Learning to Listen.

URMC's Department of Audiology leads the region with comprehensive services.

Auditory Brainstem Response (ABR) testing for infants and adults. Balance disorders. Newborn Hearing Screening. Hearing loss prevention. Routine hearing testing. Central Auditory Processing (CAP) testing. Hearing aids and cochlear implants. Testing for special needs populations. Tinnitus counseling and device fitting.

From common hearing loss issues to rare conditions—the Department of Audiology at URMC leads the region with cutting-edge research and comprehensive clinical services.

With eight full-time audiologists, the department is one of the largest practices in the region. The department's Director of Clinical Services, Christy Monczynski Hopson, Au.D., says, "What makes our practice shine is our depth of audiologic expertise. Being a non-profit medical academic center, we can take on a lot of the things private audiology practices can't." For example, the department is the only facility in Rochester that has a cochlear implant program, bone-anchored hearing aids (BAHA), and a pediatric practice that focuses on early hearing loss intervention.

The department also runs the universal newborn hearing screening (UNHS) programs for both Highland Hospital and Strong Memorial Hospital, testing an average of 6,000 infants before they are discharged annually. Counseling and rehabilitative services are a major departmental focus. Dr. Monczynski Hopson says, "We spend a lot of time helping our patients develop listening strategies in conjunction with hearing aid and/or cochlear implant use." URMC Audiology is also one of only two non-profit audiologic organizations in the area that dispenses hearing aids to patients of all income levels, accepts all insurances, and provides charity care for the under-insured.

As part of the URMC, the department has a research component not found in other area audiology practices. Current projects include studying the hearing status of adults with HIV, and observing auditory brainstem response (ABR) patterns in newborns with various conditions. Another area of interest is the study of central auditory processing abilities. Dr. Monczynski Hopson says, "We examine children whose hearing is in the normal range, but who have difficulty understanding what they hear in the presence of background noise." In the elderly population, central processing abilities can deteriorate over time with or without peripheral hearing loss, which affects the ability to understand what is being heard. Dr. Monczynski Hopson says, "Oftentimes it's not only that people can't hear, it's that they can't understand what they're hearing."

Working in collaboration with ENT physicians, the department is able to bring all its resources to help patients. Dr. Monczynski Hopson says, "We have a depth of knowledge and medical support that is unique in this region. We provide service that is unbiased, comprehensive, highly skilled and very caring. No case is too complicated or too simple. We're willing to see anyone with any need, for any reason. "

The Department of Audiology provides outpatient services at Clinton Woods

There's More to Tell

News briefs and events from URMC's Otolaryngology Department:

- Christy Monczynski Hopson, Au.D. has been named Director of Audiology at Strong Hospital. Christy received her Au.D., degree from The University at Buffalo and has been practicing audiology for eight years. Additionally, she earned a Master's degree in Medical Management from The University of Rochester, Simon Graduate School of Business in 2009. Christy has been with the University for seven years. Her specialties include: pediatric audiology, difficult-to-test populations, cochlear implants, and amplification.
- Sarah Mucenski, SLP has been named as the Director of Speech Pathology for URMC. Sarah received her undergraduate and graduate degrees from Ithaca College in Speech Language Pathology (SLP) and has been practicing for nine years. Additionally, she received a graduate degree from Ashford University in Health Care Administration in 2011. Sarah joined URMC in 2011 and her clinical interests include: pharyngograms, pediatrics and acute care dysphagia.
- Dr. Mark Orlando, Ph.D. has been named the director of Audiological Research for the Department of Otolaryngology
- Dr. Arthur Hengerer was elected to the Board of Directors of the Federation of State Medical Boards for a 3 year term.
- On June 28th, we celebrated our resident graduation with our annual resident research day and graduation banquet. Drs. Caitlin McLean and Rachel Roditi won awards for outstanding research presentations. Dr. Lisa Orloff, Robert K. Werbe Distinguished Professor in Head and Neck Cancer, and the Director of the Division of Head & Neck & Endocrine Surgery at the University of California, San Francisco, was our visiting Professor for this event.
- Graduating resident Alfredo Archilla, M.D. is leaving URMC to pursue fellowship training in rhinology at Vanderbilt University.
- Graduating resident Sveta Karelsky, M.D. is joining our faculty as a general otolaryngologist.

