

SIGHT+SOUND

Annual Report 2010

NEWS FOR SUPPORTERS AND FRIENDS OF THE EYE & EAR FOUNDATION

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## |NS|DE

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## LIVE OUT LOUD: ELENA LAQUATRA'S STORY

BY JACQUELIN WALKER

he models. She dances. She acts. She wins beauty pageants. She plays percussion. And she's deaf.

As a toddler, Elena LaQuatra loved the arts and at only three years old, was well on her way to becoming a theater arts kids. But in 1996, on the day after her fourth birthday, she was diagnosed with an ear infection turned bacterial meningitis...and it cost her, her hearing. Now though, some 14 years later, Elena lives life in such a way that one would never know she had ever lost the ability to hear or speak.

In addition to 100% hearing loss, the meningitis infection also caused the loss of nearly all function in her vestibular system, leaving her walking on all fours. Elena's parents, Effie and

Paul, were told to simply accept the fact that their daughter would never be normal again. Instead, they enrolled her in the DePaul School for Hearing and Speech. Staff there referred the family to Dr. Donald B. Kamerer of The Eye & Ear Institute, at the time a major research center for cochlear implants. A cochlear implant is a small

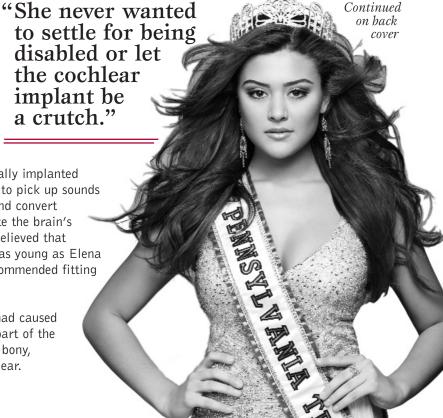
electronic device that is surgically implanted under the skin in the inner ear to pick up sounds from a person's environment and convert them into impulses that activate the brain's auditory nerve. Dr. Kamerer believed that implants could allow someone as young as Elena to mainstream quickly and recommended fitting her for one immediately.

Unfortunately, the meningitis had caused Elena's cochlea (the auditory part of the inner ear) to become rigid and bony, pushing the implant out of her ear.

For eight months, she still could not hear, struggled with balance, and the quality of her speech deteriorated. But her mother believes that failure was a blessing in disguise. "Elena's ear was the problem, not the device," she says, "and we couldn't settle for the setback. We believed that something more could be done so we kept pushing." And the day before Thanksgiving, Elena and her parents had much to be thankful for. She underwent surgery to place an implant in her other ear. This time, she was able to hear immediately... and her progress has skyrocketed ever since.

Elena continued attending the DePaul School until she was 7½ years old, splitting her time there and in mainstream elementary school... but by second grade, she was fully mainstreamed.

By the time she reached



## FROM THE CHAIRS

#### DEPARTMENT OF OTOLARYNGOLOGY



Fiscal year 2010 produced many remarkable accomplishments, including recruitment of top faculty, grant awards, and further progress within our existing programs.

Over the last year we were delighted to welcome Maria Rubio, PhD, David Schmidt, PhD, Ryan Soose, MD, and Andrew McCall MD to the department. Dr. Rubio established her laboratory with our Auditory Science

team, using the electron microscope to enhance their work to demystify Tinnitus. Dr. Schmidt has joined our Otitis Media research team to help develop and interpret research in the hypobaric chamber. Dr. Soose, who is pioneering the use of sleep endoscopy to better localize the site of obstruction during sleep in those with sleep apnea and snoring, has completed a fellowship in Sleep Medicine. He will become Director of the Surgical Sleep Disorders Team with clinical offices in Monroeville and Mercy Hospital. Lastly, Dr. McCall has joined our faculty in Otology-Neurotology. Dr. McCall completed his fellowship training at the Massachusetts Eye and Ear Infirmary and will be investigating the vestibular system with Dr. Bill Yates.

We are pleased to announce that The National Cancer Institute has awarded a grant to continue funding of the SPORE [Specialized Program of Research Excellence] in Head and Neck Cancer. Dr. Jennifer Grandis, principle investigator, explains that this grant will provide over \$10,000,000 in funding over the next 5 years! Dr. Joseph Furman and his colleagues in the Balance Research team have also received major funding from the National Institutes of Health. As a result, they continue to employ the virtual reality laboratory in efforts to better understand optimal interventions for patients with dizziness and balance disorders.

