

Vision *for the* Future

University of Rochester Eye Institute

Volume VI, Issue i

Inside

2

Sharing the Vision

Board News

3

Alumni Insights

Clinical Trials

4

Learning More About
Diagnosing and Treating
Glaucoma

5

Cornea Recipient

Cornea Transplant's
Changing Face

6

Resident Update

7

Focus on Collaboration

8

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.

The Progress Continues

MESSAGE FROM THE DIRECTOR:



Fall ushers in a series of exciting events at the University of Rochester Eye Institute (UREI). New laboratory construction, funded by a \$2.6 million NIH grant, is well under way. This 20,000 square feet of space will enhance our ability to conduct translational research aimed at solving the most complex visual disorders. We anticipate that the labs will be occupied by our scientists in February.

In addition, Bausch & Lomb has increased its commitment to eye research in Rochester by providing UREI up to an additional \$11 million during the next five years. These funds will go toward developing a better understanding of diseases such as glaucoma, and expanding collaborations with university partners (like the Center for Visual Science and Institute of Optics). The goal is to develop new detection methods and treatments that will improve the quality of life for patients worldwide.

UREI's clinical enterprise continues to expand as we add new staff and faculty members, such as **Dorothy Khong, M.D.**, who completed her ophthalmology residency at Jules Stein Eye Institute. Additions like these ensure that referring doctors and patients from throughout the region, nation, and from overseas can access the highest quality sub-specialty care and specialized procedures. For instance, in the past year alone, we performed 37 keratoprosthesis surgeries, including eight in children or infants.

Advancement efforts last year at UREI saw an increase in the number of donors who supported our mission with their generosity. In addition, we have added five new members to our elite advisory board, and plans are underway to host a signature fund-raising event.

Looking forward, I grow more excited about the promise of new science, technology, education, and patient care that UREI can offer as we pursue our goal of becoming a top-ranked eye institute.

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

Architect's rendering of
new laboratory space.



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 our most successful Eye Institute Annual Fund appeal. 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 January 1, 2006 and June 30, 2006. Gifts can be designated to the Annual Fund and mailed to: **Brian Hendrick**, Associate Director of Development, UREI, 210 Crittenden Boulevard, Box 659, Rochester, NY 14642. Or make a gift online by going to www.stronghealth.com/eyeinstitute and clicking on "Support the Eye Institute."

Allergan Inc.	Mr. Larry Keener
Dr. & Mrs. James V. Aquavella	Ms. Patricia J. King
Mr. & Mrs. Thomas R. Arcara	Mr. Hy Kreitzman
Mrs. Margaret Berens	Mr. Clarence H. Kuehl Jr.
Dr. Philip P. Bonanni (M'64, R'71)	Dr. Babur B. Lateef (R'00)
Dr. Gregory Brumfield	Mr. John L. Lawless
Mrs. Dorothea Cameron	Mrs. Patricia A. Lill
Dr. Jay N. Chapman (R'91)	Mr. & Mrs. Walter J. Lutz
Mr. Mou Ta Chen	Mr. & Ms. Ed Lynd
Mr. Chester H. Ciesinski	Mr. & Mrs. Paul A. Mallon
Mr. & Mrs. Irving J. Cohen	Ms. Mary S. Marchese
Dr. Susan E. Cohn and Dr. Jonathan D. Klein	Dr. Ruth Mattern (R'93)
Mrs. Frances Cruikshank	Dr. & Mrs. John P. Meade
Mrs. Rose Dellefave	Ms. Ann M. Mulligan
Ms. V. Sumati Devadutt (B'64)	Mr. James P. Murphy
Dr. & Mrs. Frederick Dushay (R'61)	Dr. Mary S. Napoleon (R'82)
Mr. & Mrs. Jack D. Eisenberg	Palm Harbor Homes
Mr. Peter M. Emmel	Ms. Harriett M. Peris
Mrs. Joyce Ermer	Gustavus and Louise Pfeiffer Research Foundation
Mrs. Susanne Esan (B'49)	Mr. Hale A. Pietropaolo
Mr. Harlan D. Everett	Ms. Lucy L. Prynne
Mr. David Fake	Mr. William Reilich
Dr. Frank Y. Falck Jr. (R'91)	Mrs. Patricia Richard
Mr. Harold S. Feinbloom	Rochester Alumnae Chapter of Delta Gamma
Joseph S. Feldman Foundation for Scientific Research	Rochester Area Community Foundation
Mr. & Mrs. Charles Ferren	Ms. L. Ann Rowley
Mr. & Mrs. Barry W. Florescue (B'66)	Mrs. Jeanne Sandholzer
Mr. Achille Forgione	Mr. Samuel P. Sardisco
Mr. Dudley N. Fox Jr.	Mr. Wolf-Udo Schroeder
Mrs. Barbara L. Frank	Mr. Ross Scott
Dr. Deborah I. Friedman and Mr. Scott Mackler	Dr. Diane Singer
Mr. & Mrs. Gerard J. Grassi II	Ms. Carol A. Smith (R'97)
Mr. & Mrs. Joseph R. Hanna	Ms. Norma B. Stephan
Dr. James L. Harrington (M'49, R'50)	Ms. Mary T. Stephens
Ms. Jeanette Hayes	Ms. Kasia M. Swetz
Ms. Suzanne M. Hemmer	Alvin F. & Ruth K. Thiem Foundation
Ms. Charlotte K. Holmes	Mrs. Edna S. Tiberio
Mr. L. Thomas Hussey	Mrs. Helen M. Townsend
Dr. Sungjun Hwang (R'98)	Mr. Bryan Yaeger
Ms. Theresa Johnson	Mr. & Mrs. Ronald L. Zarrella
Mr. Richard R. Keefer	

