

# Vision *for the* Future

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University of Rochester  
Eye Institute newsletter

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### MESSAGE FROM THE DIRECTOR



## Building for Tomorrow: Accepting the Challenge

*I am pleased to announce that we at the University of Rochester Eye Institute are achieving many of our goals initially established at our founding just eight years ago. In this issue of Vision for the Future, we are pleased to announce new grants from the National Eye Institute (NEI) including NORDIC, establishing the University of Rochester as an important part of NEI's clinical research enterprise. The faculty continues to expand with the addition of Zoë Williams, M.D., a former resident returning to UREI in October to develop her career as a clinician / scientist. Dr. Williams completed a fellowship in neuro-ophthalmology at John's Hopkins with Neil Miller, M.D., one of*

*the world's leading neuro-ophthalmologists. I also welcome Rajeev Ramchandran, M.D., to our faculty. He completed his fellowship in retina at UREI following his residency at Duke University.*

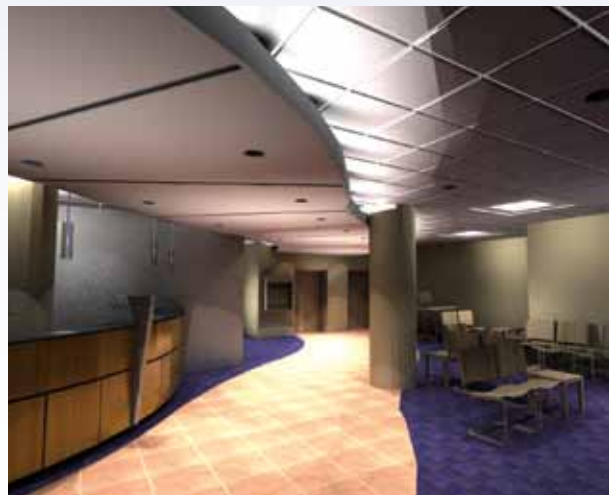
*This year's group of first-year residents and clinical fellows is outstanding. We look forward to giving them many new training opportunities as we expand our outreach.*

*By November we will have completed renovations to our ground floor. This new space will house well eye care, clinical trials and an enlarged optical shop. The 3,000 sq. ft. expansion will provide better service and access to our patients, as well as free up exam rooms on the third floor for sub-specialty care. Marking the completion of these renovations will be a recognition ceremony for one of UREI's most ardent and generous supporters, Lynn Lutz. In a celebration to be held Dec. 14, the Lutz Pavilion will be formally dedicated. The naming reflects the wonderfully generous estate gift of more than \$6 million donated to UREI by Lynn and her late husband, Jack.*

*I would also like to salute the generosity of our many friends, including our Advisory Board, and especially single out the contributions of Donald Grover, M.D. Don has recently retired from the UREI faculty but will remain an active part of our organization as he takes the helm of our growing Alumni Council. We are going to recognize his achievements at this year's Alumni Council meeting at Academy in San Francisco.*

Sincerely,

Steven E. Feldon, M.D., M.B.A., Director of the Eye Institute



Architectural conception of ground floor lobby

## UREI Research Director Named

Lin Gan, Ph.D., has been named UREI Director of Research and promoted to Professor of Ophthalmology, Neurobiology and Visual Science. Since becoming a primary faculty member of the Eye Institute in 2004, Dr. Gan has forged a better understanding of the genetic and molecular pathways of sensory organ development. His work directly impacts on understanding cell fate in diseases such as glaucoma. Dr. Gan has National Eye Institute (NEI) grant support and his research has been published in high-impact journals, including many images which have been selected for covers. In addition, Dr. Gan has trained many graduate students, post-doctoral researchers and fellows in his laboratories. We look forward to his continued guidance and insight as our basic science enterprise continues to grow.



# Advancing the Vision

The University of Rochester Eye Institute is most grateful to its donors for their generous gifts and ongoing support. We are especially appreciative to the friends, patients, alumni, and faculty who contributed to our Eye Institute Annual Fund. The Annual Fund is an essential source of funding that will help continue our groundbreaking work in vision care and research.

