This is our mission:
To solve the puzzles of blinding eye disease,
To improve the quality of life for our patients,
And to teach the next generation of vision scientists and clinicians.

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Cover: To detect color deficiency, ophthalmologists often ask patients to identify the number or figure within a larger circular image containing hundreds of variously sized and shaded colored bubbles. This system is called the Ishihara color blindness test, adapted here to reflect the familiar University of Michigan “Maize and Blue.”
Dear Friends,

This has been a year of tremendous growth and opportunity for the Department. In July a year ago, the University of Michigan Board of Regents approved a major expansion of the W.K. Kellogg Eye Center. The new 222,000-square-foot building will feature state-of-the-art clinics and laboratories, allowing the Department to meet the growing demand for advanced eye care, education, and research over the next 10 to 20 years.

In a later section, you will see renderings of the new building and an overview of programs targeted for growth in our new space.

While planning for the new Eye Center has occupied much of our time this year, the faculty continues to excel at providing core services. Kellogg clinicians conducted 125,000 patient visits this year, and they expect to see many more patients next year. Their expertise reached far beyond Kellogg clinics, with many ophthalmologists volunteering to provide eye care in countries with limited access to health care.

Scientific findings and publishing moved ahead at a brisk pace. We were especially proud of one lab’s pioneering work on the inflammatory roots of macular degeneration, including the discovery, along with other centers, of Complement Factor H, a significant causal factor for age-related macular degeneration.

As I write this letter, we are looking ahead to groundbreaking for the expanded Eye Center. The new building will be situated next to the Kellogg research tower that we dedicated just 21 years ago. That expansion allowed us to grow in ways we couldn’t imagine then. In no time at all, we will have nearly doubled our space and resources, toward the goal of saving sight and improving our patients’ lives.

Paul R. Lichter, M.D.
F. Bruce Fralick Professor and Chair
University of Michigan Department of Ophthalmology and Visual Sciences
Director, W.K. Kellogg Eye Center
125,000 PATIENT VISITS TOOK PLACE AT THE KELLOGG EYE CENTER LAST YEAR. WE’LL SEE MORE NEXT YEAR.

Meeting the challenge of changing demographics

The Kellogg Eye Center is serving more patients every year. In 2006, patient visits reached 125,000, up 36% from the same period five years ago. Growth will continue at a rapid pace because we are experiencing a major demographic shift.

This year the Baby Boomer generation begins to turn 60. As this group ages, we will see many more patients with cataracts, glaucoma, macular degeneration, and other conditions of the aging eye.

While our faculty is strong and we continue to attract important research funding to fight eye disease, the Department is planning for the future. We will add personnel in several areas: faculty and staff who deliver patient care, faculty engaged in vision research, and additional physicians in our residency program. The projected growth will take place in a new building—the Eye Center Expansion, described later in this report.
WORK AT THE KELLOGG EYE CENTER AND WE ARE STILL GROWING.

410 PEOPLE WORKING AT THE W.K. KELLOGG EYE CENTER

- 1 ocularist
- 3 nurses
- 3 ophthalmic photographers
- 4 orthoptists
- 5 optometrists
- 9 fellows
- 18 residents
- 27 O.R. staff
- 38 ophthalmic technicians
- 66 faculty
- 71 support staff
- 76 clinic staff
- 89 research staff

$11,003,987 IN RESEARCH FUNDING
- Federal
- Non-federal
- Gifts and endowment
- General funds

410 PATIENT VISITS TOOK PLACE AT THE KELLOGG EYE CENTER LAST YEAR. WE'LL SEE MORE NEXT YEAR.

3 nurses
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66 faculty
71 support staff
76 clinic staff
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="We can all expect to live longer, healthier lives. Yet quality of vision is of tremendous concern to people entering their 80s and 90s. The challenge for ophthalmology is to develop the resources to serve these new patients."

Paul R. Lichter, M.D.

All figures are for FY2006.
With patients and their families in mind, our scientists seek to unravel the mysteries of blinding eye disease. This year they have made great progress in their study of eye diseases like macular degeneration, glaucoma and diabetic retinopathy. They continue to develop new methods to peer into the minute activities in cells that may help them identify—and eventually treat—disease at the earliest possible moment. Our physician–scientists also lead a wide range of clinical trials that give patients access to promising new treatments for eye disease.
The findings will bring us closer to creating gene-based treatments for a disease that has defied simple answers. Age-related macular degeneration (AMD) is a complicated and multifactorial disease, one that is the result of many genetic and environmental factors.

Anand Swaroop, Ph.D., molecular geneticist and Director of the Retinal and Macular Degeneration Center at Kellogg, was awarded a grant from the National Eye Institute to identify susceptibility genes for AMD. This new project will build on the lab’s years of research, which came to fruition this year in the form of two major developments. The Swaroop research team identified a number of chromosomal areas that harbor genes believed to predispose people to macular degeneration as they age. This laid the groundwork for the latest discovery of Complement Factor H, which was shown to be associated with the onset of the disease. They have also identified several gene variations that are associated with AMD.

The substantial scope of the new project will ultimately generate information that will jumpstart the search for gene-based therapies for patients who are losing their vision from AMD. Kellogg scientists will collect detailed clinical information on 1500 unrelated patients who have AMD and another 1000 age-matched patients who do not, and then study both groups for changes in their vision over time as well as their genetic make-up.

Dr. Swaroop expects to provide new insights into disease diagnosis, progression, and pathology. The knowledge generated by these scientists will enable them to identify molecular targets for new therapies and drug discoveries for people who are likely to suffer from AMD.
"If we hope to use stem cell-based therapies to treat retinal disease, it is profoundly important that we understand the molecular mechanism by which dying photoreceptors are replaced,” says Dr. Hitchcock, an internationally known neurobiologist. “We know that stem cells detect retinal injuries. Our goal is to identify the signaling molecules, from the injured cells to the stem cells, that initiate regeneration.”

In the past year, Dr. Hitchcock’s lab has made significant progress. His group has identified several signaling molecules that may play key roles in photoreceptor regeneration. Now they need to define where the molecules are expressed and how they might trigger the cascade of events that result in regeneration.

Dr. Hitchcock cautions that it will take time to interpret the intricate chain of biological and biochemical events leading to regeneration. Stem cell-based replacement therapies won’t be possible, says Dr. Hitchcock, until we have a thorough understanding of the entire sequence of events, from dying cells to their replacement.
Two Kellogg scientists have developed
a novel technology that will serve as
an early warning system for eye disease.
They have used advanced imaging
techniques to detect minute signals
emitted by damaged or dying retinal
cells long before symptoms of the dis-
ease appear. The technique will give
ophthalmologists the ability to treat
eye disease before vision loss occurs
and before disease can be detected
using currently available clinical
methods.

Victor M. Elner M.D., Ph.D., and
Howard R. Petty, Ph.D., believe the
technology has potential for detecting
diseases ranging from glaucoma to
age-related macular degeneration.

Dr. Petty is a biophysicist known
for creating high-speed imaging sys-
tems that perform the remarkable feat
of tracking the signaling pathways of
individual molecules in cells. He and
Dr. Elner, who is an orbital surgeon,
eye pathologist, and scientist, have
used this technology to measure the
metabolism of retinal cells. The result-
ing data, they say, serve as a barom-
eter of the health of the retina and
optic nerve.

In preliminary tests, the tech-
nology has provided very accurate
readings of visual health. Dr. Elner
has recorded images before and after
surgery for patients with compressive
optic neuropathy, a disease affecting
the optic nerve and cells in the inner
layer of the retina. As predicted, the
“before” photos displayed metabolic
images typical of diseased tissue; the
“after” photos showed little to no
metabolic disturbance.

The ultimate goal is to use the
technology to image the retinas of
patients believed to be at risk for eye
disease. “If we can capture images
that signal the onset of disease,” says
Dr. Elner, “we can intervene early
to preserve the patient’s vision and
monitor treatment response.”

