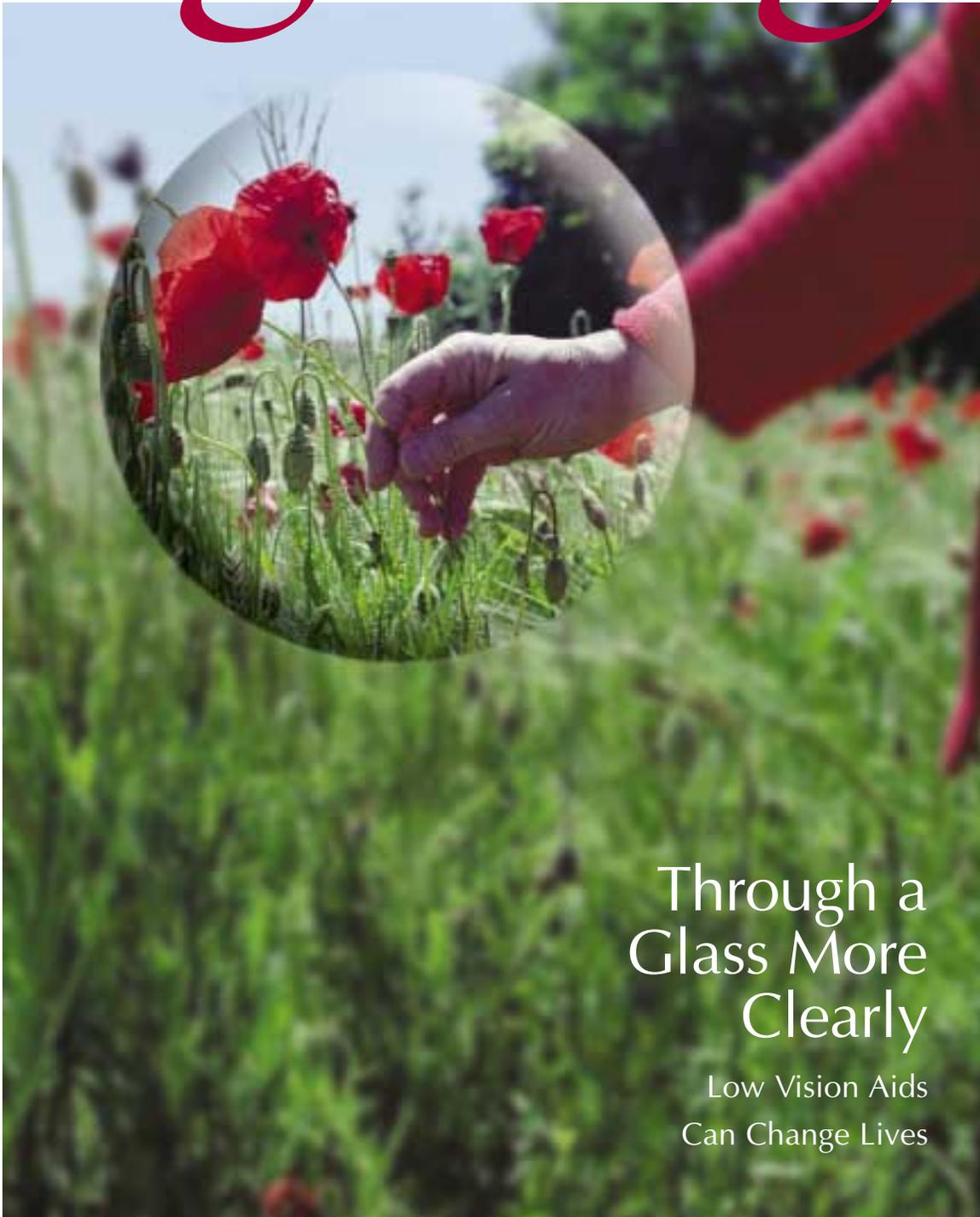


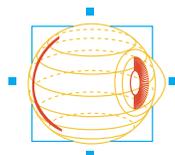
Sightings

Spring 2004



Through a
Glass More
Clearly

Low Vision Aids
Can Change Lives



The Schepens Eye
Research Institute



From the Chairman

On March 15, 2004, J. Wayne Streilein, M.D., the Charles L. Schepens Professor of Ophthalmology at Harvard Medical School, and the President and CEO of The Schepens, died while being treated for a blood-borne infection at Beth Israel Deaconess Medical Center in Boston. Wayne's passing came as quite a shock to us. He was a man of seemingly unending energy, who only six days earlier had given a memorable seminar that was attended by the nearly all the faculty, fellows and scientific staff of the Institute. Wayne had recently returned from a very successful series of symposia and seminars in Florida in which he was able to speak to thousands of lay people about the very latest in research targeting macular degeneration, dry eye syndrome and low vision. His laboratory was thriving, with two new fellows expected to arrive this spring. He was working closely with members of the Board of Trustees and faculty to develop important new initiatives to enhance the financial security of the Institute. There was no hint that this incredibly creative, insightful and vibrant man would very soon be gone.

With Wayne's passing, we have lost a great scientist, leader, colleague, mentor, and friend. Wayne cared deeply about The Schepens and its mission, and worked tirelessly to make the Institute the preeminent vision research institute in the world. Under his leadership, The Schepens

Eye Research Institute has undergone major transformations on several fronts. On the physical facility front, an aging laboratory building at 20 Staniford Street, once partially occupied by Boston Biomedical Research Institute, has been totally rejuvenated. A completely new infrastructure (heat, ventilation, air-conditioning, plumbing, etc.) has been installed in this building to support approximately 70,000 sq. ft. of renovated, state-of-the-art laboratories and offices for Schepens scientists, their trainees and their staff. The adjoining administration building has similarly been renovated, as has approximately 20,000 sq. ft. of laboratories in Charles River Plaza. By the end of the Summer 2004, all laboratory construction will have been completed. Already, a new, all-weather bridge physically connects the laboratory building at 20 Staniford with a 450,000 sq. ft. research building at Charles River Plaza that is now under construction. When completed, this building will be leased and occupied by scientists from Massachusetts General Hospital, as well as by Schepens scientists.

