

**The National Military Audiology and Speech Pathology Center  
at Walter Reed National Military Medical Center – Bethesda:  
*A New National Treasure***

In the NOV/DEC 2011 issue of *Audiology Today*, an article appeared that paid tribute to the Army Audiology and Speech Center (AA&SC) at the Walter Reed Army Medical Center. Specifically, the article outlined the history and accomplishments of the AA&SC's renowned research and clinical sections. Although the history of the AA&SC's contributions to the fields of audiology and speech are well documented, the closing of the Army's flagship medical center opened the doors on opportunities to an elite, contemporary flagship *military* medical center: the Walter Reed National Military Medical Center, Bethesda (WRNMMC). With the official opening ceremony on November 10, 2011, Walter Reed Army Medical Center and Bethesda Naval Medical Center were combined to start a new era in military medicine. At the opening ceremony, Department of Defense Secretary Leon Panetta stated: "Today, we observe the coming together of two very storied and historic institutions, each with a long legacy of serving those who serve this country in uniform."

The move from the Walter Reed Army Medical Center in northwest Washington, DC to the new facilities on the grounds of the National Naval Medical Center in Bethesda, Maryland was a massive undertaking and started in earnest in late 2010 as personnel and services started the transition to the new facility. More than two million square feet of clinical and administrative space was constructed or renovated to absorb the integrated missions and activities at the new integrated military facility. The move culminated with the transport of all in-patients from the old Walter Reed via private ambulance and police escort to the new facility (only a mere three exits away around the Capitol Beltway) in late August 2011. This exercise was carefully planned and orchestrated and more than 100 medical and logistics experts were involved. By the end of August 2011, the majority of personnel and services from the old Walter Reed were relocated to the new Walter Reed to join with the personnel and services already in place at the Bethesda Naval Medical Center.



**Aerial photograph, Walter Reed National Military Medical Center.**

The mission of the new facility is to continue to provide world-class medical care to wounded warriors and their families, promote state-of-the-art medical practice and continue to produce ground-breaking clinical and basic science research. ‘One Team, One Fight’ is the WRNMMC call to action. As part of this integrated military facility, the new National Military Audiology and Speech Pathology Center (NMASC), is housed within the America Building (the largest military outpatient facility in the world), and it continues its Army, Navy and overall military missions of clinical service provision, graduate medical education and research.

The Director of the NMASC oversees the three integrated sections within the NMASC and liaisons with all other Army, Navy and Air Force treatment facilities around the world. The NMASC includes the Audiology Section with 15 clinical and support staff; the Speech Pathology Section with six clinical staff; and the Research Section (Scientific and Clinical Studies Section) with 15 staff, scientists and research associates.



**First floor entrance to the America Building. The National Military Audiology and Speech Pathology Center is housed on the 5<sup>th</sup> floor.**

### *Audiology Services*

Persons eligible for care at the NMASC are active duty and retired service members and their families (all ages) and other Secretary of Defense appointed beneficiaries – this represents and a large potential population! As an entry point for service members who have sustained all types of injuries while deployed, the staff at WRNMMC cares for its share of warriors with amputations, head injury and other serious bodily injury. To that end, there are dedicated Audiology staff providers to interact and evaluate these patients and provide the integrated care needed in terms of hearing loss and/or vestibular deficits. The fact that many of these service members have multiple co-morbid conditions makes the audiologic care more complex but the staff works diligently to ensure restoration of hearing and balance function so that the wounded warrior can be returned to normal duty as quickly and safely as possible. Comprehensive audiologic evaluations are completed in the new state-of-the art test suites as well as care assessments provided bedside as needed to accommodate the wounded service member. A contemporary approach to vestibular assessment includes videonystagmography (VNG), rotary chair testing to include off-axis rotational testing, and posturography. These kinds of evaluations are critical in assessing a wounded soldier’s immediate treatment needs as well as for monitoring the healing process with a goal to return the service member to their pre-injury health status.