The following donors have contributed in various ways to UREI between Nov. 1, 2008, and June 1, 2009. Gifts can be designated to the Annual Fund and mailed to: Desirae Jourdan, Assistant Director of Development, UREI, 210 Crittenden Boulevard, Box 659, Rochester, NY 14642. Or make a gift online by going to [eyeinstitute.urmc.edu](http://eyeinstitute.urmc.edu) and clicking on “Support the Eye Institute.”

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# Alumni Council Update

The Alumni Council wishes to thank **Karl Marchese, M.D.**, for his service to the Council. Karl recently stepped down as president after a productive term. He helped play a great role in establishing the Resident Alumni Endowed Fund, which helps to defray expenses for incoming residents through purchasing them their BCS basic ophthalmology textbooks. We would also like to welcome back **Donald Grover, M.D.**, as president. Dr. Grover served in this capacity prior to taking a hiatus and looks forward to invigorating the council. He was on hand at the annual resident welcome breakfast in July where he presented an informative history of the ophthalmology program at the University of Rochester.

## See You in San Francisco

Former residents, fellows and medical students of the University of Rochester School of Medicine and Dentistry who went into ophthalmology are invited to a reception at this year's American Academy of Ophthalmology Meeting. The festivities will take place on Sunday, Oct. 25, at the W Hotel, conveniently located next to the Moscone Center. An Alumni Council meeting will precede the reception and anyone interested in joining the council is welcome to attend. Please watch your mail for an invitation. For more information, please contact Desirae Jourdan at 585-275-3594.



Linda Rooker and John Rooker  
Richard Roomian  
Joan Rosati and Carl Rosati  
Joanne Rose  
Geraldine Rounds and  
Francis Rounds  
L. Ann Rowley  
Maxine Rude and Robert Rude  
Audrey Rutan and Robert Rutan  
Elaine Saba and Anthony Saba  
Jeanne Sandholzer  
Mark Schwartz  
Les Schweizer and  
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Walter Scott  
Pearl Shakarjian and  
Zakar Shakarjian  
Shakeel Shareef, M.D.  
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John Smith  
Royden Smith  
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Thelma Wrench  
Zeller Corporation  
Jacqueline Zuber

*We offer special thanks to Bausch & Lomb, Research to Prevent Blindness, Glover Crask Charitable Trust, David & Ilene Flaum, and Lynn & Walter Lutz for their sustaining support.*

## A Special Thank You...

### New Patient Education Program Arrives

At last September's Crystal Ball, guests raised their paddles to fund the purchase of state-of-the-art patient education software. As of publication, Eyemaginations is being installed in every exam room at UREI and will soon be available online at [www.eyeinstitute.urmc.edu](http://www.eyeinstitute.urmc.edu). Eyemaginations features more than 230 animated videos that explain different eye conditions and their treatment in easy-to-understand language. UREI doctors and staff will use the software as a tool to help them counsel patients about their eyes and procedures such as cataract surgery.

In addition, the video library can be personalized to particular patients' conditions so that they may learn more about what is happening with their vision and better participate in their care. The animations come in a variety of language translations and include closed captioning to accommodate UREI's diverse patient base. Upon completion of the new lobby space, we anticipate having Eyemaginations stations available for public use. Our deepest thanks go out to the people who made this possible.

A blue graphic with a jagged right edge. At the top, it says "SAVE THE DATE!" in white, bold, sans-serif font. Below that, "UNIVERSITY OF ROCHESTER EYE INSTITUTE" is written in a smaller, white, sans-serif font, arched over a stylized eye graphic. The eye graphic has a globe as its iris. Below the eye, "Crystal Ball" is written in a large, white, cursive font. Underneath that, "Saturday March 20, 2010" is written in a smaller, white, cursive font. At the bottom, the website "www.stronghealth.com/crystalball" is written in a small, white, sans-serif font.

