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*Glaucoma continued from page 1*

low pressure is unlikely as well. You've kept normal anatomy and tried to just enhance how it works. And the other thing that's helpful is that it's easy to do in conjunction with cataract surgery" (*Pittsburgh Post-Gazette*).

Despite its positive results, iScience Canaloplasty is not a cure and cannot be performed on all patients due to pre-existing scarring or differences in anatomy. Patients that undergo the procedure or any of the other treatment options need to be continually monitored to ensure that the disease has not caused other changes and that eye pressure achieved is indeed low enough for the individual.

However, this leading-edge surgery will certainly be instrumental in shaping the future of glaucoma therapies. "With glaucoma surgery, the purpose is to protect your vision, preserve the vision you have remaining," Dr. Schuman says (*Pittsburgh Post-Gazette*). The key to preventing the devastating vision loss or blindness

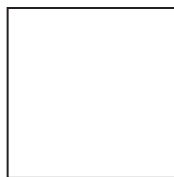


**Robert J. Noecker, MD**

that glaucoma can cause is early examinations, especially for older adults and those who have a family history of glaucoma. The sooner the disease is detected, the more effective a treatment regime can be. ♦

*Individuals, foundations and other organizations can play a significant role in ensuring future breakthroughs in the treatment of glaucoma and other eye diseases and disorders.*

*To support new science and new solutions through a gift contact Traci at 412-383-8756 or info@eyeandear.org. For more information on glaucoma or to schedule an appointment call UPMC Eye Center at 412-647-2200 or 1-800-533-8762.*



[www.eyeandear.org](http://www.eyeandear.org)

203 Lothrop Street , S119 BST  
Pittsburgh, PA 15213  
(412) 383-8756  
(412) 383-8769 fax

**THE Eye & Ear Foundation**  
of PITTSBURGH

**UPMC EYE CENTER**  
412.647.2200

**UNIVERSITY EAR, NOSE & THROAT SPECIALISTS OF UPMC**  
412.647.2100

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The official registration and financial information of the Eye & Ear Foundation may be obtained from the Pennsylvania Department of State by calling toll free, within Pennsylvania, 1 (800) 732-0999. Registration does not imply endorsement.

THE Eye & Ear Foundation  
of PITTSBURGH

Spring 2009

# SIGHT+ SOUND

NEWS FOR SUPPORTERS AND FRIENDS OF THE EYE & EAR FOUNDATION



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## DR. ROBERT NOECKER SEES INNOVATION IN GLAUCOMA

BY LAUREN WALLY

Over 3 million Americans suffer from glaucoma, a blinding disease that is often symptom-less and can go undetected until the condition has become critical – by then, treatment is ineffective and irreversible damage has been done to vision. Glaucoma is very treatable though, if diagnosed early. Most patients are treated with eye drops initially and many respond well to this therapy. However, for patients who need more extensive treatment or may have difficulty tolerating or paying for eye drops, laser procedures and different types of surgeries are also available. Though there are risks of infection, bleeding or swelling, and possible lengthy recovery time associated with surgery, the advantage is that, if successful, the need for eye drops may be reduced or eliminated.

According to Dr. Joel S. Schuman, director of the UPMC Eye Center and Eye and Ear Foundation Professor and chairman of the Department of Ophthalmology at the University of Pittsburgh School of Medicine, there is a good mixture of old and new surgical options. While some of these surgeries are very old procedures, others that have become available are very new and experimental. Dr. Robert J. Noecker, associate professor of Ophthalmology and vice chair, Department of Ophthalmology and UPMC Eye Center, has performed many surgeries during his career, but none that are as minimally invasive as the iScience Canaloplasty surgeries being performed in Pittsburgh recently.