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RECENT EVENTS

2011 OTOLARYNGOLOGY RESIDENT GRADUATION DINNER

Alfredo Archilla and Sveta Karelsky with Dr. Newlands

Jonathan Walsh and Annalisa Overstreet, our two chief residents.

ENTell
DEPARTMENT OF OTOLARYNGOLOGY

UNIVERSITY of ROCHESTER MEDICAL CENTER

Fall 2011 | Volume 2

MEDICINE of THE HIGHEST ORDER

Breaking the Sound Barrier.

URMC's cochlear implant program helps patients tune into the world of sound.

A hearing-impaired child now thrives in a mainstream classroom. A mother is able to recognize her daughter's voice for the first time. An adult who suffered profound hearing loss is able to listen to music again.

These are just a few of the stories you might hear from the cochlear implant program at the URMC Department of Otolaryngology, the only one of its kind in the Rochester area.

A cochlear implant is a surgically implanted electronic device for people with profound sensorineural hearing loss who do not benefit from hearing aids. Sensorineural hearing loss inhibits the transmission of electrical signals to the auditory nucleus—the part of the brain that processes hearing. The cochlear implant performs this function mechanically by sending an electrical signal that stimulates the nerve fibers directly, so that the wearer perceives sound. The procedure does not reverse deafness or produce normal hearing, but enables users to experience a representation of sound.

URMC Cochlear Implant team

From left to right: Mark Orlando, Ph.D, Mary Rivers, F.N.P., Christina Babian, Au.D. John Wayman M.D., Rachel Roditi, M.D., Christy Monczynski, Au.D., Paul Dutcher, M.D.

The department's cochlear implant program was started in 1985 by Paul Dutcher, M.D., when the device first came on the market for adults. Since then, the technology has been approved for use in children and infants. Dr. Dutcher and his two colleagues, John Wayman M.D. and Benjamin Crane, M.D., Ph.D, are the only surgeons in the Rochester area who perform the procedure.

Dr. Dutcher says cochlear implants are very different from hearing aids. "The brain has to be retrained to interpret what it is hearing. In essence, the patient has to learn—or re-learn—how to hear." Because of this, audiological testing and therapy is critical to the success of cochlear implantation. Once the device is implanted, the wearer must undergo several "mapping" sessions with an audiologist. During mapping, the electrodes inside the ear are adjusted to determine how the wearer perceives soft and loud sounds and to set ranges for the hearing of speech. As the brain learns to adapt to sound, the device is continually reprogrammed. URMC audiologists also provide wearers with listening strategies for increasing sound awareness, the ability to discriminate between sounds, and overall comprehension.

While cochlear implantation enables the majority of children and adults to increase their understanding of speech, the degree of success varies. "The quality of hearing varies with each individual, so we pre-screen our patients to have realistic expectations," Dr. Dutcher says. "Some patients will experience near-normal hearing. Others may only hear environmental sounds. It depends on a number of factors, such as how long the patient has been hearing-impaired, their ability to learn how to hear, and whether they are pre or post-lingual."

Although Rochester has one of the largest per capita deaf communities in the country, candidates for cochlear implantation are still a fairly small part of the population, with the URMC team doing an average of 30-50 procedures a year. The team also works closely with the Rochester deaf community, including the National Technical Institute of the Deaf (NTID). John Wayman M.D. says that when cochlear implantation was first introduced in the 1980s, it encountered resistance from the deaf community. Since then, he has seen a "sea change" over the years. "Today, the procedure is widely accepted within the deaf community. But we never force cochlear implants on anyone. However a person wants to communicate—be it through American Sign Language, auditory devices, or a combination of the two—it's a highly personal choice."