On the research front, faculty members representing new scientific disciplines have joined the resident research faculty, and the quality of research being conducted has risen so that The Schepens is now recognized as one of the leading eye research organizations in the world. Federal support for research

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projects at The Schepens is at an all-time high, placing our Institute at or near the top in terms of total federal support for eye research organizations in America. From 1993 to 2001, Wayne also served as the Ankeny Director of Research at The Schepens. It is safe to say that the rapid ascent of the Institute to the highest tier of eye research organizations in the world reflects Wayne's vision, dedication, and persistence.

After the building and renovation project at The Schepens was launched, Joseph Martin, M.D., Ph.D, Dean of Harvard Medical School, appointed Wayne to head a Search Committee charged with the mission of identifying the next Ankeny Director of Research, an individual who would also hold a Professorship in Ophthalmology at Harvard. As a member of the Institute's Board of Trustees, I was privileged to be a member of that Search Committee. I was gratified to observe the open and thorough nature of the search process, and the commitment to excellence on the part of committee members. I am pleased to report that the Search Committee has completed its task, and recently recommended to the Dean that Michael S. Gilmore, Ph.D., be appointed the next Ankeny Director of Research at The Schepens, and Professor of Ophthalmology at Harvard Medical School.

Dr. Gilmore is a distinguished molecular biologist whose primary field of research interest is microbiology, and whose research in vision concerns bacterial infections of the eye. He currently holds two named professorships (one in Microbiology, the other in Ophthalmology) at the University of Oklahoma Health Sciences Center in Oklahoma City. In addition, he is the Vice-President for Research at the University of Oklahoma Health Sciences Center where he oversees the entire extramural grant program (in excess of \$100 million per year). Thus, he is both an outstanding scientist and an excellent administrator. My colleagues on the Search Committee, all of whom are academicians, tell me that Dr. Gilmore's research is cutting edge and of world renown. And they agreed with me that Mike Gilmore possesses those rare human qualities that make him a natural leader. He is articulate, enthusiastic, resourceful, and wise.

Though Dr. Gilmore was not expected to move to Boston and take up his duties and responsibilities until September of this year, he has accelerated his involvement in the organization in response to the tragic loss of Wayne. Mike flew out to the Institute to comfort and reassure the faculty and staff, and to spend time with the administra-

tion and Board of Trustees to put measures in place for this unexpected transition. For the past four years, Darlene A. Dartt, Ph.D., Senior Scientist at The Schepens and Associate Professor of Ophthalmology at Harvard, has admirably carried out the duties of the Director of Research in an acting capacity, and will work with Mike to steward the Institute until his arrival.

I have no doubt that Dr. Gilmore will continue the trajectory to excellence that has been evident at The Schepens under Wayne Streilein's leadership over the past decade. We – the scientists, the staff, the leadership, the volunteers – continue to strive to reach the worthy and noble goals of discovering the causes of eye diseases and bringing these discoveries to the clinic so that the scourge of blindness can be eliminated. The impending appointment of Dr. Michael Gilmore as Ankeny Director of Research will accelerate the pace at which we reach these goals. 🍷

Sincerely,



Kennett F. Burnes

Through a Glass More Clearly

Low Vision Aids Can Change Lives

Last fall for the first time, a popular TV medical drama depicted the plight of a person afflicted with age-related macular degeneration (AMD), a disease that either slowly or rapidly steals central vision. The character, played by a well-known and beloved actor/comic (Bob Newhart) was so depressed over his impending visual loss that he chose to take his own life in the second episode.

While the portrayal of a man struggling with AMD was certainly a breakthrough for television, the drama's climax was a disappointment for the vision community, who were concerned that the program's hopeless message would discourage the millions of Americans dealing with the illness.



Kameran Lashkari, MD

“Although most people faced with losing parts of their vision are frightened and depressed initially, many also are given new hope by experts devoted to creating techniques and devices to help people live fulfilling lives despite vision-robbing diseases such as AMD, retinitis pigmentosa or diabetic retinopathy, among others,” says Kameran Lashkari, MD, an assistant scientist at The Schepens Eye Research Institute and an ophthalmologist who specializes in retinal diseases, who treats and counsels hundreds of AMD patients each year.

What the ER plot failed to acknowledge is the existence of the whole low vision rehabilitation specialty, which is “literally exploding with possibilities today,” says Eli Peli, MSc, OD, the Moakley Scholar in Aging Eye Research at The Schepens and a professor of ophthalmology at Harvard Medical School. Peli is a world-class low vision expert, who, according to his patients, has devoted his entire career to giving people a new lease on life by helping them to see more clearly. Here are a few of their stories.

BERNARD RESNICK STILL PLAYS DESPITE AMD

Bernard Resnick, 78, has “wet” Age-related Macular Degeneration (AMD), which quite rapidly destroys the central part of the retina known as the macula – the precious, photo-receptor-rich tissue responsible for fine vision critical for reading, driving and other detail activities. There are two types of AMD – wet and dry. The wet form acts more quickly and can be more destructive than the dry, occurring when fragile abnormal blood vessels grow and then leak into the retina, causing scarring and vision loss, according to Lashkari.

