Otolaryngology News

SPRING 2009

Message from the Chairman

As I look over the many achievements of the Department of Otolaryngology over the last year, I marvel at the ways in which modern technology has enhanced our ability to serve our patients. In this issue, you'll discover some fascinating examples, from computer simulation and virtual reality to electronic devices and ever-tinier and more convenient hearing aids.

Of course, technology is only as effective as the experts putting it to use, and I'm proud to introduce you to a number of the caring and imaginative physicians, audiologists, researchers, and other health professionals in the department.

Finally, the department's excellence in clinical and basic sciences is greatly aided by our generous benefactors who make it possible to realize our mission to search, to teach and to discover.

I hope you enjoy learning more about our recent activities and accomplishments.

Anil K. Lalwani, M.D.
Mendik Foundation Professor and
Chairman of Otolaryngology
Professor of Pediatrics and Physiology
and Neuroscience

Making Connections:
Audiology Services for Children and Adults with Hearing Loss

For a newborn child, the sense of hearing is fundamental to understanding a strange new world. The sound of a mother's heartbeat helps develop a bond even in the womb, and familiar family voices welcome a baby into safe surroundings. More than any other of the five senses, our hearing is highly functional from the day we're born.

But when a newborn's hearing is compromised, a crucial connection is lost. Hearing impairments are a difficult reality for two to three of every 1,000 children born in the United States each year.

Ensuring children are connected to the world around them is a core mission of the Center for Hearing Health's pediatric unit, housed in the Laurence D. Fink and Lori Weider Fink Children's Ambulatory Care Center. The Fink Center, which opened in 2007, expanded in 2008 to complement the Arnold and Marie Schwartz Health Care Center, where outstanding audiologic services have been provided to adults and children for decades.

(CONTINUED ON NEXT PAGE)

Inside:

NYU Langone Medical Center
Department of Otolaryngology

"It is absolutely amazing to see the progress of the kids we fit with hearing aids, who at first had no vocabulary, and are now talking up a storm!"

— Dr. Zhanneta Shapiro

(CONTINUED FROM PAGE 1)

Right from the start

"We're able to begin diagnosis and treatment immediately after a child is born," offers William H. Shapiro, Au.D., director of the Division of Audiology. "If a hearing loss is diagnosed, the process and timing of fitting a child with a hearing aid is critical. The earlier a child can be fit with appropriate amplification, the sooner they'll have access to their environment and begin learning. Our job is to give these children access as early as possible to reduce the ramifications of hearing loss."

The division brings a range of talent to bear on every case. A collaborative philosophy ensures the patient is seen not only by specialists within the Center for Hearing Health, but by experts qualified to address the educational, psychological, and social challenges associated with hearing loss. The in-house team commonly calls on fellow NYU Langone Medical Center professionals, including speech pathologists, developmental pediatricians, and educators of the deaf.

Perhaps the most vital collaborators of all, though, are the patient's family members. "Here at NYU, we use a family-centered approach," notes audiologist Zhanneta Shapiro, Au.D. "We recognize the needs of parents and provide support to them through informational and emotional counseling. We also rely on the parents to work with us in giving the child a chance to develop speech and language through proper amplification and other needed services."

The wireless connection

Talent is augmented by technology, and audiologists employ state-of-the-art techniques to examine and habilitate their patients.

Adults can offer verbal feedback to an audiologist during a hearing test, but behavioral testing is impossible with an infant and unreliable with a toddler or young child. Otoacoustic Emissions (OAE) and Vivosonic Auditory Brainstem Response (ABR) tests provide objective means of looking at the auditory system, and both approach the gold standard of behavioral testing. The Vivosonic ABR employs Bluetooth® technology, and is designed to obviate the need to sedate a young patient. "The audiologist still needs to attach electrodes to the child's head," says Dr. Bill Shapiro, "but now Mom or Dad can actually hold the child or let him walk around the room while we read auditory responses." *[see sidebar]*

Hear today, hear tomorrow

Patients of every age are benefiting from vast improvements in hearing technology. As Dr. Bill Shapiro explains, the latest and greatest hearing aids are digitally programmable. "Digital technology provides a much clearer signal than conventional [analog] amplification, and patients tend to perform better," he says. "We can customize the power at various frequencies to match a patient's

degree of hearing loss. The hearing aid is connected to the computer via Bluetooth®, so the patient can be sitting up to 10 feet away while the aid is being programmed."

