

Vision *for the* Future

UNIVERSITY OF ROCHESTER

FLAUM EYE INSTITUTE

SUMMER 2011 NEWSLETTER

Finding Her Own Way

“You have Graves disease; I’ll see you in a year.”

After that meeting with the first eye doctor, Patricia Marino thought that she had better look elsewhere — she felt lost.

“I couldn’t accept it,” said the former Rochester City School District master teacher and career coach who has recently earned her Ph.D. At the time she heard those words, Marino had just been diagnosed with Graves thyroid eye disease by her endocrinologist. Graves disease is an autoimmune condition associated with the thyroid gland which becomes overactive and results in hyperthyroidism. She was suffering from many symptoms — including a dangerously racing heartbeat, weight loss and chronic fatigue (from a lack of sleep) — all things that her endocrinologist and her primary care team could treat. But, her particular case also presented her with significant ophthalmic problems, and she didn’t know where to turn.

“My eyes were going left and right, and they were red and painful, too,” she said. “I felt very self conscious when I looked in the mirror.” Graves disease sometimes results in exophthalmos, a condition in which the eyes bulge outward. This can cause pain, dry eye, double vision and occasionally blindness. “I had surgery to have my thyroid removed,” she said. “But as for my eyes, I didn’t know where to go. After that meeting with the first eye doctor, I thought that I had better look elsewhere. During this time I felt alone; the best I could do was try



to self medicate with over-the-counter eye drops, a decision I would later regret. Between my job, continuing my doctorate and the Graves, I was frankly overwhelmed. It literally forced me into retirement from education to focus on getting myself better.”

After some patience and with the persistence of her internist, Marino was referred to the Flaum Eye Institute where she was seen by **Steven Feldon, M.D., M.B.A.**, who is a leading expert in thyroid eye

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Adaptive Optics Brings a New Look to Vision Correction

Adaptive optics (AO) is a tool used in vision science that employs specialized mirrors with surfaces that can be adjusted or deformed in microscopic increments to correct optical distortions that occur when light passes through an imperfect lens. On a large scale, astronomers, for instance, use AO to fine tune the light coming through their telescopes from distant objects, thereby bringing them into better focus. In effect, they are able to take the “twinkle” out of stars. The twinkle is caused by anomalies in both outer space and in the earth’s atmosphere. Adaptive optics corrects these anomalies so that celestial bodies can be studied in greater detail.

Flaum Eye Institute (FEI) is a leading center world-wide for applying the discipline of AO to human vision. Using AO, LASIK was improved upon by scientists and clinicians at FEI and the University of Rochester Center for Visual Science — including **Geunyoung Yoon, Ph.D.**, **Scott MacRae, M.D.**, and **David Williams, Ph.D.** Together they helped commercialize a customized system that uses AO to better identify the optical imperfections in the eye prior to performing surgery. This technology was a quantum leap forward resulting in much better and safer vision correction for millions of people who undergo this procedure.

Today, Yoon leads a team that is using AO to further understand how light passes through the human lens system and how adjusting this system using spectacles, contact lenses or surgery

(CONTINUED ON PAGE 8)



STEVEN E. FELDON,
M.D., M.B.A.

Soon the Flaum Eye Institute will be celebrating its 10-year anniversary. This upcoming milestone provides an opportunity to reflect on how far FEI has come and to anticipate its future direction. As part of this critical exercise, the faculty, board, and staff are working together to develop the culture and infrastructure of a "Learning Organization," as envisioned by Peter Senge in his classic book, *The Fifth Discipline*. As the first step in the transformation to a learning organization, we are reviewing our current mission statement . . .

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.

As you will see in this issue of *Vision for the Future*, our current mission has been and remains very timely and relevant. On the cover, you will see how **Geunyoung Yoon, Ph.D.**, is using adaptive optics techniques that may improve the outcomes of cataract surgery. On page 9, there's news of FDA approval on technology developed and patented by an FEI team led by **Scott MacRae, M.D.** that is making LASIK results even better. In academics, our graduating residents and fellows are moving on to excellent positions in fellowships and clinical practice. We are very excited about the residency group for the coming academic year, two-thirds of whom will have their doctorates in addition to their M.D.s.

Our goal this next year is to refine our mission, transforming ourselves into an organization in which we learn together as a team and remove rigid or outmoded patterns of interaction that are many times the unanticipated consequences of rapid growth like ours. The ultimate goal of this transformation is to be more responsive to those we serve: patients, students, scientific collaborators and the community.

Accordingly, you will also see some new themes beginning to emerge such as community outreach and disease-specific support groups. For instance, on the cover, you will learn how **Pat Marino**, educator and patient, is leading development of a support group focused on thyroid eye disease. **Keri Allen**, a graduating medical student has spearheaded a nationally-sponsored community outreach project to identify and treat glaucoma in Rochester's underserved population. With the help of all our stakeholders, like Pat, Keri and you, we hope that new initiatives like these will strengthen the underlying values of our organization, enhancing FEI as a place for innovation in patient care, discovery and education.