Resnick’s “wet” AMD came on with a vengeance. In 1988, a blood vessel in one eye burst. Though arrested tem-

porarily by laser surgery, AMD took all his central vision in that eye within three years, followed by similar loss in the other eye two years later. Resnick, two weeks from retiring at age 67, was devastated. “To me it was catastrophic, until I was directed to Dr. Peli and learned what options existed,” he says.



Eli Peli, MSc, OD

Resnick now uses multiple low vision devices to help him do the things he loves and to maintain his independence. A special closed circuit television enlarges and changes contrast and color of text to help him read books, write checks and do other detail work. “Expander” software on his computer allows him to surf the Internet, and a large screen television keeps him up-to-date on his favorite shows. For a while he extended his ability to drive using a special (bioptic) telescope attached to his glasses for reading road signs and distinguishing traffic lights and other signals more easily. In addition, Bernard still plays chess and bridge with oversized chess pieces and large-print cards.

Resnick also counsels others. “People who have lost vision believe that the world has ended; I point out the things that they still can do. Once you accept what has happened, you start to reclaim your life,” he says, adding that it takes hard work to gain proficiency with the visuals aids, and it is important to keep using them to gain reap the rewards. “If you don’t use it, you lose it,” he says.

RP DOESN’T STOP GENERAL WEEKS

General Weeks has retinitis pigmentosa (RP), which according to Lashkari, is a disease that ultimately destroys most of the retina. Unlike AMD, RP begins by destroying peripheral vision first and eventually heads toward the center of the retina. Night blindness is one of the first signs of the condition, since the low light-sensitive rods are mostly on the outside edges of the retina where the disease typically begins. In advanced stages, RP leaves only a narrow, pinpoint field of vision – often described as tunnel vision.

General Weeks’ night blindness started in his 20’s after retuning from military duty during the Korean War era. By 30, his day vision was affected. “I would be driving or walking along and see a person or a car, and they would disappear and then reappear.” Weeks was legally blind and stopped driving in 1986, which was difficult as his job as a manager for the Coca Cola company required constant driving. Today his tunnel vision allows him a little bit of working central vision. Weeks met Dr. Peli several years ago and has been

serving as a test subject in evaluating new devices for night blindness and field of vision expanding devices for the Peli lab ever since.

Reading for Weeks is exhausting because he must move his eyes constantly to scan a line of text with his tiny spot of central vision. A closed circuit television like Resnick’s, a head mounted magnifier that can be pulled down over his glasses, magnifying lamps and hand held magnifiers are all part of his low vision tool box. JAWS, a computer software program that reads aloud helps him create materials for training programs he presents to other blind veterans around the country.

For Weeks, “Life would be much harder without these devices, and I wouldn’t be able to do the work I love.”

ON THE ROAD WITH CHERYL WORTMAN

Diabetic retinopathy occurs when high blood sugar levels lead to damaging changes in the blood vessels of the retina. The blood vessels may leak and cause swelling in the area of the macula, and eventually become occluded, depriving the retina of oxygen and nutrients. This triggers an overgrowth of new abnormal blood vessels that can hemorrhage or induce scarring or detachment of the retina. Although in some instances the symptoms are similar to those of macular degeneration, diabetic retinopathy can go beyond the macula. Careful monitoring and control of blood sugar can keep this condition

at bay for many years. If blood sugar is left unchecked, it can damage the vessels to the point of causing blindness, according to Mara Lorenzi, MD,

“People who have lost vision believe that the world has ended; I point out the things that they still can do. Once you accept what has happened, you start to reclaim your life.”

The Levin Scholar in Diabetic Retinopathy and senior scientist at The Schepens Eye Research Institute, who is also a clinician at the Diabetes Center of the Massachusetts General Hospital.



Mara Lorenzi, MD

Cheryl Wortman, age 40, has diabetic retinopathy in combination with another condition called Cushing’s disease. Cushing’s disease is triggered by a tumor on the pituitary gland that causes overproduction of steroids in the body and with it stress on the blood vessels of the eye. According to Wortman, her diabetic retinopathy was accelerated by this disease.

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Through a Glass More Clearly *(continued from page 5)*

Together they have caused blurring in her central vision. In addition, she underwent a surgical procedure for a detached retina in the right eye that left her with double vision when viewing distant objects or scenes. Retinal detachment is a complication of diabetic eye disease.

“When you first start losing your vision, you wonder ‘how am I going to function.’ I decided it was not going to get the best of me.”

Wortman, an accountant, needs her eyes to work, and went to Peli in her search for help. “Dr. Peli gave me glasses with a singular high power bifocal lens that enhances my vision 20 times. I have to close one eye to use them, but I can’t read without them. When I misplace them, I panic.” Wortman also has a closed circuit television for reading and a bioptic telescope for driving. Although she no longer drives, she still uses her special driving telescopic glasses to enjoy the scenery as a passenger. A special pair of spectacles with very strong prisms prescribed by Peli alleviates the double vision as well.

“When you first start losing your vision, you wonder ‘how am I going to function.’ I decided it was not going to get the best of me,” she says. What helps her most is planning ahead, especially when traveling, which she

does frequently to visit her clients. “I always call the airport and get maps so I don’t have to read signs in the airport. And I let the staff know I may need extra assistance.” She adds: “I also thank God everyday for Dr. Peli. He is a savior for someone like me.”

NEW AIDS ON THE HORIZON

Over the years, Peli’s lab has created and tested devices similar to those used regularly by Resnick, Weeks and Wortman. And, he and his team are now engaged in developing and testing even better tools for the visually impaired.

