MESSAGE FROM THE DIRECTOR

It has been an exciting year working with our faculty, hospital and university colleagues to grow our department to not only provide world-class care but help to define what is considered world-class care by providing the most advanced therapies, innovation and thoughtful clinical research. Our physician-scientists are making strides and are being recognized for expanding the understanding of ophthalmic disease to enhance and create new treatments. For the past 20 years, Dr. Jon Lass fostered a culture of excellence in clinical care, research productivity and innovation. I am proud to expand our potential to provide true leadership in ophthalmology – improving eye care for all. We strive each and every day to embody the mission statement of University Hospitals – To Heal. To Teach. To Discover. – with a focus on collaboration, community and cures.

Kind Regards,
Doug

University Hospitals Eye Institute at UH Case Medical Center and the Department of Ophthalmology & Visual Sciences at Case Western Reserve University School of Medicine focus on pioneering translational and clinical research and providing patients with leading-edge treatments and superior clinical outcomes. Through its affiliation with the School of Medicine and its partnership with basic science departments as part of the Case Visual Sciences Research Center, the institute has access to emerging technologies and medical research that enhance its clinical care. The institute has extended its vision of translational science and discovery to tackle public health issues via national collaborations and research. Its National Eye Institute-funded Cornea Preservation Time Study is currently the largest clinical trial in corneal disease.

The School of Medicine’s Case Visual Sciences Research Center is ranked third in funding in the nation by the National Eye Institute of the National Institutes of Health.

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The following are examples of pioneering clinical research projects that are breaking ground in the field of visual medicine:

- The Cornea Donor Study, funded by the NEI, has found that 10 years after a transplant, a cornea from a 71-year-old donor is likely to remain as healthy as a cornea from a donor half that age. The study, which is comparing graft survival rates from donors ages 12 to 65 and ages 66 to 75, involves 80 U.S. clinical sites. At UH Case Medical Center, the study is being led by Jonathan H. Lass, MD, past Chairman, Department of Ophthalmology & Visual Sciences, UH Case Medical Center and School of Medicine; past Director of the UH Eye Institute; current member of the Center for Anterior Segment Diseases & Surgery of the UH Eye Institute; and Charles I Thomas Professor, School of Medicine. Dr. Lass also chairs the Cornea Preservation Time Study, occurring at 41 U.S. clinical sites, which is exploring the viability of corneas preserved up to 14 days after donor death. Both studies strive to address the critical shortage of donated corneas by determining safe ways to expand the donor pool.

- The Rainbow Speculum makes examining infants’ eyes in the neonatal intensive care unit easier and more effective for physicians and more comfortable for patients.

- The device was created by Faruk H. Örge, MD, the William R. and Margaret E. Althans Chair in Pediatric Ophthalmology and Director, Center for Pediatric Ophthalmology & Adult Strabismus, UH Eye Institute and UH Rainbow Babies & Children’s Hospital; Associate Professor, Ophthalmology & Visual Sciences, School of Medicine; and Executive Editor of the KTEF Pediatric Ophthalmology & Strabismus Education Center – AAO ONE Network. The speculum, a hybrid of several different specula designs, gently separates the infant’s eyelids and holds them in place to allow for close examinations. Dr. Örge also created the Forge device for the treatment of glaucoma, which lowers intraocular pressure by bypassing a portion of the clogged trabecular meshwork and providing multiple outlets for fluid drainage.

- Research led by Akiko Maeda, MD, PhD, Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, has helped elucidate the role of chemokines in retinal degenerative diseases such as age-related macular degeneration and retinitis pigmentosa. Dr. Maeda’s work explores the biochemistry and molecular biology of the retina focusing on the retinoid metabolism. She is the 2015 recipient of the Pfizer Ophthalmics Carl Camras Translational Research Award, which is bestowed on a researcher age 45 or younger who has exhibited excellence in research through fundamental scientific discoveries, concepts and novel technologies.

- Cataract surgery for patients with Alzheimer’s disease slows dementia and improves quality of life, according to preliminary results from a five-year study led by Julie Belkin, MD, UH Eye Institute Center for Anterior Segment Diseases & Surgery; and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine. The Therapeutic Effects of Cataract Removal in Alzheimer’s Disease Study recruited 28 patients who underwent cataract surgery and 14 who did not. Patients who had the surgery reported clearer vision and were able to maintain or improve their cognitive abilities. Caregivers also reported feeling less stress because the surgery granted patients more mobility and independence. The study is ongoing; researchers eventually hope to recruit 210 patients.