As we develop as a learning organization, we will renew our *Vision for the Future of the Flaum Eye Institute*. I invite all of you to contribute your ideas, recommendations, services and philanthropy to this endeavor.

Sincerely,

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

Director, David and Ilene Flaum Eye Institute
Chair, Department of Ophthalmology
University of Rochester School of
Medicine & Dentistry

ADVISORY BOARD PROFILE

The Advisory Board of the Flaum Eye Institute is integral to its goals of serving the community through patient care and education while advancing the treatment of eye disease through translational research and technological advances. A diverse group of prominent community leaders and philanthropists, the wise counsel of the Board has helped to establish FEI as a national leader in ophthalmology as well as a potential engine of economic growth for the region. This is the first in a series of profiles introducing you to these dedicated men and women who are helping FEI to chart its course.

Advisory Board Grows

The Flaum Eye Institute Advisory Board welcomes **Daniel J. Burns** to its ranks. Burns is Senior Vice President and President of the Rochester Division of M&T Bank. A voice for economic development in the Rochester region, Burns currently serves as Chairman of Greater Rochester Enterprise. He has also recently been selected to the Board of the University of Rochester Medical Center and to the Board of Directors at St. John Fisher College.

The Advisory Board, chaired by **Danny Chessin**, now numbers 20 members, all community leaders who are committed to the success of the Flaum Eye Institute. In addition to Burns, we gratefully acknowledge the efforts of:

Danny Chessin <i>Board Chair</i>	Barbara Kelley
Susan Acker	Aaron Klein
Michael Amalfi	Joanne Loboizzo
Ronald Billitier, Jr.	Theresa Mazzullo
Stuart Bobry	Thomas Muldoon, M.D.
Lou Brescia	Ann Mulligan
David Flaum	Christopher O'Donnell
Barry Florescue	Clayton Osborne
Joe Hanna	Peter Parts
	Albert Simone, Ph.D.



ALBERT J. SIMONE,
PH.D.

A Tiger in the Think Tank

Ask virtually anyone in Rochester, NY, to describe **Albert J. Simone** and immediately words like “builder,” “achiever,” and “advisor” come to mind. The president emeritus of Rochester Institute of Technology (RIT) has left his mark on the region. His tenure at RIT ushered in an era of unprecedented growth as buildings mushroomed on campus to keep pace with the new programs and colleges he helped to establish, cementing RIT’s reputation as a national leader in career-focused education.

Simone — who holds a doctorate in economics from Massachusetts Institute of Technology — remains active in promoting business growth in the region and in community affairs. Groups from throughout the state and beyond seek his keen insight about a myriad of issues. With his busy schedule of travel, consulting and community activities, he judiciously chooses which organizations to support. Accordingly, the Flaum Eye Institute is fortunate that Simone opted to lend his expertise here.

“There are many reasons I came to be on the FEI Advisory Board,” said Simone. “**Ann Mulligan** was a major one.” Mulligan — who is also a member of the Advisory Board and one of FEI’s most ardent supporters — and Simone share a long history of working together. Mulligan still sits on the RIT Board of Honorary Trustees where she and Simone first became friends. In addition to the connection with Mulligan, Simone is very familiar with many members of the Eye Institute’s Advisory Board. He is also impressed with leadership at the University of Rochester, singling out **Joel Seligman** and **Brad Berk, M.D., Ph.D.** for the contributions they are making to the community. Perhaps most important in his decision to join the board, though, is his belief in the mission of FEI.

“It (the Eye Institute) is critical for this community,” said Simone. “As our population ages, it becomes more susceptible to eye disease. I believe that maintaining our intellectual prowess and quality of life requires healthy eyes,” he continued. “The Eye Institute provides access to some of the best clinicians in their specialties, and their effectiveness in treating vision disease is further enhanced by the translational research going on here. As someone who worked at a university that has a large deaf population (where vision is vital to communication and learning) I can’t stress enough the importance of sight.”

In the boardroom, Simone’s counsel is invaluable. As someone with first-hand experience at growing a diverse organization, his perceptions have been enormously helpful during the Eye Institute’s double-digit growth. This is a point well noted and appreciated by FEI Director **Steven Feldon, M.D., M.B.A.**

“Al is a great contributor to the Eye Institute,” said Feldon. “Every time the Advisory Board meets, I look forward to hearing his opinions and getting his advice. His grasp of how organizations are run and his ability to apply his knowledge of economics to our strategic business planning process help us make important policy decisions. It is a privilege to have someone so tuned in and actively engaged with what we are trying to accomplish at FEI. We have profound respect for Al.”

Simone is equally impressed with Feldon, whom he refers to as “a man for all seasons — clinician, inventor, scientist, researcher, teacher, leader and entrepreneur.” Simone enjoys his place on the board. “I get so much out of playing the role of advisor,” he said. “When you work face-to-face with a person or a group to help them succeed, you become part of the results. Doing this is as important as philanthropy, but much different. When you counsel in this way, it’s on a very personal level. I take great satisfaction in this as it lets me grow through the relationship, too.”

