Over 700 friends, faculty, visiting ophthalmologists, and staff gathered to dedicate the Brehm Tower at the W.K. Kellogg Eye Center on a glorious day in April. President Mary Sue Coleman led the procession of speakers, which included Ora Hirsch Pescovitz, M.D., Executive Vice President for Medical Affairs; James O. Woolliscroft, M.D., Dean of the U-M Medical School; and Douglas L. Strong, M.B.A., Director and Chief Executive Officer of the U-M Hospitals and Health Centers.

Together they celebrated the vision for the eye center that began decades ago and was carried forward by Kellogg’s alumni and community advisory boards, faculty, and department chair, Paul R. Lichter, M.D. Dr. Lichter, the F. Bruce Fralick Chair and Professor of Ophthalmology and Visual Sciences, presided over the April 23 ceremony just as he had 25 years ago when the W.K. Kellogg Eye Center was dedicated.

The theme of collaboration and discovery echoed through the dedication talks, with several speakers noting the great promise for discovery in a building where vision researchers and diabetes researchers work in close proximity to one another. “The science in the new building, in collaboration with the Brehm Center for Diabetes Research, will be profound,” said Dr. Lichter. “We look forward with great anticipation to what develops from this new facility.” Like President Coleman and Dr. Pescovitz, he thanked Bill and Dee Brehm, whose gift made possible the building and the new diabetes research center named for them.

Another highlight of the dedication festivities: twenty leading ophthalmologists from across the nation and around the world spoke at Kellogg’s annual Spring Postgraduate Conference whose theme this year was “Dedicated to Discovery.” Each of these distinguished physicians spoke on “What Experience Has Taught Me” in a particular subspecialty of ophthalmology.

As Dr. Lichter concluded his remarks, he thanked the guests for their contributions to the building and their friendship over the years. “You have given us so much support,” he said, “and we will deliver for you in the years ahead.”
FROM THE CHAIR

The dedication of the new W.K. Kellogg Eye Center was everything we had hoped for and more. It was a day to celebrate a dream realized and to thank the many people who worked to make this new building possible—from friends of the Eye Center to leaders of the University and Health System. It was a great pleasure as well to see patients, fellow ophthalmologists, staff, and members of the community among the guests at the various events over the course of the celebration.

As we planned for this beautiful and state-of-art building, we had many discussions about what the expanded space would allow us to achieve. Faculty recruitment was high on the list. We needed more clinicians and scientists to meet patient demand and to expand research programs aimed at new treatments for eye disease. This publication introduces you to several of our newest faculty members.

Dr. Hakan Demirci will direct our new Orbital and Ocular Oncology Service. Although Kellogg has always provided care to children and adults with eye cancer, Dr. Demirci will head a new service that will coordinate care for patients who often need to see other specialists in ophthalmology as well as throughout the Health System. Under Dr. Demirci’s direction, we will be able to extend our services to patients from a wider geographical area.

Optometrist Dr. Karen DeLoss brings a new and innovative treatment to the Eye Center. Severe dry eye can occur after cancer treatment or as a result of cornea disease. In most cases, it is extremely painful. After having completed extensive training, Dr. DeLoss now provides patients with a new prosthetic lens that almost immediately relieves the pain. More information appears in this issue.

We also welcome two ophthalmologists and an optometrist who will help us meet the growing demand for children’s eye care. Many of you know that our Pediatric Ophthalmology Service is in great demand. Our new pediatric ophthalmologists, Dr. Dr. Christopher Gappy and Dr. Sudha Nallasamy, and optometrist Dr. Courtney Dewey will allow us to provide timely—and still excellent—service to children who visit our clinics in Ann Arbor, Brighton, and Canton.

There is much more to come. Over the next few months we will welcome a team of five clinicians and scientists who have developed a dynamic approach to their investigation of diabetic retinopathy. Dr. David Antonetti and Dr. Thomas Gardner have already arrived and we await the remaining team members. Look for more information on our web site and in our Annual Report to arrive just after the new year.

Paul R. Lichter, M.D.
F. Bruce Fralick Professor and Chair
Department of Ophthalmology and Visual Sciences
Director, W.K. Kellogg Eye Center

BUILDING AN ACADEMIC EYE CENTER IN BEIJING

Looking to Kellogg as a model

S
ince his appointment nine years ago as director of the Tongren Eye Center in Beijing, Ningli Wang, M.D., has transformed a clinical eye service into a growing academic program. Today, Tongren enjoys a reputation as one of the top two eye centers in China.