One of the most innovative is an intraocular telescope, a tiny telescope implanted inside the eye. Primarily for people with AMD, this device, developed in Israel, might replace a number of devices, including the bioptic telescope on the driving glasses. Surgeons remove the lens of one eye and replace it with this tiny device. To date, 200 patients have undergone the surgery, and the devices are being evaluated for their effectiveness. “This device takes some special training and getting used to,” says Peli, who has been part of the development team for more than six years. He sees the intraocular telescope as an enormous breakthrough in technology irrespective of the results of these initial trials.

In another project, Peli and his colleagues are designing glasses in which

telescopes are built right into the lens of a normal pair of glasses. “We are very aware of the esthetics of low vision devices. Many people won’t use some devices because they look strange. Besides being more attractive, these glasses would also eliminate the blind spot created by the current designs.” Peli has just been allowed a USA patent and is looking for an industry business partner to develop these new telescopes.

Peli and his team are also developing a system that will work with the new digital television technology to increase the contrast and sharpness of the television image for those with vision loss. The lab is also testing a way to enlarge a video in real time, which would involve enlarging the image so that the most important element is centered on the screen, while cutting off less essential elements. “We are measuring eye movement of normally sighted viewers while they watch the movies to determine where the point of interest a person is watching in every image. Ultimately we envision broadcasting this kind of information with the video to use in a system that enlarges and centers the image at the patient’s home.”

The safety of existing bioptic telescopes for driving is also of interest to Peli. Using a driving simulator, he and his team test whether a low vision patient wearing the glasses with a telescope mounted on one side are able to process through the other eye information not

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Ask a Schepens Scientist

Eating more of certain fatty acids may reduce the risk of dry eye syndrome.



Debra A. Schaumberg, ScD, OD, MPH



Reza Dana, MD, MPH

Debra A. Schaumberg, ScD, OD, MPH, is an associate scientist at The Schepens Eye Research Institute, an assistant professor of medicine and ophthalmology at Harvard Medical School and a faculty member in the Division of Preventive Medicine at the Brigham and Women's Hospital.

Reza Dana, MD, MPH, a senior scientist at The Schepens Eye Research Institute, is the 2003 recipient of the Cogan Award from the American Association for Research on Vision and Ophthalmology. The W. Clement Stone Scholar at The Schepens, Dana is also an associate

professor of ophthalmology at Harvard Medical School and a member of the Cornea Service at Massachusetts Eye and Ear Infirmary.

Q: I have heard about people taking omega 3 fatty acids to prevent dry eye syndrome. Has there been research that showed this was helpful, and, if so, what should sufferers do?

A: In recent years, essential fatty acids, also known as omega 3 and omega 6 fatty acids, have been touted by journalists and health professionals alike as cures for everything from cardiac problems to autoimmune disease. And, in fact, there may be some truth to those claims. We at The Schepens Eye Research Institute have conducted research that shows a clear relationship between the amounts and kinds of these substances we eat and the risk of dry eye syndrome. Here are some of the facts.

DRY EYE SYNDROME

Dry eye syndrome is a debilitating eye condition affecting millions worldwide, particularly older women. Dry eye syndrome occurs when the eye does not produce enough tears – the natural lubricant that normally bathes the eye constantly and keeps it healthy – or when tears evaporate too quickly because of their chemical makeup. Scientists believe this abnormality in tear production and/or evaporation can be the result of a number of factors, including aging, medications, the environment or autoimmune diseases such as lupus, rheumatoid arthritis, rosacea or Sjögren's syndrome.

Ranging from mild to severe, symptoms often include constant irritation that many describe as “like having sand in my eyes,” and may become similar to a chronic pain syndrome. Although rarely causing permanent vision loss, dry eye syndrome can be very debilitating in its impact on daily life, frequently preventing victims from driving, reading and working.

FATTY ACIDS

Essential fatty acids are fats or oils not produced by the body, but “essential” to the smooth functioning of all organs. To obtain enough essential fatty acids, humans must consume them in their diets. Two types are vital to the human body: omega 3 and omega 6. Omega 3's are most commonly found in fish, especially oily dark meat fish, such as tuna and salmon, while omega 6's are primarily found in oils from safflower or corn and found in abundance in American food products.

The balance of these two types of fatty acids appears to be a key to good health. And, while scientists suggest that prehistoric men and women automatically balanced their intake of these substances in a one-to-one ratio, modern humans consume many more omega 6 fatty acids than omega 3's. The ratio of 6's to 3's can be way out of whack, sometimes as high as 20 or more to one.

Balance is important because these two types of fatty acids often perform somewhat opposing roles in the body.

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Clinically Speaking



Cynthia L. Grosskreutz, M.D., Ph.D.

Cynthia L. Grosskreutz, M.D., Ph.D., is an associate surgeon in the Glaucoma Consultation Service at Massachusetts Eye and Ear Infirmary, a clinical assistant scientist at The Schepens Eye Research Institute and an assistant professor of ophthalmology at Harvard Medical School. She completed her master of science in physics and her medical degree and doctorate in pharmacology at the University of Iowa. In addition to a thriving clinical practice, Grosskreutz is engaged in investigating how and why optic nerve cells die and ways to prevent this nerve cell death in glaucoma.

Q: When I go to my ophthalmologist, he always tests me for glaucoma. Can you tell me what glaucoma is, what causes it and the latest treatments?

A: There is good news and bad news about glaucoma, a disease that affects millions worldwide and is the third leading cause of blindness in the

United States. The good news is that we diagnose it in the early stages, we can control it and delay or prevent blindness. The bad news is that once diagnosed, glaucoma lasts a lifetime, and its victims must be forever vigilant.