Last but not least, US News and World Report ranked our department #3 for 2010. This ranking reflects reputation and a number of clinical measures. Reputation is enhanced through discovery and contributions that increase understanding of disease and treatment. Our entire faculty proudly remains committed to the causes of patient care, education and research.

Jonas T. Johnson, MD

The Dr. Eugene N. Myers Professor and Chair in Otolaryngology University of Pittsburgh School of Medicine Director, University Ear, Nose &Throat Specialists of UPMC

#### DEPARTMENT OF OPHTHALMOLOGY



We are excited about the past year's growth at UPMC Eye Center, the Department of Ophthalmology of the University of Pittsburgh School of Medicine. We are now 26 full time clinicians representing nine academic subspecialties at nine locations with 26,000 office visits, 18 residents and 5 clinical fellows, and 111 other employees. Research faculty numbers 18, plus 50 employees in addition to faculty, graduate

and postdoctoral students. Research funding this year totaled \$7.2 million, with \$5.9 million from the NIH.

As clinical healthcare becomes increasingly more challenging, we work hard to provide the highest levels of care. Patients have access to physicians within 24-48 hours of their non-emergent call. Our electronic health record can be used not only for clinical documentation, but also to share relevant clinical information with patients via their own portal. And we are thrilled that our clinicians, trainees and staff volunteer their time to give ophthalmic care (not just screenings) in community health centers and other sites for patients who cannot afford access to eye care.

Our Fox Center for Vision Restoration continues advancing the frontiers of ocular regeneration and sensory substitution. Scientists are investigating the effects of stem cells on corneal clouding, as well as the functioning of the drain of the eye, and working with technologies to transform the visual world into one that we can experience with other senses. One of these technologies allows the blind to "see" shapes and obstacles by feeding a video image to a stimulator that the user places on the tongue. This advance is undergoing both clinical and basic research, to study the potential enhancement in independence and mobility for the blind, and also to understand the plasticity of the human visual system. Additionally, our scientists are developing translational programs to bring basic science discoveries from the laboratory to the clinic.

We look forward to continuing the growth of the Department of Ophthalmology, on all fronts — clinical, research and education.

Joel S. Schuman, MD, FACS

Eye & Ear Foundation Professor and
Chairman of Ophthalmology
University of Pittsburgh School of Medicine
Director, UPMC Eye Center

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he Eye & Ear Foundation gratefully recognizes the individuals, businesses and foundations whose generosity allows us to bring new science and new solutions to people with diseases and disorders of the eye, ear, nose, throat, head and neck. Your support makes all the difference. Thank you!

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# TROUBLE SLEEPING?

Sleep apnea is a common, serious medical condition characterized by repetitive obstruction of the upper airway during sleep. It can result in poor sleep quality, cardiovascular disease, and unsafe driving conditions. Various medical and surgical treatment options are available but successful therapy depends on proper evaluation of each individual's unique anatomy.

"Drug-induced sleep endoscopy" (or DISE) is a new, safe outpatient procedure that allows surgeons to examine a patient's airway in a sedated state that mimics sleep. DISE translates into more accurate procedure selection and customization of each patient's specific treatment plan.

Comprehensive sleep apnea evaluation, including DISE, and a wide range of treatment options are available at the University Ear, Nose & Throat Specialists of UPMC Division of Sleep Surgery, directed by Ryan Soose, MD.

Call (412) 232-3687 for more information.

### THE BEST OF BOTH WORLDS

BY LAUREN WALLY

yle McKenna, PhD, Assistant Professor of Ophthalmology, Director of the Ocular Tumor Immunology Laboratory, was always interested in biology and football. Though these interests seem incompatible, Kyle graduated with honors in Biology from the University of Maryland while playing on the football team. A series of concussions ended Kyle's football career but allowed him to pursue his other passion. After graduation, Kyle took a position with Abbott Laboratories, working to improve a biological man-

ufacturing process that produced antibodies the American Red Cross used to screen blood.