FEI and the other members of the FEI Advisory Board are grateful to have such a dynamic member in our midst.

Student Sight Savers Program Turns One

Thanks to two FEI faculty and a University of Rochester School of Medicine and Dentistry medical student, the Eye Institute is bringing the fight against blindness to the neighborhoods of Rochester. Glaucoma is one of the

most devastating threats to vision and a leading cause of irreversible vision loss in the United States. Called a “silent thief,” it gradually destroys a person’s eyesight from the periphery. Fortunately, the disease is treatable. Much like high blood pressure, it can be

medically or surgically managed if caught early. Unfortunately, glaucoma disproportionately affects African Americans and Hispanics. For many, especially those living in our urban cores, access to routine eye exams that should catch the disease is limited or unavailable, resulting in unnecessary blindness.

During her third year of medical school, **Keri Allen, M.D.** was looking for a project that involved her passion for caring for the underserved with her newly discovered interest in ophthalmology. Assistant professor of Ophthalmology **Holly Hindman, M.D.** — who runs FEI’s medical student ophthalmology interest program — knew FEI was looking for a motivated individual to start

a **Friends of the Congressional Glaucoma Caucus Foundation (FCGFC) Student Sight Savers Program.**

The Sight Savers program provides medical school ophthalmology departments a \$20,000 grant to conduct eye screenings in underprivileged neighborhoods where the risk of untreated glaucoma is high. A large part of the grant comes in the form of specialized equipment that can be used to help determine if the eye being screened is suspicious for the prevalence of glaucoma. The screening stations are manned by medical students who feed the test results to a resident, optometrist or ophthalmologist at the end of the line. The doctor then makes a determination whether or not the patient should seek a full glaucoma exam.

Spearheaded by Allen and FEI glaucoma specialist **Shakeel Shareef, M.D.** the program has screened hundreds of people at churches and community health fairs in some of Rochester’s poorest neighborhoods. The team has caught many who are at risk for glaucoma, or have other eye diseases, and directed them to the appropriate resources, including FEI’s resident clinic.

“I love working in the community and educating people about the risks of glaucoma,” said Allen. “Glaucoma can be managed but only when we know it’s there. Starting this program was a great opportunity for me. It is

my hope that it will continue for years to come, helping people who needn’t go blind and getting more University of Rochester medical students excited about ophthalmology.”

Although Allen just graduated, the program continues and she has left behind a capable and willing team. Allen, who begins an internship in internal medicine at Bassett Healthcare in Cooperstown, NY, hopes to continue her raining in an ophthalmology residency program.



KERI ALLEN, M.D.

Former resident **Justin Aaker** performs a glaucoma screening at a health fair. The Student Sight Savers program has screened hundreds to date throughout the Rochester, region.



If you are interested in arranging a glaucoma screening in your Western New York neighborhood, please contact FEI at **585-273-3937.**

FEI in the Community

FEI faculty members are committed to improving health across the region through their involvement in community health screenings and educational programs. The past few months have been highlighted by the following presentations:

In January, **Shakeel Shareef, M.D.** discussed “Glaucoma in Focus” with about 40 members of the Aneon Baptist Church located in southwest Rochester. Immediately following the talk Shareef and 2nd year Resident **Mahmood Shah, M.D.** led a group of medical students in a glaucoma screening.

In February, **Rajeev Ramchandran, M.D.** traveled to Canandaigua, NY where he gave a talk about age-related macular degeneration to a group of 50 seniors at Quail Summit.

In April, Ramchandran was at the National Technical Institute for the Deaf where he gave a lecture about childhood deaf blindness to a group of 20. In May, **Yousuf Khalifa, M.D.** gave a presentation about resident education to a men’s group of retirees at the Jewish Community Center. The talk was sponsored by FEI Advisory Board member **Stuart Bobry.**

If you or your community group is interested in having an FEI faculty member speak about eye health, contact **Steve Kofron** at **585-275-3977.**

Finding Her Own Way (CONTINUED FROM COVER)

disease. She was surprised with her initial diagnosis. “Besides thyroid eye disease, she had glaucoma,” remarked Feldon. “Before we could begin her treatment for the thyroid eye disease, we had to get the glaucoma under control.”

This would mean more waiting for Marino who was referred to the Eye Institute’s **Shakeel Shareef, M.D.**, “Finding out I had glaucoma was a bit of a shock, but I was glad to be in an environment where there was a specialist to treat that, too. Dr. Feldon was very reassuring that we could manage this and then get to my thyroid eye disease. He inspired trust and confidence in me, and I think that’s an important characteristic for a doctor to have,” she said.