**SAVE THE DATE!**

UNIVERSITY OF ROCHESTER  
EYE INSTITUTE

*Crystal Ball*

*Saturday  
March 20, 2010*

[www.stronghealth.com/crystalball](http://www.stronghealth.com/crystalball)

# NORDIC: NIH National Research Award Focuses on Rochester

*UREI, the University of Rochester departments of Neurology and Ophthalmology were recently selected by the National Eye Institute (NEI) as data analysis sites for a five-year award that could total more than \$7 million for the University. The Neuro-Ophthalmology Research Disease Investigators Consortium (NORDIC) will help doctors and scientists study a variety of rare neuro-ophthalmic disorders, providing data vital to answering questions important to the NEI and National Institutes for Health. As a center recognized for its excellence in ophthalmic photographic interpretation, UREI will play a key role in NORDIC. UREI's Deborah Friedman, M.D., M.P.H., explains more about this exciting collaboration to Vision for the Future.*



*Deborah Friedman, M.D., M.P.H.*

*Co-director NORDIC, Data Coordination and Biostatistical Center*

## What is the purpose of NORDIC and what will be studied?

NORDIC provides an infrastructure to design and execute clinical research studies of neuro-ophthalmic disorders. Many of these conditions are relatively rare and need to be studied in a coordinated effort between numerous centers to recruit enough patients to answer the research questions.

Our first study is a treatment trial for idiopathic intracranial hypertension (IIH), sometimes known as pseudotumor cerebri. IIH usually affects obese women of childbearing age. The cause of the disease is unknown and it results in high spinal fluid pressure in the brain and around the optic nerves. The first symptoms of IIH are headaches and visual disturbances. In some cases, there may be permanent visual loss and occasionally blindness. Forty sites across the U.S. will participate in this trial to study the effectiveness of dietary treatment with and without a medication called acetazolamide in the management of patients with mild visual loss.

## What roles will be played by the Department of Neurology and the Eye Institute?

Neurology runs the Data Coordination and Biostatistical Center (DCBC) of NORDIC. Karl Kiebertz, M.D., and I are co-directors of the DCBC and will be responsible for developing research protocols for each study, assuring safety for patients enrolled in studies, developing electronic forms to collect the data from each site, monitoring the quality and accuracy of the data, and analyzing the data when the study is complete.

The Eye Institute will serve as the NORDIC Photography Reading Center (PRC). Led by Center Director Steven Feldon, M.D., and William Fischer, M.S., trained photographic readers will look at images of the optic nerve and retina and grade the amount of swelling in each subject throughout the IIH trial. Optic nerve swelling is one of the markers of high pressure in the brain and the degree of optic swelling will help researchers monitor whether the study treatments are working. In future studies, the center may interpret a variety of other ophthalmic images. Together the DCBC and the PRC will receive more than \$7 million during the first five years of NORDIC.

## Focus on Collaboration

### NEI Funding for Customized Contact Lenses Continues

Geunyoung Yoon, Ph.D., will receive more than \$750,000 over the next two years to further develop customized soft contact lenses and create new customized scleral lenses for treating keratoconus. Over the past several years, Dr. Yoon successfully used wavefront technology to develop the first customized soft contact lenses. These lenses are capable of correcting severe amounts of higher-order aberrations that cause image distortion with keratoconus. In preliminary studies, patients with keratoconus gained on average a two-line improvement in their vision over correction using the conventional soft contact lenses. However, because the customized lenses tend to shift on the eye's surface, the ability to consistently achieve 20/20 or better vision is somewhat limited. Continued research will focus on minimizing lens movement and looking at new lenses that are less susceptible to movement. Success could result in vastly improved vision for hundreds of thousands with keratoconus or other abnormal corneal conditions. Collaborators with Dr. Yoon in this research are UREI's Rebecca Nally, O.D., and Boston Foundation for Sight's Perry Rosenthal, M.D.

### UREI Receives Funding to Study Presbyopia Correction

Following cataract surgery, mono-focal intraocular lenses are routinely inserted to allow patients to see objects at distance or near, but not both. This lack of ability to change focus is called presbyopia. Recently, premium

intraocular lenses have become available that permit clear vision at both distance and near. Geunyoung Yoon, Ph.D., and Scott MacRae, M.D., received a \$100,000 award to better characterize the ability of premium intraocular lenses to correct presbyopia. These premium lenses are not routinely covered by health insurance and patients must pay an extra charge out of pocket. The work proposed by Dr. Yoon and Dr. MacRae seeks to evaluate the optical and visual performance of these lenses under everyday conditions and to propose new designs that function better. \$30,000 of funding is provided by the New York State Foundation for Science, Technology and Innovation, with an additional \$70,000 coming from Bausch & Lomb.