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

University of Rochester Eye Institute Names New Board Members

The University of Rochester Eye Institute announces the addition of new members to its board of directors. Board Chairman **Danny Chessin** welcomes:

Michael Amalfi
Ronald Billitier, Jr.
Joseph Hanna
Joanne Lobozzo
Christopher O'Donnell

The 14-member board is an advisory group consisting of community members with an interest in vision care and research. It supports awareness-building and fund-raising efforts while promoting the teaching, research and service objectives of the University of Rochester Eye Institute. Each board member serves a three-year term.

In Appreciation

Several recent events illustrate the generosity and deep commitment of the UREI's growing number of supporters.

- In March, the Eye Institute officially named the **Hobart Lerner, M.D. Pediatric Waiting Room** in honor of Dr. Lerner's commitment and contributions to ophthalmology in the Rochester area. This was made possible through a generous gift from **Arthur Lowenthal**.
- This past Spring, **Senior Resident John Karth, M.D.** (R'06) did ophthalmic service work in India. His trip was supported by a gift from alumni **Monique** (Ph.D. '65) and **Michael** (M'64) **Freshman**.
- The Eye Institute thanks **Friends of Strong** for its generous donation of \$22,000. The funds were used to purchase a confocal microscope which will greatly enhance the ability of UREI physicians to study the pathology of patients' corneas in extreme detail.

Alumni Council

Changes for the council are in the air this fall. Inaugural President **Don Grover, M.D.** (B '62, M '66, R '73) will step down after serving his two year term. He will hand the reigns over to **Karl Marchenese, M.D.** (M '74, R '79). Also, **Dr. Bryant Shin** (R '02) will serve as the Council's Secretary/Treasurer. Many thanks to Dr. Grover for his leadership in establishing the Alumni Council.

Alumni Reception at Academy

This year's annual alumni reception will take place on *SATURDAY*, November 11 from 6:00–9:00 PM at the Venetian Resort and Casino in Las Vegas. We encourage all alumni to attend to connect with our colleagues and learn of the progress at the University of Rochester Eye Institute. More details to come.



Keep in Touch

Department of Ophthalmology alumni are welcome to join the University of Rochester School of Medicine and Dentistry online community — a great tool for keeping in touch and finding fellow resident alums. Go to www.alumniconnections.com/urmc or email alum.urmc.rochester.edu to update your personal profile.

Resident Alumni Endowed Appeal

Through the efforts of the Eye Institute Alumni Council, \$46,600 has been raised for the Resident Alumni Endowed Appeal. This puts us at 78 percent of goal. The purpose of the endowment is to support unfunded ophthalmology resident education expenses, with the initial effort providing for Basic and Clinical Science Course textbooks for all incoming residents. For further information on ways you can give, contact **Brian Hendrick**, UREI Development Office, at 585-275-3594 or brian_hendrick@urmc.rochester.edu.