Dr. Noecker has mastered iScience Canaloplasty, a new surgical procedure where a micro-catheter, finer than a hair, is inserted into the canal of Schlemm – this is the drainage canal for the inside of the eye. The catheter re-opens the canal for glaucoma patients and a suture is then tied in place so that it remains dilated once the catheter is removed, thus making it easier for the fluid to leave the eye. This

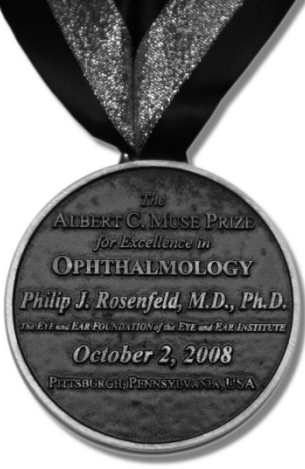


*New innovation in sight. This micro-catheter, used in iScience Canaloplasty, offers a safer, minimally invasive alternative to surgery for glaucoma patients.*

dilation results in lower eye pressure for the patient. Dr. Noecker currently performs approximately two of these surgeries a month but expects an increase as the word is spread about this new treatment.

"As a first procedure, it's probably one of the safest [operations]," Dr. Noecker says. "There's a fast recovery and predictable results. The reason I say that [it is so safe] is because you never enter the eye. The furthest you go is into the drainage canal, so it has a low risk of infection and bleeding. The canal is in the wall of the eye so the operation is never inside the eyeball. Because of that and because you're not leaving a hole, the chance of causing an overly

*Continued on page 4*



## MUSE PRIZE AWARDED TO PHILIP J. ROSENFELD, MD, PhD



Donors Ada and Stan Davis with Dr. Rosenfeld.

Philip J. Rosenfeld, MD, PhD, at Bascom Palmer Eye Institute of University of Miami Miller School of Medicine, transformed the treatment of macular degeneration.

No industry or federal support was available for his research, but thanks to a gift from a grateful patient, ophthalmologists worldwide now use Avastin to treat thousands. To honor his discovery, Dr. Rosenfeld received the 2009 Albert C. Muse Prize.

The annual Muse Prize ceremony allows supporters of the Eye & Ear Foundation and clinical and research leaders to celebrate innovation in Otolaryngology and Ophthalmology.

To join us for the 2010 Muse Prize, contact Traci at 412-383-8756 or [info@eyeandear.org](mailto:info@eyeandear.org).

# UPMC CENTER FOR BALANCE DISORDERS HELPS TO STEADY PATIENTS

BY PATRICK SPARTO, PhD, PT and JOSEPH M. FURMAN, MD, PhD

Although dizziness and balance disorders often occur in older adults, they can happen at any age to anyone. The UPMC Center for Balance Disorders within the Department of Otolaryngology focuses on finding the cause of these disorders and then develops a treatment plan with their comprehensive balance disorders care team.

Balance is accomplished by several body systems working together. Your brain takes information from your eyes, inner ear and sensation in your limbs to understand where you are and how you are moving. When one of these systems is damaged or the brain does not interpret the signals correctly, a balance disorder can occur. According to Joseph Furman, MD, team member at UPMC Center for Balance Disorders, "Whether caused by inner ear problems, migraine headaches, anxiety or even muscle weakness, the symptoms of balance disorders can vary. I see patients who feel unsteady, dizzy, woozy or fearful of falling. Others feel as though they are moving, spinning or floating. Balance disorders are something we all experience a little differently." No matter the cause or the symptoms, balance disorders can be debilitating and can be a leading sign of other medical problems.

Patients at the UPMC Center for Balance Disorders benefit from the Center's Vestibular (Balance) Laboratory, a specialized facility designed to offer a wide variety of tests to determine the cause of the dizziness and balance problem. Once the cause is determined, an effective treatment plan is designed for the patient, which commonly involves a combination of therapies, including medications and physical therapy. Research has shown that the use of customized treatments improves balance



Finding balance in the virtual grocery store at UPMC Center for Balance Disorders

and dizziness in all age groups, including older adults.

