular function, disease and therapy with the eye in obtaining data for grant applications or primary research papers.” The EyePod was constructed with an $860,000 grant to a team of UC Davis investigators by the highly competitive UC Davis Research Investments in Science and Engineering (RISE) program (http://research.ucdavis.edu/research/gc/rise/eye-pod/). The team, headed by Edward Pugh, includes Ophthalmology faculty members Robert Zawadzki (who serves as the EyePod managing director), Marie Burns and John Werner, as well as faculty from a number of other departments. The EyePod incorporates a suite of state-of-the-art imaging technologies, including a custom widefield optical coherence tomography (OCT) and custom multichannel confocal scanning laser ophthalmoscopy (SLO), all of which provide cellular-level resolution imaging (figures 1, 2).

Fluorescence images of a single retinal ganglion cell expressing a fluorescent protein in a living mouse taken over 8 months. The leftmost image shows a wide-field (50 degrees visual angle) view centered on the optic nerve head; bright lines are axons of cells whose cell bodies lie outside the viewing field. Magnified images of the cell in the red box reveal its dendrites and axons are shown in the three other panels; the images were colorized. The scale bar represents 100 μm, about twice the thickness of a human hair. (The mouse was provided by Nadean Brown, associate professor of Cell Biology & Human Anatomy, who investigates ganglion cell development.)
On Wednesday, December 10th the UC Davis Eye Center honored a transformational gift from grateful patient Ernest E. Tschannen. Joining Mr. Tschannen in celebration was Chancellor Linda P.B. Katehi; (Vice Chancellor for Human Health Sciences and Dean) of the School of Medicine, Julie A. Freischlag, M.D.; Mark J. Mannis, M.D. Professor and Chair, UC Davis Eye Center; Michele C. Lim, M.D., Professor and Vice-Chair, UC Davis Eye Center, and members of the UC Davis Eye Center Advisory Council.

Please join us in thanking Mr. Tschannen for a wonderful gift that will propel the UC Davis Eye Center forward both now and in the future.
On Wednesday, December 10th the UC Davis Eye Center honored a transformational gift from grateful patient Ernest E. Tschannen. Joining Mr. Tschannen in celebration was Chancellor Linda P.B. Katehi; Vice Chancellor for Human Health Sciences and Dean of the School of Medicine, Julie A. Freischlag, M.D.; Mark J. Mannis, M.D., Professor and Chair, UC Davis Eye Center; Michele C. Lim, M.D.; Ernest E. Tschannen and Chancellor Linda P.B. Katehi.
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Photo 9: David Motes; Charlene Woodward and Cameron Blount

Photo 10: Event attendees

Photo 11: Mark J. Harris, MD; Ernest E. Tschannen and Michele C. Lim, MD
“Your gift will inspire Eye Center physicians and scientists to find innovative treatments for patients with disabling eye disease. I am honored to have you as a personal friend, and I admire your great generosity to an important cause.”

Mark Mannis, MD

“Your generosity is an example of how one person can ignite a research effort that will eventually benefit thousands of patients in the future.”

Michele Lim, MD
James D. Brandt, M.D., Professor of Ophthalmology and Director of the Glaucoma Service at the UC Davis Eye Center, was recently appointed Vice-Chair for International Programs and New Technologies. In this new role, Dr. Brandt will oversee the Center's ever-increasing international footprint. For example, the Eye Center and the UC Davis Health System have entered into a unique partnership with Orbis International, an organization dedicated to prevention and care of blinding eye disease in the developing world (see EnVision Fall/Winter 2014). The Eye Center has many other international programs as well - residents from UC Davis travel regularly to Mexico with Volunteer Clinical Faculty and to the Islamia Eye Hospital in Dhaka, Bangladesh.

Dr. Brandt has worked with Orbis and other international NGOs like the Himalayan Cataracts Project since the early 2000s, and he has recruited other members of the faculty to join him in engagement abroad. Eye Center faculty now travel regularly to Asia, Africa and South America to teach and provide ophthalmic care.