### Cornea Specialist Receives K-23 to Study Wound Healing

The National Eye Institute (NEI) has awarded clinician/scientist Holly Hindman, M.D., more than \$1 million to study a new type of corneal transplant surgery. In endothelial keratoplasty (EK), the patient's diseased lining of the inner cornea (endothelium) is replaced with the posterior one-third of a donor cornea which includes a healthy endothelium. This type of surgery is preferable to a full-thickness cornea transplant for endothelial failure because of its faster recovery, lower amounts of astigmatism and better stability. However, post-operative vision from EK is somewhat limited due to a haze that develops at the interface between the patient's cornea and the donor tissue. Dr. Hindman's research aims to better understand the healing process that is mediated by specialized corneal

## Why was UREI chosen as the reading center?

UREI is an experienced fundus reading center for clinical trials of retinal disorders, and no other reading centers have experience in standardizing and rating optic nerve swelling. Dr. Feldon, William Fischer and other investigators have developed a computerized system that receives photographs from remote study sites in such a way that they can be analyzed in a standard fashion. For research purposes this system lends itself to providing the DCBC with high-quality data, resulting in more accurate conclusions.

## What other neuro-ophthalmic disorders might be studied by NORDIC?

For the next couple of years, we will focus on the IIH trial, but the NORDIC Steering Committee is already discussing possible clinical research projects to pursue in the future. Other studies that may be addressed include treatment trials for ischemic optic neuropathy, thyroid eye disease, optic neuritis and myasthenia gravis. We also are interested in becoming involved in ocular toxicity studies. For example, if a medication may possibly be associated with some type of optic nerve or retinal toxicity, we have a network of investigators to help the sponsor follow and monitor the subjects closely, provide various measures of visual function, and record accurate measurements of the thickness of the nerve fibers in the eye. We can also measure drug levels in the blood to correlate with visual function.

## What are the long-term possibilities for NORDIC?

The current grant support for NORDIC and the IIH trial is for five years. After demonstrating our success in designing and performing the IIH trial, we anticipate future funding from the NEI to continue the NORDIC network. Our plan is for UREI to take a greater role in the oversight and management of the DCBC in the future, as well as to expand the scope of the reading center to include other types of images (such as external photographs in a thyroid eye disease study) and advanced imaging technologies.

cells called keratocytes. Improved knowledge of the healing process may suggest new therapies to improve ocular optics and visual outcomes for patients who have EK surgery. Dr. Hindman's mentors for the award which focuses on research training for bright clinician/scientists are **Krystel Huxlin, Ph.D.**, **Rick Phipps, Ph.D.** and **Guenyoung Yoon, Ph.D.**

## New Awards for Retinal Disease Research using Adaptive Optics Imaging

**Mina Chung, M.D.**, who has been collaborating with **David Williams, Ph.D.**, to better image and understand retinal disease, has recently been awarded two grants totaling \$174,000 to further her studies. The International Retinal Research Foundation is providing \$50,000 to use adaptive optics imaging in the hope of better pinpointing where age-related macular degeneration (AMD) can first be detected. The team's hypothesis is that in certain patients, signs of AMD may be evident in the photoreceptor cells of the retina versus the more conventional scenario wherein the disease is first evident in the retinal pigment epithelium (RPE). Understanding this could lead to better screening, earlier treatment and better understanding of the causes of AMD.

The MacTel project funded by Lowy Medical Research Foundation has awarded Dr. Chung an additional \$124,000 to study a blinding retinal vascular disease called Macular Telangiectasia (MacTel). Little is understood about the origin of this difficult to detect condition that dilates the tiny blood vessels that feed the central part of the retina, called the fovea, which is responsible for most of our usable vision. Dr. Chung and her colleagues believe that the loss of neuronal cells in the retina precede the vascular changes in MacTel. In order to test this hypothesis, UREI's unique *in vivo* adaptive optics imaging equipment will be used to image retinal cells in patients who have early symptoms of MacTel and compare the data with standard clinical test results obtained by the National Eye Institute's **Emily Chew, M.D.**

*(continued on page 6)*

## A Rich Tradition of Ophthalmic Photography in Rochester

Home to Eastman Kodak Company, Rochester is known by many as the imaging capital of the world. So, it is no surprise that the region developed a peerless reputation for ophthalmic photography. Much of this success can be traced to a unique collaboration between UREI and Rochester Institute of Technology (RIT).