Clearly the technology has come a long way since the days when clunky in-ear devices were adjusted with a screwdriver. NYU audiologists advance the techniques and technology of their discipline through ongoing research, and the fruits of their labor are shared among child and adult patients alike. In fact, a better understanding of the superior technology available today might encourage more hearing-impaired adults to seek help.

The newest member of the NYU team, ***Alison Singleton, Aud.D.****, received her doctoral degree from Northwestern University and completed her residency at the NYU Cochlear Implant Center.*

Presbyacusis, or hearing loss due to advancing age, can afflict adults as young as 35. This type of hearing loss is usually exhibited by a decreased sensitivity in the high frequencies. But antiquated hearing aids that blocked the outer ear entirely caused a disconcerting "occlusion effect" (distorting the sound of one's own voice), and left patients frustrated—which, in turn, left hearing aids in the nightstand. The open-platform hearing aids introduced three years ago, by contrast, utilize a thin tube that leaves the ear unoccluded.

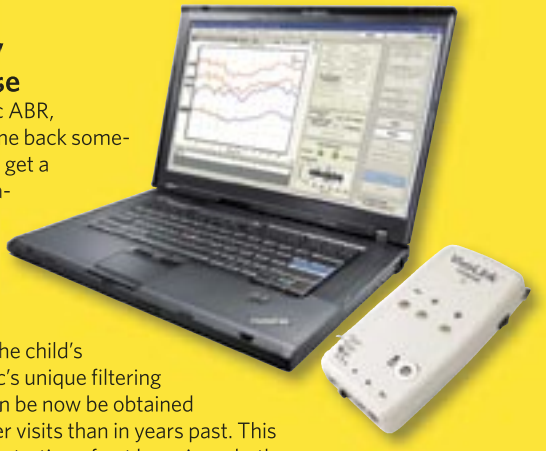
NYU's audiologists have also made impressive progress with adult patients who experience tinnitus, a common disorder characterized by noise or ringing in the ears. The pioneering treatment, known as Neuromonics Tinnitus Treatment, manages tinnitus using an approach that integrates audiology, neurology, and psychology. "It is wonderful to watch a transformation in which people who initially feel beset by their tinnitus gradually develop a sense of relief and empowerment over it," says audiologist Terri Shaw, M.Ed. *[see sidebar]*

"For patients of every age, I love using all the tools at our disposal to solve problems," says Dr. Bill Shapiro. "Patients are happier and hearing better, and that's the most important thing." ●

Tools of the Trade

Technology has become indispensable to the work of audiologists. Below are some of the newest tools used at the Center for Hearing Health.

Vivosonic Auditory Brainstem Response



Prior to using the Vivosonic ABR, "parents would have to come back sometimes two or three times to get a complete diagnostic evaluation," says audiologist Terri Shaw. "If infants were active or fussy, the test would have to be halted because of artifact problems stemming from the child's activity. With the Vivosonic's unique filtering technology, ABR testing can be now be obtained more quickly and with fewer visits than in years past. This obviously decreases the frustration of not knowing whether a hearing loss can be ruled out or confirmed."

Neuromonics Tinnitus Treatment

Over the course of six to eight months, a standard candidate uses a customized Neuromonics portable device, as small and discreet as a personal mp3 player. The device delivers a pleasant and relaxing acoustic stimulus, which incorporates spectrally-modified Baroque classical and New Age music and engages the brain's response center, thereby desensitizing the patient to the tinnitus. Patients eventually demonstrate a substantial reduction in the amount of time they are both aware of, and disturbed by, their tinnitus.

Lyric Hearing Device

NYU recently began offering the Lyric® Hearing Device, a totally new concept for hearing improvement. It is the first and only 100% invisible, non-surgical, extended-wear hearing solution, worn 24 hours a day, seven days a week, for up to 120 days. Once placed, patients can enjoy the benefits of better hearing without the daily hassles associated with traditional hearing devices. Dr. Anil Lalwani says, "The beauty of the Lyric is that it is simple to place in the ear and there is no after-care, with no batteries to change."