“Our role with Orbis and other NGOs is not to go and teach the doctors in other countries how to take care of common problems like cataract,” says Brandt. “The doctors with whom we work are extremely skilled surgeons; in their resource-starved countries, they perform low-tech, low-cost, high-volume, high-quality cataract surgery with outcomes similar to those in the developed world. Our role is to train the faculty surgeons abroad in new techniques for more uncommon disorders where new treatments are becoming available so that these techniques can be adopted by their trainees.”

Under the leadership of Julie Freischlag, Dean of the School of Medicine & Vice Chancellor for Health Sciences at UC Davis, the UC Davis Health System has plans to greatly expand and coordinate the global outreach of the Schools of Medicine, Nursing and Veterinary Medicine and programs in Public Health, Biomedical Engineering and Health Informatics. In his role as Vice-Chair for International Programs, Dr. Brandt will serve on a School of Medicine oversight committee and lend his and the Eye Center’s input as these Global Health initiatives gain momentum.

The joining of International Programs and New Technologies in Dr. Brandt’s new portfolio is a logical one. A proudly self-described ‘geek,’ Dr. Brandt has been involved in technology issues at the Health System for over two decades and sits on the Health System’s IT oversight committee. Part of the Orbis-UC Davis initiative is a technological one – the Eye Center will soon begin a telemedicine relationship with the Instituto Regional d’Oftalmologia in Trujillo, Peru with regularly scheduled joint teaching conferences and real-time surgical demonstrations.

Dr. Brandt is a graduate of Yale University and received his MD degree from Harvard Medical School. After a residency at the Doheny Eye Institute, University of Southern California, he trained in glaucoma at the Wills Eye Hospital in Philadelphia. Dr. Brandt is an active research collaborator both locally and nationally and served as a principal investigator of the Ocular Hypertension Treatment Trial, a $40 million NIH clinical trial. He serves on the Editorial Boards of Ophthalmology and The Journal of Glaucoma, holds leadership positions in both national and international glaucoma organizations and has given numerous named lectures and visiting professorships around the world.
Navigating the complicated maze of healthcare delivery in the United States is a challenging task for any provider in 2015. If one adds to this task delivering care in an institution with the additional missions of teaching and research, this prospect is even more daunting. The UC Davis Health System Practice Management Board was established to maximize efficient and high quality healthcare delivery to our patients and to handle the complex business issues that must be addressed to sustain the practice of medicine in an academic center. At the administrative helm of the Practice Management Board is James E. Goodnight, Jr. MD, PhD.

A native of San Antonio Texas, Dr. Goodnight is one of four children. His father was a general practitioner. In college at the University of Texas, Austin, Dr. Goodnight decided to pursue a career in medicine that took him to Baylor for medical school, the University of Utah for training in general surgery, and UCLA for surgical oncology. He came to UC Davis in 1980 when the School of Medicine was only 12 years old, recruited as a surgical oncologist by the chair of the Department of Surgery, William Blaisdell. While building a busy surgical practice in the community with special interest in breast cancer, GI cancer, and melanoma, he became the founding director of the UC Davis Cancer Center (1991) and in 1996 became chair of the Department of Surgery, succeeding Dr. Blaisdell.

Jim Goodnight has transformed his career several times, always bringing distinction and accomplishment to the task at hand. When he moved to Sacramento from UCLA, the transition was startling—from well-appointed offices in Westwood to an office in a trailer here in Sacramento. Yet, he points out that his career, spanning five deans at UC Davis, has far exceeded anything he could have expected, as he watched and participated in the growth of the Health System into a first-class academic medical center.

Taking the lead role in the Cancer Center in 1991 was an extraordinary experience in “change management”, as he pulled together diverse treatment modalities for cancer patients into a single organization providing a well-organized and comprehensive clinical delivery system. And while he never expected to become Chair of the Department of Surgery, during his tenure as chairperson, he more than tripled the size of the department and added both breadth and depth to the services provided.