Why do retina cells die? It’s a decept-
ively simple question. By studying
the molecular process by which cells
die during disease, David N. Zacks,
M.D., Ph.D., expects to learn how
to preserve photoreceptors, the cells
that are essential for sight. A specialist
in Kellogg’s Retina Clinic, Dr. Zacks
understands firsthand the impact his
research could have on patients with
conditions and diseases ranging
from retinal detachment to macular
degeneration.

Scientists in differing fields of
research often learn from each
other at professional conferences
and through peer-reviewed publica-
tions. It occurred to Dr. Zacks that
a more sustained conversation would
help to advance the research of all
those who study retinal cell death
and related diseases. Two years ago,
with a colleague from California, he
created a Special Interest Group at the
annual meeting of the Association for
Research in Vision and Ophthalmol-
ogy. Nearly 150 scientists came to the
most recent meeting.

According to Dr. Zacks, the
gatherings have sparked some lively
discussions among those who study
retinal cell death. “We have shared
problems, reviewed recent thinking,
and have talked about directions for
future research,” he says. “And we all
want the same outcome: to find new
treatments for our patients who will
lose vision from retinal disease.”
A clinical trial at Kellogg has brought hope to people who could lose vision from the wet form of age-related macular degeneration (AMD).

A quarter of a million Americans over the age of 60 have this disease and, with the baby boom bulge looming on the horizon, that number is expected to grow. Until now, little could be done to halt the progression of vision loss.

Clinical trials here at the U-M Kellogg Eye Center and in sites around the country produced some very positive findings. The new drug, Lucentis, not only stopped the loss of vision, but improved vision in those who received it soon after being diagnosed with the disease. The drug was approved by the Food and Drug Administration in June 2006.

Mark W. Johnson, M.D., a highly respected retinal specialist who led the trial at Kellogg, explains that wet AMD is a disorder in which abnormal blood vessels behind the retina leak blood and fluid, resulting in the formation of scar tissue. The disease impairs central vision, causing problems with reading, driving, and recognizing faces.

“Lucentis is now the most effective treatment we have for wet AMD,” says Dr. Johnson. “For the first time, the average patient can expect to experience an improvement in vision, rather than a reduction in the rate of vision loss.”

Other FDA-approved drugs were able to slow progression of the disease, but none has been shown to reverse deteriorating vision. During the Phase III trials, 95% of patients treated with Lucentis maintained their vision. In 30% to 40% vision actually improved. People who received the drug in the early stages of the disease had the most improvement.

The drug inhibits the growth of abnormal blood vessels. It is delivered through tiny injections in the eye. These injections are given once a month for three months initially, followed by additional, less frequent injections as needed for one year or more.
Scientists are making progress in their quest to understand how the eye adapts to changing light conditions. The process is called visual adaptation and involves a continuing series of fine adjustments as the eye encodes its surrounding environment. Consider, for example, the modifications the eye must make to encode a starlit walk through the woods, compared to a sunny day at the beach. The eye adapts to each scene, becoming relatively more sensitive in the woods and less sensitive on the beach.

Jonathan B. Demb, Ph.D., is a neurobiologist who studies visual processing and is working to reveal the mechanisms in the retina required for adaptation to changing light conditions. He explains that visual images are encoded, or communicated, by electrical and chemical signals through several layers of the retina that contain over 60 types of neurons. Yet it is still not known exactly how these various cell types connect with each other to form circuits that eventually send messages along the optic nerve to the rest of the brain.

In a recent issue of the journal Neuron, Dr. Demb describes a key part of the retinal circuitry for adaptation, identifying a mechanism for a slow form of contrast adaptation. He reports that slow adaptation arises from a temporary suppression of the activity in bipolar cells. Bipolar cells are neurons in the retina that play an important role in transferring signals from rod and cone photoreceptors to the ganglion cells that form the optic nerve.

The research is significant, says Dr. Demb, because it helps us to understand the cellular mechanism for ganglion cell function in the healthy retina. Understanding such mechanisms could allow scientists to monitor the health of ganglion cells in animal models of eye disease.

Rapid genetic testing for eye disease is becoming a reality thanks to a technology developed at the U-M Kellogg Eye Center. Scientists have created the first test on a microchip array that will help physicians refine their diagnosis of patients with the blinding disease retinitis pigmentosa (RP).

Kellogg scientist, Radha Ayyagari, Ph.D., developed this innovative technology and published her findings this year in Investigative Ophthalmology & Visual Science. The chip screens thousands of genetic sequences simultaneously for mutations in multiple genes; it is focused on the autosomal recessive form of the disease. These patients have inherited one gene from each parent, neither of whom is affected by RP.

Retinitis pigmentosa is a group of diseases in which retinal degeneration leads to blindness or severe vision loss. It is nearly impossible to identify which form of the disease a patient has through a clinical examination alone. Without a precise diagnosis, physicians cannot give their patients an accurate picture of what is in store for their vision in the future. Nor will it be possible to apply genetic therapies effectively as they are developed. Identifying the precise genetic mutation is critical.

“We now have a new and faster way to identify the underlying genetic basis for diseases associated with multiple genes. It is impossible to overestimate how important this is for patients.”

Radha Ayyagari, Ph.D.
Kellogg faculty provide training for residents, fellows, and vision scientists who will go on to teach, set up laboratories, and establish clinical practices throughout the country. Our educational efforts reach beyond our own clinics and laboratories. Many faculty members hold joint appointments in other departments, and they frequently lecture at universities in this country and around the world. This year, to assist students of ophthalmology wherever they reside, we have launched a new interactive, web-based teaching program.
Our residency program attracts some of the top medical school graduates in the nation. Gary J. Lelli, Jr., M.D., who completed his residency in June of this year, is typical of the outstanding residents who choose to train at the U-M Kellogg Eye Center. “Over the past three years, Dr. Lelli has demonstrated his dedication to ophthalmology and considerable leadership skills,” said Kellogg’s Residency Program Director, Shahzad I. Mian, M.D. During his residency, Dr. Lelli served as co-chief resident, pursued clinical research, and captured several honors. He twice received the Walter R. Parker Resident Teaching Award as well as the Excellence in Service Award for his exceptional clinical judgment and care of patients at the Veterans Affairs Hospital in Ann Arbor. Dr. Lelli is now in New York, where he is beginning a fellowship in oculoplastics.

The residency program will expand over three years. Next year, and for the following two years, we will add one new house officer to the first-year class. By July 2008 we will have 21 house officers in the three-year residency program.

Dr. Mian explains that the expansion is in response to changing demographics. “Both the Eye Center and the VA Hospital expect to see a steep and steady rise in the number of older patients needing eye care over the next several years,” he says. “The Department recognizes it must increase training so that new skilled ophthalmologists will be available to help treat the aging population.”

Nine fellows received subspecialty training at Kellogg this year. For Roni Mintz, M.D., who completed her fellowship on the Cornea Service, the primary attraction was the strong emphasis on clinical experience. “Fellows at this Eye Center are exposed to a great number and variety of patients because the attending physicians have developed such diverse practices,” she says. “Fellows can expect to manage interesting and complicated cases drawn from a large geographic region.”

Holding a fellowship at a tertiary care center can be an intense experience. “A fellow comes out of residency and is suddenly viewed as a specialist,” observes Dr. Mintz. “The cornea faculty here is extremely supportive, so you feel very comfortable assuming a high level of responsibility, knowing that your colleagues are available to provide assistance at any moment.”

Dr. Mintz will soon be in a position to support other fellows and residents. She has accepted a faculty position at the Kellogg Eye Center, where she will assume both clinical and research responsibilities. Her research focus will be on factors that lead to failure or rejection of cornea transplants. “Cornea transplants are highly successful for a certain group of patients,” she says. “But when these transplants fail, there aren’t a lot of good alternatives.” By investigating risk factors affecting surgical outcomes, she hopes to find ways to improve the success of corneal transplants for all patients.
This year, ten postdoctoral fellows came to Kellogg to work with faculty pursuing advanced research on aspects of eye disease and visual function. Charles Krafchak, M.P.H., Ph.D., is a postdoctoral fellow in the laboratory of molecular geneticist Julia E. Richards, Ph.D., an international expert on the genetics of glaucoma. Dr. Krafchak earned his masters and Ph.D. in epidemiology, writing on the genetics of posterior polymorphous corneal dystrophy. Now, as a postdoc, he is engaged in the hunt for genes that cause glaucoma. Because he has training in both molecular and statistical genetics, Dr. Krafchak will be able to make substantial contributions to our understanding of the complex etiology of common eye diseases.

