Advanced Sinus Care at URMC

Rhinology is the study of health issues impacting the structure and function of the nose and paranasal sinuses. This subspecialty of otolaryngology involves the evaluation and management of conditions such as acute and chronic rhinosinusitis, sinonasal polyposis and skull base tumors. A relatively new field, rhinology has blossomed over the past quarter century due to the advent of endoscopes that can provide a clear and magnified view within the nose. As a result, the diagnosis of disorders of the sinuses can be more accurate and the surgical options for treatment have become less invasive. “Indeed, these minimally-invasive endoscopic techniques are now also available for patients with CSF leaks, skull base tumors and certain eye disorders whose treatment in the past might involve a facial incision and subsequent scar,” explains Li-Xing Man, MSc, MD, MPA.

The first fellowship-trained rhinologist in the Rochester area, Dr. Man is an Assistant Professor in the URMC Department of Otolaryngology. He completed medical school at the University of Pennsylvania and residency in Otolaryngology-Head and Neck Surgery at the University of Pittsburgh, where he gained instruction in minimally invasive approaches to the skull base. Dr. Man then pursued further training in rhinology and endoscopic skull base surgery with Drs. Martin Citardi and Samer Fakhri, internationally recognized rhinologists at the Texas Sinus Institute in Houston, Texas.

Welcome to this installment of ENTell, the newsletter of the Department of Otolaryngology at the University of Rochester Medical Center. In this issue, we highlight two clinical programs: our newly expanded rhinology practice and Dr. Matthew Miller’s participation in the multidisciplinary endoscopic pituitary and skull base surgery program. This issue’s research article features Dr. Mark Orlando’s work in diagnosis and prevention of childhood hearing loss. Dr. Chase Miller also shares with us some of her remarkable experiences from her medical mission trip to rural Kenya in April of 2012. In addition, there is an update on the progress of our NIH resident training program. Plus, in the following pages, we introduce you to our newer residents, update you on our most recently graduated residents, bring you pictures from important departmental events and note some recent accomplishments of our faculty and staff. We hope you enjoy this fourth issue and look forward to your feedback.
Dr. Man joins Dr. Chase Miller, an expert in otolaryngic allergy, in offering comprehensive rhinology services at URMC. Dr. Man also brings an expertise in the medical and surgical management of sinus and nasal disorders with a special focus on refractory chronic rhinosinusitis. He treats a large number of patients who have not responded well to medical therapies or who have previously undergone surgery. "Many patients do quite well with their initial medical or surgical treatment, but those with persistent symptoms present a difficult challenge to treat," Dr. Man states. "Sometimes a revision surgery may be necessary if a patient has refractory nasal polyposis or chronic rhinosinusitis despite initial surgery and appropriate medical therapy. The revision procedure, however, may entail higher surgical risk due to changes in anatomy from previous sinus surgery and the severity of inflammatory disease." A significant proportion of Dr. Man’s surgical practice involves advanced and revision endoscopic sinus surgery.

Comprehensive medical management is incorporated into the treatment regimen. Patients are evaluated and treated in state-of-the-art exam rooms equipped with video endoscopy and image and video archiving stations. They have the option of viewing their own endoscopic examinations on high definition flat-panel monitors. Dr. Man says, "Although not all patients wish to see their own examinations, most patients welcome the opportunity to learn more about their nasal and sinus health. Over time, they become more active partners in improving and maintaining their health and well-being."

Another focus for Dr. Man in his first year with the department has been the development and training of the next generation of otolaryngologists who will treat nasal and sinus disorders. Dr. Man organized the first in-house sinus course at URMC for the residents earlier this year and has instituted a weekly sinus radiology conference to help residents learn how to utilize radiographic imaging into improving surgical outcomes. Fourth-year resident Dr. Brendan O’Brien, MD reports, "The integration of the sinus conference into the educational week provides detailed radiographic and pathologic discussion of sinus disease. This has become an invaluable training tool for preparation and translation to hands-on application in the operating room." Dr. Caitlin McLean, one of the chief residents this year, was inspired in part by Dr. Man to pursue her own fellowship training in rhinology. She states, "He makes it a point to treat residents as colleagues who are essential participants in the patient care process."