The year 2008 brought yet another career transformation, as Dr. Goodnight changed directions from clinical practice to take on the challenge of leading the newly formed Practice Management Board. He saw this as an extraordinary opportunity to meet leaders in other fields at UCD and at other great institutions, and to learn what it takes to drive the business of medicine. He has watched the board grapple with difficult issues such as access to care and the creation of regional alliances and has seen very positive impact on the practice of medicine at UC Davis and our provision of care to the region.

Of the Eye Center, Dr. Goodnight notes that the Department of Ophthalmology has always been at the epicenter of activity in the Health System. He cites John Keltner, Chair Emeritus of the Eye Center, as a true citizen of the Health System, both having built a strong department and also having led the extremely effective Ambulatory Care Work Group for Several Years. Of the Eye Center, Dr. Goodnight comments, “The Eye Center is a strong organization with dedicated leadership and a record of service to the Health System.”

Outside his busy career, Dr. Goodnight is devoted to his wife, Carol and their three daughters and three grandchildren.

And, as for coming transformations, the next phase is not yet crystal clear, but Dr. Goodnight looks forward to more time for reading, traveling, and writing. But he notes of his remarkable career: “My life has been filled with wonderful serendipity.”
Employee of the Year Awards

Each December, UC Davis Eye Center faculty sponsor a holiday celebration to recognize the hard work and accomplishments for both School of Medicine and hospital staff. An important aspect of this celebration is the recognition of employees who had particularly successful years in furthering the mission and vision of the department. The recipients of this year’s award are:

- Jose Arcilla
  - Supervisor’s Choice Award
- Marian Vaitai
  - Eye Center Clinic
- Sharon Saefong
  - School of Medicine

Sharon Saefong
School of Medicine

Marian Vaitai
Eye Center Clinic

Jose Arcilla
Supervisor’s Choice Award
Gary D. Novack, PhD, joins the UC Davis Eye Center as a Visiting Professor in the Department of Pharmacology with a joint appointment in the Department of Ophthalmology & Vision Science. Dr. Novack is President of Pharmalogic Development, Inc., a company he founded in 1989 that operates as a consulting service to the pharmaceutical, biotechnical and medical device communities. As a volunteer, Dr. Novack also contributes to the University of California as the president of the UC Santa Cruz Alumni Association, as the president of the UC Santa Cruz Foundation, and has served as a UC Regent. He has also served as a director of the American Society of Clinical Pharmacology and Therapeutics, and a section chair for the American Society of Pharmacology and Experimental Therapeutics.

Edward N. Pugh, Jr., PhD is Professor in the Departments of Cell Biology & Human Anatomy, and of Physiology & Membrane Biology, and was recently given a secondary appointment in Ophthalmology. Funded continuously by the NIH over his career, he has authored over 100 scientific papers (overall H-impact factor of 50) on photoreceptor physiology and visual function. His work has received international recognition, including the Troland Award of the National Academy of Sciences, the Alcon Research Award, and the Proctor Medal of the Association for Research in Vision and Ophthalmology.

Pugh heads a team of investigators funded by UC Davis Research Investments in Science and Engineering (RISE) who have developed a state-of-the-art mouse in vivo ocular imaging facility (the “EyePod”). This imaging facility achieves single-cell resolution imaging. Ongoing research in the EyePod is focused on neuronal function, neurodegeneration, vascular physiology, inflammation, as well as assessing stem cell, viral mediated gene therapy and other therapeutic interventions in disease models.

Vivek Srinivasan, Ph.D., joins the UC Davis Eye Center as an Assistant Professor with a joint appointment in the Department of Biomedical Engineering. Dr. Srinivasan currently runs a diverse but integrated research program that develops and applies novel imaging techniques to understand neuronal and metabolic control of hemodynamics in the central nervous system. He has an extensive background in biomedical optics and photonics as well as neuroimaging, and has made contributions to retinal imaging technologies that are currently used clinically. He recently moved from the Martinos Center for Biomedical Imaging in the Radiology Department at Massachusetts General Hospital to the UC Davis Biomedical Engineering Department, where he is a member of the Biomedical Engineering and Neuroscience Graduate Groups. His laboratory has received funding from federal (NIH) and foundation (American Heart Association, Glaucoma Research Foundation) sources.