All alumni who have not yet responded are asked to consider a leadership gift to the fund and will be contacted by a member of the Alumni Council. On behalf of our residents, a special thanks to the following who have made their contribution:

Dr. Dennis A. Asselin (M'81, R'87)	Dr. Edward L. Hicks (B'62, M'65, R'69)
Dr. Jay Chapman (R'91)	Dr. Sungjun Hwang (R'98)
Dr. Percival H. Chee (M'62)	Dr. Jacqueline A. Leavitt (R'82)
Dr. Steven S. Ching (M'74, R'81)	Dr. & Mrs. Hobart Lerner (R'49)
Dr. & Mrs. Robert L. Clark (M'62, R'70)	Dr. Karl J. Marchenese (M'74, R'79)
Dr. Ronald J. Cole (M'62)	Dr. Ruth Mattern (R'93)
Dr. & Mrs. Frederick Dushay (R'61)	Dr. Dana F. McGinn (R'84)
Dr. Frank Falck, Jr. (R'91)	Dr. & Mrs. Henry S. Metz (R'66)
Dr. & Mrs. Steven E. Feldon	Dr. Mary S. Napoleon (R'82)
Dr. John R. Fitzgerald (R'52)	Dr. Prim D. Roca (R'59)
Dr. Walter C. Griggs (M'52)	Dr. Edward J. Sheridan III (M'62, R'71)
Dr. & Mrs. Donald A. Grover (B'62, M'66, R'73)	Dr. Diane Singer (R'97)
Dr. James Harrington (M'49, R'50)	Dr. Thomas G. Tuxill (M'67, R'75)
Dr. Jeffery Heimer (R'86)	Dr. Donald N. Zehl (R'63)

Currently Enrolling Patients in Innovative Studies

- ▲ IOL Power Calculation after Laser refractive Surgery using the Orbscan II (*J. Aquavella, M.D.*)
- ▲ An Evaluation of an Investigational Medication in the Treatment of Bacterial Conjunctivitis for Patients ages 1 through Adult (*J. Aquavella, M.D.*)
- ▲ Wavefront Aberrations in Pseudophakic Patients (*S. Boghani, M.D.*)
- ▲ Intravitreally Administered Plasmin for Creation of Posterior Vitreous Detachment (*M. Chung, M.D.*)
- ▲ Intravitreal Fluocinolone Acetonide Inserts in Subjects with Diabetic Macular Edema (*D. DiLoreto, M.D., Ph.D.*)
- ▲ The Standard Care vs. Corticosteroid for Retinal Vein Occlusion Study (*D. DiLoreto, M.D., Ph.D.*)
- ▲ Migraine Reduction through PFO Occlusion (*D. Friedman, M.D.*)
- ▲ Evaluation of an Investigational Medication for the Acute Treatment of a Single Moderate or Severe Headache in Adults with Recurring "Sinus", "Stress", "Menstrual" or "Migraine-like" Headaches (*D. Friedman, M.D.*)
- ▲ Atropine Compared to Atropine Plus a Plano Lens for Amblyopia in Children 3 to Less Than 7 Years Old (*M. Gearinger, M.D.*)
- ▲ A Prospective Study of Primary Surgical Treatment of Nasolacrimal Duct Obstruction in Children Less Than 4 Years Old (*M. Gearinger, M.D.*)
- ▲ Using Bausch & Lomb Zyoptix Personalized Vision Correction for Hyperopia and Hyperopic Astigmatism LASIK Treatment (*S. MacRae, M.D.*)

For more information about the studies and eligibility requirements, please call 273-3085 or 275-1604.

Learning more about diagnosing and treating.

WITH SHAKEEL R. SHAREEF, M.D.



SHAKEEL R. SHAREEF, M.D.

is a glaucoma specialist and associate professor at the University of Rochester Eye Institute. Dr. Shareef is a member of the American Academy of Ophthalmology and the Association for Research in Vision and Ophthalmology, and he serves as a peer-reviewer for the journal Ophthalmology. Dr. Shareef graduated from New York Medical College, where he did his residency in ophthalmology. He later completed two glaucoma-related fellowships at Washington University School of Medicine, St. Louis. Dr. Shareef's interests include clinical work and research focusing on mechanisms of cell death, glaucoma drugs, and neural stem cells. He has won numerous research awards, including the Association for Research in Vision and Ophthalmology/Retina Research Foundation Travel Fellowship Grant. Dr. Shareef can be reached by calling 585 (273-3937).

www.stronghealth.com/eyeinstitute

What is glaucoma?