Each year RIT's Biomedical Photographic Communications program sends up to 10 students to UREI. As part of an advanced course in ophthalmic photography, these students receive hands-on instruction from UREI's technical staff and faculty and put their skills to use in a clinic setting, providing them with invaluable experience and developing their "chair-side manners" with real patients who have eye disease.

The program originated in 1991 between the Department of Ophthalmology and RIT as the brainchild of RIT professor **William Fischer, M.S.**, who had been spending time working in the ophthalmology clinic at the University of Rochester Medical Center. Since then, Fischer has joined UREI's full-time faculty as Director of Imaging Technology, but the relationship with RIT remains in place.

"To date it's safe to say that at least 100 graduates of RIT's Biomedical Photographic Communications program have taken the class and gone on to become ophthalmic photographers," said Program Chair **Michael Peres**. "The relationship with the Eye Institute has been a great success and has launched many careers."

(continued from page 5)

**Grant Encourages Medical Education**

Allergan has awarded **James Aquavella, M.D.**, a \$50,000 Horizon Grant to encourage research and education of post-doctoral fellows at UREI. The funds will support, in part, investigation of tear film dysfunction in UREI's translational research facility. In addition, the grant will be used to fund travel to scientific conferences such as the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO).

**Retina Researcher Receives R-21 Grant**

NEI has awarded **William Merigan, Ph.D.**, more than \$400,000 to be used over the next two years to study whether the protein channelrhodopsin can restore visual sensitivity to people with damaged photoreceptors. Dr. Merigan believes that by using gene therapy, channelrhodopsin2 can be inserted into retinal cells through the use of a benign virus. Once incorporated into the retina, channelrhodopsin2 — a protein that is stimulated by light — may be able to transmit light signals received by the eye to ganglion (nerve) cells which often remain intact despite the affects of retinal degeneration. This would provide a mechanism to restore sight to people with damaged vision via bypassing the photoreceptors (rods and cones) that normally do this work. Channelrhodopsin2 transplant into retinal cells holds great promise for those who suffer from eye diseases that destroy photoreceptors, such as age-related macular degeneration.

**Annual Conference Draws Distinguished Faculty**

UREI was the proud host of the 54th annual Rochester Ophthalmology Conference in late March. In keeping with tradition, the meeting continues to draw outstanding speakers to provide regional ophthalmic physicians and allied health professionals with the latest techniques for diagnosing and treating eye disease. Snell Memorial Lecturer **Stanley Chang, M.D.**, and Bausch & Lomb Visiting Professor **Randall Olson, M.D.**, highlighted the list of speakers, which also included UREI faculty, **Richard Hertle, M.D.**, **Robert Noecker, M.D.**, **Julian Perry, M.D.**, **Perry Rosenthal, M.D.**, and **Nicholas Volpe, M.D.** Special thanks go out to all those who attended, as well as our exhibitors and underwriters.

**Residents and Clinical Fellows Arrive**

The annual changing of the guard took place this July as three third-year residents moved on to sub-specialty fellowships. We wish them all a fond farewell. The New Year brings excitement and promise as an outstanding trio joins the second- and third-year residents to begin their training. An enthusiastic crowd of faculty and staff greeted them at the annual residents' breakfast. **Sabita Ittoop, M.D.**, comes to UREI from the Robert Wood Johnson Medical School and just completed her transitional year internship at St. Luke's-Roosevelt Hospital Center in New York. **Sayed Mahmood Ali Shah, M.D.**, joins us from the Aga Khan Medical University in Pakistan. He did his internship at Maryland General Hospital in Baltimore and before that had been doing research at the Wilmer Eye Institute. **Amy Zhang, M.D.**, is a graduate of the University of Pittsburgh School of Medicine and completed her transitional year at Michigan State University, Kalamazoo.