The UC Davis Eye Center is pleased to announce the addition of three new faculty.

The UC Davis Eye Center is honored to welcome Dr. Novack, Dr. Pugh and Dr. Srinivasan to our faculty.
We had a strong turnout this year at our American Academy of Ophthalmology Alumni, VCF and Friends Reception in Chicago. The event, held at the Fairmont Millennium Park Hotel on Sunday, October 19, 2014, was a great opportunity for alumni to come together and visit with faculty, staff, current residents and fellows.

Alumni Program Chair, Joseph T. Zeiter, MD, shared the impact that the UC Davis Eye Center Alumni Fund for Educational Excellence has had on our residency program this past year. The Fund covered the travel expenses for three residents to San Blas, Sinaloa Mexico, where care is provided for 450 patients; the remodel and upgrades of our resident training room; and support for our annual Alumni and Resident Day program.

Professor and Chair, Mark J. Mannis, MD made two announcements, one regarding a surgical training course that is being developed between the UC Davis Department of Ophthalmology & Vision Science and the School of Veterinary Medicine, and the other regarding the grand opening celebration of the state-of-the-art Lanie Albrecht Foundation Microsurgical Training Laboratory.

Thank you for your support and the enhanced experience you’ve provided for our resident and fellow training programs. We look forward to celebrating with you all in Las Vegas, Nevada in the Fall.
From the Collection at UC Davis

Dating from c1857, the Förster perimeter, designed by the physiologist Hermann Auber and Richard Förster of Breslau, dominated the field of perimetry for two decades and was used for over 100 years to examine the visual field. Aubert and Förster decided that it was important to keep the stimulus at a constant distance from the eye as it was placed in different parts of the visual field; their solution was a simple arc perimeter as seen here.

1833 issue of Von Ammon’s Zeitschrift für die Ophthalmologie was only the third regular “journal” dedicated to ophthalmology. First published in 1830, it represents a major turning point in the science of ophthalmology. Friedrich von Ammon (1796 – 1861) established Dresden as a major ophthalmic center and contributed broadly to both ophthalmology and plastic surgery during his lifetime.

Ophthalmic cautery device (c. 1940)
Cautery has been used in medicine since ancient times. This instrument is designed to provide heat cautery during ophthalmic surgery. The conical tip is heated over an alcohol lamp and then applied to the ocular surface to achieve hemostasis.

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JAMES B. AMES, PH.D.
DEPARTMENT OF CHEMISTRY
COLLEGE OF BIOLOGICAL SCIENCES


Lim S, Dizhoor AM, Ames JB. Structural diversity of neuronal calcium sensor proteins and insights for activation of retinal guanylyl cyclase by GCAP1. 2014. Frontiers in Molecular Neuroscience; 17, 7:19.


MELISSA BARNETT, OD.
DEPARTMENT OF OPHTHALMOLOGY AND VISION SCIENCE
SCHOOL OF MEDICINE


Barnett M. Insights on solution induced corneal staining (SICS) and preservative-associated transient hyperfluorescence (PATH). 2014. American Optometric Association Contact Lens and Cornea Section Newsletter; May.


Barnett M. Messer B. Putting scleral lenses front and center. 2014. Review of Cornea & Contact Lenses; May.

Barnett M. Corneal collagen cross-linking and photorefractive keratectomy. 2014. Ocular Surface Society of Optometry Newsletter; April.

Barnett M. Mystifying…Multifocal inter ocular lens (IOLs) Post-Lasik. 2014. American Optometric Association Contact Lens and Cornea Section Newsletter; April.

Barnett M. Tear osmolarity. 2014. American Optometric Association Contact Lens and Cornea Section Newsletter; February.

Barnett M. Scleral lenses for keratoconus. 2014. American Optometric Association Contact Lens and Cornea Section Newsletter; February.