Dr. Man adds we have expanded our rhinology program considerably in the past year. "Our goal is to serve as a resource for the otolaryngology community, as well as primary care providers and other physicians," he says, "We aim to provide top-notch expertise and care for patients with complex nasal and sinus conditions."

On May 18, 2012, Dr. Edward Weaver from the University of Washington Sleep Surgery Expert Serves as Visiting Professor at URMC—continued

URMC’s Mark S. Orlando, PhD, MBA, Associate Professor and Director of Research and Education in Audiology in the Department of Otologygnology, focuses his research efforts across both early detection of hearing loss in infancy and quantifying the detrimental effects of toxins on the central nervous system by monitoring auditory function. Although one may see these areas as very different, Dr. Orlando explains to us why they are very similar and important to the everyday lives of children both nationally and internationally.

Approximately two to three children in 1,000 are born with some type of permanent sensorineural hearing loss in either one or both ears. Sensorineural hearing loss is often untreated from a medical standpoint, but almost always benefits from rehabilitative intervention such as hearing aids or cochlear implants. Providing children with the best possible auditory signal minimizes speech and language delays. Dr. Orlando states that, “There exists a critical time in one’s life where language is most easily learned.” The critical period for language acquisition occurs between birth and five years of age. Those children that are not provided with proper rehabilitation currently have significant speech language delays that can result in long-term academic problems and even social concerns into adulthood. Thus, early recognition and intervention of hearing loss is critical to providing children optimum therapy. Universal hearing screening in infancy is now standard across the United States, but that was not always the case. Between 1995 and 1998, Dr. Orlando and URMC participated in the initial feasibility study for neonatal hearing screening in New York State. Dr. Orlando explains, “It should be noted that prior to this investigation, few children were fitted with amplification prior to six months of age.” Since the average age at diagnosis has been lowered, there has been a push to provide infants with amplification at a very early age. “At URMC, we can often fit infants with hearing aids between three and four month of age,” Orlando notes.

Today, the goal is to screen every child by one month of age (preferably prior to hospital discharge), diagnose hearing loss by three months of age and provide amplification and early intervention by six months of age. Dr. Orlando states, “Although we have been very successful with screening infants, diagnose hearing loss and providing those with hearing loss amplification and early intervention services at a very early age at URMC, we are presently looking at our cumulative data over the last 10 years to determine the long-term success of the URMC program (which includes Highland Hospital).”

More recently, Dr. Orlando and colleagues have been using tests often used to screen and diagnose hearing loss in infants, such as the Auditory Brainstem Response (ABR) and OtoAcoustic Emission (OAE) procedure to quantify exposure levels to toxins. Along with URMC Neonatologist Dr. Sanjiv Amin, Dr. Orlando has used ABR and OAE to investigate how the increased or decreased levels of many often naturally occurring substances affect the development of the neonate. Presently, Drs. Amin and Orlando are investigating the effects of high bilirubin levels in very premature infants. Dr. Orlando states, “Excess bilirubin is very toxic to the newborn brain and can even cause death in a severe case.”

Presently, these investigators suspect that even short-term transient increased bilirubin levels might have long-term effects on children’s abilities to learn. Similarly, Drs. Amin and Orlando have looked at the benefits of iron, fatty acid and iron supplements on infant brain development using the ABR. Similar to the bilirubin investigations, Drs. Amin and Orlando quantify the beneficial effects of these substances to the developing brains. Dr. Orlando further states, “I like our mothers would often say, ‘everything in moderation and nothing in excess,’ as with these substances there is a delicate balance between just enough to assist in the development or maturation of the brain and too much which can cause either short- or long-term damage.”

Dr. Orlando’s research in the effects of toxins has gone global. He and colleagues from the Seychelles Child Development Study are also investigating the effects of methylmercury on the developing child in the Seychelles, a low-lying island archipelago nation in the Indian Ocean. For the Seychelles, like many other cultures, fish is a large part of their diet. However, fish contains naturally occurring toxins such as methylmercury. Exposure to high levels of mercury causes severe neurologic impairments and may even cause death. As fish contains high levels of important nutrients for brain development, the risk of mercury exposure due to fish consumption during pregnancy must be weighed against the nutritional benefit. Using similar audiologic testing procedures such as the ABR and OAE, the Seychelles Child Development Study investigators are longitudinally following many cohorts of Seychellois from fetal development throughout early adulthood. As this is a very long study, the prenatal and postnatal effects from low dose exposure to methylmercury from fish consumption are still unknown. Dr. Orlando hopes to continue doing research, despite his busy clinical practice. He states, “Knowing I have contributed to research that has impacted thousands of children’s lives is one of the most rewarding aspects of my career.”

