

Vision *for the* Future

University of Rochester Eye Institute

Volume IV, Issue iii

Inside

2

Sharing the Vision
Alumni Council

3

Taking a look at...
Amblyopia

4

New Faculty

5

Focus on
Collaboration

6

Eye on the News

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.

Message from the Director



I am very pleased to announce further expansion of the University of Rochester Eye Institute (UREI) faculty and senior administrative staff. **Shakeel Shareef, M.D.** is our new glaucoma specialist and has joined our clinical faculty as associate professor. **Richard Libby, Ph.D.** and **Amy Kiernan, Ph.D.** will be joining our research faculty as assistant professors in February, 2006. All three are profiled in this issue of *Vision for the Future*.

I also welcome **John Meade, M.P.H.** as UREI administrator. John is an experienced senior healthcare executive with an extensive background in finance and administration, project management, and quality improvement. A graduate of St. Bonaventure University and the University of Rochester, he will be responsible for overseeing UREI operations. We welcome John to the pivotal role he will have in achieving our aggressive goal to rank among the top 10 eye institutes in the nation.

Even as John is identified as key to the future of UREI, we are saddened by the death of his predecessor, **Karen Keefer**, after a prolonged illness (see *In Memorium*).

Research funding from the National Eye Institute, one of the National Institutes of Health (NIH), is the key benchmark of progress toward our goal. Clinical and basic scientists who are awarded NEI grants represent the best of the best in their fields, having successfully navigated the rigors of the peer review process. I am proud to report that, among the nation's top-ranking eye institutes and departments, UREI was number two in NEI funding growth with a whopping 129 percent gain in 2004 over 2003. Total NEI funding at UREI now totals more than \$10.6 million, including two new Career Development Awards to **David DiLoreto, M.D., Ph.D.** and **Mina Chung, M.D.** (see story inside this issue). Moreover, the University of Rochester now ranks #20 nationally in total federally funded vision research, including NEI grants awarded both inside and outside UREI.

Steven E. Feldon, M.D., M.B.A.

Director of the Eye Institute

In Memorium



We bid farewell to **Karen Keefer** and extend our deepest sympathies to her family. Karen served as administrator of the Department of Ophthalmology for 12 years. In August, Karen lost her life to cancer. She had fought the disease with grace and courage.

During Karen's administration, she helped the department grow from 40 full-time employees to our current 98 and was influential in the development of UREI. Karen touched us all with her strength of character and wonderful spirit. If you wish to acknowledge Karen's legacy, please see more on the next page about the *Keefer Memorial Sculpture* commissioned to honor her memory.

Sharing 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 at this time to the friends, patients, alumni, and faculty who responded to the **Keefe Memorial Sculpture** appeal. The Keefe Memorial Sculpture, a commissioned celebration of vision which Karen Keefe helped design, will hang in the checkout area with a plaque recognizing her many contributions to the Eye Institute.

The following donors have contributed to the Keefe Memorial Sculpture as of August 31, 2005. Keefe Memorial Sculpture gifts can be mailed to: Brian Hendrick, UREI, 210 Crittenden Boulevard, Box 659, Rochester, NY 14642.

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Endowment Fund Pursued by UREI Alumni Council

The Alumni Council is looking to our medical school and resident alumni to help in the establishment of an endowed fund that will support resident education at UREI. The first priority of this endowed fund is to provide sufficient funds to give each incoming resident his or her own personal set of the American Academy of Ophthalmology (AAO) Basic and Clinical Science Course textbooks—the foundation of the ophthalmology lecture series given throughout the three years of residency. An initial endowment of \$60,000 is needed to generate the necessary income to purchase the textbooks now and in future years. All alumni are asked to provide their support and will be contacted by Council members.

For further information on ways you can give, contact Brian Hendrick at: 585-275-3594 or brian_hendrick@urmc.rochester.edu

We offer special thanks to Bausch & Lomb and Research to Prevent Blindness for their sustaining support.

Taking a look at, and learning more about... Amblyopia

by Matthew Gearing, M.D.