Last spring, Dr. Wang and three colleagues came to the Kellogg Eye Center to learn about our highly regarded teaching and research activities. His goal: “to develop a partnership with an excellent eye center like Kellogg.”

This was not the first encounter between the two groups. Last year, the Tongren group asked Kellogg epidemiologist David C. Musch, Ph.D., M.P.H., to help develop a large-scale clinical trial on glaucoma treatment in China. Dr. Musch and neuro-ophthalmology specialist Jonathan D. Trobe, M.D., long an advocate of international outreach, hosted the delegation.

“IT was a wonderful visit,” says Dr. Trobe. “We learned about research in China, especially angle-closure glaucoma, a type of glaucoma that is not as common in the United States as in China.” Also important, according to Dr. Trobe, was the chance to talk about different approaches to clinical care and research practiced in each country.

While our department has long allotted protected time for research, the practice is more difficult in China where so many people need basic eye care. “It’s hard to appreciate the volume of patients in China,” says Dr. Trobe. “We don’t have anything like it, even in our urban centers.”

Dr. Wang agrees that Tongren has a daunting task: providing eye care in China where there are only 4 ophthalmologists per 1,000,000 people. Nonetheless, he has urged his faculty to perform research and publish the findings; and he has established a school of ophthalmology—all toward building a strong academic center.

The exchange between eye centers will continue, in keeping with Kellogg’s tradition and that of the U-M Medical School, which has formalized its international outreach in a program called Global Reach. In November, Dr. Musch will visit his Tongren Eye Center colleagues after teaching a course on clinical trial principles and methods in Shanghai. Next spring, Dr. Trobe will teach a two-day course at Tongren on neuro-ophthalmology.
A new prosthetic lens provides relief to patients who suffer from severe dry eye, often the result of cancer or corneal disease. It is available in just a few medical centers across the nation, including the U-M Kellogg Eye Center.

The device—a custom-made prosthetic lens that bathes the eye in saline—is a pioneering treatment developed by the Boston Foundation for Sight. Up until two months ago, patients like Thomas Dixon, could receive treatment only in Boston.

Mr. Dixon, who suffers from Stage IV Non-Hodgkin’s lymphoma, had received a bone marrow transplant at the U-M Comprehensive Cancer Center in April 2009. Six months later, he was diagnosed with graft-versus-host disease, a common side effect of stem cell and bone marrow transplants. After experiencing severe dry eye accompanied by extreme pain, Mr. Dixon visited Kellogg cornea specialist, H. Kaz Soong, M.D., who referred him for the special lens. “I tried a variety of treatments for Mr. Dixon, including cauterizing his drainage ducts, but he continued to suffer from severe dry eye and was extremely uncomfortable,” says Dr. Soong. He thought Mr. Dixon would respond well to the special lens.

The full name of the device is the prosthetic replacement of the ocular surface ecosystem, or PROSE, and it is used to treat patients suffering from complex corneal diseases. The prosthetic device rests on the white part of the eye, the sclera, and is composed of material that allows oxygen to reach the cornea. When inserted onto the eye, it is filled with saline that remains in the reservoir while the device is worn. The device creates a smooth surface over the damaged cornea and the saline provides lubrication and a healthy supply of oxygen to the cornea, allowing the damage to heal with time. When the device is fitted properly, the pain disappears.

Mr. Dixon was treated by Karen S. DeLoss, O.D., one of Kellogg’s newest faculty members, who has had nine weeks of fellowship training to fit the PROSE lens. Dr. DeLoss immediately began the fitting process, which takes 7 to 10 days—and sometimes longer—to achieve optimal fit and comfort level. She custom designs each device, which is then manufactured in Boston. Before leaving the clinic, each patient receives training to become “100 percent proficient” in maintaining the device, explains Dr. DeLoss.

“When Dr. DeLoss inserted the device, there was a cooling sensation and the pain was gone immediately,” says Mr. Dixon. After his follow-up appointment, he will see Dr. DeLoss annually, here at the Kellogg Eye Center.

Mr. Dixon was pleased with his experience. “Dr. DeLoss was wonderful. During my initial consultation, she answered all my questions and she explained what the device could do for me. She also spoke with me about expectations,” Mr. Dixon says. “And my expectations have been met. I’ve had the lenses for a few months and I’m seeing better than 20/20.”

Dr. DeLoss works closely with Kellogg’s cornea specialists who encounter patients with the kind of diseases that yield to treatment with the device. “It’s an honor to work together to offer this cutting-edge treatment to our patients,” says Dr. DeLoss. “It puts us at the forefront of patient care.”