Pediatric Auditory Research

Dr. Orlando explains, “It should be noted that prior to this investigation, few children were fitted with amplification prior to six months of age.” Since the average age at diagnosis has been lowered, there has been a push to provide infants with amplification at a very early age. "At URMC, we can often fit infants with hearing aids between three and four month of age," Orlando notes.

Today, the goal is to screen every child by one month of age (preferably prior to hospital discharge), diagnose hearing loss by three months of age and provide amplification and early intervention by six months of age. Dr. Orlando states, “Although we have been very successful with screening infants, diagnose hearing loss and providing those with hearing loss amplification and early intervention services at a very early age at URMC, we are presently looking at our cumulative data over the last 10 years to determine the long-term success of the URMC program (which includes Highland Hospital)."

More recently, Dr. Orlando and colleagues have been using tests often used to screen and diagnose hearing loss in infants, such as the Auditory Brainstem Response (ABR) and OtoAcoustic Emission (OAE) procedure to quantify exposure levels to toxins. Along with URMC Neonatologist Dr. Sanjiv Amin, Dr. Orlando has used ABR and OAE to investigate how the increased or decreased levels of many often naturally occurring substances affect the development of the neonate. Presently, Drs. Amin and Orlando are investigating the effects of high bilirubin levels in very premature infants. Dr. Orlando states, “Excess bilirubin is very toxic to the newborn brain and can even cause death in a severe case.”

Presently, these investigators suspect that even short-term transient increased bilirubin levels might have long-term effects on children’s abilities to learn. Similarly, Drs. Amin and Orlando have looked at the benefits of iron, fatty acid and iron supplements on infant brain development using the ABR. Similar to the bilirubin investigations, Drs. Amin and Orlando quantify the beneficial effects of these substances to the developing brains. Dr. Orlando further states, “I like our mothers would often say, ‘everything in moderation and nothing in excess,’ as with these substances there is a delicate balance between just enough to assist in the development or maturation of the brain and too much which can cause either short- or long-term damage.”

Dr. Orlando’s research in the effects of toxins has gone global. He and colleagues from the Seychelles Child Development Study are also investigating the effects of methylmercury on the developing child in the Seychelles, a low-lying island archipelago nation in the Indian Ocean. For the Seychelles, like many other cultures, fish is a large part of their diet. However, fish contains naturally occurring toxins such as methylmercury. Exposure to high levels of mercury causes severe neurologic impairments and may even cause death. As fish contains high levels of important nutrients for brain development, the risk of mercury exposure due to fish consumption during pregnancy must be weighed against the nutritional benefit. Using similar audiologic testing procedures such as the ABR and OAE, the Seychelles Child Development Study investigators are longitudinally following many cohorts of Seychellois from fetal development throughout early adulthood. As this is a very long study, the prenatal and postnatal effects from low dose exposure to methylmercury from fish consumption are still unknown. Dr. Orlando hopes to continue doing research, despite his busy clinical practice. He states, “Knowing I have contributed to research that has impacted thousands of children’s lives is one of the most rewarding aspects of my career.”

Dr. Orlando helps to provide infants with amplification at a very early age. "At URMC, we can often fit infants with hearing aids between three and four month of age," Orlando notes.
Endoscopic Skull Base Surgery Program Continues to Grow

Under the direction of Head and Neck Surgeon Matthew Miller and Neurosurgeon Edward Vates, the University of Rochester’s endoscopic cranial base surgery program has experienced tremendous growth. Starting in 2009, Drs. Miller and Vates began to partner on endoscopic pituitary surgery. After only a few cases together, it was clear to both that there was great potential for the partnership and the program. “Ed and I developed an instant friendship and professional rapport and I think that’s been a great benefit to our patients,” says Miller. “The complex nature of these cases requires teamwork, a thorough understanding of each other’s techniques and aftercare plus a commitment to making co-surgery an active and interactive process.”