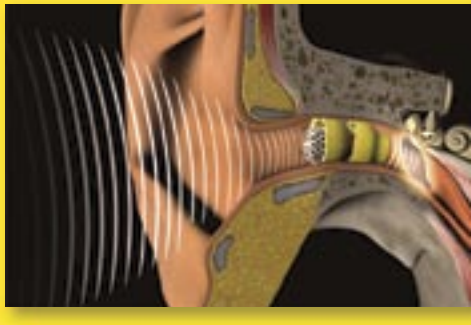


PHOTO CREDITS, TOP TO BOTTOM: COURTESY OF VIVOSONIC INC.; COURTESY OF NEUROMONICS INC.; COURTESY OF INSOUND MEDICAL

The NYU Voice Center:

Improving Quality of Life through Clinical Care and Research

Breathing. Eating. Speaking. When these fundamental functions are disrupted by disease or injury to the throat or esophagus, it is the work of the NYU Voice Center to guide patients back to good health.

In the course of a normal day, speech pathologist Cathy L. Lazarus, Ph.D., is as likely to treat a high-school teacher with a damaged voice as a former smoker with cancer of the larynx. The patients she and her colleagues see in the Department of Otolaryngology's Voice Center may have vocal cord constriction that inhibits breathing or neurologic damage that has impaired the voice. They see long-recovering surgical patients who have been fed through a tube for so many months they've lost the ability to eat by mouth.

Dr. Cathy Lazarus

"It's so gratifying to help patients improve their quality of life," says Dr. Lazarus. "When we can help get someone off of their tube-feeding or recover their speaking voice, they are so happy and grateful. So, it's extremely satisfying when a person's speech, swallowing, or voice improves. But they have to do all the work. I can guide them, but they're the ones with all of the homework."

Dr. Lazarus is being modest, though she's also describing a process that begins with clinical and diagnostic evaluation and ends with a patient's final weekly visit. In the interim, therapeutic strategies outlined by the Voice Center's collaborative team empower the patient to promote his or her own healing. "Recently we saw a patient who'd had thyroid surgery and ended up with a paralyzed vocal cord," relates Dr. Lazarus. "She was unable to project her voice, and very upset. With just one set of exercises she was able to improve her voice. We basically just gave her the technique, and by the second visit her voice was nearly clear."

Patients may be referred by a general physician or otolaryngologist. The voice and swallow specialists are also frequently asked to collaborate on cases from a range of NYU departments. The team works closely with pulmonologists when a patient's breathing problem relates to the larynx, with gastroenterologists when swallowing is restricted by the esophagus, and with oncologists on cancers of the head and neck. They also provide speech therapy in collaboration with the NYU Rusk Institute of Rehabilitation Medicine's Speech-Language Pathology Department to patients having undergone cochlear implant at the NYU Cochlear Implant Center.

Vocal folds viewed by flexible laryngoscopy

The program is directed by Milan Amin, M.D., chief of the Division of Laryngology. A small but ambitious group, the practitioners in the Voice Center complement their patient care with leading-edge research. In fact, the research rivals their patient work in both variety and depth.

With a grant from the National Institutes of Health (NIH), Dr. Lazarus and Dr. Mark DeLacure are conducting a clinical trial examining the effects of two swallowing exercise programs for oral cancer patients who have been treated with chemo-radio therapy. In a separate five-year study for the NIH, the center is conducting one of the first trials examining the effects of electrical stimulation on swallowing in head and neck cancer patients. The group is also pursuing smaller voice studies to examine the effects of cochlear implants, and has been published on new techniques for analyzing pitch and loudness variation in connected speech.

On the horizon is a study to consider the effects of laser scarring on vocal tissue, and another to develop a take-home device that patients can use to monitor their own progress with voice therapies. Dr. Lazarus

(CONTINUED ON PAGE 10)

Research Updates

Under the direction of Anil Lalwani, M.D., department chairman, and Mario Svirsky, Ph.D., vice chair for research, the Department of Otolaryngology has an impressive portfolio of research funding from both internal and external sources.

Project Highlights:

Matthew B. Fitzgerald, Ph.D., has obtained a $927,000 grant from the National Institutes of Health. Because bilateral cochlear implants are known to improve the patient's ability both to understand speech and localize sound, implanting devices in both ears has become increasingly common practice. Yet to date, the fitting of the two implants is performed largely independently, with no method for programming them—other than minor loudness adjustments—so they work together in optimal fashion. Working from the hypothesis that pitch- and loudness-matching procedures across the two implants will enhance speech perception and localization abilities, he and Dr. Svirsky are investigating different methods for optimizing the fitting of bilateral cochlear implants with the goal of achieving significant improvement in patient outcomes.