Vision Research Seminars provided an informal setting for reviewing the latest research in the visual sciences. Faculty from the Department and visiting professors from other universities presented weekly seminars for the vision research community. The seminars attract fellows, research associates, and faculty who are currently engaged in vision research, as well as students who are entering the field. This year’s series included topics ranging from the evolution of the visual system to regulation of retinal gene expression.

The program complements the Department’s Vision Training Research program. Through an NIH Training Grant we are able to support exceptional graduate students and postdoctoral fellows who seek careers in vision science.

“... The postdoctoral years critically shape a scientist’s career. To get the most from these years you look for an area of research that excites you, a mentor that inspires you, and an institution with an outstanding training environment like Michigan’s.” — Julia E. Richards, Ph.D.
Forty-five medical students rotated through Kellogg’s clinics and O.R.s in the 2005–06 year. Some, like Sophie Liao, believe that a concentrated research program is essential to their medical education. She has taken a year off from medical school to pursue research with Donald G. Puro, M.D., Ph.D., assisting him in his investigation of the function of retinal pericytes in diabetic retinopathy. During her year of research, Ms. Liao has received several significant honors. She was awarded a Medical Student Eye Research Fellowship from Research to Prevent Blindness, and she was one of only 20 students in the nation to be invited to participate in a vision research course held at the prestigious Woods Hole Marine Biological Laboratory.

Busy ophthalmologists and technicians attended Continuing Medical Education courses designed to help them keep up with the newest ophthalmic treatments and surgical techniques. Among the offerings this year were a mid-winter symposium on oculoplastics and, at our annual spring conference, a review of current thinking—and controversy—on glaucoma treatment. Also this year, six visiting professors from other universities presented case studies at Grand Rounds. In addition, allied health professionals were invited to attend a series of courses on topics ranging from cosmetic eyelid surgery to new treatment options for macular degeneration.

Through innovative web-based tools, faculty reach far beyond the walls of the Eye Center. Jonathan D. Trobe, M.D., has created a unique interactive guide to basic, practical ophthalmology called The Eyes Have It. It’s a multi-media approach to eye care for a wide-ranging audience. Ophthalmologists in training will find it provides a useful review of core material, while those in practice may use it for instructional purposes.

The biggest users may well be physicians in other specialties, says Dr. Trobe, a highly respected neuro-ophthalmologist and educator. “Medical curriculums are jam-packed with requirements, and medical students often come away with a cursory knowledge of ophthalmology,” he observes. “Once they start practices in pediatrics or family medicine, they will encounter patients with a variety of vision problems.” Dr. Trobe sees The Eyes Have It as an easily accessible manual for physicians here and in countries where educational resources are limited.

Among the comments from medical students who tested the program, “Excellent pictures—better than textbook quality—and the interactive style make it an excellent program.”
Improving Our Patients’ Lives

This year we served a record number of patients. From July 2005 through June 2006, Kellogg ophthalmologists conducted 125,000 patient visits and performed 5,500 surgeries. But the numbers alone do not measure the impact our ophthalmologists can have on the lives of individual patients. Some patients, like Mrs. Haas and Mrs. Nace, come to the Eye Center over a period of years to keep an ongoing eye condition in check. Others, like the parents of 7-month-old Joshua, learned that early diagnosis is often the key to saving sight.

Dr. Eibschtiz with Mrs. Lee and Joshua
“Dr. Maya,” as the Lees call her, was “very friendly and great with Joshua. She answered all our questions and explained everything so well, never forgetting a detail.”
Most of us would not suspect that a child can develop a cataract. Joshua Lee, however, was diagnosed with a congenital cataract at the age of seven months. His parents had noticed a drifting eye and asked their pediatrician to take a look during Joshua’s six-month appointment. A referral to Kellogg’s Pediatric Ophthalmology Service followed, and in February the Lees met Maya Eibschitz, M.D., or, as they call her, “Dr. Maya.” Three days after Dr. Eibschitz’s diagnosis, Joshua was in surgery.

A congenital cataract involves a clouding of the lens of the eye that is present at, or develops shortly after, birth. Once the condition is diagnosed, urgent treatment is needed so that the infant’s immature visual system will not be deprived of the stimulation needed for normal development. Otherwise, there can be permanent vision loss.

Joshua’s mother, Heather Lee, says she was initially frightened but soon felt at ease, thanks to Dr. Maya. “She was very friendly and was great with Joshua. She answered all our questions and explained everything so well, never forgetting a detail,” Mrs. Lee says. “We were very comfortable.”

Following surgery to remove the cataract, Joshua was fitted for a contact lens and then had the stronger eye patched so he would learn to use the weaker eye. After a few difficult months during which Joshua had trouble keeping the contact lens in place, Dr. Eibschitz was able to implant a foldable intraocular lens. The technique, which has been used in children for just a few years, requires only a small incision, allowing for a faster recovery. Now 13 months old, Joshua still wears a patch and is making great strides in his vision.

“This whole process has changed our lives,” Mrs. Lee says. “But we know the treatment he is receiving is the best, and Dr. Maya and her staff have become like family to us.”

Meet a few of the ophthalmologists who worked with patients to save sight and improve lives this year.

Mrs. Lee with Joshua, who needed prompt treatment for a congenital cataract.

Pediatric ophthalmologist Maya Eibschitz, M.D.
A young man was told he would eventually become blind due to an untreatable form of retinal degeneration. He came to Kellogg’s Retina Clinic for a second opinion and, after an extensive examination, he received welcome news. He would not lose his vision. John R. Heckenlively, M.D., found that his patient had autoimmune retinopathy, a rare eye disease, which, unlike many inherited degenerative disorders, can respond to treatment.

The original diagnosis was not unreasonable, given the host of subtle and confusing symptoms that the patient presented. Dr. Heckenlively is one of a handful of specialists who have studied this rare disease and can piece together the unusual array of symptoms.

A patient may first complain that vision has rapidly deteriorated over time, but upon examination will have only minimal retinal changes. This discrepancy may be resolved with an electroretinogram, a test that measures the retina’s response to light flashes. For patients with autoimmune retinopathy, the results will indicate severe dysfunction. According to Dr. Heckenlively, this is only the first step in identifying the disease. He must follow with additional tests, clinical observation, and finally a check for anti-retinal antibodies before the diagnosis can be confirmed.

With a clear diagnosis, Dr. Heckenlively was able to prescribe immunosuppressant drugs that would keep the patient’s vision intact.

The complexity of the process convinced Dr. Heckenlively to convene the first international conference on autoimmune retinopathy, held at the National Eye Institute in March 2006. Specialists from around the world agreed that a simple, reliable diagnostic test is urgently needed to minimize misdiagnosis of this serious eye disease. With the right resources, Dr. Heckenlively believes that diagnostic tests can be developed in three to five years.
One misstep and a detached retina threatened a wildflower expert’s view of the natural world. During a recent hiking trip in the West, Fred Case, a well-known authority on trilliums, lost his footing and fell while reaching for yet another new plant specimen. By the time he returned to Michigan, he knew something was wrong with his vision and called on Paul R. Lichter, M.D., who had previously performed cataract surgery for Mr. Case. Dr. Lichter quickly diagnosed a detached retina and referred his patient to Kellogg’s Retina Clinic for surgery. It is the kind of care Eye Center patients expect to receive from every one of our expert ophthalmologists.

Mr. Case is well on the way to recovering full vision and has returned to his life’s work, which has included lecturing, writing, and collecting a vast array of wildflower specimens. In the gardener’s paradise he has created in Saginaw, he has grown all 38 of the North American species of trillium, along with several Asian varieties, gathered over some 40 years of hiking throughout swamps and woodlands with his late wife Roberta.