- A new, simple but elegant instrument created by David Bardenstein, MD, Director, UH Eye Institute Center for Oculoplastics & Neuro-Ophthalmology; and Professor, Ophthalmology & Visual Sciences, School of Medicine, is poised to revolutionize the assessment of diplopia (double vision). The Bardenstein-Patfield diplopometer (BPD) is a handheld device consisting of a measuring arm (with a scale in degrees), a handle, an alignment portion that allows accurate reproducible alignment of the arm along the eight standard gaze axes, and a linear target. Moving the target from the straight-ahead position outward along the eight axes allows detection of the point where diplopia occurs and identification of the areas of single and double vision respectively, producing a quantitative representation of the patient’s functional vision.

The BPD is portable and quick with equal sensitivity. It can provide detailed quantitative information to experts and also assist non-eye-care providers in detecting diplopia and assessing disability. The device plays a key role in care for patients with thyroid eye disease, orbital fractures, orbit disease with restrictive myopathy and other conditions affecting millions of patients annually. The diplopometer is patented and licensed; production for general use is expected to begin in spring 2015.

Clinical findings impact patient care and shed new light on ocular disease

All National Institutes of Health (NIH) funding for basic and clinical research is awarded to the School of Medicine at Case Western Reserve University.
Acclaimed glaucoma researcher Carol Toris, PhD, has joined UH Case Medical Center and Case Western Reserve University as Vice Chair of Translational Research. Dr. Toris’ research focus is intraocular pressure and ocular fluid dynamics. Her appointment greatly expands the hospital’s potential to make meaningful discoveries and increase the understanding of glaucoma at the molecular, functional and clinical levels, leading to new treatments. Dr. Toris will be collaborating with Douglas J. Rhee, MD, Chair and Professor of Ophthalmology, Department of Ophthalmology & Visual Sciences, UH Case Medical Center and School of Medicine; Amy Zhang, MD, Glaucoma Service, UH Eye Institute, and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine; and Dr. Edward Burney.

Edward Burney, MD, FACS, Director, UH Eye Institute Center for Anterior Segment Diseases & Surgery, and Professor, Ophthalmology & Visual Sciences, School of Medicine, was recently awarded the Distinguished Alumnus Award by Ohio Dominican University, from which he graduated in 1974. For the past 26 years, Dr. Burney has served as Director of Ophthalmology for the Louis Stokes Cleveland VA Medical Center. Under his steadfast and visionary leadership, the ophthalmic department has grown into the third-largest VA ophthalmic department in the nation, featuring the new state-of-the-art Eye Clinic and more than 8,000 square feet of space devoted to patient care and research. In July 2014, Dr. Burney helped oversee the grand opening of the Cleveland VA 10,000-square-foot ambulatory surgery center, which will help accommodate the growing demand for ophthalmic surgeries.

University Hospitals is the official health care partner of the Cleveland Browns, providing a complete team of physician specialists to cover every aspect of the players’ health care needs. Rony Sayegh, MD, UH Eye Institute Center for Anterior Segment Diseases & Surgery; and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, has been named the team’s head ophthalmologist.

UH Case Medical Center’s ophthalmologists have been recognized for their leadership and potential to serve as vanguards in their specialty. The following physicians were selected to participate in the American Academy of Ophthalmology’s Leadership Development Program: Dr. Faruk H. Örge and Atif Collins, MD, Director, Ocular Aesthetics, UH Eye Institute Center for Oculoplastics & Neuro-Ophthalmology, and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine. The program identifies ophthalmologists with the potential to become leaders in ophthalmology societies, provides educational sessions to foster leadership skills, and facilitates the placement of program graduates into local and national leadership positions.

