The Department of Otolaryngology-Head & Neck Surgery (http://oto.wustl.edu/) at Washington University in St. Louis has a rich, 130-year history of leadership in our field that is built on the foundations of academic medicine: patient care, research, training and service. Our past leaders include luminaries in the field of otolaryngology, such as John Blasdel Shapleigh, MD; Greenfield Sluder, MD; Lee Wallace Dean, MD; Theodore Walsh, MD; Joseph Ogura, MD; John Fredrickson, MD; Richard A. Chole, MD, PhD; and, presently, Craig A. Buchanan, MD, FACS. Even from our earliest days, prior to the inception of the McMillan Eye, Ear, Nose and Throat Hospital (circa 1943), excellence has been an integral part of the department’s fabric. A look at former faculty and program graduates reveals many of the true innovators in our field. While we remain humbled by our beginnings and past achievements, we choose not to rest on our laurels. Rather, we aspire to further our commitment to improving patients’ lives by leading our field and its clinical application.

Today, more than ever, we are driven to provide highest-quality, cutting-edge patient care that is both safe and effective. Our Washington University physicians and team, together with our Honor Roll Award-winning hospital, Barnes-Jewish Hospital (U.S. News, 2020-21), are second to none when it comes to tackling the full spectrum of conditions involving the ear, nose, throat, head and neck. Our basic, translational and clinical research programs are remarkable, providing answers to a variety of relevant questions that build on our foundations of knowledge, lay the groundwork for future clinical trials, and provide state-of-the-art patient solutions. Our educational programs for medical and graduate students, physicians in training, and established practitioners are committed to creating a culture of lifelong learning that firmly establishes our next generation of leaders in the field. Our residency program is highly rated by all metrics, providing balanced training across the clinical subspecialties and unique opportunities for growth and development as clinician-scientists (T32 training grant) and educators. We are most proud that these activities are ongoing in a work culture that values collegiality, inclusiveness, diversity and mutual respect. The Department of Otolaryngology-Head & Neck Surgery at Washington University in St. Louis is a really outstanding place!

CID at Washington University School of Medicine

The consortium of graduate education, research and clinical programs known today as CID at Washington University School of Medicine was born out of the pioneering efforts of St. Louis physician Max Goldstein, MD. In 1914, he founded the Central Institute for the Deaf (CID), where doctors and teachers worked together to help deaf people. When CID’s school building opened two years later, its auditory/oral methods for instructing deaf children were groundbreaking.

Washington University and CID first joined forces in 1931, when CID’s established teacher training program became the first deaf education undergraduate program to affiliate with a university. Graduate programs in deaf education, audiology, and speech and hearing sciences soon followed.

CID’s research efforts began in the 1930s to study the anatomy and science of hearing. During World War II, CID’s research on hearing loss in military personnel laid the foundation for the field of audiology. CID also pioneered hearing testing and hearing aids, and it opened the country’s first hearing aid clinic in 1941. In September 2003, a new affiliation transferred CID’s graduate degree programs, research programs and adult audiology clinic — along with its building — to Washington University School of Medicine. The CID school continues to operate on the School of Medicine campus as CID — Central Institute for the Deaf.

Today, these programs continue to work together to fulfill a shared mission to serve people with hearing loss.

Website: http://oto.wustl.edu

Faculty

Craig A. Buchanan, MD, FACS (https://oto.wustl.edu/people/craig-a-buchman-md/)
Department Head
Visit our website for more information about our faculty (http://oto.wustl.edu/About-Us/Faculty-Physicians/) and their appointments.

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MPH Univ of Texas Med Sch Houston 2014

Research Electives

Otolaryngology Research Electives

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences. The type of research will depend upon the current phase of the research program in each laboratory. Students should contact the director of each laboratory to negotiate.

Pablo M. Blazquez, PhD  
East McDonnell Science Building  
4566 Scott Avenue  
Phone: 314-362-1013
This lab studies the role of the vestibulocerebellum and its target nuclei for eye movement control and spatial orientation. We use a range of methodologies, including single and multiunit recordings, electrical brain stimulation, computational methods, pharmacology and behavioral studies. Our main lines of research are as follows: (1) signal transformations carried out by the vestibulocerebellum during visual and vestibular stimulation; (2) neuronal computations performed by the anterior and posterior cerebellar vermis for spatial navigation in mice; and (3) the role of the cerebellum-brainstem loop in motor learning in the vestibulo-ocular reflex.

Students will be instructed in one or several techniques and are expected to contribute significantly to the development of specific lab projects.

Judith E.C. Lieu, MD, MSPH
3S35 Children's Hospital; and McMillan, 9th Floor
Phone: 314-747-8205

The focus of the Lieu Lab is clinical outcomes research in pediatric otolaryngology. The techniques and methodologies of clinical epidemiology and health services research are applied to investigate clinical problems in children. Projects currently underway include the evaluation of the quality of life of young children with hearing loss, the evaluation of hearing loss on the perception of fatigue in children, and the use of MRI to investigate the effects of hearing loss in children. Potential studies include evaluating changes in the quality of life of children who begin using hearing amplification devices. Other projects of the student's choosing that would utilize these research techniques may also be pursued.