Visitors to the gardens, dazzled by the display of wildflowers, immediately understand what it means to have healthy vision. Mr. Case appreciates the level of care he has experienced at the University. “When it comes to my eyes,” says Mr. Case, “I don’t want to deal with anyone but Dr. Lichter and the Kellogg Eye Center.”
The possibility of stroke concerned a gentleman who reported recurring bouts of double vision followed by vision loss in one eye. When 84-year-old Roy Klann experienced this troubling phenomenon, his doctor quickly referred him to Wayne T. Cornblath, M.D., on the Kellogg Eye Center’s Neuro-Ophthalmology Service.

Stroke in the optic nerve is the number one cause of sudden loss of vision in one eye in people over the age of 65. As Dr. Cornblath explains, 5% of patients with optic nerve strokes will develop giant cell arteritis, an inflammation of the arteries. If left untreated, these patients can go blind in the second eye within a period of several weeks. The key is to diagnose the condition early, because it can be treated with steroids, thereby preventing further visual or neurologic loss.

Dr. Cornblath, a leading neuro-ophthalmologist, says that the signs and symptoms that point to giant cell arteritis can be seen in the clinic. Through the time-honored process of asking the right questions, listening to the answers, performing a careful physical examination, and putting the pieces together, a preliminary diagnosis can be made.

When Mr. Klann saw Dr. Cornblath, he had already lost vision in his right eye. On taking a careful history, Dr. Cornblath discovered that Mr. Klann had had jaw pain and other symptoms of giant cell arteritis for several months. An examination revealed early signs of giant cell arteritis in his “good” left eye. Fortunately, Dr. Cornblath quickly ordered tests to confirm his diagnosis, and then instructed Mr. Klann to begin steroids immediately.

Today, Mr. Klann’s symptoms have resolved, he has no further vision loss in his right eye, and perhaps, most important, prompt treatment saved him from losing vision in his left eye.

Diabetes can take a toll on vision, a complication that is too often overlooked. Although Ruth Nace was diagnosed with diabetes in 1966, she was not overly concerned about the disease until it affected the vision in her left eye—her only functional eye after losing her right eye to cancer in 1950. After this particular diabetic episode, Mrs. Nace’s physician referred her to the U-M Kellogg Eye Center, where she met Donald G. Puro, M.D., Ph.D., who diagnosed diabetic retinopathy.

Diabetic retinopathy, which affects 4.1 million Americans over the age of 40, is a complication of diabetes that damages blood vessels in the retina in two ways: it causes blood vessels to weaken and leak blood or fluid into the eye, and it causes new, abnormal blood vessels to grow. These new vessels not only are fragile and prone to leak but they frequently grow where they should not. This damage can blur or distort the visual images the retina sends to the brain.

Dr. Puro performed laser surgery to stem the leaking blood vessels and prevent further vision loss. Today, Mrs. Nace is happy with her 20/60 vision because once again she can enjoy reading. “Actually, for me, reading is a good way to know that a diabetic episode is coming,” she says. “I’ll be reading along and then will notice the words are no longer clear. Over time, I’ve learned that this pattern is an indicator of low blood sugar.”

To maintain her vision, Mrs. Nace sees Dr. Puro for a check-up once every six months. She looks forward to these visits because, after all these years, she says, “it feels like we’re great friends.” Mrs. Nace says Dr. Puro “is absolutely wonderful” and she could not have wished for a nicer, more remarkable physician.
OVER TIME, UNCONTROLLED GLAUCOMA CAN DAMAGE THE OPTIC NERVE AND CAUSE SIGNIFICANT VISION LOSS. It is the second-leading cause of blindness in the United States. When Sandy Haas was told she had glaucoma, her ophthalmologist’s main goal was to lower her eye pressure. Although there are a number of treatments that can accomplish this successfully, it is not simple to find the treatment that best suits an individual patient.

Elevated pressure can be reduced using medication (in the form of eyedrops), laser treatment, or surgery. Mrs. Haas has experienced all three.

As her ophthalmologist, Jennifer S. Weizer, M.D., explains, it is not unusual for patients and their doctors to try a variety of methods over the years before reaching a pressure low enough to do no further harm to the optic nerve and the patient’s vision. “We still do not fully understand,” says Dr. Weizer, “why some people respond well to drops and others respond well to surgery or laser treatment.”

Although eyedrops are the least invasive treatment method, they are not problem-free. Some patients are allergic to some kinds of drops but not others. Some drops, as Mrs. Haas would tell you, leave the eyes red and blurry each time they are used. Often a patient will try a series of drops before finding one or a combination that adequately lowers eye pressure. All patients need to have their eye pressures monitored closely, as a rise in pressure may not be associated with pain or discomfort but still may increase the risk of optic nerve damage and potentially cause vision loss. Often the decline in vision is so gradual that it is not noticed immediately; yet over the years some patients will become blind.

When Mrs. Haas’s eye pressure began to rise again after many years of successful control, Dr. Weizer recommended glaucoma tube surgery to form an efficient drainage pathway for the excess fluid in her eye. As a result of surgery, Mrs. Haas now has normal intraocular pressure and her vision has stabilized.
A rare but potentially blinding eye infection appeared in Michigan.

H. Kaz Soong, M.D., was among the first to question why, over the course of a few months, as many as six patients tested positive for *fusarium* keratitis, a fungal infection that rarely occurs in northern climates. Even at Kellogg’s Cornea Clinic, a major referral center for complex cornea disorders, an ophthalmologist might see such a case only once every year or two.

It was not long before Kellogg ophthalmologists started to receive a barrage of reports on the spread of the fungal infection. In February, a spike of *fusarium* cases had occurred in Singapore and Hong Kong, though the fungus would be more typically found in these tropical climates. A short while later, Alan Sugar, M.D., was comparing notes with colleagues when one ophthalmologist remarked it was fortunate the infection had not appeared in the North. “Not necessarily so,” said Dr. Sugar. “We have had an unusual cluster of cases of *fusarium* in Michigan.” Five minutes later he was on the phone with an investigator from the Centers for Disease Control.

As the CDC intensified its investigation into the source of the fungus, it appeared that most of the infected patients—by now 130 confirmed cases in the U.S.—had used a particular brand of contact lens solution. In mid-May the manufacturer asked retailers to remove the product from their shelves.

It was a frightening time for contact lens wearers. It is at times like this that patients are relieved to have access to specialists like Dr. Soong and Dr. Sugar who could quickly identify the fungus and provide prompt treatment. Three patients experienced significant scarring and required cornea transplants. Three other patients were able to be treated with antifungal medication.

- Alan Sugar, M.D., was comparing notes with colleagues when one ophthalmologist remarked it was fortunate the infection had not appeared in the North. “Not necessarily so,” said Dr. Sugar. “We have had an unusual cluster of cases of *fusarium* in Michigan.”
R E A C H I N G O U T TO OTHER COMMUNITIES

We serve patients in the region, but our ophthalmologists also take their skills into countries where basic eye care is not available. It’s part of Kellogg’s commitment to education and to making sure everyone has a chance to have healthy vision.

Dr. Nelson took her daughters, Catherine (left) and Elizabeth to Kenya with her.
A Kenyan mother brought her young son to see a visiting surgeon at the Kikuyu Hospital eye clinic. Without surgery to repair a drooping eyelid, the child would never develop vision in his left eye. Christine C. Nelson, M.D., a highly skilled oculoplastics surgeon at the Kellogg Eye Center, did what she does for so many patients. With one surgical procedure, she assured the child of a future full of sight and “brought back the sparkle in his eye.”

Dr. Nelson treated over 50 patients during her weeklong trip to Kenya in April 2006. She performed surgery for a woman whose eyes had been burned during the war in Somalia and for a man who had waited over two months to have a chunk of wood removed from the orbit surrounding his eye. “In this country, we would have rushed these patients to surgery,” says Dr. Nelson.

Physicians and equipment are in short supply in many Kenyan villages, and the staff often become, in Dr. Nelson’s words, “masters of invention.” In place of view boxes, doctors taped X-rays to the window, letting the sun light up the film. And when the glass Jones tear drainage tubes were too long, a staff assistant said, “Don’t worry, Betty will trim them.” Sure enough, Betty trimmed the larger tubes, smoothing the edges over a Bunsen burner until they were perfect.