If you think you might be a candidate for this lens, please call the Cornea Clinic at 734-232-8400 or email PROSEClinic@umich.edu

Dr. Karen DeLoss holds the new prosthetic lens that provided Thomas Dixon with almost immediate relief from severe dry eye.

The new prosthetic device is a transparent dome, about the size of a nickel, made of specialized plastic that allows oxygen to reach the cornea.
Studies underway at the University of Michigan Kellogg Eye Center could guide the creation of drug and light therapies to treat vision loss, jet lag, sleep disorders and depression, among other conditions.

For more than a century, scientists have known that vision is driven by two types of photoreceptors—the rods and cones. These cells analyze the spatial details in our world and enable us to see objects, color and movement. In 2002, however, a third photoreceptor was discovered and given the name “intrinsically photosensitive retinal ganglion cell,” or ipRGC. Kellogg scientist Kwoon Y. Wong, Ph.D., studies this new photoreceptor, whose main function is to gauge ambient light intensity rather than analyze spatial details.

Like the rods and cones, ipRGCs absorb light and use the energy to generate nerve impulses. But unlike rods and cones, which send their signals to regions of the brain that deal with conscious visual perception, ipRGCs send their messages to other parts of the brain that produce subconscious physiological responses to light.

These responses affect pupil constriction, enhance alertness, affect the release of hormones, and synchronize daily rhythms like the sleep–wake cycle to the environmental light–dark cycle.

This subconscious visual system has been associated with many medical conditions. For example, scientists have shown that if ipRGCs absorb too little light during the day, depression and insomnia can occur. On the other hand, if these cells receive too much light at night, diseases such as breast and prostate cancer can develop.

“Subconscious vision has an enormous impact on our well-being,” says Dr. Wong. “The discovery of ipRGCs has made it much easier to investigate how different kinds of environmental light may influence our body, and will expedite the development of new strategies to promote health.”

Most important, these newly discovered photoreceptors still function in many blind patients whose rods and cones have completely degenerated. Thus, Dr. Wong’s work—bolstered by a $200,000 Career Development Award from Research to Prevent Blindness—also may aid in the development of drugs and electronic devices that enhance the vision of these patients.

Dr. Wong’s laboratory examines how ipRGCs respond to light and also how they communicate with other types of cells within the retina. Results of his research could have significant implications for humans. New daytime lighting technologies—such as light bulbs—could increase alertness and productivity at work and school; and special nighttime lights could reduce the harmful effects of nocturnal light exposure. Best of all, scientists may find a way to help people who have lost vision regain some of their sight.

You’ve Heard of Rods and Cones…

Now there’s a “third” photoreceptor that could lead to treatments for depression, sleep disorders, and blindness

On September 24, a beautiful fall day, many friends gathered to dedicate the Helmut F. Stern Garden. Among the special guests, at left, are Brian Campbell, Mary Campbell, Helmut Stern, and Candice Stern. At right, are Dr. Paul Lichter and Mr. Stern in front of the garden’s water wall. Look for more photos and a story in our forthcoming Annual Report.
A generous pledge of support will enable the Kellogg Eye Center to move forward with plans to create a comprehensive Resident Education Center. The Center will feature new technology, flexible instructional space, and a resident work area and lounge. The gift, made by an anonymous donor, will cover close to half of the cost of the project. Construction will begin by the end of the year and will take approximately six months to complete.

“Enhancing our training facilities will go a long way toward promoting our educational mission and will help us continue to recruit world-class medical students,” says Shahzad I. Mian, M.D., Director of the Residency Program and Associate Professor of Ophthalmology and Visual Sciences. “The residents are very excited to have the opportunity to train in a program that not only has top-notch patient care and research facilities, but also a very special dedicated space for learning.”

One of the top ophthalmology training programs in the country, the Kellogg Eye Center accepts seven residents per year into its three-year program. The new Resident Education Center will welcome the next class of residents when they arrive next July.

Sixth-floor renovations in the Eye Center’s research tower will create the 2,500-square-foot space. It is designed to accommodate an eye surgery simulator as well as communication technology that will allow residents to watch surgical cases taking place in Kellogg’s operating rooms and review recorded cases in 3D. A large conference room will be used for classroom-style lectures and for small group projects, and residents will benefit from a lounge with computer workstations, comfortable furnishings, lockers, and a rest area for when they are on call.