Robert Machold, Ph.D., has received a pilot grant from the Alzheimer's Association. The cognitive decline and dementia observed in patients suffering from Alzheimer's disease is widely thought to be caused by dysfunction of the system of nerve cells in the brain that use the chemical acetylcholine to transmit information from one nerve to another. Dr. Robert Machold, in collaboration with Dr. Bernardo Rudy of the Department of Physiology and Neuroscience, is testing this hypothesis using advanced genetic techniques. Dr. Machold has engineered mice that lack the ability to produce the acetylcholine neurotransmitter in specific brain regions that are known to be affected in Alzheimer's disease. He and Dr. Rudy are currently identifying the resultant changes in brain circuitry, as well as the cognitive and behavioral abnormalities that manifest themselves over the lifespan of the mice.

Dan Jethanamest, M.D., has received funding from the Centralized Otolaryngology Research Efforts (CORE) Grant Program, American Academy of Otolaryngology-Head and Neck Surgery. Animal research suggests that the correspondence between acoustic frequency and populations of neurons stimulated in response to that frequency is not fixed, but rather dependent on sound intensity. In other words, frequency mapping in the mammal ear depends on the intensity of the input a. Dr. Jethanamest, in collaboration with Dr. Elad Sagi and Dr. Mario Svirsky, will investigate whether this intensity dependence actually takes place in humans. Results will be very important for the development of new cochlear implants, as current versions of these devices make the assumption that the frequency map is not intensity-dependent. Dr. Jethanamest's project will investigate the effects this intensity-dependent shift may have in speech perception by cochlear implant users.

Pamela Roehm, M.D., Ph.D., has received a 5-year, $993,000 grant from the National Institute for Deafness and Communicative Disorders at the National Institutes of Health for a project, "Mechanism of Neurotrophin Latency Response in a HSV1 Vestibular Neuritis Model." The grant will fund her studies of herpes simplex virus type 1 infection in vestibular ganglion cells. Herpes simplex virus type 1 is the same virus that causes cold sores, and affects over 80% of the U.S. population by adulthood. Infection with the virus typically occurs during early childhood and causes flu-like symptoms. After the initial infection, it can remain in a latently infected state in nerve cells. Later, the virus can become reactivated due to a variety of stimuli, including stress, ultraviolet light, and other infections, and cause cold sores and other symptoms.

There is evidence that reactivation of this virus causes a number of diverse diseases in the head and neck, including Bell's palsy, vestibular neuritis, and sudden sensorineural hearing loss. Vestibular neuritis is a common syndrome of sudden spinning vertigo which lasts days to a week, followed by a gradual recovery of balance function. Some patients never fully recover their balance after vestibular neuritis due to incomplete central (brain) compensation for the damage to the peripheral vestibular system by the process. Dr. Roehm will study the processes of reactivation of latent herpes simplex virus in vestibular ganglion cells as a model of the acute process that occurs during vestibular neuritis. In particular, she will examine the role of neurotrophins, which are proteins critical in neuron development, survival, and recovery from injury, in the maintenance of latent infections of these neurons. Once these mechanisms of latent infection maintenance are known, small molecules will be screened to assess their efficacy in prevention of herpes simplex virus type 1 reactivation.

Chin-Tuan Tan, Ph.D., has received funding from Deafness Research Foundation. Dr. Tan, an electrical engineer, has extensive experience examining the types of distortion that are common in cell phones. He has developed a mathematical model to predict how sound quality may suffer from different types of distortions that may be introduced by cell phone microphones and speakers. The patent he obtained for the mathematical model has been purchased by Nokia due to the strong likelihood that it might be helpful to design the next generation of cell phones. Now Dr. Tan, in collaboration with Dr. Mario Svirsky and Dr. Brian Moore (Dr. Tan's former mentor) has obtained funding from the Deafness Research Foundation to extend the model to the perception of distorted speech and music by hearing-impaired listeners. The final models developed should be useful to manufacturers of assistive listening devices in assessing the perceptual effects of the distortion generated by those devices, and should ultimately lead to improved hearing aids and cell telephones.

Kevin Wang, M.D., has also received funding from the Centralized Otolaryngology Research Efforts (CORE) Grant Program (sponsored by Xoran Technologies), American Academy of Otolaryngology-Head and Neck Surgery. Dr. Wang is using a new CT scanner, the flat-panel CT, to evaluate and hopefully improve outcomes for bilateral cochlear implant patients. He is collaborating with Drs. Roland, Fitzgerald, and Svirsky. By comparing the exact placement of the electrodes in each ear, and then adjusting their frequency maps, he hopes to 'match' the perception of sound in each ear and ultimately improve the patient's hearing experience.