Retina fellow **Rajeev Ramchandran, M.D.**, joins the UREI faculty (see page 8) and cornea fellow **Truc Nguyen, M.D.**, is in Tennessee where he began private practice. Clinical fellows joining UREI this year include **Mohammad Ali Haider, D.O.**, and **Vamsi Gullapalli M.D., Ph.D.** Dr. Haider will be completing a one-year fellowship in cornea/refractive surgery and comes to us after completing his ophthalmology residency at the University of Louisville where he was chief resident. Dr. Gullapalli begins his two-year fellowship in medical and surgical retina after completing his ophthalmology residency at the School of Medicine and Dentistry of New Jersey. We welcome them all.

**CME Calendar**

**UREI  
Visiting Professor  
Lecture Series**

**October 17 Cataract**  
**Bonnie Henderson, M.D.**  
*Assistant Clinical Professor  
of Ophthalmology  
Harvard Medical School  
Director of Harvard Cataract Course*

**November 21 Cornea**  
**Cornea Symposium**  
*Various UREI Faculty*

**December 19 Glaucoma**  
**Peter Netland, M.D.**  
*Siegal Professor of Ophthalmology  
University of Tennessee  
College of Medicine  
Director of Glaucoma Service*

Save the Date: **March 19 - 20, 2010**  
**Annual Rochester Ophthalmology Conference**  
**Eduardo Alfonso, M.D.**  
*Chair, Bascom Palmer Eye Institute  
Snell Memorial Lecture*

*A few of our many ongoing*  
**CLINICAL TRIALS**

- ⊙ MAP Migraine Treatment Trial (*D. Friedman, M.D., M.P.H.*)
- ⊙ A Multi-center Trial to Determine the Efficacy of Zylet for the Treatment of Pediatric Blepharoconjunctivitis (*M. Gearinger, M.D.*)
- ⊙ A Phase-3 Trial Comparing Antiangiogenic Agents VEGF Trap-Eye and Ranibizumab (Leucentis®), for Use in Wet AMD (*D. DiLoreto, M.D., Ph.D.*)
- ⊙ A Multi-center trial to determine whether patients who undergo closure of a Patent Foramen Ovale with an AMPLATZER® device have a reduction in both the frequency and severity of migraine headaches compared to medical management (*D. Friedman, M.D., M.P.H., and F. Ling, M.D.*)

In May, ophthalmology focuses on Ft. Lauderdale, Fla. for the Association of Research in Vision and Ophthalmology (ARVO) conference. There the brightest minds in vision research share discoveries in hopes of finding the next breakthroughs in understanding and treating eye diseases. This past year, UREI faculty, trainees and collaborators were involved in 28 presentations, posters and papers including:

**William Merigan, Ph.D.**, presented *Histological Evidence of Retinal Damage in Macaque Caused by Exposure to 568 nm Light Below Previously Reported Damage Thresholds*. This poster, co-authored along with collaborators from the Department of Ophthalmology and Center for Visual Science, discussed the need to lower the threshold of light exposure when imaging the living retina using adaptive optics (AO) imaging. This is significant because AO imaging of the retina may be the future for detecting treatable eye diseases like age-related macular degeneration at their earliest onset. Knowing safe light exposure levels will ensure patient protection when this technology becomes available in doctors' offices.

**Steven E. Feldon, M.D.**, was part of a collaboration that included Bausch & Lomb scientist **Steven P. Bartles, Ph.D.**, and **Richard Phipps, Ph.D.**, presenting *BOL-303242-X, a Selective Glucocorticoid Receptor Agonist (SEGRA), Inhibits TGF- $\beta$ -Induced Smooth Muscle Actin, and Tissue Transglutaminase in Human Tenon's Capsule Fibroblasts (HTF)*. The work presented showed the promise of compound BOL-303242-X as a way to reduce post-operative inflammation and scarring in trabecular glaucoma surgeries. Excessive scar formation is the most significant cause of failure of the drainage channels (filtering blebs) used to surgically lower eye pressure in glaucoma patients.