Kevin K. Ohlemiller, PhD
2205 Central Institute for the Deaf
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The focus of this lab is on gene–environment interactions in cochlear injury. We study the interaction of genes and environment that increase cochlear injury due to noise and ototoxic exposure, with an emphasis on how these may yield apparent presbycusis. Because cochlear function and injury is the same in mice and humans and governed by the same genes, we use mostly mouse models. Methods employed include standard auditory brainstem response assessment and intracochlear recording, quantitative light microscopy, immunocytochemistry, and Western blots. We and our collaborators have identified specific genes and inbred strains of mice that mimic the three major forms of human presbycusis (sensory, neural and strial). Sensory presbycusis appears to be promoted by alleles and mutations that impair protective factors (e.g., antioxidant enzymes) or that impair ion homeostasis. These may enhance cochlear injury from noise and ototoxins.

Neural presbycusis can be modeled in part by mutations that impair inner hair cell/afferent synaptic function. Although it is not yet clear what types of genes and mutations can lead to strial presbycusis, we have discovered multiple mouse strains that show age-related endocochlear potential reduction along with distinctive strial pathology that includes fewer marginal cells as well as fewer and larger strial capillaries.

We have also published quantitative trait loci that impact the qualitative character of cochlear noise injury. Important implications of our findings are (1) that there exists no single "mammalian" archetype of cochlear noise injury and (2) that noise injury to the organ of Corti in young adult animals depends in part on the status of the cochlear lateral wall. The latter relation appears to be genetically linked and appears not to apply to older adults.

We collaborate widely, both within the School of Medicine and nationally. Our research is eminently adaptable in difficulty and scale to students’ schedules and other requirements. Students may expect to learn the full range of methods we employ, including physiology, immunocytochemistry, histopathology and cellular/molecular techniques.

Jay F. Piccirillo, MD
McMillan, 9th Floor
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The Clinical Outcomes Research Office performs clinical epidemiology and health services research. Clinical epidemiology is the study of diagnosis, prognosis and the evaluation of treatment. Health service research is the study of the delivery of health care. The scientific methodology of clinical epidemiology is based on the architecture of clinical research, biostatistics and data processing. Current projects include studying the impact of comorbidities on the treatment and outcomes of patients with cancer. We also conduct research into the neurobiology, treatment and outcomes of patients with tinnitus. One method that we employ is the use of smartphone technology to capture ecological momentary assessments of tinnitus. Additional projects include exploiting neuroplasticity as part of olfactory training for patients with anosmia. With the use of clinical epidemiology methodology, we can also study a variety of other diseases.

Courses

M55 Oto 660B Clinical Topics In Otolaryngology
This course consists of nine introductory lectures on common diseases of the head and neck, including voice disorders, head and neck cancer, hearing loss, management of vertigo, pediatric otolaryngology, salivary gland disorders, sinusitis, otolaryngologic emergencies and facial trauma. Additionally, there is a case-based roundtable focusing on otolaryngology disorders affecting the geriatric population and
the involvement of allied health care disciplines in the evaluation and management of these patients. Each lecture is highlighted by case presentations and treatment options in addition to pathophysiology. This course follows the physical examination practicum given earlier in the academic year.
Credit 9 units.

**M55 Oto 801 Otolaryngology Subinternship**
Four-week rotation includes evaluation of ENT problems presented to specialist for diagnosis and treatment. The student participates in the clinic, hospital, and operating room. This may also include time on the Pediatric ENT Service, Audiology, Voice Laboratory, and Vestibular Evaluation Laboratory. Option of rotation on the ENT Service at VAMC is possible.

**M55 Oto 803 Pediatric Otolaryngology**
The student will actively participate in the clinical office, inpatient consultations, and surgery with the attending staff at St. Louis Children's Hospital. Care would be taken to provide experience in the common problems one would see in primary care pediatrics or family practice. Participation in sub-specialty/multidisciplinary clinics such as the Cleft and Craniofacial clinic is encouraged. Opportunity will be provided to learn the fundamentals of audiological evaluation. Students participating in this elective will attend academic conferences in both the pediatric and adult divisions.

**M55 Oto 831 Neurotology**
Students will actively participate in the physical examination, advanced testing, and management of patients with balance dysfunction. Students will attend the patient clinic on Wednesday afternoon and all day Thursday, and they will test patients on VNG, rotary chair, VEMP, vHIT, and computerized platform three days a week. Research participation is possible with prior arrangements.

**M55 Oto 833 Ambulatory Otolaryngology for the Primary Care Physician**
This course offers a four-week exposure to ambulatory care of patients with diseases of the head and neck. Eight half-day sessions per week will be offered in attending clinics for general otolaryngology, head and neck cancer, otology, and pediatric otolaryngology. Two half-day sessions are reserved for audiology, vestibular lab, and voice lab experience. Surgical exposure is available for selected cases as identified by the student and attending physician, but the main goal of this rotation is outpatient diagnosis and management.

**M55 Oto 900 Research Elective - Otolaryngology**
Research opportunities may be available. If interested, please contact the Department of Otolaryngology.