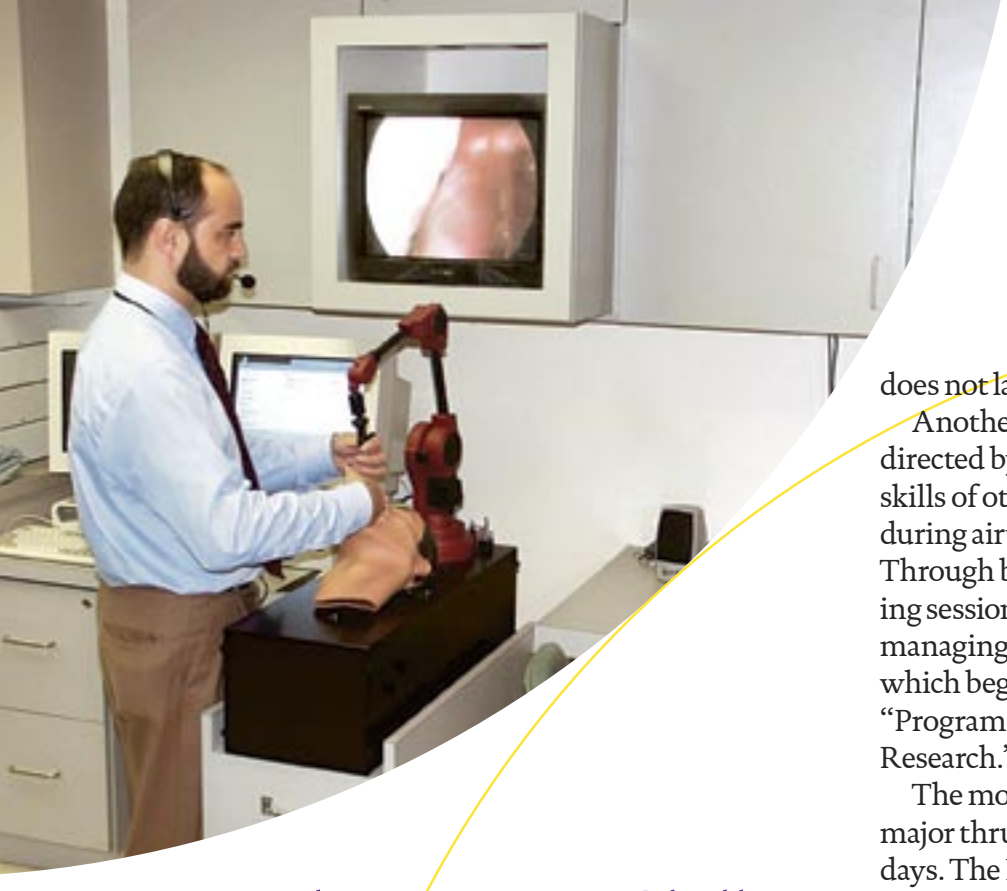


Figure 1: The ES3 simulator allows trainees to perform surgery on a virtual patient.

Teaching ENT Skills with the Help of Simulation

Because of the delicate nature of the procedures involved, training sinus surgeons has always been a challenge. Today, modern technology offers an exciting new solution to the age-old dilemma of needing to ensure patient safety while also allowing future surgeons to hone their skills: computer simulation.

In collaboration with external colleagues, NYU is currently testing the educational effectiveness of a virtual reality device, called ES3 (for Endoscopic Sinus Surgery Simulator, from Lockheed). ES3 uses computed tomography (CT) scans to create a 3-D environment that simulates both the look and feel of the sinus cavities. Its endoscopic tools allow trainees to perform surgeries on a virtual patient. *[Fig. 1]*

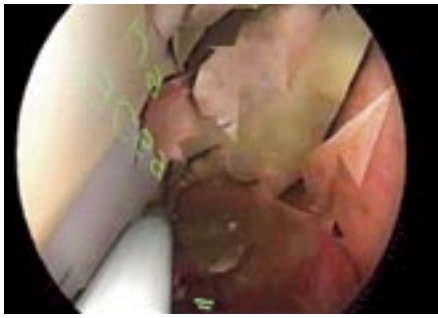
As useful for the teaching of anatomy as for the acquisition of surgical skills, ES3 has three levels of difficulty: novice, intermediate, and advanced. The novice setting allows the development of basic skills; the intermediate setting adds paranasal sinus anatomy *[Fig. 2]*; and the advanced level setting also uses virtual anatomy but, unlike the intermediate level, does not label anatomic landmarks.