For those who choose to have cochlear implantation, URMC is uniquely positioned to provide the multidisciplinary approach needed to address the many factors involved in living with a cochlear implant. The Clinton Woods facility has a complete team consisting of several physicians and audiologists, a nurse practitioner, a psychologist, and a speech-language pathologist. While each case is unique, URMC's comprehensive approach affords users the technology, medical expertise and listening strategies they need to navigate the exciting, and sometimes bewildering world of sound.

Cochlear implantation services are available on an outpatient basis in the Clinton Woods location.

Chairman's Corner

Shawn Newlands, M.D., Ph.D.

Welcome to our second edition of ENTell, the newsletter of the Department of Otolaryngology—Head and Neck Surgery at the University of Rochester Medical Center. The theme of this issue is highlighting our clinical services, research and education in the area of otologic disease. Our otology program is staffed by three fellowship-trained neurotologists and our team of nine audiologists offering a full range of diagnostic, therapeutic, and rehabilitative care for patients with hearing and balance disorders.

On the research front, we feature the work of Dr. Benjamin Crane, whose research is exploring the use of perceptual thresholds in the vestibular system, similar to the way that hearing thresholds are standard in the evaluation of hearing.

Lastly, we have included an update on the comings and goings in the Department. As always, we welcome your feedback.

Research in Motion.

The Crane Lab hopes to develop new strategies for vestibular disorders.

Nearly half of all Americans experience dizziness in their lifetime. Vertigo is the number one cause of falling in the elderly population, and for those with persistent balance deficits, symptoms of dizziness and disequilibrium can be debilitating. Benjamin Crane, M.D., Ph.D. is currently conducting research that he hopes will lead to new strategies for treating patients with balance disorders.

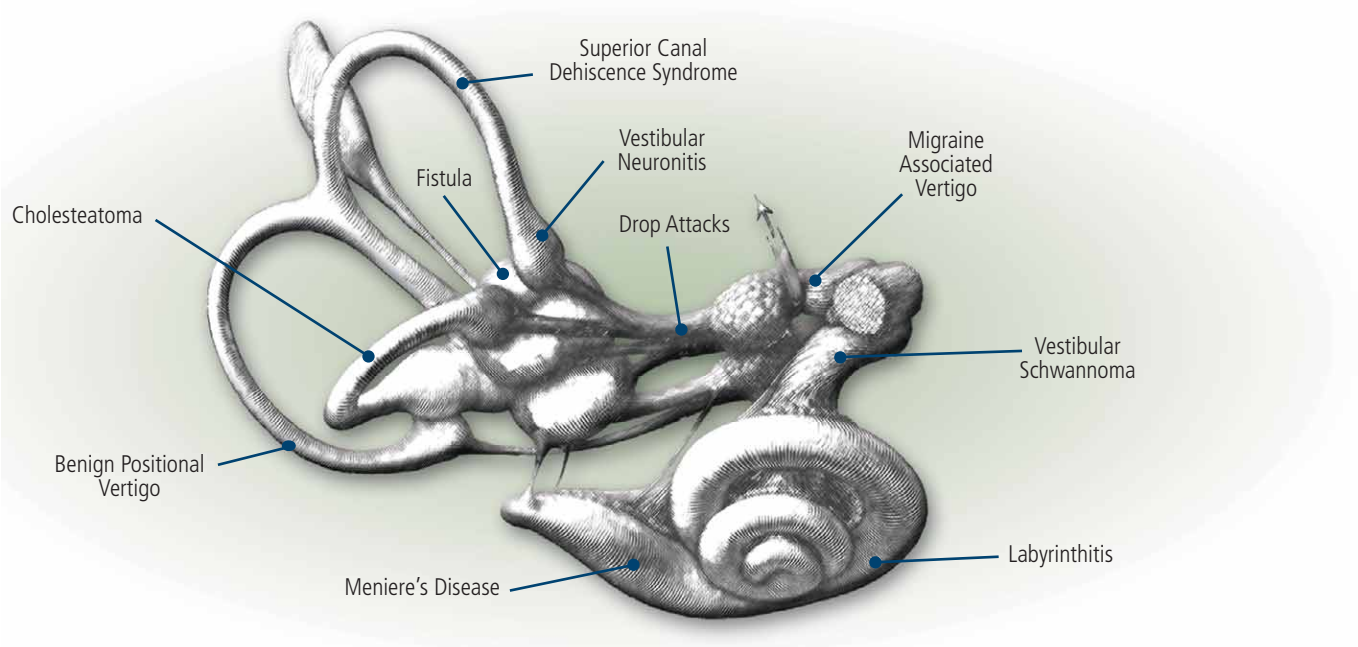
Our sense of equillibrium is a function of the interaction between vision and the vestibular system. The vestibular system starts with the semicircular canals and otolith organs of the inner ear. Most prior research on the vestibular system has focused on reflexes such as the vestibular-ocular reflex. Although understanding of these reflexes has been helpful in developing tests of vestibular function, these tests often correlate poorly with patient's symptoms. This is likely because dizziness and vertigo are common clinical symptoms caused by disturbances in motion perception rather than distubances in vestibular reflex function. Dr. Crane hopes to better understand the pathogenesis of dizziness and vertigo by understanding perception.