Several months later, with her glaucoma under control, Feldon could now look at treating the functional and cosmetic manifestations of her condition. “My appearance is very important to me,” said Marino, “and it (the exophthalmos) was something that I wanted to address.” Feldon first performed upper lid surgery to provide Marino a more “normal” appearance and to allow her lids to close more completely. This also helped to relieve her severe dry eye and to get a better night’s sleep. However, the thyroid eye disease continued progressing and the deposits of fatty tissue growing behind her eyes further pressed them outward. Together they decided on orbital decompression surgery to lessen some of the pressure from extra tissue deposits that literally pushed her eyes forward in their sockets.

“What I appreciate is that Dr. Feldon gave me options at every step,” said Marino of his patient-centered approach. “It was helpful to have a doctor who would work with me to find a place where I was comfortable. I felt like he let me take some control over this disease, and I think that’s been great for me. It’s helped empower me to understand that I can and should make decisions about my health.”

Since the decompression surgery, Marino has also had lower lid surgery and subsequent eye muscle surgery. The eye muscle surgery helped to realign her eyes and correct some of the double vision caused by her condition. Double vision is not uncommon in patients with thyroid eye disease. The eyes can become misaligned in their orbits due to muscle scarring. The misalignment causes the brain to perceive a second image so that it seems there are two objects when there is only one.

“It’s been a long journey,” said Marino, “but it’s been worth it because I can look back on it with a sense of accomplishment. Originally, I thought that things would go away quickly once I began seeing Dr. Feldon, but for the most part it took perseverance and patience. It’s like I’m in a different season now — not symptom free, but I have the support that I need and have become an active participant in my health regimen.” The support includes her doctors, a nutritionist and, most importantly, herself. Besides her medical care, she credits changing her diet, improving her sleeping habits and exercise with a renewed sense of self confidence and improved health.

Now that she is in what she describes as a “better place,” Marino has decided to do something extraordinary. She is working with FEI to start a patient support group for people with Graves, including those who are newly diagnosed. “I want to do something that gives back and helps other people in dealing with thyroid eye disease,” she said. “We need to develop a support network that provides us with a place to share our best practices. I’m hopeful that through a support group, we can build a community where we can get people the help that they need. By working together, we can ensure that no one gets lost in their experience with Graves disease.”

The Graves disease support group plans to hold its inaugural meeting on Oct. 6th. If you are interested in joining or know someone suffering from Graves disease who might be interested in coming, please contact **Steve Kofron** at the Flaum Eye Institute **585-275-3977** or e-mail him at stephen_kofron@urmc.rochester.edu and put “Graves Disease Support Group” in the subject line.

About Thyroid Eye Disease

Thyroid eye disease (TED) is closely associated with Graves disease and occurs when cells from the immune system attack the muscles and other tissues around the eyes. The result is inflammation and a buildup in muscle tissue and fat behind the eye socket, causing the eyeballs to bulge. In rare cases, inflammation is severe enough to compress the optic nerve that leads to the eye, causing vision loss.

Other symptoms include:

- dry, irritated eyes
- puffy eyelids
- double vision
- light sensitivity
- pressure or pain in the eyes
- trouble moving the eyes

About 25 percent of people with Graves disease develop thyroid eye disease which is usually mild to moderate in severity and lasts one to two years, often improving on its own. It can occur before, at the same time as, or after other symptoms of hyperthyroidism develop and may occasionally develop in people whose thyroid function is normal. As with many conditions, smoking makes thyroid eye disease worse.

ADVANCING THE VISION

Glover-Crask Pledge Tops the Million Mark

The Glover-Crask Charitable Trust is synonymous with philanthropy in the Rochester, NY region. As one of the founding donors to the Eye Institute it provided some of the seed funding helping to launch FEI. Now the foundation has pledged another \$110,000 bringing its total support of FEI to \$1 million.

"We are delighted by the continuing generosity of Glover-Crask," said **Steven Feldon, M.D., M.B.A.** "They, like the **Flaums** and **Lynn Lutz** are pioneers who believed in our vision for an eye institute in Rochester. We are grateful for their additional pledge of support."

*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 MOST GRATEFUL THANK YOU TO OUR DONORS FOR THEIR GENEROUS GIFTS AND ONGOING SUPPORT.

The David and Ilene Flaum 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 FEI between July 1, 2010, and April 1, 2011. Gifts can be designated to the Annual Fund and mailed to: **Desirae Jourdan**, Director of Development, FEI, 210 Crittenden Blvd., Box 659, Rochester, NY 14642. Or make a gift online by going to eyeinstitute.urmc.edu and clicking on "Support the Eye Institute."

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LEADERS IN SIGHT*

* *Leaders in Sight* are supporters to the Eye Institute who have made a three-year pledge to the annual fund. For more information about becoming a Leader in Sight, please contact **Desirae Jourdan**.