Another simulation-based education activity, directed by Milan Amin, M.D., aims to improve the skills of otolaryngology residents when called upon during airway emergencies in hospitalized patients. Through both lectures and simulation-based training sessions, the residents are given practical skills in managing respiratory emergencies. The program, which began over a year ago, is funded by NYU's "Program for Medical Education Innovations and Research."

The move toward learning via virtual reality is a major thrust across NYU School of Medicine these days. The NYU-developed WISE-MD, for instance, a Web-based surgical teaching program that lets students study surgical procedures through 3-D computer simulations, is now used by over two dozen medical schools worldwide. In a sweeping new initiative that involves a joint venture with Bellevue Hospital, NYU's Colleges of Nursing and Dentistry, and the City University of New York (CUNY), the School is planning a new simulation and skills center, to be located at Bellevue. A number of other educational simulation facilities are also being developed on the main campus, through mobile units, and even through ALEX, the School's online learning network.

In otolaryngology, simulators are expected to keep evolving, both to reflect normal human variation and pathologies more fully and to become more cost-effective. The value and practical applications of these devices in both surgical instruction and basic anatomic training will almost certainly increase over the coming years. ●

Figure 2: ES3 intermediate level shows anatomic labels.



The ES3 project has been initiated by a grant obtained by the Otolaryngology Department at Montefiore Hospital and Medical Center at the Albert Einstein College of Medicine. The NYU Department of Otolaryngology is participating as a testing site.

Marica Vilcek: Our Partner in Progress

Dr. Anil Lalwani, Mendik Chair of the Department of Otolaryngology, with Mrs. Marica Vilcek, whose recent leadership gift has established the Marica F. Vilcek Professorship in Otolaryngology.

Cochlear implants, one of the major innovations of the late 20th century, have changed people's lives, and philanthropists such as Marica and Jan Vilcek, M.D., Ph.D., have helped bring the miracle of hearing to thousands of grateful patients. NYU Langone Medical Center's Department of Otolaryngology has performed some 1,800 cochlear implants on children and adults, allowing many of them to hear for the first time, while continuing its groundbreaking clinical research that has led to better hearing outcomes for people around the world.

The department recently celebrated with a cocktail party at the Vilceks' home. Marica and Jan are a special couple. Marica is devoted to the department—she is a member of the Cochlear Implant Center's Advisory Board. Jan is an NYU Langone professor of microbiology whose monumental research discoveries are renowned. Together, Marica and Jan have used a large share of the substantial earnings from Jan's research to advance many programs at the Medical Center.

Marica's recent exceptionally generous gift is an endowed professorship, the Marica F. Vilcek Professorship in Otolaryngology. Her contribution, which will provide the funds for a professor to conduct cutting-edge research in otolaryngology, will help the department maintain excellence in clinical and basic research.

"I greatly admire the Department of Otolaryngology at NYU Langone Medical Center for a variety of reasons," said Marica. "The faculty members in the department are world-class experts in their specialties and they display a high degree of professionalism and humanism. I hope that by establishing the Marica Vilcek Professorship in Otolaryngology I am contributing to the continuation of the distinguished tradition in this important department."

Physicians and researchers such as Mark DeLacure, J. Thomas Roland Jr., David Myssiorek, Susan Waltzman, Mario Svirsky, Arlene Neuman, Cathy Lazarus, Milan Amin, and Mendik Foundation Professor and Department Chair Anil K. Lalwani, as well as former department head Noel Cohen, who was a founder of the Cochlear Implant Center, are among the faculty members who have given the department its stellar reputation.

NYU Langone trustees Helen L. Kimmel and George E. Hall, with his wife Lori, also attended the celebration at the Vilceks' home. Mrs. Kimmel is a long-time benefactor of the Medical Center and New York University. The Halls have pledged to create a professorship, the George E. Hall Chair in Head and Neck Cancer Research, and have made several other important gifts to the department as well. ●

Remember the Department of Otolaryngology in Your Will

Establish your legacy to the Department of Otolaryngology in a truly special way. Estate gifts are investments in our future, and help ensure that we will continue to be a world-class leader in this field. For more information on making a planned gift, please contact Marilyn Van Houten, senior director of planned giving, at (212) 404-3640 or marilyn.vanhouten@nyumc.org.