The $500,000 gift that enabled the project was made by a businessman who is a patient at the Eye Center. “As a student and an adult, I have always admired the University of Michigan’s quest for excellence,” he says. “Since I have reached a point in life where I have the resources to assist, I couldn’t resist the opportunity.” His inspiration and generosity will have a tremendous ripple effect, says Paul R. Lichter, M.D., Director of the Kellogg Eye Center. “It will benefit our trainees as well as their future patients and all those who are helped through their work. We are very grateful.”
WELCOME TO KELLOGG’S NEW FACULTY

Ten new faculty members have joined the Department this fall. Over the next few months, we will also welcome three scientists who are part of a nationally recognized research team investigating diabetic retinopathy. Dr. Thomas Gardner and Dr. David Antonetti are the first to arrive. Read more about this new research team and all of our new faculty in Kellogg’s Annual Report, coming in January.

David A. Antonetti, Ph.D., professor, is an acknowledged leader in diabetes research, particularly as it applies to diabetic retinopathy. His research, which focuses on understanding the changes in retinal vessels that occur in diabetes and other retinal vascular diseases, has been funded by the National Institutes of Health as well as the Juvenile Diabetes Research Foundation. Dr. Antonetti earned his Ph.D. in cell and molecular biology from Penn State University in 1992.

Karen S. DeLoss, O.D., is an optometrist in the Contact Lens Clinic who recently completed a fellowship at the Boston Foundation for Sight enabling her to provide a new prosthetic lens for patients with corneal disease. Dr. DeLoss earned her O.D. from the Illinois College of Optometry and completed a fellowship in Cornea and Contact Lens at the University of Houston College of Optometry.

Hakan Demirci, M.D., associate professor, heads up Kellogg’s new Orbital and Ocular Oncology Service. He provides care for individuals with eye cancer, working with other services at Kellogg and the U-M Health Centers to coordinate care for our patients. Dr. Demirci earned his M.D. from Hacettepe University in Ankara, Turkey and completed residencies at Istanbul University and Henry Ford Hospital. He has completed Ocular Oncology fellowships at Wills Eye Hospital and a fellowship in Eye Plastic, Orbital and Facial Cosmetic Surgery at the University of Michigan.

Courtney A. Dewey, O.D., has joined the Pediatric Ophthalmology and Adult Strabismus Service. She provides eye examinations, in collaboration with our pediatric ophthalmologists, for Kellogg’s pediatric patients in the Ann Arbor and Canton offices. Dr. Dewey received her O.D. from the Ohio State University College of Optometry.

Elizabeth Du, M.D., has joined the faculty of the Comprehensive Ophthalmology Service. She sees patients in Kellogg’s Livonia office and at the VA Hospital in Ann Arbor. Dr. Du earned her M.D. from Wayne State University and completed her residency at the Henry Ford Hospital.

Christopher Gappy, M.D., has joined the faculty of the Pediatric Ophthalmology and Adult Strabismus Service. He sees patients in Kellogg’s Ann Arbor and Brighton offices. Dr. Gappy earned his M.D. from Wayne State University in 2005 and completed his residency at Henry Ford Hospital. In 2010, Dr. Gappy completed a fellowship in Pediatric Ophthalmology at the University of Michigan.

Sudha Nallasamy, M.D., is an assistant professor on the Pediatric Ophthalmology and Adult Strabismus Service who sees patients in Kellogg’s Ann Arbor and Canton offices. Dr. Nallasamy earned her M.D. from and completed her residency at the University of Pennsylvania. She then completed her fellowship in Pediatric Ophthalmology at Boston Children’s Hospital.

Maria A. Woodward, M.D., is a clinical lecturer on the Cornea and External Disease, Cataract and Refractive Surgery Service. Dr. Woodward earned her M.D. from Columbia University and then completed both her residency and fellowship in Cornea and Refractive Surgery at Emory University.

Thomas W. Gardner, M.D., M.S., professor, is a prominent clinician–scientist who investigates the development and treatment of diabetic retinopathy. His research has been funded by the National Institutes of Health as well as the Juvenile Diabetes Research Foundation. Dr. Gardner earned his M.D. from Jefferson Medical College in Philadelphia in 1979 and, in 1998, his M.S. in physiology from Penn State. In addition to his research, he will see patients in the Department’s Retina Clinic in Ann Arbor.