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A Vintage Evening with Friends of the Eye Institute



RONALD BILLITIER, JR. AND HELEN BILLITIER



(FROM LEFT) CHRIS FOX, DON MAZZULLO, PETER ROBINSON, THERESA MAZZULLO AND KAREN BENTLEY

FEI Advisory Board member **Ronald Billitier, Jr.** hosted a dinner on Sept. 30th to benefit patient care at the Eye Institute. More than 100 people attended the event at Tournedos at the Inn on Broadway and dined on sumptuous fare which was expertly paired with fine California wines. **Dr. Steven Feldon** spoke about the positive relationship between FEI and the Rochester community.

In just a few short years, *The Billitier Vision Dinner* has become a tradition, growing in popularity among friends of FEI. Since its inception in 2007, the dinner has raised funds directed toward critical equipment needs of FEI. The event raised more than \$20,000 to purchase equipment, including a macycler, for the molecular biology laboratories. This instrument is being used by scientists exploring the genetic determinants of glaucoma. Understanding the genetics of this blinding disease could eventually help doctors determine who should be aggressively treated before vision loss occurs.

Please mark your calendars for September 21st as tables for this year's upcoming celebration are sure to fill fast.

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Myrna M. Lawrence-Waters
Dale H. Leiter
Ishbel E.P. Lennon and John Lennon
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Judy Lindsey and Dale Lindsey
Louise Lippa
Phyllis Lippman
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Kathleen L. Lynd and Edward J. Lynd
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Julia Magguilli and Louis D. Magguilli
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Kasia M. Swetz
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Adaptive Optics Brings a New Look to Vision Correction

(CONTINUED FROM COVER)

may improve how we see. Results of their work have the potential to lead to exciting new diagnostic technologies and treatments to correct optical errors in the human visual system. Yoon and MacRae recently provided *Vision for the Future* with an update of what is happening in the AO lab.

What is the current state of work being done in the AO laboratory?

“We’ve been doing bench testing on intra-ocular lenses (IOLs) for the medical devices industry,” said Yoon. IOLs are prosthetic lenses used to replace the eye’s natural lens when it becomes clouded by a cataract.

“In recent years, manufacturers have created a host of premium lenses,” said MacRae. “They are supposed to allow us to see unaided at near, intermediate and far distances, cheating the eye’s natural aging process which results in many of us wearing reading glasses or bi-focals. Because insurance doesn’t cover the cost of these relatively expensive lenses, understanding the limits of their performance in patient care is extremely important to the companies who manufacture them.”

“With our AO system, we can evaluate patients who have already had the lenses implanted and measure if they are performing well,” said Yoon. “These kinds of data are important for several reasons. First, they show the manufacturers at which ranges their lenses perform best and what could be done to improve their limitations. Second, the data allow us to set guidelines for physicians when selecting candidates for premium lenses. This way, they will choose only those patients who will receive the most benefit from them.”

Are there any other interesting uses for the technology?

“Yes,” said Yoon. “When a person sits down at our laboratory bench, we can fully correct every optical imperfection in their eyes; far beyond what can be achieved with their spectacles or contacts. We’ve been doing a great deal of research testing subjects at varying levels of correction for each eye. Some of the results are surprising.”

For instance, it may be more beneficial to not fully correct a patient undergoing a refractive surgical procedure such as LASIK because

the brain is used to seeing light that has passed through imperfect optics. Actually inducing small amounts optical aberration to the cornea, previously thought undesirable, may have a positive effect such as increasing a person’s depth of field — a big benefit to someone in their mid-40s undergoing a vision correction procedure. Increasing depth-of-field may provide better up-close vision

In the front part of the eye are two lenses, the cornea and the clear, or natural lens. Together they work like the lenses in a camera to focus light onto the back of the eye’s retina, which converts the optical signal to a neural one for processing by the brain. When they function perfectly, in an otherwise healthy eye, the resulting vision is excellent. However, common flaws in this system from both natural causes and disease result in a world that is out of focus for billions of people.

without sacrificing the distance correction that most people desire.

“By varying the level of vision correction using clinical trials participants, we can also better gauge how the brain will adapt to changes in ocular optics,” said Yoon. “Someone who has gotten used to seeing with poor optics might not do well if we improve their system too much. Unlike glasses, surgical vision correction is much more permanent. We want to be sure that patients undergoing treatment get the level of correction that is best for them.”

Yoon envisions that the equipment on his bench, which takes up half of a good-sized room, could be miniaturized into a table-top device. This would allow doctors to let patients “try on” wavefront corrected vision before going through a surgical procedure.

What are the medical implications of improved optics for ophthalmologists?

“More than ever, ophthalmologists looking to improve patients’ lives through refractive surgery need to better understand optics and how the visual system works,” said MacRae. “Whether it’s through laser procedures



(like LASIK) or surgically implanted lenses, the discoveries we make are going to allow doctors to do some amazing things,” said MacRae. “Take cataract surgery, for instance. If a 65-year old patient with cataracts walks in to my office, I see it as a real opportunity. Using new and emerging technologies, there’s no reason this patient shouldn’t see well into their 80s without contacts or glasses. However,” he cautioned, “because of the expanded benefits of visual correction, patient expectations are going to be greater. We have to know what we’re doing so that we don’t disappoint.”