These details are what distinguish the University of Rochester's program from the growing list of other institutions that offer minimally invasive skull base surgery. Dr. Miller believes that they are a driving factor behind the dramatic increase in patient volume and case complexity that the program continues to experience. In the past 12 months alone, Drs. Miller and Vates have performed nearly 100 endoscopic procedures together—everything from small intrasellar pituitary adenomas, to planum sphenoidale meningiomas, multiply recurrent chordomas, sinonasal undifferentiated carcinomas and sarcomas with significant intracranial extension. “We have been seeing more patients with more complex diseases coming from greater and greater distances,” says Miller. “I think it’s a testament to the level of care we provide and success we’ve had thus far.”

Dr. Vates says, “Minimally invasive skull base and brain tumor surgery is the way of the future...patients experience less pain, have better outcomes and are able to return to work faster after this kind of surgery, which requires skill sets and multidisciplinary care available at only a small number of centers in the country.”

According to Dr. Vates, “It takes a special set of people to create this kind of program. I have been blessed with colleagues and collaborators who have shared in the vision of providing the highest quality care to patients in Upstate New York. Brain surgery really isn’t hard…it’s the medical management, care coordination and availability of a team of providers that distinguishes the best centers from the rest.” He adds because URMC is committed to ‘medicine of the highest order,’ the medical center has been able to attract people like Drs. Miller, Calvi and Shafiq from the Division of Endocrinology see all of these patients to manage endocrinologic issues that arise after surgery or other treatments for skull base tumors. Drs. Michael Milano and Kenneth Usuki from Radiation Oncology are able to provide the latest radiation treatments including frameless stereotactic radiosurgery. Dr. Zoe Williams from Ophthalmology provides timely and comprehensive management of neuro-ophtalmologic issues related to skull base surgery. The Wilmot Cancer Center also provides state-of-the-art care and clinical trials for patients confronting difficult diagnoses. Catherine Hastings N.P., Sandra Clark and Jamie Frank, who staff the office of the Endoscopic Skull Base Program, supervise the care of these patients in and out of the hospital, and are the glue that holds the center together and keeps care focused on patients and their families.

The team believes that their focus on multidisciplinary patient and family-centered care can serve as a model for other programs, bringing together broad technical and intellectual expertise, compassionmate care and a commitment to advancing the knowledge and management of these diseases. Miller says that this approach is mirrored in the larger context of the University of Rochester’s Head and Neck Surgery Program.

Dr. Chase Miller Volunteers in Rural Kenya

Dr. Chase Miller took nearly the entire month of April from her practice to volunteer at Tenwek Hospital in Kenya. This was her second medical mission to Kenya and third overseas mission trip. In 2010, Dr. Miller also traveled to the Dominican Republic town of Dajobón where tropical storms and cholera devastated the area. Tenwek Hospital is a 300-bed tertiary referral hospital in rural Northwest Kenya which provides medical care to local Kipsigis and Masai tribes, as well as other people in need from surrounding areas. The hospital is staffed by full-time missionary surgeons and short-term volunteer specialty surgeons. A general surgery residency has been started to train local physicians who are required to stay in Kenya after their training. Most of those treated at Tenwek Hospital live on less than $3 a day and travel from as far as Uganda and Somalia, often waiting for days before they see a physician.