THE CAUSE

While there are four major types of glaucoma and other less common forms, they all share one very potent risk factor – increased fluid pressure inside the eyeball, which pushes on the optic nerve and retina at the back of the eye. The fluid, which is known as aqueous humor, is a normal component of the eye, kept in balance by a system of drains and channels.

In the case of glaucoma, the drains are blocked or narrowed either by trauma, scarring or heredity. If unchecked and untreated, the pressure caused by the build up of fluid eventually causes irreversible damage to the optic nerve. And, as the nerve cells die, so too, does vision since the optic nerve is the wire that transmits visual information from the eye to the brain where they are interpreted as images.

SILENCE IS NOT GOLDEN

Your regular glaucoma screening cannot be overemphasized. Glaucoma is often silent. Unlike macular degeneration that destroys central vision and with it a warning to its victims, glaucoma begins its course of destruction in the periphery. People are not as sensitive to changes in the outer edges of their

vision. Without screening, therefore, glaucoma can quietly cause significant problems without detection.

KEEP THE FLOW GOING

Medications are the first line of defense against glaucoma and can be very helpful for many years. Delivered in the form of eye drops, some of these medications cause the eye to make less fluid, while others help drain the fluid.

Laser surgery can open the drains, but its effects are not permanent, and patients often have several such treatments over the course of their disease. On the other hand, bypass surgery can be very effective. Using conventional techniques, a surgeon can cut a hole in the anterior chamber of the eye to allow fluid to escape by a route different from the one nature provided.

MORE GOOD NEWS

In a new approach to treatment, researchers are using drugs and growth factors to protect nerve cells from assault and self-destruction.

So research now has two primary goals: first, to prevent the death of nerve cells in the optic nerve, and second, to regenerate the optic nerve after death and damage. I believe both goals are attainable in the not too distant future. 🧐

Dr. Joan Miller

New Head of Ophthalmology at Harvard Medical School



Joan W. Miller, MD, Chair of the Department of Ophthalmology at Harvard Medical School and Chief of Ophthalmology at Massachusetts Eye and Ear Infirmary

Miller, who is also the director of MEEI's angiogenesis laboratory and a retina specialist and clinician, is the first woman named Chair of Ophthalmology at Harvard and the Infirmary.

In a recent interview in the Harvard Gazette, Miller said: "I am very excited to embark on this stage of my career. I've enjoyed research and clinical work, and now I have a chance to grow and develop a faculty and have a major impact on the field. I'd like to make this the best department in the world."

Born in Toronto, Canada, Miller, who completed her undergraduate work at Massachusetts Institute of Technology, obtained her medical degree at Harvard Medical School.

Miller pioneered the use of photodynamic therapy (PDT) for "wet" macular degeneration. This form of the blinding disease is characterized by the growth of abnormal blood vessels in the retina. PDT, now the treatment of choice for this more destructive type of macular

A pioneer in the treatment of macular degeneration, Joan W. Miller, MD, recently assumed the Chair of the Department of Ophthalmology at Harvard Medical School (HMS) and Chief of Ophthalmology at Massachusetts Eye and Ear Infirmary (MEEI). In addition, she recently accepted a position as Senior Clinical Scientist at The Schepens Eye Research Institute.

degeneration, eliminates the unwanted blood vessels without damaging nearby retinal or other delicate tissues. In PDT, a patient receives an injection of a photosensitive dye. Then a surgeon aims a non-thermal laser at the abnormal blood vessels in the patient's retina. This injures the cells lining the abnormal blood vessels leading to thrombosis, decreased leakage, and has been shown to slow or halt the progression of the disease.

Building on the discoveries of angiogenesis expert Judah Folkman, MD, of Boston's Children's Hospital, and working with Patricia D'Amore, PhD, of The Schepens, and others, Miller was also among the first to show the relationship between vascular endothelial growth factor – which causes blood vessel growth – and the onset of "wet" macular degeneration. This work has led to clinical trials to test several anti-angiogenic drugs that target the growth factor and promise to arrest macular degeneration in early stages.

In addition to her work with photodynamic therapy and angiogenesis, Miller and her coworkers are investigating new ways to deliver drugs to

the eye. Collaborating with a group from Draper Laboratories, they are working on a device that is placed directly onto the sclera of the eye (the tough covering of the organ.) This device could potentially deliver drugs directly into the eye in a time-released fashion for the treatment of macular degeneration and other eye diseases.



Darlene A. Dartt, PhD

At The Schepens Eye Research Institute, Miller has established a collaboration with Francois Delori, PhD, Senior Scientist, to examine the role of abnormal pigments in the cause of macular degeneration. She is an enthusiastic supporter of the Joint Clinical Research Center in which The
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Annual Fund



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VISION ACTIVIST WORTHY OF THE BLUE RIBBON

Activist, mother, equestrian, survivor. Any of these words adequately describe the blue ribbon nature of Tory Watters. And the key message is this – Tory Watters meets life head on and fights for what she believes in.

Take her riding, for instance. As an equestrian show jumper for 35 years, Watters is accustomed to taking on and meeting challenges that others may find daunting. Although she describes riding as simply a science of space and rhythm, being in perfect unison with the muscular animal, the task is more difficult for her than other blue ribbon winners.

Tory has an additional obstacle that most people are unaware of: she is legally blind. Her vision impairment, caused by a malignant brain tumor that stole her sight at the age of 14, forces her to look at the field and life in a different manner. Doctors were able to remove the tumor to save her life, but unfortunately, as a result

of subsequent optic nerve damage, Tory lost vision in her right eye. She now only has 20/200 vision in her left eye. At age 38, she describes her remaining vision as an impressionist painting – blurred and out of focus.