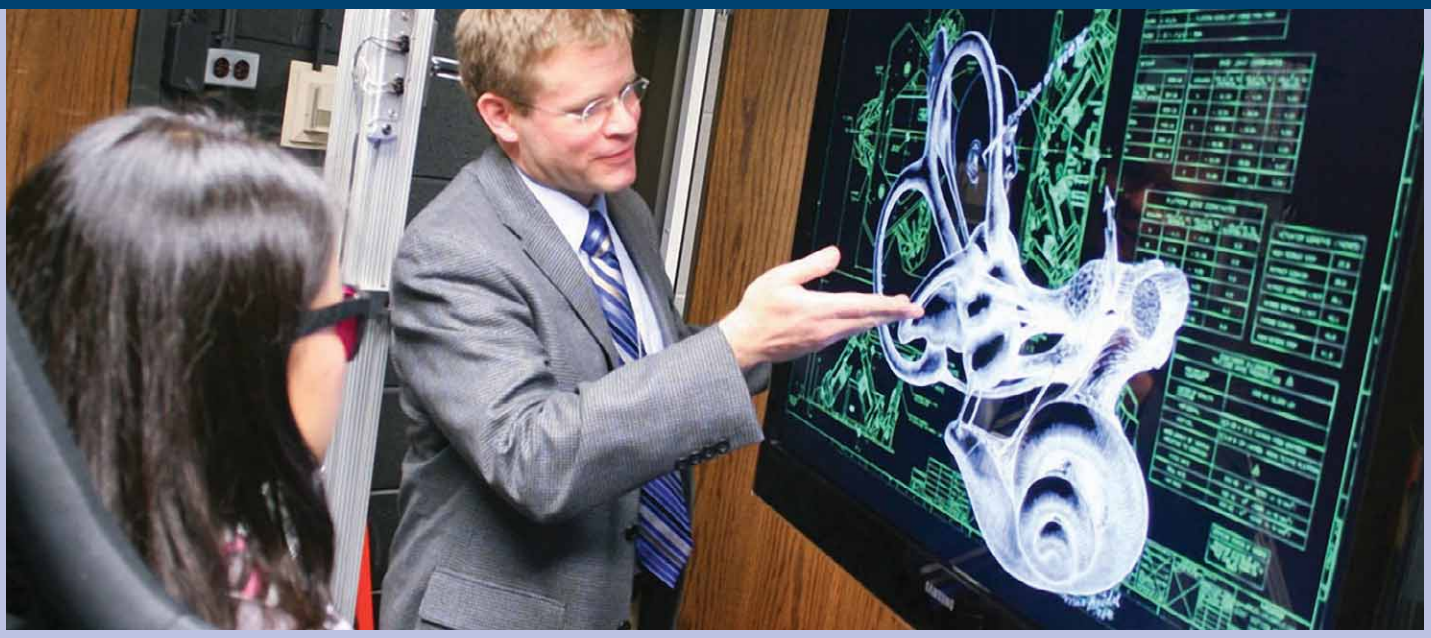
"We're looking at how these systems are integrated, and trying to measure the threshold of vestibular perception," he says. "For example, what's normal for a young person is different for an elderly subject. Normal perception hasn't been well-defined. When we find out what normal is, we'll know better about what's abormal and the range of variation in between."