Paul J. Grenier, O.D., is an optometrist on Kellogg’s Comprehensive Ophthalmology Service. He sees patients in both the Ann Arbor and Canton offices. Dr. Grenier earned his O.D. from the Illinois College of Optometry and completed a residency in Primary Care Optometry, also at the Illinois College of Optometry.
Graves’ eye disease is an autoimmune condition in which white blood cells attack the eye muscles and connective tissue within the eye socket and thyroid. It affects women more often than men. Patients often have a “staring” appearance with symptoms ranging from puffiness and bulging of the eyes to dry eye, double vision, and pressure pain or headache. Dr. Douglas explains how the disease progresses and what you can do to treat it.

If I have Graves’ disease, will my eyes be affected?
About 25 to 50 per cent of people with Graves’ disease will develop Graves’ eye disease, also called Graves’ ophthalmopathy or thyroid eye disease. Although unusual, it is possible to have the eye disease even if you do not have Graves’ disease.

How does the eye disease progress?
There are two distinct phases of the eye disease. The active phase, marked by inflammation, usually lasts from six months to two years. This phase can be painful, and many patients say they feel as if a forest fire has raced through their eyes. During the active phase the eye muscles can swell, causing the eyes to bulge and patients to have double vision. During the second phase, inflammation has calmed down but the eye bulging and double vision does not usually improve. At this point, the patient may need surgery to correct the more visible effects of the disease.

What kinds of treatments are available during the active phase?
Artificial tears and ointments restore lubrication and offer significant relief for “burning” eyes. For more advanced conditions, we prescribe anti-inflammatory medications, such as prednisone. We work with our patients to find an effective level of medication with minimal side effects.

What’s new in treating Graves’ eye disease?
Our research team is developing new treatments based on studies of medications used for other autoimmune conditions. One of these, Rituximab (anti-CD20), has been found to be a highly effective therapy for patients with Graves’ eye disease. We are continuing to investigate how this medication, and others, can be brought from the laboratory into the clinic to quiet the inflammatory process.

Can my eye doctor treat all of my symptoms?
For the most part, yes. But sometimes our patients need the services of specialists in radiology, dermatology, and endocrinology. We understand how confusing this can be, and our staff is happy to help coordinate your appointments. Kellogg is the only eye center in the nation to have an endocrinologist on staff who is dedicated to the treatment of Graves’ disease.

Will I need surgery?
This depends on your condition after the active stage has subsided. You might need surgery to correct protruding of the eyes, double vision, or the position of your eyelids. These surgeries must be performed in a specific order. Many patients are concerned about the physical changes that come with the disease. We can help by offering a range of aesthetic procedures to restore a sense of physical and emotional well-being.

Learn more about Graves’ eye disease at www.kellogg.umich.edu/thyroid. To make an appointment, please call 734.764.5106
Earthquake in Haiti

*Kellogg’s Dr. Kaz Soong reports from the ground ten days after the quake and again three months later*

**Earthquake strikes**

January 12th began as a beautiful day in Haiti but ended as a nightmare after a 7.0-magnitude earthquake struck in the late afternoon and rocked the country for 35 terror-filled seconds. Cornea specialist H. Kaz Soong, M.D., managed to secure a seat on a plane to Port-au-Prince ten days later. He’d had a long and warm relationship with Haiti and his only thought was to help his colleagues and friends care for the thousands of people who had been injured in the quake. “My friends were in trouble,” said Dr. Soong. “I knew that I had to go back.”

**Situation on the ground**

During five exhausting days at the field hospital, Dr. Soong assessed eye injuries and called upon his medical training to fill the immense need that confronted his fellow volunteers. Dr. Soong helped orthopedic surgeons with amputations, reduced closed fractures, and created casts for children. He took x-rays on the scores of patients waiting in stretchers. The queues were endless. There was no electricity, no sanitation, few supplies, and little food.

Dr. Soong rolled up his sleeves and emptied bedpans, fed patients, removed medical waste, delivered supplies, and swept the floors. “I felt privileged to be able to help in any way I could.” He sang Creole folk songs and comforted parents who had lost their children.

**Three months later**

In April, Dr. Soong returned for another visit, treating eye conditions and performing surgery. He trained residents and wrote a report for the American Academy of Ophthalmology that would be the basis of a long-term strategy to boost the condition of Haitian ophthalmology. Many of the ophthalmologic conditions were due to the lack of good medical care, a high prevalence of HIV infection, and lingering earthquake-related injuries.

Port-au-Prince was crowded with tent communities that still lacked running water and sewage facilities. The rainy season had begun, bringing with it mosquitoes, flies, and rats. Not surprisingly, interest in Haiti had faded. But the determination of one ophthalmologist from the U-M Kellogg Eye Center and others like him around the world holds promise that help will always be available to the citizens of this beautiful country.