As Dr. Nelson observes, her teaching mission was as important as her surgical successes. “One surgeon can perform only so many cases,” she explains. “But if you can teach residents and local eye surgeons the latest techniques, each one can take new procedures to other communities.” Dr. Nelson worked with nine residents from the University of Nairobi and lectured before the Ophthalmological Society of Central Africa.

The trip was also memorable because Dr. Nelson’s daughters, ages 16 and 13, went with her. They, too, wanted to make a meaningful contribution and volunteered in a nearby orphanage. When Dr. Nelson’s colleagues at Kellogg heard about the girls’ mission, they collected small gifts for them to bring: slippers, toothbrushes, toiletries, and towels.

Another generous contribution came from the Michigan Eye-Bank, which donated four corneas. Dr. Nelson delivered them to Kenyan patients who were awaiting cornea transplants.
It has been 20 years since the Chernobyl nuclear plant disaster, and the effects are still being felt today. To give children a respite from the contaminated environment, the American Belarussian Relief Organization brings children from Belarus to the United States each summer. Last year, at her daughter’s urging, Ann Arborite Nancy Paige brought the program to Ann Arbor.

When Nancy approached the University to request eye examinations for her young guests, Kellogg pediatric ophthalmologist Steven M. Archer, M.D., was pleased to oblige. In June, four lively young girls came to the eye clinic accompanied by their interpreter, Victoria Rabinovich, who teaches English in Minsk.

Victoria was quick to express her appreciation for the Kellogg physician’s willingness to provide eye care. “The Americans who help us are such special people,” she said. “The girls are becoming more comfortable with each new experience.”

Belarus is about 100 kilometers from Chernobyl, and as Victoria says, it was “our bad luck that the wind blew in our direction on the day of the disaster.” It is believed that the country received some 70% of the radiation damage from the 1986 incident. Belarussians today experience high rates of leukemia, thyroid cancer, and birth defects, and Victoria observes that poverty adds to the problem. “Many of the children live in rural areas, where they eat food grown on land that is still contaminated. For some it is not possible to move to a safer place,” she says.

Since 1991, over 3100 children from Belarus have made the trip to the United States. The Relief Organization’s leaders believe that when children are removed from the contaminated environment for approximately six weeks, the level of radiation in their bodies is lowered. “The time we spend here is a gift,” says Victoria. “Parents are very concerned about their children’s health and want them to have a vacation where the ecological situation is so much better.”
A unique exchange has grown out of a Kellogg visit to Mongolia. In the fall of 2004, Susan S. Thoms, M.D., and Theresa M. Nairus, M.D., traveled to Mongolia to train physicians and treat patients who do not have easy access to eye care. The trip was sponsored by ORBIS International, a nonprofit organization dedicated to the prevention of blindness worldwide.

During their stay, Drs. Thoms and Nairus worked with Dr. Chimgee Chuluunkhuu, who impressed them with her exceptional dedication to improving eye care in Mongolia. The Kellogg physicians convinced ORBIS to sponsor Dr. Chimgee for a six-week visit to observe ophthalmic practices in the U.S.

Dr. Chimgee arrived in the fall of 2005, stopping at the American Academy of Ophthalmology’s Annual Meeting in Chicago before coming to the Kellogg Eye Center. As one of only two retina specialists in Mongolia, she was interested in observing American specialists and their clinic operations. At Kellogg’s Retina Clinic, Dr. Chimgee hoped to improve her diagnostic skills. She also spent a few days shadowing Dr. Thoms and Dr. Nairus in Kellogg’s Livonia office.

When asked which practices she found most valuable, Dr. Chimgee cited Kellogg’s weekly Grand Rounds. She took that idea back to Mongolia and tells us her colleagues now present Grand Rounds once a month.
This year the Eye Center announced plans for a major expansion that will double its current space. In July 2005, the U-M Board of Regents approved the project and, in May 2006, the Regents voted to accept the architectural design for the new center. The plans are exceptional at every level, providing a state-of-the-art setting for faculty, beautiful new clinics for our patients, ample space for new laboratories and clinics, and the means to accelerate research to protect and save vision.

The expansion of the Kellogg Eye Center will add 222,000 gross square feet to the current clinical and research facility, bringing tremendous hope and opportunity to patients, faculty, and friends of the Eye Center. The beautifully designed eight-story building will be located immediately northwest of the current Kellogg Eye Center research tower. It will provide expanded state-of-the-art space for patient care, education, and vision research.
Patients will enjoy a comfortable setting for advanced eye care. With growing numbers of patients needing expert care for eye disease, today’s clinic space is nearing capacity. All seven Kellogg eye clinics will move to the new facility. Patients will enjoy a light and airy environment, larger waiting areas, and computer-equipped patient education centers in each clinic.

Genetic testing and genetic counseling will expand in the new center. Patients with serious eye disorders can learn whether their children or other family members are likely to carry disease genes. Counselors will help individuals understand the implications of genetic testing, particularly in situations where treatments are not yet available.

Vision research programs will grow, building on recent discoveries in genetics, neuroscience, and biomolecular sciences. Many of the research programs noted in this report have potential, over time, for yielding effective treatments for eye disease. With new laboratories and space for additional staff, Kellogg research faculty will be able to accelerate project timelines, widen the scope of current projects, and launch promising new concepts.

Several new research faculty are being recruited, including a biostatistician to analyze and interpret the vast data generated by genetic research. Another position is slated for a translational researcher specializing in degenerative eye disease. This individual will join others who will “translate” the results of basic science into forms that more immediately benefit patients with serious eye disease.

New opportunities for collaboration will emerge, thanks to the proximity of the William and Delores Brehm Center for Type 1 Diabetes Research and Analysis. A generous gift from Mr. and Mrs. Brehm and the couple’s desire to find a cure for Type 1 diabetes have resulted in the creation of this new diabetes research center. It will occupy two upper floors of the new building, allowing scientists easy access to colleagues pursuing similar lines of research. A likely outcome: a deeper understanding of vision complications caused by diabetes.

An expanded clinical trials center will bring the newest treatments to our patients. Clinical trials can provide important new methods for treating vision disorders. This year we were able to offer some 20 clinical trials for patients with conditions ranging from macular degeneration to glaucoma.

Laboratories and clinics will enhance the training of clinicians and vision scientists. Trainees as well as faculty will benefit from working and learning in the newest, most advanced medical setting and innovative laboratory environment.

What lies ahead? Groundbreaking is scheduled for the fall 2006, just shortly after you receive this report. Architects will work with faculty to finalize design details. By this time next year, we expect to see the eight-story structure in place next to the research tower. The doors to a greatly expanded Kellogg Eye Center will open in 2010. Look for updates on our progress through the Kellogg newsletter, website, and messages from the Chair.
We can’t do it alone. Many individuals have helped us achieve our goals, providing critical support for vision research, endowed chairs, outreach, and, now the launch of our building campaign. With deepest appreciation, we acknowledge the following individuals and organizations who have made gifts from July 1, 2005 through June 30, 2006.

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A longtime love of the medical profession and an immense respect for the work being done at the Kellogg Eye Center led Mary Homlar of Toledo to leave Kellogg a generous bequest. “She wanted to help the next generations, and she knew that vision research would do that,” says Caroline Korn, Mrs. Homlar’s daughter. A physical therapist who passed away at the age of 93, Mrs. Homlar came from a family of clinicians, her father a doctor and her mother a nurse. She began seeking care at the University of Michigan for her glaucoma in the mid-1980s. “She wanted the best, so her doctor sent her to Kellogg,” Mrs. Korn says. Mrs. Homlar appreciated the Eye Center’s focus on genetic discoveries and enjoyed touring Kellogg’s laboratories. Once, after receiving a letter from the University asking if she would like to receive a small gift in appreciation of her charitable gifts, she wrote back instructing the sender to “use the money for research.”
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As an ophthalmology resident at the University of Michigan in the mid-1980s, Richard A. Garfinkel, M.D., wondered how the research floors of the then newly built Kellogg Eye Center could ever be fully used. “But over the years I have seen the building become filled and then overfilled—beyond capacity. In a very short period of time, Kellogg has attracted some incredible people who are laying the groundwork for improved treatments for our patients,” says Dr. Garfinkel, who practices in the Washington, D.C., area. He and his wife, Lisa, have made a gift to the current new building campaign and consistently give to the Alumni Annual Fund. “Vision research and facilities such as the new Eye Center are very important because we don’t have answers for many of the problems in ophthalmology,” he says. “I am also very appreciative of the education I received at Kellogg. It was excellent, and it has enabled me to achieve my professional aspirations.”
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David N. Zacks, M.D., Ph.D., was honored to accept the newly created Anthony P. Adamis, M.D., Prize for Outstanding Research in Ophthalmology and Visual Sciences this year. Roberta W. Siegel, a University of Michigan graduate, established the award at the Kellogg Eye Center to honor Dr. Adamis, an internationally recognized ophthalmologist and researcher who completed his training here. Mrs. Siegel has been a patient of Dr. Adamis and has supported his research for many years.