Nadeau L. Brown, Ph.D., Department of Cell Biology & Human Anatomy
College of Biological Sciences and School of Medicine

Mari E. Burns, Ph.D., Department of Ophthalmology and Vision Science
School of Medicine
Department of Cell Biology and Human Anatomy
College of Biological Sciences


Jo Y. Ho, Ph.D., Department of Cell Biology and Human Anatomy
College of Biological Sciences
Department of Ophthalmology and Vision Science
School of Medicine
Gino Cortopassi, Ph.D., Department of Molecular and Cell Biology
School of Veterinary Medicine


Paul Fitzgerald, Ph.D., Department of Cell Biology and Human Anatomy
College of Biological Sciences
Department of Ophthalmology and Vision Science
School of Medicine


Jeffrey J. Caspar, M.D., Department of Ophthalmology and Vision Science
School of Medicine

Joy Jia Geng, Ph.D., Department of Psychology
School of Veterinary Medicine

Stankevich B, Geng JJ. Reward associations and spatial probabilities produce additive effects on attentional selection. 2014. Attention, Perception, and Psychophysiology; 76:2315-2325.


Mark S. Goldman, Ph.D., Department of Neurobiology, Physiology and Behavior
College of Biological Sciences
Department of Ophthalmology and Vision Science
School of Medicine

Leonard M. Heimeländ, Ph.D., Department of Ophthalmology & Vision Science
School of Medicine


Christopher J. Murphy, DVM, Ph.D. Department of Ophthalmology and Vision Science School of Medicine Department of Surgical and Radiological Sciences School of Veterinary Medicine


Gregg H. Recanzone, Ph.D.
DEPARTMENT OF NEUROBIOLOGY, PHYSIOLOGY AND BEHAVIOR
COLLEGE OF BIOLOGICAL SCIENCES


Christopher M. Reilly, MAS, DVM.
DEPARTMENT OF PATHOLOGY, MICROBIOLOGY AND IMMUNOLOGY
SCHOOL OF VETERINARY MEDICINE


Edward N. Pugh, Jr., Ph.D.
DEPARTMENT OF CELL BIOLOGY and HUMAN ANATOMY
COLLEGE OF BIOLOGICAL SCIENCES
DEPARTMENT OF PHYSIOLOGY and MEMBRANE BIOLOGY
COLLEGE OF BIOLOGICAL SCIENCES
DEPARTMENT OF OPHTHALMOLOGY and VISION SCIENCE
SCHOOL OF MEDICINE

LEADERSHIP

Mark J. Mannis, M.D., F.A.C.S.
Professor, Cornea, External Disease, Chair
Research Interests: Corneal transplant technology, eye & skin diseases, and artificial corneas

Michele C. Lim, M.D.
Professor, Glaucoma
Vice-Chair, Medical Director
Research Interests: Glaucoma patient compliance focusing on medication adherence

Esther S. Kim, M.D.
Professor, Comprehensive Ophthalmology Director
Optometric Services
Research Interests: Improvement of technology in cataract surgery

Lily Koo Lin, M.D.
Associate Professor, Oculoplastic Surgery
Research Interests: Improvement of aging eyelids and the relationship between the orbital globe and trauma

Ala Moshiri, M.D., Ph.D.
Assistant Professor, Vitreoretinal Surgery
Research Interests: Genetic Disease.