Better understanding of vestibular perception may lead to better diagnosis of vestibular disorders. This is important because the diagnosis of many vestibular disorders is ambiguous with currently available tests.

But the scope of the research goes beyond just better diagnostic techniques. Dr. Crane says, "There are not a lot of medications for treating these disorders. Most solutions are rehabilitative, so we want to develop cutting-edge techniques and therapeutic exercises using visual stimuli."

Dr. Crane has published 40 peer-reviewed papers on human vestibular disorders including superior canal dehiscence syndrome, Meniere's disease, and unilateral/bilateral vestibulopathy. Additionally he has published seven textbook chapters on dizziness, vertigo, and other ear related topics. The Crane Lab's research is funded by the National Institute of Health as well as private foundations. For more information about the Crane Lab, visit **urmc.edu/labs/crane-lab**





Better Balance for Your Patients.

The Vestibular Clinic at Clinton Woods

Many physicians have found patients suffering from dizziness, vertigo, or equilibrium problems can be among the most difficult to diagnose and treat. This is because some diagnoses such as superior semicircular canal dehiscence sydrome have only recently been established and treatment of well established diagnoses such as Meniere's disease continues to rapidly evolve. The Vestibular Clinic at Clinton Woods is a comprehensive center for the diagnosis and treatment of vestibular and balance disorders, directed by Dr. Benjamin Crane, a nationally recognized expert in vertiginous disorders. The center includes a state-of-the-art balance testing facility which was established as a second site for balance testing at URMC. The lab complements the established balance lab at Strong Hospital, providing patients and providers with an option for testing at either location. Balance studies at both locations include professional interpretation. However, in addition to balance testing, the Vestibular Clinic at Clinton Woods also provides patients the opportunity to be evaluated by fellowship trained neurotologists, the only such specialists in the Rochester area, at the same location and potentially on the same day as their diagnostic testing. The Vestibular Clinic provides the most comprehensive approach to testing, evaluation and treatment in the area.

Services include:

Physiologic tests:

Video-or Electro-Nystagmography (VNG/ENG). This state-of-the-art version of traditional physiologic testing assesses visual and vestibular control of eye movements, and can include caloric testing, saccades, pursuit, optokinetic nystagmus, head shake, and dynamic visual acuity.

Vestibular Evoked Myopotentials (VEMP). This tests the sacculus and inferior branch of the vestibular nerve using a series of clicks applied to the ear while monitoring sternocledomastoid or orbicularis activity. This test is especially useful when an inner ear fistula or superior canal dehiscence is suspected.

Special Tests. Tests are available when specific clinical conditions are suspected. For example, documenting eye movement in response to sound, measuring dynamic visual acuity in patients with oscillopsia, or measuring vestibulo-ocular reflex gain with suspected bilateral vestibular loss.

All tests are interpreted by one of our faculty members, and a written report will be returned to referring physicians within three days.

Evaluation:

If desired, patients can usually be seen and evaluated by one of our three fellowship-trained neurotologists (Benjamin T. Crane, M.D., Ph.D, Paul O. Dutcher, M.D., or John W. Wayman M.D.) the same day testing is performed.