In addition to the wounded warrior care provided, the clinical staff has a robust caseload of pediatric patients to include all types of diagnostic assessments and, when indicated, surgery for cochlear implants. ‘Past’ warriors are cared for as well with full access to hearing and balance

care, wellness and treatment. The Retiree At Cost Hearing Aid Program which began many years ago to assist retired service members with access to high-tech hearing aids and other hearing assistive technology continues and there is access to cochlear implants for adults as well within the clinic management structure. A comprehensive Hearing Aid Repair Laboratory continues as part of the Audiology Clinic, where nearly 200 hearing aid repair actions are handled monthly.



**The Hearing Aid Repair Laboratory.**

In line with the WRNMMC long-term goal of graduate medical education, the clinic staff educates and trains 4<sup>th</sup> year Au.D. students. These students are selected from among the best and brightest across many of the top Au.D. programs in the country. These individuals are assessed into the military officer's corps and receive full commission. The students participate and are trained in a broad range of clinical services, to the full scope of audiology practice. In addition, they are exposed to occupational audiology services (hearing conservation and prevention) and attend inter-disciplinary medical evaluations and meetings. Students develop research skills through participation in clinical protocols and attendance at clinical research and journal club meetings. After completion of their 4<sup>th</sup> year training and all other university requirements for graduation, they serve an additional three year tour within the Army or the Navy. Many graduates of this training program have gone on to long-term careers within the military as uniformed Audiology officers.

The Audiology clinic works with the NMASC research staff as well as others within the WRNMMC community on clinical research protocols. Current clinical research is focusing on the auditory and vestibular effects of repeated high-level blast exposure (a multi-site study) and the staff are collecting normative data on the military population for rotary chair testing – an important, unmet need at this time. The clinic staff also conceptualized and developed an annual inter-disciplinary (with physical therapy) military vestibular assessment and rehabilitation (MVAR) course. This is a five day course that brings together Department of Defense audiologists and physical therapists to educate them on the assessment and management of the dizzy patient – ensuring that the most contemporary approaches, techniques and best-practices protocols, with special attention to the evaluation of dizzy patients with traumatic brain injury (TBI), are implemented across the military services.

The Audiology staff has adapted to the integration of world-class institutions and is meeting the immense challenges posed by the varied patient population that defines the new Walter Reed.

### *Speech-Language Pathology Services*

The Speech-Language Pathology (SLP) clinical staff provides services to active duty and retired service members across the age span. World-class services are provided in the acute care hospital and outpatient clinic (America building) to diagnose and treat all communicative, cognitive and/or swallowing problems. SLPs are a vital member of the WRNMMC Trauma Team, a multidisciplinary team that specializes in the diagnosis and treatment of wounded warriors in the

Intensive Care Unit and throughout the hospital. SLPs participate in biweekly Trauma Rounds to share and learn vital information about the medical plan for each wounded warrior. Attended by every medical service on the Trauma Team, each warrior is reviewed during every Trauma Rounds. Given SLP input, decisions regarding a warrior's swallowing safety and readiness for a one-way speaking valve (when a tracheostomy) is present are developed. In addition, SLPs are involved in developing the appropriate discharge plan for the warrior so that recovery is maximized in an efficient manner. In the outpatient clinic, SLPs are key partners in a number of exciting TBI group therapy initiatives. These include collaboration with TBI Occupational Therapists in administering functional assessments, as well as a jointly-led Vocational Re-entry group with WRNMMC Vocational Rehabilitation Counselors.

The care and recovery of each wounded warrior is maximized with the expertise of the SLP department and other resources specific to WRNMMC. The uniqueness of this population has also led to several research projects. One such project, a collaboration with the Traumatic Brain Injury Consult Section, examines the role of certain medications in the recovery of patients with a disorder of consciousness. A collaboration with the Scientific and Clinical Studies Section was recently awarded a 3-year grant by the US Army Medical Research and Materiel Command on "Swallowing Disorders Resulting from Traumatic Injury: Nature, Course, and Management." This research will be the first of its kind to examine the type of swallowing problems observed in our wounded warriors and their recovery/management course. Results from this research will increase our knowledge of how to best treat the swallowing problems presented by our unique population of young, pre-morbidly healthy wounded warriors.