Fluid is always flowing into – and draining out of – the eye, like a sink with the faucet running. In patients with glaucoma, there is resistance to this fluid leaving the eye, or draining from the sink, which leads to increased pressure on the optic nerve. This pressure can cause axons, the wires connecting the optic nerve to the brain, to malfunction and die. Damage to the optic nerve noted during an eye exam is referred to as glaucoma. Untreated, the end result is blindness.

How is glaucoma treated?

In some patients we use medications to either facilitate the exit of fluid from the eye or decrease the amount produced. For others, we use a laser to increase drainage or weaken the structure that makes the fluid. The third option is to perform a surgical procedure known as a trabeculectomy, in which a new drain allows fluid to flow out of the eye.

Who is at risk for developing glaucoma?

Glaucoma is strongly associated with family history (genetics), eye injury, chronic steroid use, and African-American or Hispanic ancestry. People who have glaucoma usually are 40 years or older. In the United States, more than three million people have glaucoma but only half are aware they have the disease. It is the second-leading cause of irreversible blindness, but the leading cause among African-Americans, who are five to seven times more likely to develop glaucoma than Caucasians.

How is glaucoma diagnosed?

Intraocular pressure has long been the traditional indicator. “Normal” pressure is 9 mm to 24 mm Hg. However, we now know that high pressure doesn’t always indicate glaucoma and that low pressure doesn’t mean one is glaucoma-free. There’s more to it. For instance, we know that thick corneas can give a falsely high pressure reading, and thin corneas can give a falsely low pressure reading. These false pressure indications may explain why some people with low pressure readings are going blind. Formulas have been proposed to help compensate for cornea thickness when measuring pressure. Some scientific studies suggest we should add or subtract 2 to 4 mm of pressure for every 50 microns of abnormal thickness or thinness from normal.

Are we getting better at diagnosing glaucoma?

Absolutely. Ophthalmologists increasingly realize the importance of a good baseline examination that includes a pressure check, a visual check of the optic nerve, and assessment of the sink. In addition, we now have a glaucoma risk calculator, much like the tool used by cardiologists to determine the risk for heart disease. When a patient presents with elevated eye pressure in the absence of optic nerve damage, this new calculator helps us predict his or her five-year risk for developing glaucoma. It’s based on proven risk factors – derived from prospective, randomized clinical trials – such as age, eye pressure, cornea thickness, presence of diabetes, and the appearance of the optic nerve.

Are more glaucoma-related advances on the horizon?

Yes, because many people are studying this disease. The Eye Institute hosts a glaucoma research group. Our team is trying to understand the causes of glaucoma at the cellular and molecular level. Does pressure cause damage to the optic nerve? Does poor blood circulation (ischemia) play a role? We’re learning more about glaucoma every day.

Cornea Recipient Sees Value in Eye Institute

For most of her adult life, Sarah Cole's corneas were deteriorating. She recalls one physician describing her eyesight as a "tickling time bomb." One day, Cole realized she was unable to compensate for her increasingly poor vision. "If I was typing a letter, I couldn't distinguish between the letters n and m," she says. "I had no depth perception, and I couldn't see objects in the dark. I even stopped going to the movie theater. When they turned off the lights, I couldn't navigate the stairs. It frightened me."

Unable to crochet and sew, Cole also became wary of driving. "My grandchildren would call and say, 'Grandma, please come and get us,' she explains. "I'd say, 'No, I can't do it today.' I couldn't risk having them in the car with me."

Legally blind, Cole's vision was 20/200. She was referred to **Steven Ching, M.D.**, an associate professor of ophthalmology at the University of Rochester Eye Institute. Ching, who specializes treating disorders of the cornea, including the conjunctiva and sclera, is director of the Ophthalmology Cornea Fellowship and medical director of the Rochester Eye and Human Parts Banks.