To improve her vision for daily activities, Tory was recently fitted with magnification glasses designed by Dr. Eli Peli, Senior Scientist and low vision specialist at The Schepens Eye Research Institute. The glasses, featuring a small adjustable magnifier, enable her to view her fellow competitors, watch sporting events on television, and many other activities she has missed since she was a teenager.

Tory's unique approach to her vision loss involves confronting problems head-on, believing that everyone has their own set of challenges to overcome. This philosophy embodies who she is as a person and is also demonstrated in her ability to compete with normal-sighted individuals in highest level equestrian events.

Before each competition, Tory surveys the jump site on foot, carefully scanning the field for objects that will serve as markers alerting her when to turn and line up for a jump. Due to her limited visual field and lack of depth perception, she is forced to make adjustments immediately prior to the jump, usually two or three strides from the fence. Occasionally, there is a mishap. For instance, on one occasion she entered a grand prix jump backwards. Tory dismissed the mistake by saying, "I jumped the wrong jump, but I did it really well." This mother of two young boys exudes positive energy while simultaneously acknowledging her limitations.

Despite adversity, she is determined to remain optimistic. Tory has immersed

herself in an ambitious outreach effort to create awareness, education, understanding, and compassion for the millions of people living with vision impairment. Tory views her commitment to the important research objectives of The Schepens Eye Research Institute through community awareness and individual financial support as a potential catalyst to inspire others to do the same.

The ultimate goal in her awareness campaign is to create a universal symbol for legally blind people to use as a subtle indicator of their impairment. She doesn't want special treatment for the visually impaired, simply recognition and understanding that she and others like her aren't being difficult when they can't see numbers in an elevator or read a sign in a restaurant or other public venue. Ideally, this symbol would be in the form of a pin or other small object that can easily be worn on clothing. The introduction of this symbol would necessitate an appropriate level of awareness and acceptance for the system to be adopted nationally.

Since the summer of 2003, Watters' story has been featured in equestrian magazines, local newspapers, and nationally on the Early Show. She feels her logical next step is to promote the symbol on a larger scale, ideally on The Oprah Winfrey Show. Not one to walk away from a challenge, the odds are in her favor to achieve this goal as well as the ultimate trophy – to restore and prevent vision loss through research initiatives at the Institute.

For more information about making a gift to benefit the annual fund, contact Melanie Saunders by telephone at (617) 912-2564 or (877) 724-3736 (toll free) or by email at saunders@vision.eri.harvard.edu. 

Bill Carmichael, a Gift to Fix Blindness.

Throughout his life, A.W. (Bill) Carmichael has enjoyed working with his hands, whether building furniture, making repairs on his car or fixing broken appliances. No doubt, it was his interest in making things work that led him to a career in electrical engineering. Unfortunately, when Bill graduated from the University of Toronto in 1933, there were few jobs available in his chosen profession. Fortunately for Bill he was able to use his manual dexterity to land a job working at an automobile service station. Though the job only paid \$12 a week, it covered the bills until he could find work in his field. “I know the value of dollar,” says Bill, recalling those early years during the Great Depression.



Bill Carmichael, right

Eventually, Bill found work as an engineer, and by 1936 he felt financially secure enough to marry his college sweetheart, Winifred. Together, they created a wonderful life – Bill rose up through the ranks to assume leadership roles at Leland Electric Company and AMF, while Winifred worked to make their home in Darien, Connecticut a warm and welcoming environment. Each summer they enjoyed vacationing up and

down the East Coast. When Bill retired in the 1970’s, they settled on Cape Cod, where they built a house and focused their energy on making a new home.

As Bill and Winifred were enjoying their golden years, Winifred was afflicted with macular degeneration, a disease that robs people of their central vision. Eventually, Winifred would have difficulty recognizing the faces of friends and loved ones and noticing the fine details of the home life that she and Bill had so meticulously created over the years. The Carmichaels sought treatment for Winifred’s eye disease in Boston, but even the best physicians in the field could not bring back her sight. Modern medicine, despite its enormous progress, does not have a cure for macular degeneration, the disease that plagued Winifred until her death in 1997.

As an engineer whose professional life was devoted to making things work, Bill recognized that the disease affecting Winifred’s eyes could not be “fixed” at that time. It was this discovery that led the Carmichaels to The Schepens Eye Research Institute. Bill was very impressed with the Institute and its dynamic research efforts on so-far incurable eye diseases. He began supporting the Institute by donating \$100, and continued to make such gifts annually to help fund research that provides hope for the future.

Last year, Bill was happy to learn that he could make a larger gift to the Institute and receive a lifetime income through a Charitable Gift Annuity. Based on his age of 96, Bill was able to make a \$10,000 gift in return for 11.3% annuity.

To this day, Bill continues to work with his hands. Each morning, he puts in a few hours at the wood and metal shops located in his retirement community. This work keeps him active, and also enhances the quality of life of the other residents. Not long ago he noticed that some folks had difficulty getting on and off the van that shuttles them around town. He fixed that problem by designing and building retractable steps and support handles that eased the troubles of both riders and van drivers. Another project involved refinishing the dining hall chairs that caught and rumbled ladies’ garments. His current project involves retrofitting the path lights throughout the complex to prevent them from being damaged by the ground crew’s new mowers.

Though he cannot fix macular degeneration with his own two hands, Bill knows that his gift to the Institute will help our scientists to discover a cure to help future generations.