**Rajeev Ramchandran, M.D.**, et al. presented *Infectious Endophthalmitis in Adult Eyes Receiving Dohlman Type 1 Keratoprosthesis*. The poster described a review of all eyes receiving artificial corneal transplants (keratoprosthesis) at the University of Rochester Eye Institute. It concluded that infectious endophthalmitis (an inflammation of the tissues inside the eye) is more common than in other types of eye surgeries and presents later than typical endophthalmitis when the Dohlman type 1 keratoprosthesis is used. Their conclusions suggest that proper selection and use of prophylactic antibiotics may be important in reducing the risk of infection, improving post-operative outcomes.

### Currently Enrolling Patients in Innovative Studies 585-276-UREI 585-276-3784

- ⦿ A Non-Treatment Study of Risk Factors for Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION) (*D. Friedman, M.D., M.P.H., and Steven Feldon, M.D.*)
- ⦿ A Randomized Trial of the Effects of Glatiramer Acetate on the Retinal Nerve Fiber Layer and Visual Function in the first Episode of Optic Neuritis. (*D. Friedman, M.D., M.P.H., and Steven Feldon, M.D.*)
- ⦿ A Randomized Exploratory Trial Comparing Five Over the Counter Artificial Tear Preparations on Tear Film Dynamics (*James Aquavella, M.D.*)

### Huxlin Journal Article Creates Ground Swell of Interest in Visual Rehabilitation for Stroke Victims

The last issue of *Vision for the Future* reported about the progress of **Krystel Huxlin, Ph.D.**'s research into retraining vision lost due to stroke. Publication of this interview occurred just prior to publication of a paper by Dr. Huxlin in the *Journal of Neuroscience* detailing the results of years of experimentation and hypothesizing how the process of retraining works. Because the paper is the first scientific evidence that permanent vision loss could be regained, there has been much interest in the subject and in Dr. Huxlin's work. So much so that it was featured in the mainstream press, including Canadian National Television and worldwide wire services. Since then, Dr. Huxlin has received hundreds of requests from stroke victims with damaged vision to participate in her ongoing studies. In the not too distant future, she hopes the retraining exercises will be available commercially, providing hope to legions of stroke victims.

### Promising Use of Femtosecond Lasers Funded

**Krystel Huxlin, Ph.D.**, received notice of a \$100,000 award to investigate the ability of femtosecond lasers to predictably change the refractive characteristics of ocular tissues such as the cornea and lens. This could result in new laser refractive procedures to help people see better. Moreover, the new technology could help to minimize any harmful tissue effects associated with refractive procedures like LASIK. The Center for Electronic Imaging Systems (CEIS) — part of the New State Office of Science, Technology and Academic Research (NYSTAR) — and Bausch and Lomb are providing the grant. Dr. Huxlin and collaborating investigators **Wayne Knox, Ph.D.**, and **Holly Hindman, M.D.**, have already demonstrated the potential of the technology to change the refractive index of corneal tissue, natural lens, as well as of inert materials used to manufacture intraocular and contact lenses. The results they obtain from this next series of experiments may be a crucial next step in commercializing this technology for clinical use.

### First-of-its-Kind Eye Tracking Improves Astigmatic Laser Vision Correction

The Eye Institute's refractive surgery practice under the direction of **Scott MacRae, M.D.**, just completed an equipment update. It is one of the first six facilities in the United States to receive the **Advanced Control Eyetracking (ACE)** system from Technolas Perfect Vision — formerly Bausch & Lomb's laser vision correction unit. ACE is the first eye tracking targeting technology that locks on to the eye during vision correction. Accordingly, it allows the laser to deliver pulses of light more accurately than any other system by compensating for even the most subtle eye movements. This is of particular significance in treating patients who have high degrees of astigmatism. Clinical studies show that ACE could significantly reduce the need for enhancement procedures for these patients.

ACE is part of a recent capital expansion that increased the refractive center's number of examination rooms and included the installation of a Ziemer Femtosecond Laser. The Ziemer allows the surgeon to create the flap commonly made in LASIK surgery without the use of a mechanical microkeratome blade. Known as **all-laser LASIK**, the procedure is more reliable and allows surgeons to safely perform LASIK on patients with thinner corneas.