Susanna S. Park, M.D., Ph.D.
Professor, Vitreo-retinal Surgery
Research Interests: Age-related macular degeneration, proton beam treatments, and stem cell therapies

Linda J. Margules, M.D.
Professor, Vitreo-retinal Disease, Veterans Administration, Martinez
Research Interests: New treatments for age-related macular degeneration

Lawrence S. Morse, M.D., Ph.D.
Professor, Vitreo-retinal Surgery and Uveitis
Director, Retina Service
Research Interests: Treatments for diabetic retinopathy, age-related macular degeneration and retinal degeneration

Mary A. O’Hara, M.D., F.A.C.S., F.C. A .P.
Professor, Director, Pediatric Ophthalmology and Strabismus Service
Research Interests: Development of new technology in pediatric strabismus

Jennifer Li, M.D.
Assistant Professor, Cornea, External Disease and Refractive Surgery
Research Interests: Endothelial keratoplasty and keratoprosthesis surgery

Jennifer Li, M.D.
Assistant Professor, Cornea, External Disease and Refractive Surgery
Research Interests: Endothelial keratoplasty and keratoprosthesis surgery

Glenn C. Yiu, M.D., Ph.D.
Assistant Professor, Vitreo-retinal Surgery
Research Interests: Neuro-regeneration, retinal cell biology, ocular imaging
Marie E. Burns, Ph.D.
Professor, Retinal Physiology
Research Interests:
Photo transduction, photoreceptor adaptation, and protein movement

Mark S. Goldman, Ph.D.
Associate Professor, Neuroscience
Research Interests:
Computer models of eye movement

Andrew T. Ishida, Ph.D.
Professor, Neurobiology, Physiology, & Behavior
Research Interests:
Modulation of retinal ganglion cell excitability

Christopher J. Murphy, D.V.M., Ph.D.
Professor, Comparative Ophthalmology
Research Interests:
Bio-physical cueing and modulation of cell behaviors

Edward N. Pugh, Jr., Ph.D.
Professor, Cell Biology and Human Anatomy; Physiology and Membrane Biology; Ophthalmology
Research Interests: Retinal photoreceptors and color vision

Paul Fitzgerald, Ph.D.
Professor, Cell Biology and Human Anatomy
Director, Center for Visual Sciences
Research Interests: The role of intermediate filaments in the biology of the ocular lenses of the retina

Leonard Hjelmeland, Ph.D.
Professor, Molecular & Cellular Biology; Ophthalmology
Research Interests: Senescence of retinal pigment epithelium

Zeljka Smit-McBride, Ph.D.
Research Scientist
Vitreoretinal Research Lab
Research Interests: Genomics and epigenetics of aging and age-related eye diseases, age related macular degeneration and diabetic retinopathy

Gary D. Novack, Ph.D.
Visiting Professor of Pharmacology and Ophthalmology
Research Interests: Development of new therapeutics, Patient adherence and performance, Regulatory Affairs

Vivek J. Srinivasan, Ph.D.
Assistant Professor, Biomedical Engineering
Research Interests: Retinal and Optic Nerve Imaging, Blood Flow and Metabolism
VISION SCIENCES CONTINUED

John S. Werner, Ph.D.
Distinguished Professor,
Visual Psychophysics.
Research Interests: Color and spatial vision, normal aging and age-related disease, retinal and optic nerve imaging

Robert J. Zawadski, Ph.D.
Associate Researcher,
High Resolution Retinal Imaging
Research Interests: Retinal and optic nerve imaging techniques

Min Zhao, M.D., Ph.D.
Professor, Regenerative Cures
Research Interests: The role of endogenous electric fields to stimulate cell migration, corneal wound healing and regeneration of retinal degeneration

Charles E. Thirkill, Ph.D.
Adjunct Professor Emeritus,
Immunology & Biology
Research Interests: Ocular immunology, retinal and optic nerve imaging techniques

FELLows

J. Edie DeNiro, M.D.
Clinical Glaucoma Fellow

Mazen Y. Choulakian, M.D.
Clinical Cornea Fellow

Elad Moisseiev, M.D.
Clinical Retina Fellow

Senad Osmanovic, M.D.
Clinical Retina Fellow

Sumeer Thinda, M.D.
Clinical Retina Fellow

RESIDENTS

Annamieka Leary, M.D.
Third Year Resident

Shabnam Taylor, M.D.
Third Year Resident

Jeffrey Willis, M.D., Ph.D.
Third Year Resident

Peter Wu, M.D.
Third Year Resident

Nathaniel Gebhard, M.D.
Second Year Resident

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