Assistant professor in the Department of Ophthalmology, Dr. Gearing is a pediatric ophthalmology specialist. His clinical research interests include amblyopia and retinopathy of prematurity (ROP).

What is amblyopia?

When vision in one eye is reduced because of an inherent problem that prevents the eye and the brain from working together properly to produce normal vision, the diagnosis is amblyopia. It is commonly referred to as "lazy eye" because the brain favors the stronger eye. Amblyopia affects two to three out of every 100 children and is the leading cause of visual impairment in childhood.

What causes amblyopia?

Amblyopia can be caused by strabismus, which is a misalignment of the position of the eyes. It also occurs when one eye is significantly more nearsighted, farsighted, or astigmatic than the other eye. Less commonly, amblyopia is caused by other conditions such as cataracts.

Are there recent advances in the treatment of amblyopia?

Amblyopia treatment goals are to stimulate use of the weaker eye and correct vision (with glasses if necessary). Traditional methods for stimulating the weaker eye focus on patching the strong eye for six to 24 hours per day or by using atropine, a drug that blurs vision in the dominant eye and also forces a child to use the weaker eye. Recent breakthroughs have proven that one drop of atropine twice per week is as good as wearing an eye patch and that two to six hours per day of patching works as well as full time. These insights help dramatically with the patient's and family's ability to comply with treatment recommendations.

What is the best age for treating amblyopia?

Earlier is better. For many years it was believed that the connection between the brain and eye that is responsible for vision matured by age seven to nine and that treatment for older children was not effective. However, a recent study found that 50 percent of 7- to 18-year-olds who received atropine and patching treatments had vision improvements. This is an important finding. Even though amblyopia patients have good vision in one eye, having good vision in both eyes helps to cut down on the risk of total blindness later in life from age-related conditions that may affect the stronger eye. Currently, UREI is working with the New York Statewide School Health Services Center (NYSSHSC), which develops the vision screening standards used by school nurses, to better detect amblyopia. We hope that this collaboration will result in earlier diagnosis and treatment for more children.

Are clinical trials in amblyopia available at UREI?

UREI has access to leading clinical studies as part of a national consortium called the Pediatric Eye Disease Investigative Group (PEDIG). With this disease as one of PEDIG's priorities, it currently has a number of active amblyopia clinical studies. UREI is participating in several investigations including studies focused on young children with deficits in both eyes; treatment comparisons; and older children.

For more information about clinical studies in amblyopia and eligibility requirements, please call (585) 273-3085 or 275-1604.



David DiLoreto, M.D., Ph.D.; Samuel Masket, M.D.; and Steven Feldon, M.D.

Thanks!

In May, UREI presented the 50th annual Rochester Ophthalmology Conference. The two-day event was attended by nearly 300 physicians, allied health professionals and vendors' representatives. Highlighting this year's program were Snell Memorial Lecturer Dr. Hilel Lewis, director of the Cole Eye Institute and Bausch & Lomb Visiting Professor Dr. Samuel Masket, clinical professor of ophthalmology at the Jules Stein Eye Institute.

UREI would like to thank all the visiting faculty and community physicians who presented relevant and compelling information. We especially would like to recognize all the physicians and health professionals who attended the conference. We hope to see you all for next year's program May 19 and 20, 2006.

New Faculty

The Eye Institute welcomes glaucoma specialist and clinician-researcher **Shakeel Shareef, M.D.** For the past seven years, Dr. Shareef has practiced at Geisinger Medical Center in Danville, PA. His research interests include glaucoma drug studies and neural stem cells; his work has been recognized with numerous prestigious research awards. Dr. Shareef earned his medical degree from New York Medical College and completed graduate work in biochemistry and undergraduate work in chemistry at Queens College, City University of New York. He completed an internship at Winthrop University Hospital, Stony Brook School of Medicine; an ophthalmology residency at New York Medical College; and a glaucoma research fellowship and clinical fellowship at Washington University School of Medicine, St. Louis. Dr. Shareef is a member of the American Academy of Ophthalmology and the Association for Research in Vision and Ophthalmology. He also serves as a peer-reviewer for *Current Eye Research* and *Ophthalmology*.