AT HIS OPTICAL BENCH, DR. YOON CAN SHOW PEOPLE HOW LIFE WOULD BE WITH NEAR PERFECT VISION AIDED BY ADAPTIVE OPTICS.



Want to learn more about adaptive optics and the other technologies in our translational research laboratories?

The FEI clinical research group is recruiting for clinical trials using this technology. If you'd like to be added to our database and contacted for specific studies, please contact us at **585-276-8734**.

Better by the Numbers:

FDA Approves New LASIK Technology Developed by Eye Institute

The Rochester Nomogram, originally developed by **Scott MacRae, M.D.** and collaborators, marks a leap forward for patients who receive refractive surgery. Recently approved by the FDA, the formula improves the post-operative results for LASIK and PRK across a broad spectrum of patients.

With the aid of the Nomogram, a remarkable 99.3 percent of the eyes that MacRae performs wavefront-guided surgery on have vision of 20/20 or better. That's one of the best success rates among refractive surgeons in the world.

Recently, the company that licensed the technology from FEI announced that the FDA has approved its use in its refractive surgery system. **Technolas Perfect Vision** is a cataract and refractive laser company that was formed through a joint venture of **Bausch + Lomb** and **20/10 Perfect Vision AG**. It's the only company offering the Nomogram technology in its refractive surgery correction system.

The Nomogram was first created and tested at the University about five years ago by MacRae working together with **Manoj Venkiteshwar, Ph.D.** who was then a post-doctoral researcher at the University's Center for Visual Science.

MacRae, the director of the Refractive Surgery Center at FEI, had long noted that patients undergoing refractive surgery were much more likely to come out of the surgery slightly far-sighted, though their vision was nearly always 20/20 or better. He and Venkiteshwar created a complex formula that helps physicians understand how refractive surgery affects a person's eyesight. The Nomogram adjusts the way laser correction interacts with a patient's vision, vastly reducing the chances that the patient's eyes will be near-sighted or far-sighted after the procedure.

CURRENTLY OPEN:

- ⊙ A Phase I Open-Label, Dose Escalation Trial of QPI-1007 Delivered by a Single Intravitreal Injection to Patients with Optic Nerve Atrophy (Stratum I) and Acute Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION) (Stratum 2) *stratum 1 enrollment complete* (*D. Friedman, M.D., M.P.H.*)
- ⊙ A Phase 1 Placebo-Controlled Study Evaluating the Safety, Tolerability, Immunogenicity, Pharmacokinetics and Pharmacodynamics of Multiple Escalating Dosages of RN6G in Subjects with Advanced Dry, Age-Related Macular Degeneration (AMD) Including Geographic Atrophy (*M. Chung, M.D.*)
- ⊙ Controlled Study of Safety, tolerability, and Evidence of Activity of Intravitreal Injections administered monthly or every other month to patients with Geographic Atrophy (*D. DiLoreto, M.D., Ph.D.*)
- ⊙ Multicenter, double-blind, randomized, Placebo-controlled Study of Weight-Reduction and/or Low Sodium Diet plus Acetazolamide vs. Diet plus Placebo in Subjects with Idiopathic Intracranial Hypertension (*Z. Williams, M.D.*)
- ⊙ Prospective randomized investigation to evaluate incidence of headache reduction in subjects with Migraine and PFO Using the AMPLATZER PFO Occluder compared to Medical Management (*D. Friedman, M.D., M.P.H.*)
- ⊙ A Non-Treatment Study of Risk Factors for Nonarteritic Anterior Ischemic Optic Neuropathy (NAION) (*D. Friedman, M.D., M.P.H.*)
- ⊙ Effect of Diabetes Education During Retinal Ophthalmology Visits on Diabetes (*D. DiLoreto, M.D., Ph.D.*)
- ⊙ A Randomized Trial of Bilateral Lateral Rectus Recession versus Unilateral Lateral Rectus Recession with Medial Rectus Resection for Intermittent Exotropia (*M. Gearinger, M.D.*)
- ⊙ A Randomized Clinical Trial of Observation versus Occlusion Therapy for Intermittent Exotropia (*M. Gearinger, M.D.*)
- ⊙ A Randomized Trial of Levodopa as Treatment for Residual Amblyopia (*M. Gearinger, M.D.*)

For more information please contact us at: **585-276-8734**

Resident Clinic Expansion

During the past few years, the FEI resident clinic has become so busy that patient schedules have been filling up weeks in advance. To handle growing patient volume and enhance the teaching environment, the clinic will add two additional exam rooms this year. A chart room on the third floor of the Eye Institute will move to the ground floor, making way for the expansion. This new configuration is in accordance with other recent improvements to the clinic, including the first steps in migration to electronic medical record keeping. E-records will first be used by the residents and their on-call preceptors to care for hospital in-patients who have eye problems. Eventually the system will be implemented clinic-wide and into the faculty practice, as well.