Pankaj Gupta, MD, Director of the Cornea and Refractive Surgery Center for UH Eye Institute Center for Anterior Segment Diseases & Surgery; and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, has been named Program Director of the Ophthalmology Residency Program; Manasvee Kapadia, MD, Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, will serve as Associate Program Director. The Ophthalmology Residency Program is one of the most prestigious in the country, accepting only six residents a year, for a total of 18 across the three-year program. Residents amass a broad range of clinical experiences, including training with the Eyesi Surgical simulator at the Louis Stokes Cleveland VA Medical Center, participating in community outreach programs such as Prevent Blindness Ohio vision screenings and attending the annual American Academy of Ophthalmology meeting or another major conference of their choice. Senior residents can complete a three-week elective rotation at the world-renowned L V Prasad Eye Institute in Hyderabad, India. These experiences, combined with strong didactics, ensure that each resident is well-qualified to enter practice or pursue a fellowship upon completion of the program.
UH Case Medical Center’s physicians, surgeons and scientists – all members of the faculty of Case Western Reserve University School of Medicine – are leaders in their respective fields, and their ongoing research programs are at the leading edge of medical progress. A strong emphasis on translational, or “bench-to-bedside,” research means that new and innovative treatments and technologies transfer more rapidly from the research laboratory to actual patient care.

**TOMORROW’S CURES TODAY.**

**Dr. Douglas Rhee** offers the broadest choice of surgical procedures and devices – including the Trabectome, iStent, canaloplasty, deep sclerectomy and endoscopic cyclophotocoagulation – along with traditional glaucoma surgeries to offer the greatest ability to personalize the surgical management of glaucoma. Furthermore, Dr. Rhee is an investigator for the Hydrus drainage device and Artemis sustained medication release device, and sits on scientific advisory boards for several device and drug manufacturers to help steer in the next generation of surgical and medical therapy for glaucoma.

**Dr. Pankaj Gupta** and Dr. Rony Sayegh are implanting the Boston Keratoprosthesis (KPro), the most widely used artificial cornea. Dr. Gupta also performs Descemet’s stripping endothelial keratoplasty (DSEK), and in July 2014, he performed UH Case Medical Center’s first Descemet’s membrane endothelial keratoplasty (DMEK). DMEK is the most anatomical repair possible, involving an ultrathin graft about 15 microns thick. This was only the third DMEK procedure to be performed in the Northeast Ohio region.

**Baseer Ahmad, MD**, ophthalmologist, Center for Retina and Macular Diseases & Surgery, UH Case Medical Center, and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, offers medical and surgical treatment of retinal pathologies. He is also working in collaboration with several basic science researchers regarding the effects of retina-related interventions on aqueous humor dynamics and on angiographic interpretation of diabetic retinopathy in animal models.

**A. Paula Grigorian, MD**, ophthalmologist, UH Rainbow Babies & Children’s Hospital, and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, specializes in pediatric ophthalmology and adult strabismus. She offers a wide range of procedures to re-establish the normal alignment of the eyes in order to improve binocular, 3-D and peripheral vision. Dr. Grigorian performs adjustable suture strabismus surgery, which increases the success rate in patients with complex strabismus and a history of prior surgeries. She also offers BOTOX injections for treatment of eye misalignments. Dr. Grigorian has a special interest in pediatric cataracts and pediatric ocuoplastic disorders, such as blocked tear ducts, dermoid cysts and congenital ptosis. Her research interests are focused on strabismus procedures, and she is part of the Pediatric Eye Disease Investigator Group. She directs medical student ophthalmic rotations and ophthalmic examination skills testing at the School of Medicine.

**Paul Park, PhD**, Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, with funding from the National Eye Institute, is investigating the link between cholesterol and pathologic processes in the retina and brain. Her research, funded by the National Eye Institute, National Institute of General Medical Sciences and Research to Prevent Blindness, suggests that new therapeutic approaches may be available for diseases of the eye, such as age-related macular degeneration and diabetic retinopathy, as well as those of the brain, such as Alzheimer’s disease.

**Irina Pikuleva, PhD**, Carl F. Asseff Professor of Ophthalmology, Jules and Doris Stein RPB Professor of Ophthalmology and Pharmacology, Department of Ophthalmology & Visual Sciences, School of Medicine, is investigating the link between cholesterol and pathologic processes in the retina and brain. Her research, funded by the National Eye Institute, National Institute of General Medical Sciences and Research to Prevent Blindness, suggests that new therapeutic approaches may be available for diseases of the eye, such as age-related macular degeneration and diabetic retinopathy, as well as those of the brain, such as Alzheimer’s disease.

