Mary Ann Brandt found tremendous support from Dr. Saxe and her husband, Jim Thompson, as she fought the effects of Wegener's disease.

First Mary Ann Brandt lost her hearing. Then her vision became foggy, rendering her world in shadows and shades of gray. Accompanied by her husband, Jim Thompson, Ms. Brandt set out on a long journey to recover her health, one that led her to retina specialist Stephen J. Saxe, M.D., and the U-M Kellogg Eye Center.

After months of evaluation and a prolonged hospital stay, Ms. Brandt learned that her symptoms were caused by an uncommon systemic disorder known as Wegener’s granulomatosis. The disease causes inflammation of blood vessels, destroying tissue by limiting blood flow throughout the body. The fine network of vessels in the eye is vulnerable to the insult of Wegener’s disease.

Dr. Saxe initiated a series of measures to stem the vision loss caused by this aggressive disease, using multiple injections in the eye to reduce inflammation and swelling of the retina. Yet, within the year, Ms. Brandt needed five major surgeries, including cataract surgery and three vitrectomy surgeries.

The disease had caused the blood vessels in her retina to become constricted, leading to development of new abnormal vessels that led to a severe hemorrhage in one eye. Dr. Saxe performed the initial vitrectomy to remove the blood. At the same time, he used a laser to shrink the abnormal blood vessels. He also prescribed new drug therapies to further quiet the vessels and prevent them from reforming.

Later, two more vitrectomy surgeries were needed to remove scar tissue responsible for chronic swelling that was affecting Ms. Brandt’s central vision. This ordeal would try anyone’s patience, but Ms. Brandt remained steadfast, supported by her husband and expressing gratitude for her doctor. “Dr. Saxe knows what I’ve gone through and has helped me get to where I am today,” says Ms. Brandt. “He’s very caring and he’s a great doctor.”

Today Ms. Brandt’s vision is 20/40, with minor residual scarring and swelling of the retina. “It’s amazing where Ms. Brandt is today,” said Dr. Saxe. “We all remember how difficult it was for her. Now the disease is under good control, and it is rewarding to see Ms. Brandt smiling and healthy and able to read and drive again.”

Several Kellogg specialists and a team of physicians from U-M Hospitals helped Ms. Brandt overcome a long list of ailments arising from Wegener’s disease—listlessness, memory loss, and difficulty speaking and walking.

Despite her very long hospital stay—52 days to be exact—Ms. Brandt and her husband praise both the U-M Hospital and the Eye Center staff. “We were so impressed with everyone and there is so much caring. It is patients first,” said Mr. Thompson.

Their appreciation is especially meaningful because both Ms. Brandt and Mr. Thompson are fervent fans of Michigan State University. While they continue to champion MSU’s athletics, they have generously supported the Kellogg Eye Center building fund to assure that others receive the outstanding care they experienced.

Perhaps the ultimate token of Ms. Brandt’s gratitude is reserved for Dr. Saxe: it is a custom-designed button that reads, “Eyes by Saxe.”
FROM THE CHAIR

Celebrating the New Year and the New Eye Center

This is the year we’ve been waiting for. It is the year we will celebrate the tremendous hope and promise embodied in the new Kellogg Eye Center. This beautiful new facility, the Brehm Tower, opens in the spring, and, as our theme proclaims, it is Dedicated to Discovery in patient care, education and research.

While today, many patients travel to see Kellogg specialists, we will soon have the capacity to serve many more individuals who seek a destination for advanced eye care. With additional laboratories we will add new research faculty to join current faculty in their dedicated search for cures to eye disease. For residents and fellows, the Eye Center will be the ultimate teaching laboratory, where trainees will experience the newest ophthalmological techniques and knowledge.

To celebrate this new facility—and especially the many people who have made it possible—we invite you to our Dedication events. You will have a chance to tour Kellogg’s beautiful new clinics, our technologically-advanced surgical suites, and our spacious laboratories.

It takes many people to create a community dedicated to advances in medicine. I look forward to welcoming you and thanking you for your support at the Dedication of the Kellogg Eye Center’s Brehm Tower in April.

With best wishes for the coming year,

— Paul R. Lichter, M.D.
F. Bruce Fralick Professor and Chair
Department of Ophthalmology and Visual Sciences

BUILDING CAREERS, A LEGACY
Junior faculty to benefit from donors’ generosity

Giving young faculty members at the Kellogg Eye Center a solid footing for success would have pleased Edward T. and Ellen K. Dryer, says Jon B. Gandelot, a Grosse Pointe attorney and trustee for the Dryer Charitable Foundation.

“Ed was a great believer in giving people a chance,” Mr. Gandelot says. “He and Ellen would have been thrilled to support up-and-coming researchers and physicians.”

Though the Dryers passed away within months of each other in 2001, the foundation they established in their estate plans continues to honor their values. The Dryer Foundation has made a $1.4 million gift to Kellogg to establish the Edward T. and Ellen K. Dryer Inaugural Endowed Career Development Professorship in Ophthalmology and Visual Sciences as well as an endowed research fund. Both will support junior faculty members in perpetuity. A faculty member will hold the professorship and have access to the proceeds of the research fund for up to five years, as he or she establishes a research laboratory and begins to build a solid body of scientific work.

“This gift will play a lasting role in the growth of our research program—and in the life of each individual who holds the professorship,” says Paul R. Lichter, M.D., Director of the Kellogg Eye Center.