For more information about a Charitable Gift Annuity, see sample rates below and contact George Constant by telephone at (617) 912-2572 or (877) 724-3736 (toll free) or by email at constant@vision.eri.harvard.edu

SINGLE PERSON		MARRIED COUPLE	
Age	Rate	Ages	Rate
65	6.0%	70/70	5.9%
70	6.5%	76/73	6.3%
75	7.1%	81/77	6.8%
80	8.0%	83/80	7.2%
85	9.5%	85/80	7.3%
90+	11.3%	90/85	8.4%

Friends of The Schepens

NORTHERN TRUST BANK SEMINARS AND A MAR-A-LAGO LUNCHEON HIGHLIGHT THE 2004 FLORIDA SYMPOSIA SEASON

This spring's Florida Symposia series was an unqualified success. J. Wayne Streilein, M.D., president of The Schepens Eye Research Institute, and Rich Godfrey, volunteer patient liaison, presented the very latest in research targeting macular degeneration, dry eye syndrome and low vision to audiences on both the east and west coasts of Florida, and benefited from outstanding support from our clinical partners and Board volunteers making this one of the most successful years ever for the symposia.

The 2004 symposia series would not have been possible without the generous financial support from Schepens Corporator John Palmer (Magnifying Center) and Trustee Victoria McCullough.

There were two very special highlights to the symposia season this year.

Northern Trust Bank invited The Schepens to hold the first-ever Eye and Vision Research Seminars presented at branch offices in Boca Raton, Palm Beach, Vero Beach and Sarasota for the benefit of their private banking clients. "Northern Trust was pleased and proud to affiliate with The Schepens Eye Research Institute to present the symposia series to our clients and friends. The important work being done at the Institute is extremely relevant and interesting to so many people, and we were gratified by the response we received from all

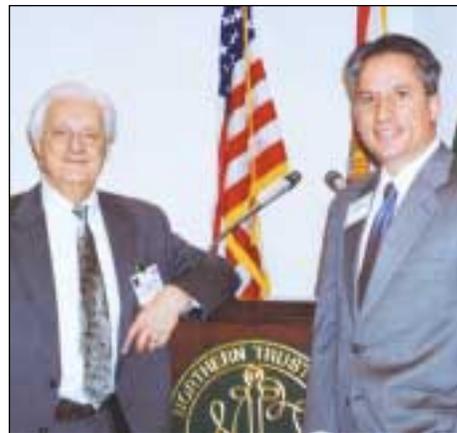
who attended," remarked Doug Regan, president of the Northern Trust in Florida. We at The Schepens are grateful to Mr. Reagan, and to Mr. Brett Rees, senior vice president of sales and marketing, who coordinated the seminars.

The second Florida highlight was the Mar-a-Lago Luncheon Symposium, which included a fashion show and the music of visually impaired pianist David Crohan. The event turned out to be "the fashion event of the season" thanks to the wonderful efforts of long-time Palm Beach supporters Hermé deWyman Miro, Katie Vecellio, Judith Murat Grubman and Cheryl

and Jerré Gowdy. Over 400 guests enjoyed the luncheon and fashion show, and more importantly, learned about eye disease and The Schepens' mission to cure blindness.

These events were anchored by the 2004 Eye and Vision Research Symposia Series that, once again, drew very large crowds to six locations – Boca Raton, Palm Beach and Vero Beach on the east coast, and Sarasota, Ft. Myers and Naples on the west coast. The program was enhanced by presentations by Institute Corporator Dr. David Snyder of the Delray Eye Associates, clinical faculty members Drs. Glenn Wing, Paul Raskauskas

and Donald Fletcher of Retina Consultants of SW Florida, as well as Drs. Roger Meyer and Tom Baudo of Florida Eye Institute and John Neffenegger M.D. of Sarasota Retina Institute.



J. Wayne Streilein, MD, President of The Schepens Eye Research Institute with Andrew Paciocco, Senior Vice President of Northern Trust Bank of Palm Beach.

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MARK YOUR CALENDAR!!!

The 5th annual "Eyeball – A Night for Sight" will be held on Friday, November 5 at The Fairmont Copley Plaza Hotel in Boston. Please join us for an evening of dinner, dancing and a silent auction.

For early inquiries, contact Ann Marie O'Rourke by telephone at (617)912-2573 or at 1-877-724-3736 (toll free).

Ask a Schepens Scientist

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Omega 6 fatty acids, for instance, are critical to the body's inflammatory immune response to injury and infection. Omega 3 fatty acids, on the other hand, tend to dampen down the immune system's inflammatory response and can protect against autoimmune disease.

FATTY ACIDS AND VISION

Fatty acids play a multidimensional role in the eye. For instance, omega 3 fatty acids found in breast milk are critical to the formation and function of the retina in infancy. In addition, epidemiological evidence suggests that omega 3 fatty acids may protect against retinal degeneration in retinitis pigmentosa and age-related macular degeneration. In addition – and here is where dry eye syndrome comes in – omega 3 fatty acids have been found in tears.

TEARS AND TUNA

We decided to test whether people who eat more omega 3 fatty acids could prevent or decrease their risk of dry eye syndrome. Because the incidence of dry eye is so high in women, we chose to look at the dietary habits of women in a large study cohort known as the Women's Health Study at Brigham and Women's Hospital. Because tuna fish is the most popular source of omega 3 fatty acids in the American diet, we decided to compare women with differing amounts of tuna in their diets and the incidence of dry eye syndrome.

Overall, women who ate more omega-3 fatty acids had a reduced risk of dry eye syndrome. Specifically, we found that women who on average ate two to four 4-ounce servings of tuna per week had an approximately 20 percent decrease in their risk of dry eye versus those who ate less than two 4-oz servings of the fish per week. Participants who ate five or more 4-oz servings of tuna per week had a 66 percent reduction in their risk of dry eye compared with women who ate less than two servings per week. We also found that

women who ate significantly more omega 6 than omega 3 had a greater risk of developing dry eye syndrome.

Overall, women who ate more omega-3 fatty acids had a reduced risk of dry eye syndrome.