**Thomas J.W. Stokkermans, OD, PhD, FFAAO**, Director, Optometric Services, UH Eye Institute Center for Anterior Segment Diseases & Surgery; and Assistant Professor, School of Medicine, is Chief Preceptor of Optometric Externship Programs for The Ohio State University, Western University of the Health Sciences and the Ophthalmic Medical Assisting Program at Cuyahoga Community College. He frequently lectures and has published on topics including ocular disease and contact lens care. Dr. Stokkermans directs the School of Medicine’s ophthalmology residency optics curriculum. For the past 16 years, he has been an investigator on 30 clinical trials for companies including Vistakon, Alcon, Cooper, B&L, Synergetics, Menicon, Second Sight (maker of the Argus II), and NIH-funded trials such as the Collaborative Longitudinal Evaluation of Keratoconus (CLEK) Study. Dr. Stokkermans is the official Cleveland Browns football team’s optometrist.

**Dr. Amy Zhang** performs a variety of surgical procedures using new technologies, including the Trabectome, iStent and the Ex-Press Shunt, as well as traditional filtering procedures. She is collaborating on a research project to study aqueous humor dynamics involved in the Trabectome procedure; she is also investigating the Artemis sustained medication release device. Dr. Zhang participates in medical student education and presents lectures on fundamental glaucoma concepts to ophthalmology residents.

**Beth Ann M. Benetz, MA, CRA, FOPS**, Professor, Ophthalmology & Visual Sciences, School of Medicine, directs activities for the Cornea Image Analysis Reading Center and the Retinal Disease Image Analysis Reading Center at Case Western Reserve and UH Eye Institute for federal- and industry-funded national and international multicenter clinical trials. She has published on corneal and retinal research in peer-reviewed journals as well as a chapter on specular microscopy in the textbook Cornea. She is editor-in-chief of the Journal of Ophthalmic Photography. She has served as a lecturer, workshop director and workshop instructor for the Ophthalmic Photographers’ Society, as well as chair of its Board of Certification. As chair, she was instrumental in the National Commission for Certifying Agencies’ accreditation of the Certified Retinal Angiographer Program and the development of the Optical Coherence Tomographer-Certified Program.

**Florin Grigorian, MD**, ophthalmologist, UH Rainbow Babies & Children’s Hospital, and Assistant Professor, Ophthalmology & Visual Sciences, School of Medicine, focuses on multiple aspects of pediatric ophthalmology, including strabismus (complex strabismus, reoperations and adult strabismus), retinopathy of prematurity (including treatment), ocuoplastics and cataract surgery using new lenses such as the Artisan iris fixation IOL. Dr. Grigorian has a special interest in the electrophysiology of the eye and visual system. He also has experience with multiple aspects of retinal dystrophies and plans to establish a clinic at UH Rainbow Babies & Children’s Hospital in collaboration with the Center for Human Genetics to treat these disorders. He has published papers on his work with new technologies in pediatric ophthalmology, including the Icare tonometer.

**Patricia R. Taylor, PhD**, Instructor, Ophthalmology & Visual Sciences, School of Medicine, has focused her research on ocular immunology. Published in the February 2014 issue of Nature Immunology, her recent paper – in collaboration with **Eric Pearlman, PhD**, Director of Research, Ophthalmology & Visual Sciences, School of Medicine – announced the discovery of a novel population of neutrophils that both produce and respond to a cytokine called Interleukin-17 (IL-17), which stimulates an inflammatory response at the site of an infection. Dr. Taylor will investigate other infectious, autoimmune and inflammatory disease processes in which these neutrophils may play a role, including diabetic retinopathy.

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The commitment to exceptional patient care begins with revolutionary discovery. University Hospitals Case Medical Center is the primary affiliate of Case Western Reserve University School of Medicine, a national leader in medical research and education and consistently ranked among the top research medical schools in the country by U.S. News & World Report. Through their faculty appointments at Case Western Reserve University School of Medicine, physicians at UH Case Medical Center are advancing medical care through innovative research and discovery that bring the latest treatment options to patients.
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