Shakeel Shareef, M.D.
Associate Professor

"I could be blind today..."

... if it wasn't for the wonderful care provided to me by Dr. Steven Ching, Dr. David Diloreto, and their associates in the University of Rochester Eye Institute."



So states Lynn Lutz, a friend and grateful patient. "It was my husband, Jack, who first suggested that we should express our gratitude through an estate arrangement, and a series of charitable gift annuities,

which provide dependable income during our lifetimes. These measures will combine to provide a substantial gift, in my name, to the Eye Institute when we have passed away." Like Lynn and Jack Lutz, many thoughtful donors choose charitable gift annuities for their philanthropic programs, because they combine attractive lifetime benefits to the donor, and the opportunity to provide substantially for causes they support.

Benefits include:

- guaranteed payments for life
- current income tax deduction
- partially tax-free income, in most cases
- attractive annuity rate
(currently 6.5% for an individual age 70)
- the satisfaction of supporting the Eye Institute.

For more information on charitable gift annuities and other ways of giving to support the University of Rochester Eye Institute, contact Jack Kreckel at the Office of Trusts and Estates at 585-273-5930, or visit our Web site at www.rochester.plannedgifts.org.

2005-2006 Visiting Professor Series

November 12, 2005

Keith Carter, M.D.
Plastic Surgery
University of Iowa

December 17, 2005

Dale Heuer, M.D.
Glaucoma
Medical College
of Wisconsin

January 21, 2006

Peter Savino, M.D.
Neuro-Ophthalmology
Jefferson Medical College –
Wills Eye Hospital

February 18, 2006

Peter Campochiaro, M.D.
Retina Vitreous Surgery
Johns Hopkins
Wilmer Eye Institute

March 18, 2006

Paul Kaufman, M.D.
Glaucoma
University of Wisconsin

April 22, 2006

George Baerveldt,
M.B.C.H.B.
Glaucoma
University of California
at Irvine

May 20, 2006

UREI Ophthalmology Conference
Bausch & Lomb Lecturer
Neil Bressler, M.D.
Retina Vitreous Surgery
Johns Hopkins
Wilmer Eye Institute

June 17, 2006

Mark Mannis, M.D.
Cornea
University of California
at Davis

Focus on Collaboration

This column is dedicated to the collaborative endeavors of bench scientists and physicians—work aimed at swiftly applying basic science discoveries and new technologies to improve the diagnosis and treatment of eye disease.

Collaborating Faculty

Daphine Bavelier, Ph.D.

Charles Duffy, M.D., Ph.D.

Mary Hayhoe, Ph.D.

James Ison, Ph.D.

David Knill, Ph.D.

David Kornack, Ph.D.

Walter Makous, Ph.D.

Maiken Nedergaard, M.D.

Gary Paige, M.D., Ph.D.

Richard Phipps, M.D., Ph.D.

David Williams, Ph.D.

James Zavislan, Ph.D.

National Institutes of Health Awards Two Career Development Grants to UREI Retinal Specialists

The Role of Müller Cell in the Retina (\$1.1 million)

David DiLoreto, M.D., Ph.D.: Müller cells support retinal neurons. In several diseases of the retina, including macular degeneration, diabetic retinopathy, and retinal detachment, Müller cells can form scar tissue in the retina that disrupts or shuts down critical photoreceptor cell functions. Establishing the central role that the Müller cell plays in retinal health and disease may provide a potential target for new clinical therapies. Limiting the formation of scar tissue may delay or prevent neuron loss, thereby helping to preserve vision.

Adaptive Optics Imaging in Genetic Macular Disease (\$1.1 million)

Mina Chung, M.D.: While advances in genetics have been powerful in identifying the molecular causes of some macular diseases, the progression from molecular defects to vision loss remains poorly understood. Adaptive optics can provide a view of disease progression at a cellular level in living patients, helping to fill the scientific void between genes and blindness. High-resolution imaging may provide clues to earlier diagnosis and treatment modalities. In collaboration with the Center for Visual Science and its director **David Williams, Ph.D.**, we will use the high-resolution, in vivo imaging capabilities of the adaptive optics ophthalmoscope developed in Rochester.