An Annual Update on the Spencer Fund for Head and Neck Cancer Research

Susan Namm Spencer, a legendary friend to NYU Langone Medical Center, hosted a very special event last year to thank supporters for the fund that bears her late husband's name: the William I. Spencer Fund for Head and Neck Cancer Research in the Department of Otolaryngology.

This is an especially personal endeavor—Bill Spencer, a former president of Citibank and a great leader of the Medical Center in earlier years, passed away from head and neck cancer in 2001. Susan's commitment to improving the lives of patients with this disease has become an important mission in her life. Her partnership with the Department of Otolaryngology and the NYU Cancer Institute is an ongoing endeavor, and it underwrites valuable research that is making a positive difference in the lives of patients and their families. The Spencer Fund helped finance research that provided for an additional $1.5 million research grant from the National Institutes of Health.

Thanks to friends like Susan Spencer and her Spencer Fund donors, the Medical Center continues to make extraordinary progress in our work to one day eliminate head and neck cancer.

During the event, 40 donors and friends of the Spencer Fund gathered together at the Lighthouse Center for the Arts in Jupiter, Florida, to celebrate the Fund's achievements. Dr. Anil Lalwani, the Mendik Foundation Professor and Chairman of the Department of Otolaryngology, began his remarks by expressing appreciation for Susan Spencer. He also introduced Dr. David Myssiorek, a professor whose recruitment to the department was underwritten, in part, by the Spencer Fund.

Susan Namm Spencer

Dr. Mark DeLacure, associate professor of otolaryngology and surgery, shared advances in treatments for patients with head and neck cancer. Then, one of Dr. DeLacure's patients, Thomas Murphy Jr., the son of NYU Langone Medical Center trustee Thomas S. Murphy, offered a very moving account of his personal struggle and triumph over head and neck cancer.

Stories like these are what make the work in the department and at the NYU Cancer Institute so compelling. Thanks to friends like Susan Spencer and her Spencer Fund donors, the Medical Center continues to make extraordinary progress in our work to one day eliminate head and neck cancer. ●

Right: *From left, Dr. David Myssiorek, Thomas Murphy Jr., Dr. Mark DeLacure and Dr. Anil Lalwani.*

Far Right: *Suzanne and NYU Langone Medical Center trustee Thomas S. Murphy.*

Developing Minimally Invasive Approaches to Skull Base Surgery

Nearly 15 years ago, NYU was one of the first medical centers in New York to routinely use intraoperative image guidance during endoscopic sinus surgery. Also known as computer-assisted surgery, this technique relies on a computer processor and the patient's CT or MRI scans to track the position of the surgical instruments, allowing for the precise localization and removal of abnormal tissue while identifying and preserving critical surrounding structures.

Over the next decade and a half, the application of this technology has allowed for the development of safe and effective minimally invasive endoscopic approaches to the skull base. NYU's Division of Rhinology—headed by Dr. Joseph Jacobs and Dr. Richard Lebowitz—in conjunction with colleagues from the Department of Neurosurgery, provides the most advanced minimally invasive endoscopic surgical treatment of cerebrospinal fluid leaks and tumors of the anterior (front) skull base, including nasal and sinus tumors.

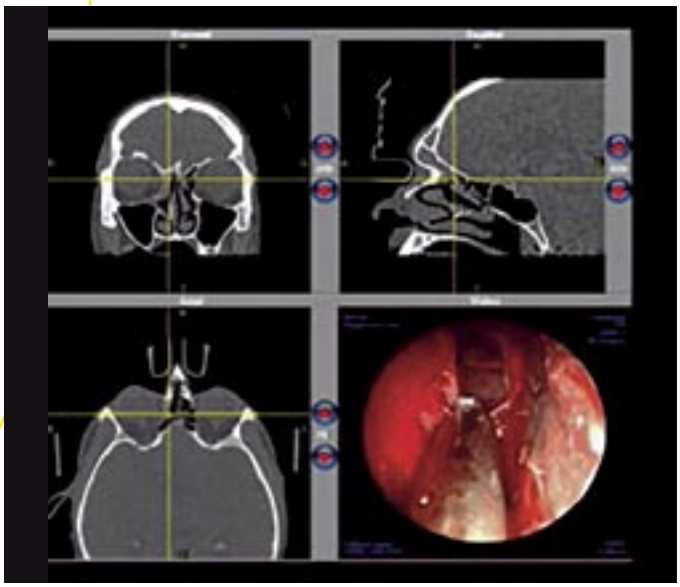
With intraoperative image guidance and specialized tools, surgeons at NYU are able to remove most pituitary tumors through the nose.