(continued on page 8)

Accepting new patients  
through your referrals:  
**585-273-EYES**

### Comprehensive Eye Care

Shobha Boghani, M.D.  
Rebecca Nally, O.D.  
Jill Schafer, O.D.  
Fred Schamu, O.D.

### Contact Lens Services

Rebecca Nally, O.D.  
Jill Schafer, O.D.

### Cornea and External Disease

James Aquavella, M.D.  
Steven Ching, M.D.  
Holly Hindman, M.D.  
Ronald Plotnik, M.D.

### Glaucoma

Shakeel Shareef, M.D.

### Neuro-Ophthalmology and Orbit

Steven Feldon, M.D., M.B.A.  
Deborah Friedman, M.D., M.P.H.  
Zoë Williams, M.D.

### Pediatric Ophthalmology

Matthew Gearinger, M.D.

### Refractive Surgery

Scott MacRae, M.D.  
Joseph Stamm, O.D.

### Retina and Vitreous

Mina Chung, M.D.  
David DiLoreto, M.D., Ph.D.  
David Kleinman, M.D., M.B.A.  
Rajeev Ramchandran, M.D.

## Research Faculty

Alfredo Dubra, Ph.D.  
Lin Gan, Ph.D.  
Krystal Huxlin, Ph.D.  
Amy Kiernan, Ph.D.  
Richard Libby, Ph.D.  
William Merigan, Ph.D.  
David Swinton, Ph.D.  
Geunyoung Yoon, Ph.D.

*For more information about  
the Eye Institute or one of our  
professionals, contact:*  
**eyeinstitute.urmc.edu**  
**585-273-EYES**

## OUR MISSION

*The mission of the  
Eye Institute is to  
develop and apply  
advanced technologies  
for the preservation,  
enhancement, and  
restoration of vision  
through a partnership  
of academic medicine,  
private industry, and  
the community  
we serve.*

## Eye on the News

*(continued from page 7)*

### Arrivals, Departures and Distinctions

**Fred Schamu, O.D.**, has joined UREI as Senior Associate. Dr. Schamu is a graduate of the New York College College of Optometry and is seeing patients at the Rochester and Canandaigua Veterans Administration clinics as part of the Eye Institute's ongoing association with the VA.

Congratulations are in order for **Rachel Hollar, C.R.A.**, who recently achieved her certification as a Certified Retinal Angiographer from the Ophthalmic Photographers' Society.

We also are delighted that **Maureen Nealon** has joined us as Faculty Practice Manager. She plays a vital day-to-day role in ensuring top-notch care for our patients.

And lastly, we bid a fond farewell and congratulations to **Dorothy Khong, M.D.**, who moved to California with her husband and new baby girl.

### New Faculty



**Rajeev Ramchandran, M.D.**

The Eye Institute welcomes **Rajeev Ramchandran, M.D.**, to the clinical faculty. He joins UREI as Assistant Professor of Ophthalmology after finishing his surgical vitreoretinal fellowship under the guidance of UREI's **Mina Chung, M.D.**, **David DiLoreto, M.D., Ph.D.**, and **David Kleinman, M.D.** Dr. Ramchandran is a native of Pittsford, N.Y. who completed his medical degree at the University of Rochester and his residency in ophthalmology at Duke University. During his fellowship at UREI he has distinguished himself as a caring physician who will be a welcome addition to a busy retina team. Dr. Ramchandran's academic interests are numerous, including diabetic eye disease, international ophthalmology, and telemedicine. He is also looking forward to developing a portfolio of translational and clinical research through his interactions with UREI basic science and clinical faculty and collaborators.



**Zoë Williams, M.D.**

UREI also welcomes **Zoë Williams, M.D.**, to the faculty on Oct. 1. After completing her residency at the Eye Institute in 2008, Dr. Williams went to the Wilmer Eye Institute at Johns Hopkins for a fellowship in neuro-ophthalmology. While there, she developed a research interest in optic nerve disorders which she will continue to pursue in addition to her patient care duties in the Eye Institute's faculty practice.

Finally, we welcome back on our faculty, **William Fischer, M.S.**, He will play a key role in the new fundus photographic reading center (see page 5). Bill returns to UREI after a successful stint with Zeiss.