Ching diagnosed Cole with an unusual combination of unrelated problems. She had Terrian's marginal degeneration of the cornea, which causes the peripheral cornea to become very thin, and she also suffered from a mysterious clouding of the cornea, which caused a loss of visual clarity. Usually, a clouded cornea would call for a full transplant, but the Terrian's precluded this procedure; there wouldn't be enough tissue to sew in a donor cornea. Ching recommended complementary cornea transplants to restore vision. "We normally transplant the central cornea, but don't touch the peripheral cornea," Ching says. "Sarah is a special case, because she had two problems with her cornea. We decided to take a different approach with her first surgery, which simultaneously was a stem-cell cornea transplant and reinforcing transplant."

(continued on next page)

Cornea Transplant's Changing Face: One Size Doesn't Fit All

Until five or six years ago, corneal transplant surgery had not changed much since penetrating keratoplasty – in which the whole cornea is replaced – became standard procedure. However, penetrating keratoplasty, which still performed in the United States about 34,000 times each year, can have disadvantages. These include high levels of refractive error (requiring correction with contacts or glasses), transplant rejection, high susceptibility to future injury, suture complications, and a lifetime of follow-up care requiring expensive medications.

Recent advances in surgical techniques now make it possible for physicians to selectively transplant new tissue into only the diseased layer of the cornea. When used in the proper situations, the following partial transplant procedures performed at the University of Rochester Eye Institute can increase the likelihood of surgical success and may reduce the level of post-operative care required:

■ Corneal Stem Cell Replacement

In this procedure, healthy epithelial stem cells are grown in culture and grafted onto a patient's cornea to stabilize and protect its surface.

■ Deep Anterior Lamellar Keratoplasty (DALK)

A partial-thickness graft that preserves the two innermost layers of the cornea, Descemet's membrane and the endothelium. The goal of the procedure is to retain the patient's endothelial layer.

■ Automated Anterior Lamellar Keratoplasty

A microkeratome is used to remove diseased or scarred tissue at the front of the cornea. This tissue is replaced with a new tissue from a donor eye created in a similar manner.

■ Deep Lamellar Endothelial Keratoplasty (DLEK)

Selective transplantation of the diseased inner layer without the need for surface incisions or stitches to keep the donor tissue in place. May provide better quality of unaided vision following surgery.

- ### ■ Descemet's Stripping Endothelial Keratoplasty (DSEK)
- The procedure involves peeling off the inner two layers of the diseased cornea. A donor cornea is then split or dissected to create a flap of the inner two layers and a small portion of stroma (to provide substance for manipulation). This three-layer donor is then folded and inserted into the eye and floated up to stick onto the inside of the cornea, replacing the layers removed earlier. In the automated version of this procedure, **(DSEAK)** portions of the surgery are performed using a microkeratome.

To learn more about cornea care at the University of Rochester Eye Institute, or to refer a patient for evaluation, please call (585) 273-EYES (585) 273-3937.

Cornea Recipient (continued from previous page)

In August 2005, Ching “built up” Cole’s periphery cornea to create a base onto which a transplanted cornea could be sewn. “Sarah had a full-thickness cornea and full-diameter cornea transplanted onto her eye after 90 percent of her own diseased tissue was removed,” Ching says. “Her remaining tissue was about 10 percent thickness and served as a base for the new reinforcing tissue.” The use of a full-thickness and full-diameter cornea for cornea stem-cell transplantation has been described, but Ching doesn’t believe it is used routinely in the United States. The first surgery set the stage six months later for a second transplant involving the central cornea; both surgeries were successful. As part of Cole’s personalized treatment, she sees an immunologist, who partners with the Eye Institute to provide her care, and takes the same immunosuppressive drugs as people who undergo a kidney transplant.

Mark Mannis, M.D., chairman of the Department of Ophthalmology and Vision Science for UC Davis Health System and a respected expert in cornea surgery, saw Cole after her transplants while visiting the University of Rochester Eye Institute. “The procedure performed by Dr. Ching in this complicated case calls for meticulous planning and the highest level of technical and surgical skill,” says Mannis, who has published more than 100 cornea-related scientific papers and books. “Dr. Ching’s extensive experience is the key to the success of an operation of this nature and speaks to the high level of surgical expertise available in the cornea program at the University of Rochester Eye Institute.”