The objective of the Adamis Prize is to support the promising work of an early-career physician-scientist. “It takes considerable resources to start a research program, and I am pleased to have the opportunity to give young scientists a boost when they especially need it,” Mrs. Siegel says. Dr. Zacks, who trained under Dr. Adamis at the Massachusetts Eye and Ear Infirmary, will use the $10,000 prize to identify improved therapies for patients who experience intraocular infections, a serious complication of eye surgery.
Steven M. Archer, M.D.

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Outreach
• ORBIS trip to Shijiazhuan, China

Publications


Radha Ayyagari, Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Scientific Advisory Board Member, Foundation Fighting Blindness
• Grant Reviewer, Foundation Fighting Blindness
• Member, National Ophthalmic Disease Genotyping Network (eyeGene), NEI
• Editorial Board Member, Molecular Vision

Publications


Terry J. Bergstrom, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Galens Tag Days, Faculty Advisor, University of Michigan Medical Student fundraising effort for needy children

Outreach
• Glaucoma screenings in local communities throughout the year

Christina A. Bruno, M.D.

Publications

Wayne T. Cornblath, M.D.

Awards/Honors/Leadership
• Best Doctors in America 2005-2006
• Fellow, American Academy of Neurology
• Reviewer, Journal of Geriatric Psychiatry and Neurology
• Reviewer, Journal of Ocular Pharmacology and Therapeutics
• Director: Top Ten Neuro-Ophthalmic Diagnoses You Can’t Afford to Miss. American Academy of Neurology

Sherry H. Day, O.D.

Awards/Honors/Leadership
• Fellow, American Academy of Optometry

Monte A. Del Monte, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Distinguished Alumni Visiting Professor, Children’s Hospital National Medical Center, George Washington University Medical School
• Best Doctors in America 2005-2006
• Elected to Academic Keys Who’s Who in Medical Sciences Education
• Special Invited Guest Speaker, Asia Pacific Association of Ophthalmology 21st Annual Meeting, Singapore
• Chairman, Program Committee, American Orthoptic Council
• Vice Chairman, International Affairs Committee, American Association for Pediatric Ophthalmology and Strabismus

Outreach
• ORBIS Special Guest Lecturer, Sociedad Ofalmologia Pediatrica Latin America (SOPLA), 2nd National Meeting, Santiago, Chile
• ORBIS Program Visiting Professor and Mentor, Hospital Nacional Las Ninos, San Jose, Costa Rica

Publications


Jonathan B. Demb, Ph.D.

Grants
see Grants, pages 44–47

Publications

Manookin MB, Demb JB. Presynaptic mechanism for slow contrast adaptation in mammalian retinal ganglion cells. Neuron 2006;50:453-64.


Maya Eibschitz, M.D.

Grants
see Grants, pages 44–47

Publications


Susan G. Elner, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Publications


Victor M. Elner, M.D., Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Edward W. Purnell Lecturer, Case Western Reserve University
• Board of Directors, American Association of Ophthalmic Pathologists
• Best Doctors in America 2005-2006

Publications


Bartley R. Frueh, M.D.

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Publications


Philip J. Gage, Ph.D.

Grants
see Grants, pages 44–47

Publications


Adam S. Hassan, M.D.

**Publications**


**John R. Heckenlively, M.D.**

**Grants**

see Grants, pages 44–47

**Awards/Honors/Leadership**

* Best Doctors in America 2005-2006

**Publications**


Peter F. Hitchcock, Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
- Symposium, Western Eye Research Conference, Stem Cell Biology, Laguna Beach, CA
- Invited talk, Iowa State University, Department of Biology, Ames, Iowa
- Invited talk, University of Notre Dame, Department of Biology, South Bend, Indiana
- Symposium, Gordon Research Conference, Visual System Development, Il Ciocco, Italy
- Invited talk, SUNY Upstate Medical University, Department of Physiology and Neuroscience, Syracuse, New York
- Grant Review Panel, National Institutes of Health
- Director, University of Michigan Interdepartmental Neuroscience Graduate Program

Publications

Mark W. Johnson, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
- Advisory Board Member, Genentech
- Editorial Board Member, American Journal of Ophthalmology
- Reviewer, Ophthalmic Surgery, Lasers & Imaging
- Election to active membership, American Ophthalmological Society
- Top Ten Reviewers, Archives of Ophthalmology
- Best Doctors in America 2005-2006
- International Health Professional of the Year, International Biographical Centre, Cambridge

Publications

Harjeet Kaur, M.D.

Awards/Honors/Leadership
- Invited guest speaker, JIPMER, Pondicherry, India

Hemant Khanna, Ph.D.

Publications


Andrei I. Kindzelskii, M.D., Ph.D.

Publications


Thellea K. Leveque, M.D., M.P.H.

Publications

Erika M. Levin, M.D.

Grants
see Grants, pages 44–47

Publications

Paul R. Lichter, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Anagnostakis – Trantas Award, Greek Glaucoma Society
• Planning Committee Member, International Council of Ophthalmology Foundation
• A. Edward Maumenee Distinguished Service Medal, Pan-American Association of Ophthalmology
• Best Doctors in America 2005-2006
• Associate Editor, American Journal of Ophthalmology

Publications


Michael J. Lipson, O.D.

Grants
see Grants, pages 44–47

Publications

Lipson MJ. What you need to know about extended wear. Optom Mag (Aug) 2005


Shahzad I. Mian, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Board of Directors, Midwest Eye Banks
• Annual Program Co-Chair 2006, Michigan Ophthalmological Society
• Best Doctors in America 2005-2006

Publications


Sayoko E. Moroi, M.D., Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Elizabeth C. Crosby Research Award, University of Michigan
• Best Doctors in America 2005-2006

Publications


Cornea 2006 [in press].


David C. Musch, Ph.D., M.P.H.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Chair, Special Emphasis Grant Review Panel, NEI/NIH
• Member, Editorial Board, Ophthalmology
• External referee, Michael Smith Foundation for Health Research, BC, Canada
• Methodologist, Cornea Panel, Ophthalmic Technology Assessment Committee, American Academy of Ophthalmology
• Member, Executive Committee, Women’s Health Initiative Sight Exam Study
• Member, Consulting Editorial Board, Journal of Neuro-Ophthalmology
• Reviewer, National Medical Research Council, Singapore
• Member, Advisory Group, Cochrane Collaboration Eyes and Vision Group US Project
• Consultant, Ophthalmic Devices Panel, Medical Devices Advisory Committee, Center for Devices and Radiological Health, Food and Drug Administration

Publications


Dhall A, West AL, Trobe JD, Musch DC. Third, fourth, and sixth cranial nerve palsies following closed head injury. J Neuroophthalmol 2006;26:4-10.


Theresa M. Nairus, M.D.

Publications


Christine C. Nelson, M.D.

Awards/Honors/Leadership
• First Extreme Surgery Recognition Award, American Society of Ophthalmic Plastic and Reconstructive Surgery
• 2nd John J. Skowron, M.D. Distinguished Visiting Professorship Award, Loyola University
• Best Doctors in America 2005-2006
• Editorial Advisory Board, EyeNet, American Academy of Ophthalmology
• Leadership Conference Committee for Strategic Planning, American Society of Ophthalmic Plastic and Reconstructive Surgery
• Chair, Preceptor Committee, American Society of Ophthalmic Plastic and Reconstructive Surgery

Outreach
• Medical and teaching mission to Kikuyu Eye Hospital, Kenya

Publications


Hemant Pawar, Ph.D.