Intravitreal Device Implanted for Treatment of Uveitis

UREI surgeons were the first in the region to use Bausch & Lomb-developed drug-delivery microtechnology when they implanted an intravitreal device approved by the Food & Drug Administration for treatment of chronic non-infectious uveitis. Potentially blinding, uveitis is a recurring inflammation of the posterior segment of the eye, which contains many veins and arteries that transport blood to the parts of the eye that are critical for vision. It is traditionally treated with injections, oral steroids, or immunosuppressive drugs, which can have significant side effects. The new implant, called Retisert, provides more effective treatment, delivering sustained levels of anti-inflammatory medication to the back of the eye for several years.

UREI Welcomes Amy Kiernan, Ph.D. and Richard Libby, Ph.D. to the Basic Science Team

Amy Kiernan, Ph.D. studies the genetic mechanisms involved in sensory organ development and has recently focused on transcription factors and signaling pathways that are involved in stem cell growth. Understanding how they act in the eye and ear may provide insights into potential regenerative therapies and new methods to detect diseases of the senses. Concentrating on the cell biology and genetics of glaucoma, **Richard Libby, Ph.D.** investigates how and why retinal neurons die in glaucoma. He is identifying genetic susceptibility to glaucoma and disease aggressiveness. He is also identifying molecular pathways to retinal ganglion cell death in glaucoma. Dr. Libby's ultimate goal is to apply new knowledge about glaucoma to the development of new therapies to prevent or slow vision loss. Drs. Kiernan and Libby come from the Jackson Laboratory in Bar Harbor, ME. Dr. Kiernan has been awarded a prestigious post-doctoral fellowship from the NIH, and was also accepted into the National Eye Institute fellowship program, Fundamental Issues in Vision Research. Dr. Libby has received two post-doctoral training grants from the NIH, including a Developmental Genetics Training Grant. They both received their doctorates in biology at Boston College.

Eye on the News

Congratulations to our graduating residents

- **Rachel Biedenbach, M.D.** is moving back to her home in Ohio and going into private practice in general ophthalmology.
- **Greg McCormick, M.D.** is continuing at the University of Rochester Eye Institute in a Cornea-External Disease and Refractive Surgery Fellowship.
- **Sean Mogan, M.D.** is staying in Rochester as a member of the voluntary faculty and an Oculo-Plastics Fellow with Dr. Paul Rosenberg.

Welcome to our incoming residents

- **Sidney Chang, M.D.** received his medical degree at Cornell University where he participated in ophthalmology research with Dr. David Abramson.
- **Kalliopi Stasi, M.D., Ph.D.**, a native of Athens, completed medical school and ophthalmology training in Greece and has earned a Ph.D. from a collaboration of universities in Greece, the U.S., and Germany.
- **Zoe Williams, M.D.** earned a B.S. in Biology from Yale, and an M.D. with Alpha Omega Alpha honors from Wake Forest University. She has a sub-specialty interest in Neuro-Ophthalmology.

Notes

- **Gary Markowitz, M.D.**, a member of the voluntary faculty, has been promoted to clinical professor of ophthalmology.
- **Praveen Tyle**, Bausch & Lomb's senior vice president of Research and Development and chief scientific officer, has joined the UREI faculty as adjunct associate professor.
- UREI has invested in Televox® interactive voice technology to make our appointment reminder and confirmation system more efficient and patient-friendly.

*For more information about the Eye Institute
or one of our professionals, contact:*

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Rebecca Lockemann, O.D.

Cornea and External Disease
James Aquavella, M.D.
Steven Ching, 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.

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.
Donald Grover, M.D.

Research Faculty

Lin Gan, Ph.D.
Krystal Huxlin, Ph.D.
Amy Kiernan, Ph.D.
Richard Libby, Ph.D.
William Merigan, Ph.D.
Jianhua (Jay) Wang, M.D., Ph.D.
Geunyoung Yoon, Ph.D.

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