Silvia Henry

The Flaum Eye Institute hosted an international fellow this winter. **Silvia Henry** came to FEI from Alexander University in Egypt where she is a third-year resident in Ophthalmology. In her residency she has already gained extensive surgical experience and is active in teaching undergraduate and postgraduate students.

She came to FEI to do an observership, learning cornea surgical techniques under the mentorship of **Yousuf Khalifa, M.D.**

Graduating Third-Year Residents Have Exciting Plans

Ben Hammond, M.D., who just returned from an international ophthalmology rotation at the L V Prasad Eye Institute in India, will enter a pediatric ophthalmology fellowship at the University of Southern California Children's Hospital of Los Angeles this July. **Justin Aaker, M.D.** is fellowship bound. He will travel to Washington University in St. Louis where he is focusing his training on the cornea sub-specialty. We are pleased to see **Mujahid Hines, M.D.** join Rochester Ophthalmology Associates where he is working with outstanding FEI clinical faculty members **Dennis Asselin, M.D., R '87**, and **Robert Olsen, M.D., R '85**.

The first- and second-year residents have been busy, too. **Sabita Ittoop, M.D.**, **Mahmood Shah, M.D.**, and **Seth Pantanelli, M.D.**, all presented posters at the Association for Research in Vision and Ophthalmology meeting in Ft. Lauderdale. Congratulations!

Vamsi Gullapalli M.D., Ph.D. enters

private practice after completing his two-year surgical retina fellowship at FEI. He will join Coastal Bend Retina in Corpus Christi, Texas in July. Also departing is Cornea Fellow **Tofik Ali, M.D.**, who is interviewing with several practices. We wish all our departing trainees the best of luck in ophthalmology.

In July, FEI welcomes three new residents and two clinical fellows. **William Gensheimer, M.D.** earned his medical degree at the University of Rochester School of Medicine and Dentistry and is finishing his internal medicine rotation at URM. **Juan Ayala Haedo, M.D., Ph.D.** comes to FEI after completing his first-year internship at the University of Arizona. He received his medical degree from Universidad Nacional de Asuncion in Paraguay and his doctorate in cell biology from the University of Miami. **Xiaofei Wang, M.D., Ph.D.**, is wrapping up her first-year general medicine experience at the University of Tennessee, Memphis. She earned her medical degree at Henan Medical University in China and a Ph.D. in ophthalmology at Beijing Medical University.

The retina service welcomes Fellow **Gareth Lema, M.D., Ph.D.**, who completed his medical training and residency in ophthalmology — as well as a doctorate in

Focus on Collaboration

Research to Prevent Blindness Grant Recognizes FEI Research Director



The **Research to Prevent Blindness (RPB)** Senior Scientific Investigator Award is among the most prestigious in eye research. Candidates must be recognized as national leaders in their field of scientific interest and be actively engaged in vision research to be considered.

FEI Professor of Ophthalmology and Research Director **Lin Gan, Ph.D.** was one of just six winners nationwide selected by RPB to be honored this year. Gan's research that investigates the molecular and genetic pathways associated in the development and progression of glaucoma may lead to new drugs and stem cell therapy to treat the disease. The recent discovery of an important factor in triggering the death of cells that transmit visual signals from the eye to the brain will be studied under this grant. The \$75,000 award brings to \$2.2 million the total amount of funding from RPB since the Eye Institute's establishment nearly 10 years ago.

NIH Awards Eye Institute \$1.9 Million to Study Function of Retinal Ganglion Cells

William Merigan, Ph.D. has received an RO1 grant from the National Institutes for Health to better understand the role of retinal ganglion cells (RCGs). RCGs are the cells in the retina that perform the vital function of converting visual information that comes through the eye into electrochemical information that is sent to the brain, allowing us to see. Researchers have identified more than 17 types of RCGs, but the contribution to vision for all but a few of them is largely unknown. This is due to the fact that many of these RCGs are too small and sparsely scattered in the eye to have their signals monitored through traditional technology. Using Functional Adaptive-Optics Cellular Imaging in the Living Eye (FACILE), Merigan proposes to image individual RCGs *in vivo*. FACILE does this by combining adaptive optics imaging with optical recording to map the simultaneous electrical activity of several hundred ganglion cells. The development of FACILE will help to accelerate the complete characterization of the many pathways from the retina to the brain and will reveal the full contribution the retina makes to visual image processing. Understanding the functions of these cells could help researchers and scientists develop better ways of detecting eye disease and in targeting new treatment pathways to eventually prevent disease progression or restore vision.

biophysics — at the SUNY Buffalo School of Medicine and Biomedical Engineering.

Joining the cornea team this July is fellow **Marshall Ford, M.D.**, who comes to FEI after completing his medical training and ophthalmology residency at Loma Linda University Medical Center. We are excited to have such an accomplished new group of residents and fellows and look forward to their contributions to FEI.