Grants
see Grants, pages 44–47

Publications

Howard R. Petty, Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
Plenary Lecture, 2006 Bioelectromagnetics Society Annual Meeting

Keynote Lecture, 2005 National Institute of Child Health and Human Development Annual Meeting

Publications


Donald G. Puro, M.D., Ph.D.

Grants
see Grants, pages 44–47

Publications


Venkat N. Reddy, Ph.D.

Publications


Julia E. Richards, Ph.D.

Grants
see Grants, pages 44–47

Outreach
• Interviewed by Charity Nebbe on NPR’s Stateside about The Human Genome: A User’s Guide and the need for a better understanding of genetics and gene therapy.

Publications


Alan Sugar, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• President, Cornea Society
• Secretariat Award, Ophthalmology Journal, American Academy of Ophthalmology
• Secretariat Award, Secretary for Quality Care, American Academy of Ophthalmology
• Best Doctors in America 2005-2006

Publications


Frank W. Rozsa, Ph.D.

Publications

H. Kaz Soong, M.D.

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Publications


Anand Swaroop, Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Editorial Board, Investigative Ophthalmology & Visual Science
• Editorial Review Board, Molecular Vision
• Director, “International Resource for X-Linked Retinitis Pigmentosa,” Foundation Fighting Blindness

Publications


Debra A. Thompson, Ph.D.

Grants
see Grants, pages 44–47

Publications


Susan S. Thoms, M.D.

Awards/Honors/Leadership
• Editorial Board, Comprehensive Ophthalmology Update
• Best Doctors in America 2005-2006
• Board of Directors, Greater Detroit Agency for the Blind and Visually Impaired

Outreach
• Host, ORBIS fellow from Ulan Baatar, Mongolia, Dr. Chimgee Chuluunkhuu

Jonathan D. Trobe, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Publications


Andrew K. Vine, M.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Best Doctors in America 2005-2006

Publications
Jennifer S. Weizer, M.D.

Publications


Adrienne L. West, M.D.

Publications

Dongli Yang, M.D., Ph.D.

Publications

David N. Zacks, M.D., Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Terry J. Bergstrom Faculty Teaching Award, Department of Ophthalmology and Visual Sciences, University of Michigan
• Career Development Award, Research to Prevent Blindness
• Anthony P. Adams Prize for Outstanding Research in Ophthalmology and Visual Sciences, Department of Ophthalmology and Visual Sciences, University of Michigan

Publications


David N. Zacks, M.D., Ph.D.

Grants
see Grants, pages 44–47

Awards/Honors/Leadership
• Terry J. Bergstrom Faculty Teaching Award, Department of Ophthalmology and Visual Sciences, University of Michigan
• Career Development Award, Research to Prevent Blindness
• Anthony P. Adams Prize for Outstanding Research in Ophthalmology and Visual Sciences, Department of Ophthalmology and Visual Sciences, University of Michigan

Publications


Sepideh Zareparsi, Ph.D.