Today, Cole’s right eye is 20/25 with glasses, and she is enjoying newfound vision and independence. She is back at work helping others as a home health aide, and is spending more time with her grandchildren, whom she can safely transport across town. She enjoys telling people about her experience at the University of Rochester Eye Institute, and has made special appearances during Grand Rounds teaching lectures. “I think Dr. Ching is the most fantastic person I’ve met,” Cole says. “He is so gentle and soft-spoken. I had no fear whatsoever. He told me what he was going to do and he instilled confidence.”

Physicians at the University of Rochester Eye Institute perform about 130 cornea transplants annually with a 90 to 95 percent success rate. “I am so lucky,” Cole says, pausing to ponder the wonder of her restored vision. “I can close my right eye and see with my left what life used to be like.”

Three new residents began their first year of ophthalmology training on July 5th. **Salman Ali, M.D.** joins us from Howard University Medical School; **Michael Bradley, M.D.** comes to UREI from the University of Utah Medical School; and **Babek Jian Seyedahmadi, M.D.** journeys to us from the Tehran University of Medical Sciences. We are looking forward to them making significant contributions to the Eye Institute. In addition, all three of our departing residents have moved on to fellowships. **Matilda Chan, M.D.** will be doing a one-year Cornea Fellowship at the Proctor Foundation at the University of California at San Francisco; **John Karth, M.D.** has accepted a one-year fellowship in Vitreoretinal Surgery at the University of British Columbia in Vancouver; and **Ying Quain, M.D.** will be starting a one-year cornea fellowship at Massachusetts Eye and Ear Infirmary. Outgoing UREI cornea fellow **Greg McCormick, M.D.** is entering into private practice in Burlington, Vermont.



Salman



Bradley



Seyedahmadi

THE BAUSCH & LOMB VISITING PROFESSOR SERIES

- **RETINA** October 21, 2006
Ed Stone, M.D., Ph.D.
Professor of Ophthalmology — University of Iowa
- **RETINA** November 18, 2006
David W. Parke II, M.D.
President and Chief Executive Officer of the Dean A. McGee Eye Institute
- **UVEITIS** December 16, 2006
Stephen Foster, M.D., F.A.C.S., M.D.
President, Ocular Immunology and Uveitis Foundation; Clinical Professor of Ophthalmology, Harvard University Medical School
- **NEURO-OPHTHALMOLOGY** January 20, 2007
Neil Miller, M.D.
Professor of Ophthalmology — Wilmer Eye Institute, Johns Hopkins University
- **PEDIATRIC OPHTHALMOLOGY** February 17, 2007
Alex Levin, M.D.
Professor of Ophthalmology and Vision Sciences — University of Toronto

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 Bavalier, 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.

Lecture, Research Highlight ARVO Meeting

A highlight of the 2006 Association for Research in Vision and Ophthalmology (ARVO) meeting this spring at the University of Rochester Eye Institute was **David Williams'** Friedenwald Award lecture titled, "The Limits of Human Vision." Williams is a key University of Rochester Eye Institute collaborator and faculty member.

During the meeting, University of Rochester Eye Institute (UREI) basic scientists, clinician researchers, and residents made 18 presentations that were well received for their contributions to vision research. Highlights include:

- work by **Scott MacRae, M.D.**, and **Manoj Subbaram, Ph.D.**, which demonstrates the efficacy of a new nomogram that improves outcomes and reduces re-treatment rates for patients having LASIK or PRK.
- collaboration between **David DiLoreto, M.D.**, **Thurma McDaniel, Maiken Nedergaard, M.D.**, and **Xi Wang**, which shows how Müller cells from distinct domains in the retina may be related to neuronal functioning. This information could lead to better and earlier detection of retinal disease such as macular degeneration.
- an investigation by **Krystal Huxlin, Ph.D.**, **Lana Nagy, Matthew Wyble, Margaret Beha, Jay Wang, M.D., Ph.D.**, **Ian Cox, Ph.D.**, and **Scott MacRae, M.D.**, to characterize the optical and biomechanical hallmarks of ectasia after refractive surgery. Their long-term findings suggest that a thin cornea alone doesn't cause this pathological condition.

For more information about any of these University of Rochester Eye Institute presentations, please visit www.stronghealth.com/eyeinstitute.