The UPMC Center for Balance Disorders also is actively developing new and innovative treatments for dizziness. One new treatment uses virtual reality to simulate shopping in a grocery store. The virtual grocery store is a life-size video game that projects 3-D, moving images around a real shopping cart on a custom-built treadmill. A person operating the shopping cart

## After six weeks, the majority of participants improved in every test...

can control his or her own speed and direction while walking up and down 18 aisles that display realistic-looking products. "Easier" aisles display larger products, like paper towels, while the more challenging aisles contain smaller products, like tiny bottles of medicine. In a recent study led by Sue Whitney, a physical therapist and researcher at the UPMC Center for Balance Disorders, research participants with balance disorders went through a series of balance and mobility tests and self-reported surveys before and after using the virtual store. After six weeks, the majority of participants improved in every test taken. According to Whitney, "This ongoing trial will compare the virtual reality treatment to traditional physical therapy and will lead to better care for patients with balance disorders."

If you or someone you know experiences debilitating dizziness, balance disorders or fear of falling, help is available. The Center for Balance Disorders combines their comprehensive testing facility and a team of experts to help identify and overcome balance problems at any age. ♦

Private support from individuals and organizations sustains the development of innovative therapies such as the virtual grocery store.

To support this work with a gift contact Traci at 412-383-8756 or [info@eyeandear.org](mailto:info@eyeandear.org). For more information on balance disorders or to schedule an appointment call the UPMC Center for Balance Disorders at 412-647-2125.



Medical research participant Chris Ryan tracks his condition with the help of Joel S. Schuman, MD.

## PARTICIPATING IN MEDICAL RESEARCH

BY TRACI WEATHERFORD-BROWN

Chris Ryan was diagnosed more than 10 years ago with glaucoma. As a patient of Joel Schuman, MD, Chris benefits from thorough eye exams and because his glaucoma was caught early, he uses eye drops to control his disease.

While the care he receives ensures his health, when Chris agreed to participate in a glaucoma study that Dr. Schuman and his multidisciplinary team of nearly 20 clinicians, engineers, computer scientists and researchers are conducting, his knowledge of the disease skyrocketed.

"I understand that participating in Dr. Schuman's research doesn't mean that my eyes will get better," Chris says, "but I am learning so much about my condition and the progress of my glaucoma. And I don't have to take his word for it. The incredible technology Dr. Schuman uses allows him to show me the changes happening within my eye."

Using technology such as Optical Coherence Tomography that Dr. Schuman helped develop and brought to Pittsburgh, Dr. Schuman creates highly detailed maps of each participant's eyes to track the progression of their glaucoma.

According to Dr. Schuman, "Without people like Chris and others who are willing to support research, we would be unable to predict the stages and aggressiveness of glaucoma and impact the way physicians treat the disease."

Chris, who happens to be Director of the Institutional Review Board at the University of Pittsburgh, reviews all research efforts at the University and at UPMC which include people as subjects. "Without private funding for medical research from foundations, corporations and people like me," Chris adds, "many studies would falter. Federal research dollars are getting scarcer and private support ensures that science continues to advance."

For Chris, participating in glaucoma research has done so much more than make him a more informed consumer of his health care. "Now," he says, "I know enough to encourage others to seek help, and I know that I am making difference in the future of medicine." ♦

Your support—either by making a gift or participating in clinical research—makes all the difference.

If you would like to impact the future of medicine through a gift contact Traci at 412-383-8756 or [info@eyeandear.org](mailto:info@eyeandear.org). Or join the Research Participant Registry. Any UPMC patient over the age of 18 can register by calling the Registry office at 1-866-438-8230 or by talking with your physician.



Traci Weatherford-Brown is Director of Development for the Eye & Ear Foundation. Prior to joining the Foundation, Traci served as Associate Director of Development for The Children's Institute of Pittsburgh. She also has held fundraising appointments with The Pittsburgh Foundation and Carnegie Museums of Pittsburgh.

REVISED WEBSITE

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**EYE & EAR FOUNDATION ANNOUNCES A NEW WEBPAGE, EYEANDEAR.ORG**



Our website is completely redesigned to power our mission of supporting leading edge research, education and care in Ophthalmology and Otolaryngology at UPMC and University of Pittsburgh. Visitors can share their Eye & Ear story and sign up for our newsletter. Plus, the website will allow us to securely accept online donations.

By showcasing the newest advances in research and providing links to resources at UPMC and the University, we aim to connect visitors with the best in eye, ear, nose, throat, head and neck care and build awareness and support for the life-changing work in Ophthalmology and Otolaryngology.