Publications

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<tr>
<th>Faculty Name</th>
<th>Source</th>
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<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. Ayyagari, Ph.D.</td>
<td>NIH</td>
<td>R01-EY013198-05</td>
<td>Macular Degeneration: Genetics of 4 Distinct Phenotypes</td>
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<td>T. Bergstrom, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>U10-EY010439-11</td>
<td>Ocular Hypertension Treatment Study (OHTS) - Coordinating Center: Washington University</td>
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<td>M. Del Monte, M.D.</td>
<td>Alcon/Clinical Trial</td>
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<td>Betoptic S Compared to Timolol Gel Forming Solution in Pediatric Patients with Glaucoma or Ocular Hypertension</td>
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<td>J. Demb, Ph.D.</td>
<td>NIH</td>
<td>R01-EY014454-02</td>
<td>Functional Circuitry of Visual Adaptation</td>
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<td>Midwest Eye-Banks</td>
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<td>Visual Responses of Mouse Retinal Ganglion Cell</td>
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<td>Sloan Foundation</td>
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<td>Sloan Research Fellowship</td>
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<td>M. Eibschitz, M.D.</td>
<td>Blind Children’s Center</td>
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<td>Improving Trabeculectomy Outcomes in Children with Human Amniotic Membrane</td>
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<td>S. Elner, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>U10-EY014660</td>
<td>Multicenter Uveitis Steroid Treatment (MUST) Trial Coordinating Center: Johns Hopkins University</td>
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<td>V. Elner, M.D., Ph.D.</td>
<td>NIH</td>
<td>R01-EY009441-10</td>
<td>RPE-MΦ Binding: Ca++ &amp; O₂⁻ Dependent AMD Responses</td>
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<td>Senior Scientific Investigator Award</td>
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<td>P. Gage, Ph.D.</td>
<td>NIH</td>
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<td>Pitx 2: Molecular Mechanisms in Eye Development and Disease</td>
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<td>Midwest Eye-Banks</td>
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<td>Expression and Function of the Homeobox Gene Pitx1 in Eye Development</td>
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<td>D. Green, Ph.D.</td>
<td>NIH</td>
<td>R01-EY010084-06</td>
<td>Clinical and Molecular Analysis of Oregon Eye Disease</td>
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<td>J. Heckenlively, M.D.</td>
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<td>R01-EY007758-18</td>
<td>Mouse Models of Human Hereditary Eye Diseases</td>
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<td>Johnson &amp; Johnson</td>
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<td>Progenitor Cell Therapy of rd10 Retinal Degeneration (Supplement)</td>
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<td>Lowy Medical Research Institute</td>
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<td>Mouse Models of Retinal Telangiectasia</td>
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<td>Research Center for the Study of Retinal Degenerative Diseases</td>
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<td>P. Hitchcock, Ph.D.</td>
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<td>R01-EY007060-17</td>
<td>Neuronal Development, Injury and Regeneration in Retina</td>
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<td>Midwest Eye-Banks</td>
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<td>Function of Midkine B in the Developing and Regenerating Retina</td>
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<td>B. Hughes, Ph.D.</td>
<td>NIH</td>
<td>P30-EY007003-19</td>
<td>Core Center for Vision Research</td>
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<td>NIH</td>
<td>R01-EY008850-16</td>
<td>Ion Conductances in the Retinal Pigment Epithelium</td>
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<td>Lew R. Wasserman Award</td>
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<td>M. Johnson, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>N01-EY012113</td>
<td>Preservative-Free Triamcinolone Acetonide as an Adjunct to Photodynamic Therapy for Age-Related Macular Degeneration - Coordinating Center: Emmes</td>
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<td>NIH/Clinical Trial</td>
<td>U10-EY014351</td>
<td>Standard Care versus Corticosteroid for Retinal Vein Occlusion (SCORE) Study - Coordinating Center: University of Wisconsin</td>
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<td>Eyetech/Clinical Trial</td>
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<td>Intravitreal Injection of Anti-VEGF Pegylated Aptamer for Exudative Age-Related Macular Degeneration</td>
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<td>Genentech/Clinical Trial</td>
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<td>Ranibizumab Compared with Visudyne Photodynamic Therapy for Subfoveal Neovascular Age-Related Macular Degeneration</td>
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<td>Extension Study of Ranibizumab for Subfoveal Choroidal Neovascularization Secondary to Age-Related Macular Degeneration</td>
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<td>RhuFab V2 versus Sham for Minimally Classic or Occult Subfoveal Neovascular Age-Related Macular Degeneration</td>
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<td>Pfizer/Clinical Trial</td>
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<td>AG-013958 for Subfoveal Choroidal Neovascularization Associated with Age-Related Macular Degeneration</td>
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<td>Ranibizumab in Naïve and Previously Treated Subjects with Choroidal Neovascularization Secondary to Age-Related Macular Degeneration</td>
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<td>E. Levin, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>U10-EY011751-09</td>
<td>Pediatric Eye Disease Investigator Group - Multiple Projects - Coordinating Center: Jaeb</td>
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<td>P. Lichter, M.D.</td>
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<td>Unrestricted Grant</td>
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<td>Glaucoma Research Foundation/ Clinical Trial</td>
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<td>Pedigree Collection in 500 Patients from the Collaborative Initial Glaucoma Treatment Study (CIGTS)</td>
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<td>VisionCare Ophthalmic Technologies/ Clinical Trial</td>
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<td>VisionCare Ophthalmic Technologies Implantable Miniature Telescope (IMT) for Central Vision Impairment Associated with Age-Related Macular Degeneration and Other Maculopathies</td>
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<td>M. Lipson, O.D.</td>
<td>Menicon</td>
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<td>Post-Marketing Surveillance of the Menicon Z Rigid Gas Permeable Contact Lens for Extended Wear</td>
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<td>S. Mian, M.D.</td>
<td>NIH</td>
<td>R01-EY014163-01</td>
<td>Femtosecond Laser Posterior Lamellar Keratoplasty</td>
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<td>S. Moroi, M.D., Ph.D.</td>
<td>Pfizer/Clinical Trial</td>
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<td>Xalacom Given in the Evening, Xalatan in the Evening, and Timolol S in the Morning for Open-angle Glaucoma or Ocular Hypertension</td>
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<td>S. Moroi, M.D., Ph.D.</td>
<td>Pfizer/Clinical Trial</td>
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<td>Beta2-Andrenergic Receptor Genetic Polymorphisms on Variations in Aqueous Humor Flow and Drug Response</td>
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<td>S. Moroi, M.D., Ph.D.</td>
<td>Pfizer/Clinical Trial</td>
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<td>Improving Trabeculectomy Outcome with Human Amniotic Membrane</td>
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<td>S. Moroi, M.D., Ph.D.</td>
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<td>Role of Ocular CYP2D6 in Glaucoma Drug Metabolism</td>
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<td>S. Moroi, M.D., Ph.D.</td>
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<td>Modulating Glaucoma Filtration Wound Healing with Human Amniotic Membrane</td>
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<td>D. Musch, Ph.D., M.P.H.</td>
<td>NIH</td>
<td>R03-EY015860-01</td>
<td>Analysis of CIGTS Visual Field Data</td>
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<td>H. Pawar, Ph.D.</td>
<td>Glaucoma Research Foundation</td>
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<td>Genetics of MICC: Multiple Iridociliary Cysts with Glaucoma</td>
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<td>H. Petty, Ph.D.</td>
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<td>N01-HD-2-3342</td>
<td>Services in Support of the Perinatology Research Branch - Subcontract with Wayne State University</td>
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<td>H. Petty, Ph.D.</td>
<td>NIH</td>
<td>R01-CA074120-07</td>
<td>Signaling Dynamics of Leukocyte-Tumor Cell Interactions</td>
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<td>H. Petty, Ph.D.</td>
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<td>R01-AI051789-04</td>
<td>Mechanisms Regulating Neutrophil Activation in Pregnancy</td>
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<td>H. Petty, Ph.D.</td>
<td>National Multiple Sclerosis Society</td>
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<td>Mechanisms Regulating Neutrophil Activation in Pregnancy</td>
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<td>D. Puro, M.D., Ph.D.</td>
<td>NIH</td>
<td>R01-EY012507-07</td>
<td>Physiology of Retinal Pericytes</td>
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<td>D. Puro, M.D., Ph.D.</td>
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<td>D. Puro, M.D., Ph.D.</td>
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<td>J. Richards, Ph.D.</td>
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<td>Expression Profile Approach to Glaucoma Gene Detection</td>
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<td>J. Richards, Ph.D.</td>
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<td>Molecular Genetics of Glaucoma and Related Disorders</td>
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<td>A. Sugar, M.D.</td>
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<td>U10-EY012358-07</td>
<td>Cornea Donor Study - Coordinating Center: Jaeb</td>
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<td>NIH/Clinical Trial</td>
<td>R01-EY016482-01</td>
<td>A Multi-Center Study to Map Genes for Fuch’s Dystrophy - Coordinating Center: Case Western Reserve University</td>
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<td>A. Swaroop, Ph.D.</td>
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<td>R01-EY007961-18</td>
<td>X-Linked Retinitis Pigmentosa</td>
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<td>R01-EY011115-09</td>
<td>Molecular Mechanisms of Retina-Specific Gene Expression</td>
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<td>R01-EY016862-01</td>
<td>Genetic Variations in Age-Related Macular Degenerations</td>
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<td>Function of Ciliary Protein RPGR in Renal Epithelial Cells: Possible Implications for Renal-Retinal Diseases</td>
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<td>Functional Analysis of NRL: A Rod Photoreceptor Specific Transcription Factor</td>
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<td>Sramek Foundation</td>
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<td>Interactive and Integrated Genetic Databases for the Study of Age-Related Macular Degeneration</td>
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<td>D. Thompson, Ph.D.</td>
<td>NIH</td>
<td>R01-EY12298-05</td>
<td>RPE65 in Retinal Metabolism and Degeneration</td>
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<td>Midwest Eye-Banks</td>
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<td>The Retinal Pigment Epithelium (RPE) Visual Cycle and Metabolism in Cone Cell Function</td>
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<td>J. Trobe, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>U10-EY09435</td>
<td>Longitudinal Optic Neuritis Study - Coordinating Center: Jaeb</td>
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<td>A. Vine, M.D.</td>
<td>NIH/Clinical Trial</td>
<td>U10-EY14231</td>
<td>A Randomized Trial Comparing Intravitreal Triamcinolone Acetonide and Laser Photocoagulation for Diabetic Macular Edema - Coordinating Center: Jaeb</td>
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<td>Lowy Medical Research Institute/ Clinical Trial</td>
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<td>A Natural History Study of Macular Telangiectasia - The MacTel Study</td>
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<td>D. Zacks, M.D., Ph.D.</td>
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<td>K08-EY14705-03</td>
<td>Apoptosis in Retinal Detachments</td>
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<td>RPB</td>
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<td>Career Development Award</td>
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<td>American Federation for Aging Research</td>
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<td>Mechanisms of Apoptosis in Retinal Detachments</td>
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FFB: Foundation Fighting Blindness  
NIH: National Institutes of Health  
RPB: Research to Prevent Blindness
In Memoriam

This year we mark the passing of a faculty member and friend who played an early and influential role in the field of medical genetics. Harold F. Falls, M.D., died on May 27, 2006, at the age of 96. Dr. Falls helped to establish what is widely recognized as the first human genetics clinic in the nation. The Heredity Clinic at the University of Michigan opened in 1941, while Dr. Falls was still a resident. Two years later, he was named its director. He subsequently joined the faculty of the Department of Ophthalmology, teaching and studying genetics until his retirement in 1975.

During the 1940s, well before the structure of DNA was known, Dr. Falls started building a rich collection of genetic histories of eye disease that are still being studied today. He described the hereditary patterns for a number of ophthalmic conditions, including a type of ocular albinism that became known as the Nettleship-Falls Syndrome.

A keen observer and highly respected teacher, Dr. Falls encouraged his residents to study the relatives who accompanied the patient, noting that they might reveal the carrier states of the patient’s disease. His instinctive understanding of the power of genetic information is now the unquestioned basis of an entire field of medical research and treatment.

In 2003, colleagues and alumni honored Dr. Falls by establishing the Harold F. Falls Collegiate Professorship in Ophthalmology and Visual Sciences.
Executive Officers of the University of Michigan Health System:
Robert P. Kelch, M.D., Executive Vice President for Medical Affairs
Allen S. Lichter, M.D., Dean, U-M Medical School
Douglas L. Strong, Interim Chief Executive Officer, U-M Hospitals and Health Centers
Zelda Geyer-Sylvia, Executive Director and CEO, M-CARE

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Andrea Fischer Newman, Ann Arbor; Andrew C. Richner, Grosse Pointe Park;
S. Martin Taylor, Grosse Pointe Farms; Katherine E. White, Ann Arbor;
Mary Sue Coleman, ex officio

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