ADVICE

With only observational evidence of the benefits of consuming more omega 3 fatty acids, it is too early to make dietary recommendations. Our next research steps will be to test fatty acid preparation in a clinical trial setting, which, we hope may help to confirm our epidemiological findings.

In the meantime, increasing the amount of omega 3– rich foods does not appear to be harmful, especially if you are already consume far too few by comparison to the omega 6's in the typical American diet. 🍷

Through a Glass More Clearly

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visible through the telescope.

For sufferers of RP, Peli and members of his laboratory are developing and testing an electronic device for night vision. It is a head mounted display device with a light sensitive camera. The camera takes a picture in low light and a computer transforms it into an outline (cartoon like) image seen over the natural view through the

device. “The goal is to create something that people can wear and which is readily available when they are outside and encounter a darkened area.”

Peli is also testing a device that expands the visual field of someone with tunnel vision, by taking video images with a wide angle camera and displaying it on a small video screen set in a pair of spectacles.

NEXT EPISODE

These are just a few of the projects underway at The Schepens Eye Research Institute in the field of low vision.

According to Peli, they are just the tip of the iceberg. “The explosion in technology in recent year has made it possible for people with low vision to see, work and live in ways not possible a decade ago. And, the future holds possibilities we cannot yet imagine,” he says. 📺

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Dr. Joan Miller

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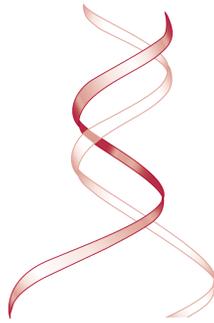
Schepens and the Infirmary have joined forces to promote the development of translational and clinical research in Ophthalmology.

“I have never been bored in the work I have chosen,” says Miller.

“Ophthalmology appealed to me even as a medical student. For me it was a good blend of surgery, medicine and research. It has never let me down.”

And she has never let it down. Says Darlene A. Dartt, PhD, Acting Director of Research at The Schepens Eye Research Institute. “There are many challenges ahead and many doors opening for all of us in vision research and treatment. With Joan heading up our team at Harvard, I know we can meet the challenges and take advantage of the open doors.” 📺

The Streilein Center for Ocular Immunology and Inflammation



at
The Schepens Eye Research Institute

Basic research to enhance the quality of vision and life

While each of us is witness to remarkable scientific advances in our lifetime, the most important advances undoubtedly lie in the future. The next generation of scientists will make these discoveries.

J. Wayne Streilein, M.D., the Charles L. Schepens Professor of Ophthalmology at Harvard Medical School, and the President and CEO of The Schepens until his death in March, 2004, considered the training of the next generation of scientists as his most noble and important responsibility. While Wayne's level of scientific accomplishment is well recognized and significant, his record of training young scientists is even more exemplary. J. Wayne Streilein launched and directed research training programs in Dallas, Texas (Southwestern Medical Center), in Miami, Florida (University of Miami), and in Boston, Massachusetts (Schepens Eye Research Institute and the Harvard Department of Ophthalmology), and he spent countless hours lecturing medical and graduate students, and leading small group discussions and seminars. He

personally trained more than a dozen doctoral students, and more than 85 post-doctoral fellows from all over the world. His trainees hold academic or commercial research positions in America, Japan, France, Germany, Italy, the Netherlands, Brazil, and Argentina. The fact that many of his trainees now hold leadership research positions emphasizes the success of his lifelong commitment to training the next generation of scientists.

The Schepens Eye Research Institute is the largest independent eye research facility in the America, dedicated to conducting basic and clinical research that will lead to the prevention and/or cure of visual dysfunction and blindness.

During the past decade as President of The Schepens, J. Wayne Streilein recruited world-acclaimed scientists to the Institute to conduct research in ocular immunology and inflammation that resulted in publication of manuscripts in first-tier journals and elevated The Schepens to the top-ranking eye research institute in ocular immunology and inflammation.

The establishment of The Streilein Center for Ocular Immunology and Inflammation is in honor of J. Wayne Streilein's 40 years of teaching and research in Immunology. This center will highlight his 10 years at The Schepens, and will continue the research leadership he instituted. The Streilein Center will recruit mid-to senior level investigators in ocular immunology and inflammation and provide institutional support for senior faculty with professorial or scholar appointments. The Center will aim to develop fully equipped and staffed core facilities for microgene array, cellular image analysis and bioinformatics and support tri-yearly international conferences on ocular immunology and inflammation.

For more information, or to make a donation, please contact The Streilein Center for Ocular Immunology and Inflammation, scoii@vision.eri.harvard.edu, 20 Staniford Street, Boston, MA 02114. 

In Memoriam



J. Wayne Streilein, MD
Photo credit: Peter Mallen

The Trustees, Faculty, Staff and all of the members of the Schepens family worldwide, mourn the sudden loss of our President, J. Wayne Streilein, M.D. on Monday, March 15, 2004.

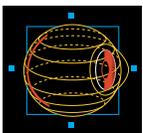
During the past decade as President of The Schepens, Dr. Streilein recruited world-acclaimed scientists to the Institute to conduct research that resulted in the publication of manuscripts in first-tier journals and elevated The Schepens to the top-ranking eye research institute in the world.

To celebrate Dr. Streilein's lifetime dedication to teaching, research and leadership, we are establishing

The Streilein Center for Ocular Immunology and Inflammation at The Schepens Eye Research Institute

Dr. Streilein's family has requested that contributions in his memory be made to:

The Streilein Center for Ocular Immunology and Inflammation
Office of the President, The Schepens Eye Research Institute,
20 Staniford Street, Boston, MA 02114



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