Dr. Miller and her husband James carried six hockey bags (about 360 pounds) of equipment with them including much needed medications, suture materials and other medical supplies. Dr. Miller’s husband not only helped to provide well-baby check-ups by preparing vaccinations and distributing vitamin supplements, but also provided 40 water filtration systems, which have improved the quality of life of countless families and the local orphanage. Additionally, the Millers brought donated equipment including a high-definition screen and camera to be used for endoscopic surgery at the hospital. As you can imagine, there is great need for specialty ENT care at Tenwek Hospital, where advanced disease processes are seen due to the lack of adequate medical care. During the three weeks that Dr. Miller was actively treating patients, she worked long hours to treat a steady stream of patients coming from the emergency and outpatient clinic. She performed nearly 50 procedures and participated in the training of local resident surgeons. Dr. Miller saw severe injuries from wild animals, many sinus and ear infections and numerous neck masses; one golfer the size of a Cornish hen and another that had been untreated for 15 years. Other notable cases included a man with a rare nasoalveolar cyst, a 34-year-old woman requiring laryngectomy for a large, obstructing tumor, and a newborn with a naso-encephalocele, which was removed with the help of a visiting neurosurgeon. Working conditions at Tenwek Hospital are challenging — 70% of surgeries are casual and emergency work that comes in daily, there are limited surgical instruments, electricity is unreliable and some patients present with advanced disease processes that are beyond the scope of available resources. "Although Tenwek Hospital is fairly advanced for Third World hospitals, there are many problems that are just beyond my abilities. We are caught between our compassion for these patients and the complexity of the problems," states Dr. Miller. Despite stark realities, those seeking medical care endure and are grateful for the time and services they receive. Dr. Miller adds, “I continue to be amazed with the strength of the Kenyans. They are not complainers. They move forward each day despite the trials of living a harsh life. Although I do not see abundant joy in those I am working with, I do see strength.” And we are appreciative of the Millers and their wonderful work on behalf of these less fortunate Kenyans.
Training Grant in Full Swing

In 2010, the National Institute for Deafness and other Communication Disorders awarded URMC a training grant titled, “Training in Navigation and Communication Sciences.” As part of this training grant, one otolaryngology resident each year dedicates that academic year to full-time research as part of expanded training designed to prepare him or her for a career in academic medicine and inquiry. The first resident to leave the clinical portion of his training to pursue research is Dr. G. Todd Schreiber, who is now between his 3rd and 4th clinical year and is working with Dr. J. Chris Holt studying vestibular efferent effects in the mouse. We asked Todd a few questions to catch up on what’s going on in the lab.

ENTell: How is the research coming along? Todd: So far, we’ve been making steady progress, however in all basic science projects, there are always obstacles to overcome. Dr. Holt and I both started this project with very little knowledge of murine neuroanatomy, but by now I feel that we’ve nearly perfected our anesthetic regimen and surgical technique. We are starting to get consistent data into the transition, but when my parking pass and ID card worked on July 1st, I knew I was probably okay. The hardest part has been staying connected with the clinical teams. I try to make a point of knowing about some of the big cases and finding out the outcomes of some of the patients I worked with closely in my first three years.

ENTell: Do you feel you are able to keep in contact with the clinical side of your career? Todd: It has definitely been a challenge to keep my mind in the clinical world since my average patient for the last nine months has only weighed about 30 grams. Without constant clinical demands, I have had more time to either read the pile of journals on my desk or from one of the textbooks just to keep my head in the game. My hope is that all the work under the microscope this year with mice will translate to improved surgical skills on humans in my two final clinical years.

ENTell: Do you miss being on call? Todd: Mostly no. I will admit that sometimes I miss the problem-solving aspect of some of the consults or the instant gratification of draining an abscess. All in all, having no call responsibilities has been a good thing because it allows me to completely focus on my project without worrying about how a call may affect my plan for experiments during the week. In fact, I think the happiest person about this is my wife who gets to sleep through the night without waking up to my pager at 2:00am every couple of days.

Consider a tax-deductible, annual contribution to the Otolaryngology Department this year. You can direct it to a special project or fund, if you’d like. Your gift of any amount is important, but an annual gift of $1,500 or more over five years enables you to join the George Eastman Circle Giving Society. Gifts of cash or stock are also accepted. For more information, please call Mary M. Koegel, Assistant Director of Advancement, at 585.273.3171.

Thank you for your consideration.

You Can Support Our Mission to Improve Health Through Caring, Discovery, Teaching and Learning.

URMC clinical programs have been pivotal in research, fledgling studies to gain a better understanding and improve the treatments of various ear, nose and throat ailments. Philanthropy plays a huge role in creating opportunities for our doctors and researchers, and for the community to receive the best care. Do you feel deep appreciation for the education you received? Are you a concerned parent whose child suffers from chronic ear infections? Or a grateful patient who has benefited from sinus surgery? Or do you need assistance from the specialists at the URMC Department of Otolaryngology to help with vertigo or balance problems?