Married for 45 years, the Dryers were a frugal, enterprising couple. Mr. Dryer, an international banking executive, was struck by blindness in the middle of his career. Let go by his employer because of his condition, he created his own opportunities for success. He kept in touch with colleagues and made his living by investing in the stock market. Mrs. Dryer was an advertising pioneer who served as W.B. Doner & Company’s first female media director. When she came home from work in the evening, she read her husband stock reports. Mr. Dryer also urged large publicly traded companies to put their annual reports on audio tapes so that he and others could listen to them. He served for many years on the board of Recording for the Blind & Dyslexic.

“He had a real passion for helping others who were affected by a loss of their sight,” says Joseph A. Drrobot, Jr., a trustee of the foundation. Judith L. Drrobot and Lisa Mower Gandelot are also trustees.

The Dryer Foundation supports a variety of programs for people with vision difficulties as well as special reading programs and Lutheran programs for children. It also funds arthritis research at the University of Michigan.

“The Dryers were wonderful people,” says Lisa Gandelot. “And they would have been very happy to know that their legacy has the potential to impact the world.”
Nanoparticles Remove “Static”  
So Scientists Can Study Retinal Disease

It would seem to be an advantage. Many cell types in the retina appear fluorescent when exposed to light. But when every cell “lights up,” how do you isolate and study the cells and molecules implicated in eye disease?

Biophysicist and immunologist Howard R. Petty, Ph.D., has found a way to eliminate the unwanted fluorescence using nanoparticles that are ten thousand times smaller than the width of a human hair. It is a new technique that could change the way scientists study the complex cells of the retina.

“Although other medical fields use fluorescence to study disease molecules, the ‘noise’ from the unwanted retinal fluorescence is an obstacle to learning about the function of cells and molecules that are so critical to vision,” says Dr. Petty. Now that he has found a way to remove the noise and reveal the molecules, vision scientists can begin to study how these different cells function in both healthy and diseased states.

For the past year, Dr. Petty has experimented with a vast number of nanoparticles, each with unique spectral properties, in an attempt to eradicate the “static” of the fluorescence that emerges from each type of retinal cell. The static makes it impossible for scientists to study the cellular functions for a whole range of diseases including macular degeneration, diabetic retinopathy, retinitis pigmentosa, and retinoschisis. Once the fluorescence has been removed, scientists will be able to label the specific location of important molecules in the human eye and study their mechanics. “For the very first time,” says Dr. Petty, “scientists can effectively see and study the molecules that cause so many people to suffer from vision loss.”

NEW TREATMENT FOR GRAVES’ EYE DISEASE  
Offers Rapid Relief

Patients with severe Graves’ eye disease have very few treatment options. Now it appears that a drug used for rheumatoid arthritis may offer relief to these patients, according to a small study in the January issue of Ophthalmology. After treatment with rituximab, patients experienced improved vision and significant reduction of inflammation. The same patients had not responded to conventional treatment with steroids.

Graves’ eye disease is an autoimmune process in which an overproduction of thyroid hormone causes inflammation and fatty deposits around the orbit. The inflammation causes the tissues and muscles behind the eyes to swell, causing the eyes to bulge and become dry, the lids to retract, and, sometimes, loss of vision.

Raymond S. Douglas, M.D., Ph.D., an oculoplastic surgeon at Kellogg and Graves’ expert, believes a new treatment for Graves’ eye disease is long overdue. The first-line treatment is high-dose steroid therapy, sometimes accompanied by radiation. Dr. Douglas calls these “imperfect options,” because inflammation can return once the treatment has stopped. These patients often face surgery, which is not always successful.

In a pilot study at UCLA, Dr. Douglas found that his patients received relief from symptoms for at least four to six months after treatment ended. None experienced a relapse. Reduced inflammation and swelling were apparent within four weeks of receiving the drug. Patients not only regained vision, but they avoided surgery.

Although this was a small study, Dr. Douglas believes the obvious benefits justify a large national clinical trial, which he is in the process of establishing.
Discovering IntraLase
It Happened at the University of Michigan Kellogg Eye Center

As Ron Kurtz, M.D., tells the story, the discovery of IntraLase—the bladeless laser and the company that first made it—was a chance occurrence. As a second-year resident at Kellogg, Dr. Kurtz was called to the emergency room to see an engineering student whose eye had been burned by a laser. Though the patient had multiple retina burns, the cuts were very clean and his vision was normal.

Not long after the injury, Dr. Kurtz, looking for an interesting Grand Rounds case, asked his patient to tell him more about this laser. It was a femtosecond laser in the Center for Ultrafast Optical Sciences at the U-M College of Engineering. Says Dr. Kurtz, “I learned that this laser had two important characteristics: ultra-fast pulse duration and a large wavelength band.” By using tiny, rapid pulses of laser light, a surgeon could create a cut that was exceptionally fast and accurate.

These qualities would allow Dr. Kurtz and his eventual collaborator, physicist Tibor Juhasz, Ph.D., to transform this industrial laser into one suitable for eye surgery. By 1994, Dr. Kurtz had applied for a patent, and in 1997 he and Dr. Juhasz founded IntraLase Corp. that would bring the laser into wide use for LASIK surgery.

As Department Chair Paul R. Lichter, M.D., recalls, Dr. Kurtz worked at warp speed during these years, but still managed to appear calm. And as Dr. Kurtz recalls, Dr. Lichter provided important support during early stages of development.

Not surprisingly, Kellogg was one of the early adopters of the “bladeless” laser for LASIK surgery. Today the Department is pioneering other uses for the laser. In a pilot study on the laser’s use for cornea transplants, Shahzad I. Mian, M.D., reports that his patients are experiencing faster recovery times and better vision.

Dr. Kurtz has a new business venture: his new company, LenSx Lasers, based in Aliso Viejo, California, will explore the femtosecond laser for cataract surgery.