Treatment:

The treatment of vestibular disorders has rapidly evolved during the past decade. Some disorders presenting with vertigo such as superior canal dehiscence and acoustic neuromas can be best treated with surgery. Other disorders such as migraine associated vertigo are best treated with lifestyle modification and medications. Conditions such as Meniere's disease can be effectively treated by surgery, medicine, or lifestyle changes. The clinic at Clinton Woods offers the full range of treatment options for these conditions.

For appointments at Clinton Woods and information please call **585.758.5700** or visit **urmc.rochester.edu/dizziness-clinic**. Balance testing is also available at Strong Memorial Hospital (**585.275.6395** or **urmc.rochechester.edu/balance-clinic**)

Meet our new residents

Alexis Strohl, M.D.

Alexis received her M.D. from Georgetown University in May, 2011. Prior to that she graduated from Cornell University with a BA in Chemistry and Chemical Biology. She volunteered as a student clinician at Georgetown University's Hoya Clinic, which provides free medical care to Washington, DC's under-served population.

Mark Merkley, M.D., Ph.D.

Mark received his M.D., Ph.D. from the Medical College of Georgia School of Medicine in May, 2011. He also has a BS in Microbiology from Brigham Young University. He has served as a missionary in the Phillipines, and as a volunteer for Hurricane Katrina relief.

Steven Rosenblatt, M.D.

Steven received his M.D. from State University of New York Downstate Medical Center College of Medicine, Brooklyn, NY in May, 2011. A University of Rochester alumnus, he has an undergradute degree in Biology and a minor in Linguistics. Steven was a volunteer at the Brooklyn Free Clinic and a student tutor at SUNY Downstate College of Medicine.

Meet our new faculty

Margo McKenna Benoit, M.D.

Margo joins us after an otolaryngology residency at the Massachusetts Eye and Ear Infirmary and a General Surgery Intership at Brigham and Women's Hospital, both through Harvard University. She received her M.D. from University at Buffalo School of Medicine & Biomedical Sciences, and has an undergraduate degree in Biology from Cornell University. She was a clinical teacher in head and neck examination at Harvard Medical School and a Research Fellow in biomedical imaging at Massachusetts General Hospital. She has also been involved in research scholarship at the National Institutes of Health, Roswell Park Cancer Institute, and Cornell University. Margo has been published in a number of peer review journals in subjects ranging from vascular tumors to brain mapping, and has made presentations at both national and international conferences.

Li-Xing Man, M.D., MSc, M.P.A

Li-Xing joins us after serving at the Department of Otorhinolaryngology-Head and Neck Surgery, at the University of Texas Medical School at Houston, where he was a Rhinology Fellow and Clinical Instructor. He has postgraduate training at the University of Pittsburgh School of Medicine, and was a surgical intern at University of Pennsylvania School of Medicine, where he also received his M.D. He was also a Research Fellow in plastic and reconstructive surgery at Columbia University College of Physicians and Surgeons. Li-Xing's other accomplishments include a Masters in Public Admistration from Harvard University, a Master of Sciences with Distinction in Environmental Epidemiology and Policy at the London School of Hygiene and Tropical Medicine, an undergraduate degree in Chemistry from Princeton University, and a Fulbright Scholarship. He has membership in numerous professional and scientific societies, and has been widely published in peer review journals and clinical abstracts.

Sveta Karelsky, M.D.

Dr. Karelsky is an assistant professor of Otolaryngology at the University of Rochester School of Medicine. Dr. Karelsky is a native of Russia who has lived in the United States since childhood. She obtained her undergraduate degree at the University of California, Berkeley and graduated with a BA in molecular and cell biology. Her seminal undergraduate research work on short interfering RNA was published in the journal Nature. She subsequently completed medical school at Vanderbilt University School of Medicine, and has recently graduated from the otolaryngology program at the University of Rochester. Dr. Karelsky practices primarily at Highland Hospital and provides a wide range of ear, nose and throat services to both children and adults. Her academic interests include improving patient care through improving hospital systems, education and communication.

Otolaryngology

Head and Neck Surgery, Strong Audiology & Speech Pathology

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