Ophthalmology Conference Draws Record Attendance

The 56th annual Rochester Ophthalmology Conference hosted by FEI was attended by more than 250 ophthalmologists and allied healthcare personnel. The two-day physician program was highlighted by the chairs of two top-10 ophthalmology departments. Our thanks go out to **Joan Miller, M.D.** of Harvard University who gave the Flaum Eye Institute Distinguished Visiting Professor Lecture and to Duke University's **David Epstein, M.D.** who delivered the 56th Snell Memorial Lecture. They led an outstanding panel of guest lecturers, including **Prem Subramanian, M.D., Ph.D.** and **J. P. Dunn, M.D.** from Johns Hopkins University, **Peter Dolman, M.D.** from the University of British Columbia, **Pravin Vaddavalli, M.D.** from the L V Prasad Eye Institute in Hyderabad, India, and FEI's own faculty. They provided the latest updates on a variety of topics ranging from the diagnosis and management of uveitis to surgical treatment of several vision threatening conditions. Thanks to all who attended, as well as exhibitors and sponsors of the program.



FEI Chair Receives Health Care Achievement Award

Steven Feldon, M.D. was honored by the *Rochester Business Journal* for his contributions in healthcare to the regional economy. The Health Care Achievement Awards single out individuals who have had an impact on the community and are awarded in several categories including management.

Feldon was nominated by FEI Advisory Board member and former Rochester Institute of Technology President **Albert Simone, Ph.D.** He described Feldon as “a true visionary who has set his goals high and is largely responsible for the Eye Institutes success and rapid rise.”

Under Feldon's leadership, the Eye Institute has grown from 20,000 square feet and two research scientists to a 65,000 square foot facility employing more than 140, including six basic researchers and 18 clinical faculty generating in excess of \$12 million in NIH funding. The award was presented at a luncheon at the Rochester Hyatt Hotel on March 22nd.

AUPO Update

Earlier this year, the Association of University Professors of Ophthalmology (AUPO) and the University Administrators of Ophthalmology (UAO) held its annual meeting in Arizona. AUPO/UAO is a national organization that provides chairs, residency program directors and administrators from university ophthalmology programs with a forum to share best practices, thereby improving patient care, resident education, research and other critical functions. During this year's meeting **Steven Feldon, M.D., M.B.A.**, made a presentation about balancing clinical productivity. **John Meade, M.P.H.**, FEI administrator, was elected to the UAO Board of Directors. He will serve a three-year term and help to define standard practices for UAO members as well as play an integral role in setting the agendas for upcoming meetings. **Ajay Kuriyan, M.D.**, a former University of Rochester medical student, was one of four selected to present at the AUPO/Research to Prevent Blindness Resident and Fellow Research Forum. His paper discussing a novel therapy to prevent corneal scarring due to injury or surgery was selected from 43 entries. Kuriyan, who will begin his ophthalmology residency at Bascom Palmer Eye Institute, received a commemorative certificate plus a cash prize.

Former Resident Makes Breakthrough in AMD Research

Jayakrishna Ambati, M.D., R '98, recently published scientific findings that may soon lead to better diagnosis and treatment of dry age-related macular degeneration (AMD). Ambati, who is a professor and vice chair of ophthalmology at the University of Kentucky, leads a team of researchers that has discovered a crucial link between the scarcity of a common enzyme (DICER1) in retinal cells of dry AMD patients and the accumulation of a substance that is toxic to retina cells. His findings were published in the journal *Nature*. We extend Ambati our congratulations on this important discovery.



Local Television Reporter has an Eye for Art

One of the most noticeable features of the Eye Institute is the presence of original works of art, highlighted by the stained glass sculpture of world renowned **Valerie O' Hara** of Pike Stained Glass Studios. Recently, WHEC TV's **Janet Lomax** made a visit to FEI to bring attention to this hidden gem in Rochester. **Steven Feldon, M.D.**, provided Lomax, and her viewers, with floor-by-floor insiders' tour of FEI. Together they discussed the history of well over a dozen pieces that provide inspiration to patients and remind us of how precious vision is.



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Looking Forward, Looking Back

In anticipation of the celebration of FEI's 10th anniversary we'd like to share some of the great moments we've enjoyed together during our growth.

In March of 2010, many of the founding supporters of the Flaum Eye Institute gathered at Oak Hill Country Club to be recognized for their support and to celebrate our vision for the future. The evening was highlighted by a talk given by Treacy Ziegler, an artist and grateful patient of FEI who reminded us how important sight is to us and offered her unique perspective on living in a visual world.



(SEATED FROM LEFT) RINA CHESSIN, MARY BERK, BRAD BERK, M.D., PH.D., ROBERT MORGAN, ROBYN MORGAN. (STANDING) DANIEL CHESSIN, DAVID FLAUM, ILENE FLAUM, LOU BRESCIA, SUSAN BRESCIA.

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