Scavenger Hunt

On October 7th, Otolaryngology residents and faculty divided into teams to participate in a team building scavenger hunt organized by chief resident Dr. Caitlin McLean. The teams followed clues around Rochester to collect photographs and answer cultural and historical questions. Members of the winning team are seen here having fun with an unidentified wedding party during the scavenger hunt. Team members are, from the left, Dr. Pihya Kesarwani (PGY-1), Dr. John Wayman, and Dr. Alexis Strohl (PGY-2).

Scavenger Hunt

To help with vertigo or balance problems?

Dr. Alexis Strohl (PGY-2).

Consider a tax-deductible, annual contribution to the Otolaryngology Department this year. You can direct it to a special project or fund, if you’d like. Your gift of any amount is important, but an annual gift of $1,500 or more over five years enables you to join the George Eastman Circle Giving Society. Gifts of cash or stock are also accepted. For more information, please call Mary M. Koegel, Assistant Director of Advancement, at 585.273.3171.

Thank you for your consideration.

You Can Support Our Mission to Improve Health Through Caring, Discovery, Teaching and Learning.

URMC clinical programs have been pivotal in research, fledgling studies to gain a better understanding and improve the treatments of various ear, nose and throat ailments. Philanthropy plays a huge role in creating opportunities for our doctors and researchers, and for the community to receive the best care. Do you feel deep appreciation for the education you received? Are you a concerned parent whose child suffers from chronic ear infections? Or a grateful patient who has benefited from sinus surgery? Or do you need assistance from the specialists at the URMC Department of Otolaryngology to help with vertigo or balance problems?

Scavenger Hunt

On October 7th, Otolaryngology residents and faculty divided into teams to participate in a team building scavenger hunt organized by chief resident Dr. Caitlin McLean. The teams followed clues around Rochester to collect photographs and answer cultural and historical questions. Members of the winning team are seen here having fun with an unidentified wedding party during the scavenger hunt. Team members are, from the left, Dr. Pihya Kesarwani (PGY-1), Dr. John Wayman, and Dr. Alexis Strohl (PGY-2).
Dr. Matthew Miller’s poster presentation, “TORS without the use of a mouth prop: Early experience with a novel exposure technique” won the designation of “Poster with Distinction” at the 8th International Conference on Head and Neck Cancer in Toronto, Ontario in July.

Dr. Arthur Hengerer was elected to a three-year term as the Chair of the Board of the New York State Board of Professional Medical Conduct and is now on the Board of Directors of the Federation of State Medical Boards.

Dr. Mark Orlando was honored with a 2012 Golisano Foundation Leadership Award for Exemplary Health Care Services to Individuals with Intellectual Disabilities for his work in hearing rehabilitation.

Dr. Ben Crane became a fellow American College of Surgeons.

Twenty-five of alumni, faculty and residents attended the 3rd annual Hengerer Dinner September 9th, 2012 at the Brasserie Beck restaurant in Washington, DC. A great time was had by all!

Merideth Rao, SLP has been named as the Director of Speech Pathology for URMC. Merideth received her undergraduate degree in Communication and Disorders and Sciences from State University College at Buffalo, New York and her graduate degree from Nazareth College in Speech Language Pathology (SLP). She has extensive experience with over 27 years in the field. For the past four years, she held the position of Assistant Clinical Professor in the graduate program at Nazareth College. Merideth joined URMC in 2012 and her clinical interests include: traumatic brain injury, craniofacial disorders, stroke, and head and neck.

Angela Rose, RN, MS has joined the ENT team in the role of Nurse Manager. Her 18 year career history includes clinical and leadership positions in healthcare. Her most recent position of Vice President of Patient Care Services and Chief Nursing Officer was held at Lakeside Memorial Hospital. Her expertise includes abilities to grow teams and focus on patient and team satisfaction.

Priya Kesarwani, MD
Priya received her medical degree from St. Louis University in 2012. Prior to that, she graduated from the University of Western Ontario with a double major in Health Sciences & Psychology. She was on the Dean’s Honor List.

Clara Rimmer, MD
Clara received her medical degree from Albany Medical College in 2012. She also earned a bachelor’s degree in Political Science from Pennsylvania State University.

Joseph Vella, MD
Joseph received his MD from the University of Pittsburgh in 2012. He also has PhD in Bioengineering from the University of Pittsburgh, a bachelor of science degree in Chemistry from Pomona College and a master of science degree in Material Science and Engineering from Johns Hopkins University.