While at Abbott Kyle was inspired by a book, "Immunology - Recognition and Response", edited by renowned scientist Dr. William Paul, and decided to return to Maryland to pursue a PhD degree in immunology. His dream was to one day utilize the immune system to cure cancer.

Kyle completed his degree in 1999, became a post-doctoral fellow and assistant professor at Emory University, and was recruited to the University of Pittsburgh in 2006. Not surprisingly, his research focused on understanding the immune response to ocular tumors with the goal of developing immunotherapies for uveal melanoma, or cancer of the eye.

Kyle has an R01 grant which utilizes a mouse model of ocular tumor development to study why T cell responses are inhibited within ocular tumors. Generous support from the Eye & Ear Foundation helped ensure that Kyle's research progressed seamlessly as he relocated to Pittsburgh. Additionally, foundation funds allowed his research to grow in new directions. He began exploring whether the same mechanisms of immune suppression observed in his ocular tumor model in mice were active in patients with human uveal melanoma. In a recent publication, his laboratory showed that patients with primary uveal melanomas displayed elevated percentages of myeloid derived suppressor cells in the blood. These suppressive cells may contribute to eye cancers evading the



Dr. Kyle McKenna (center) works alongside Kelly Beatty and Dr. Rodolfo Vicetti Miguel to discover ways to help the body's immune system reject uveal melanoma.

body's immune system. Dr. McKenna indicated that he is very grateful that the Foundation supplied funding for this research as he is hopeful that it will one day contribute to cures for metastatic uveal melanoma.

Dr. McKenna is thrilled about his proximity to Hillman Cancer Center and the collaborations available with researchers in the cancer Immunology and Immunotherapy programs. Having access to this world class facility as well as its faculty has enabled Kyle to develop his human uveal melanoma studies. He says "Learning first hand of the successes and failures of immunotherapies for skin cancer helps me target what therapies may be effective for eye cancer." He believes that early diagnosis and treatment could save an eye cancer patient from developing fatal metastatic liver disease.

As for Dr. McKenna's future and that of his team, he would like to embark on more studies characterizing the immune response in uveal melanoma patients to lay the groundwork for clinical trials of adjuvant tumor immunotherapies.

Dr. McKenna and his wife Annie are the proud parents of 5 children, ranging from 3 to 10 years old. He is still a football fan.

The generosity of everyday people allows Eye & Ear to support important research. To learn more about how you can help, visit www.eyeandear.org/donate.



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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.

#### TELL US YOUR STORY

The Eye & Ear impacts many lives, especially those of patients and families, and sharing your story can make a difference in the work we do. Educate others about the seriousness of the diseases and disorders we treat. Encourage those struggling with similar conditions. Inspire others to support research and care with a charitable gift.

Share your story today at www.eyeandear.org.

#### Live Out Loud continued from page 1

junior high, Elena had eliminated the need for any help, with the exception of her Individualized Education Program (IEP) which took into account special communication needs. Of her drive and determination, her parents say, "She never wanted to settle for being disabled or let the cochlear implant be a crutch."

Now a Mt. Lebanon High School graduate, Elena receives care from Dr. Barry Hirsch, Director of the Eye & Ear's Division of Otology/ Neurotology, ensuring that she continues to excel.

As a teen, Elena has won several beauty pageant titles, including 2007 Miss Pennsylvania Outstanding Teen America, and 2010 Miss Pennsylvania Teen USA. But the titles are more a means of sharing her platform — Oral Deaf Education: Finding Your Voice. "As long as I have this crown and sash," Elena says, "people will listen."

And she is certainly making her voice heard. She is the creator of "Speaking Through My



Deaf Ears", a motivational program that encourages others to not allow disabilities to hinder their abilities. She is also a spokesperson for the DePaul School, and joins the Starkey

Hearing Foundation on mission trips to promote hearing aids. An accomplished dancer and choreographer, model, actress, beauty queen and soon-to-be college freshman, Elena is, at her core, a young woman committed to helping people.

Elena's mother says, "Her father and I instilled in her from the beginning that she shouldn't go through life looking for favoritism. We wanted her to meet every challenge or situation in life with strength and a positive outlook." And that's just what she does most and best—using every opportunity to encourage other disabled young people to make the most of everything life presents.