Cerebrospinal fluid rhinorrhea—nasal drainage of the fluid surrounding the brain—can occur following surgery or trauma or spontaneously (usually due to increased intracranial pressure). Using fiber-optic endoscopes passed through the nose, these leaks can be identified and repaired with a greater than 95% success rate, and most patients can be discharged from the hospital within one to two days after the surgery.

The division also collaborates with neurosurgeons on minimally invasive surgical treatments for pituitary tumors. Most pituitary tumors are benign, but can cause symptoms due to pressure on the optic nerves and/or the abnormal secretion of hormones. Surgery to remove pituitary tumors has traditionally been performed either through a craniotomy or a transseptal approach, both of which require external incisions. Now with intraoperative image guidance and specialized neurosurgical instruments, surgeons at NYU are able to remove most pituitary tumors endoscopically through the nose. This approach has several advantages, including enhanced visualization, which allows for more complete tumor removal, and more accurate identification of the carotid artery and optic nerve, making the surgery safer. And with no external incision or nasal packing required, patients are able to recover and leave the hospital earlier, with minimal post-operative discomfort.

For the more common sinus and nasal abnormalities, such as sinusitis, the division uses both medical and surgical techniques with great success. In fact, most rhinologic conditions can be treated medically. But for those requiring surgery, otolaryngologists—and patients—are continuously benefiting from these minimally invasive approaches. ●

Computer-assisted sinus surgery. In the right lower quadrant is a surgical instrument in the ethmoid sinus. The remaining quadrants show the instrument on the patient's axial, coronal, and sagittal CT images. As the instrument moves during surgery, the location on the scan changes.



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- Facial Plastic and Reconstructive Surgery
- General Otolaryngology and Sleep Surgery
- Head and Neck Surgery and Oncology
- Otology, Neurotology and Skull Base Surgery
- Pediatric Otolaryngology
- Rhinology
- NYU Cochlear Implant Center
- NYU Voice Center
- Center for Hearing Health

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and co-investigator Dr. Milan Amin, working closely with NYU's Center for Biomedical Imaging, have also conducted a pilot study exploring the use of high-speed MRI imaging to look at movement of the tongue base and pharyngeal wall during swallowing. They recently submitted a grant to NIH to further examine the usefulness of this imaging technique to study swallowing in healthy young and elderly individuals.

"The research is exciting because some of it represents the first time state-of-the-art technology has been applied to swallowing and voice issues," says Dr. Lazarus.

Ultimately, the research serves the same end as the ongoing work with patients at the Voice Center: to help people recover functions vital to a life well lived.

Concludes Dr. Lazarus, "When we can teach someone to rehabilitate their own speaking voice, or help them learn how to enjoy normal food and drink again, not only is the patient thrilled—the family is, too. Or if we get a patient in the office who's having difficulty breathing—just plain old breathing—and you can teach them a technique so that they're not constricting their vocal cords, it can be very moving. They're like a new person." ●

Faculty News

Minas Constantinides, M.D., director of the Division of Facial Plastic and Reconstructive Surgery, was elected by a national vote to the Board of Directors of the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) at its annual meeting in September 2008. His position—group vice president for research, awards, and development—recognizes his work with the AAFPRS and with Face to Face, its pro-bono arm. In addition, Dr. Constantinides was recently appointed to the Facial Plastic Surgery Education Committee of the American Academy of Otolaryngology-Head and Neck Surgery.

J. Thomas Roland Jr., M.D., is the co-director of the new NYU Neurofibromatosis Center, which provides comprehensive multidisciplinary care for pediatric and adult patients with neurofibromatosis, a disorder characterized by the growth of noncancerous tumors in the nervous system. Many members of the Department of Otolaryngology participate in the care of NF2 patients. The surgical team at the center is well known for its skills in hearing preservation and rehabilitation surgery using auditory brain stem implantation and cochlear implantation. The center seeks to help develop new drug therapies to stem the growth of the tumors and provides education to patients and their caregivers. New clinical trials for prospective drugs are underway. The center was established with the support of the Children's Tumor Foundation and is housed at the Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders. In addition to Dr. Roland, it is directed by Jeffrey Allen, M.D., Department of Pediatrics, and John Golfinos, M.D., Department of Neurosurgery.