Ophthalmology Reports Results of Retinal Imaging Study

Mina Chung, M.D. along with fellow collaborators **Jessica Wolfing, M.S.**, **David Williams, Ph.D.**, and **Joseph Carroll, Ph.D.** (from the Center for Visual Studies and Institute of Optics); and **Austin Roorda, Ph.D.** (from the College of Optometry, University of Houston) reported recently in *Ophthalmology* the results of an experiment to use high-resolution adaptive optics in ophthalmoscopy. They concluded that this new methodology provides a non-invasive way to observe a patient's retinal pathology at the cellular level. Applications of this technology could prove useful in investigating early-stage retinal disease mechanisms, help to better monitor retinal disease progression, and may assist in targeting retinal gene replacement therapies to maximize their effectiveness.

New Thyroid Eye Disease Discovery

The October Issue of *American Journal of Pathology* reports a recent discovery by collaborators **Steven Feldon, M.D.** and **Richard Phipps, Ph.D.** of a process by which the immune system causes fat accumulation in thyroid eye disease. This accumulation of fat causes the eyes to protrude and may result in double vision and visual loss due to optic nerve compression. Understanding the underlying disease process that leads to these dramatic changes is important in identifying potential treatment options in this disfiguring and vision threatening condition. The article for the first time shows how white blood cells (human lymphocytes) induce fibroblasts to proliferate and change into fat cells, and suggests that this process can be blocked by Cox-2 inhibitors found in pharmaceutical agents.

Eye on the News

New Faculty

We welcome **Dorothy Khong, M.D.**, who will be director of the University of Rochester Eye Institute's consult service and play a critical role in the training of our nine residents. She also will augment UREI services available to retired military through the Veteran's Administration. Dr. Khong is a graduate of the UCLA School of Medicine and completed her ophthalmology residency at UCLA's Jules Stein Eye Institute. She enjoys working with patients from all walks of life and is especially interested in the treatment of cataracts and glaucoma.



UREI Recognized by Research to Prevent Blindness

- Research to Prevent Blindness (RPB) selected **Richard Libby, Ph.D.**, as the recipient of a \$200,000 Career Development Award. These funds will be used to finance his scientific activities and equip his laboratory.

Dr. Libby's work focuses primarily on investigating genetic factors in glaucoma that lead to the death of retinal ganglion cells (RGCs), and why certain RGCs are more likely to die in some patients than in others. His work may lead to better understanding of glaucoma, and result in new therapies that may aid in the detection of or perhaps slow progress of this disease.

- In addition, **Yasser M. Elshatory, M.D., Ph.D.**, received a \$30,000 RPB Medical Student Eye Research Fellowship. This grant will help fund his training under UREI's **Lin Gan, Ph.D.**, whose research explores the genetic factors responsible for blindness. Work from this laboratory may eventually lead to novel therapies that could preserve or restore vision through gene therapy or stem-cell replacement.

National Eye Institute Funds Graves' Study

Richard Phipps, Ph.D. and **Steven Feldon, M.D.** received a five-year \$1.1 million grant from the National Eye Institute to study Graves' Ophthalmology. The new research will be based on recent discoveries reported in *American Journal of Pathology* (see previous page). These studies will help delineate the inflammatory T cells and pathways that incite orbital fibroblast differentiation to adipocytes. Information discovered by this research could lead to new methods to treat inflammation and understand the pathologic differentiation of orbital fibroblasts important for Graves' ophthalmology as well as other diseases that involve fat deposition.

StrongVision Faculty Practice

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

Comprehensive Eye Care

Shobha Boghani, M.D.
Dorothy Khong, M.D.
Rebecca Lockemann-Nally, O.D.

Contact Lens Services

Rebecca Lockemann-Nally, 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 Gearing, 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.
Krystel Huxlin, Ph.D.
Amy Kiernan, Ph.D.
Richard Libby, Ph.D.
William Merigan, Ph.D.
Geunyoung Yoon, Ph.D.

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

University of Rochester Eye Institute
210 Crittenden Blvd.
Box 659
Rochester, NY 14642

www.stronghealth.com/eyeinstitute

585-273-EYES

University of Rochester Eye Institute
210 Crittenden Blvd.
Box 659
Rochester, NY 14642

NONPROFITORG
U.S. Postage
PAID
Rochester, NY
Permit No. 780