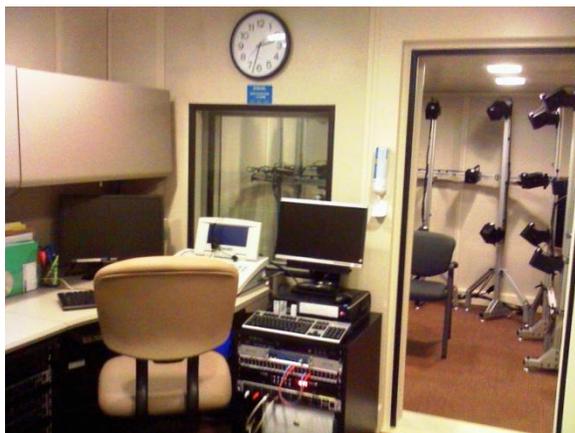
Another specialized resource available within WRNMMC to all service members is the Brain Fitness Center (BFC). While the BFC is not a part of the SLP department, many patients are referred there as an adjunct to formal SLP treatment. The center provides access to specialized computer software purported to improve cognitive function. The BFC has recently received two grants for research in collaboration with the Neuropsychology Service. The first grant was awarded by the Center for Neuroscience and Regenerative Medicine (CNRM) and the Defense and Veteran's Brain Injury Center (DVBIC) titled: "A randomized, controlled pilot study looking at the effectiveness and feasibility of novel rehabilitation approaches for Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) patients with persistent complaints of cognitive dysfunction following a traumatic brain injury." The second grant, awarded through the Congressionally Directed Medical Research Programs (CDMRP), is titled: "BRAVE Trial: Broad-spectrum Cognitive Remediation Available to Veterans: Effects of a Brain Plasticity-based Program in Mild Traumatic Brain Injury (mTBI)."



**A WRNMMC Speech-Language Pathologist performs a swallow study.**

The SLP care provided to the patients at the WRNMMC is cutting edge, contemporary and well integrated into the new flagship of military medicine.

## *Scientific and Clinical Studies Section*



**The Hearing Aid and Spatial Hearing Research Laboratory.**

The Scientific and Clinical Studies Section continues its world-class research tradition, conducting basic, applied and translational research in support of the clinical activities of the NMASC and of Department of Defense (DoD) audiologists and speech pathologists worldwide in a concerted effort to produce forward-looking research and evidence-based clinical care. Across five new dedicated research labs, the current program focuses on the development of improved methods to enhance the prevention, assessment, diagnosis and treatment of audiologic and speech/language disorders across the lifespan. Current major research areas include: development of auditory fitness-for-duty

standards (laboratory and real-world performance), evaluation of hearing loss prevalence in the armed services, development of functional measures of speech understanding/speech perception, validation of DoD hearing profile standards and laboratory and field trials of hearing protection. We have continued a comprehensive program of clinical and field studies of hearing aid performance, development of advanced models of hearing loss, evaluation of speech perception and localization abilities (unaided, aided and with and without hearing protection), quantifying the benefit of multisensory integration for hearing and speech function, determination of muscle function for speech and swallowing and the evaluation of normal and impaired vestibular function.

The Scientific and Clinical Studies Section has continued its collaborations with external federal and private institutions such as Army Research Labs, Army Public Health Command, the Veterans Administration, the National Center for Rehabilitative Audiologic Research, the National Institutes of Health, research universities and we have continuing numerous manufacturer/industry interests. Additionally, the SCSS has been an integral part of the development of the initiatives and programs within the newly-minted DoD Hearing Center of Excellence which was funded by the FY2009 National Defense Authorization Act to better address the injuries sustained by active duty service members while deployed in Iraq and Afghanistan. At the new Walter Reed facility, the SCSS has collaborations with the National Intrepid Center of Excellence (NiCOE - a focused care facility for service members with traumatic brain injury and other injuries) (need website) to study the effects of traumatic brain injury on hearing, balance and speech function.



**The Auditory-Visual Speech-Perception research laboratory.**

The clinical and research spirit of the 'old' AA&SC continues on within the new National Military Audiology and Speech Pathology Center and the clinical and research goals are unchanged: to remain on the cutting edge of clinical care provision and to lead military research efforts in audiology and speech for those we are proud to serve each day. Indeed, each current staff member of the NMASC stands on the shoulders of those who came before and while they build on the successes of the past, they blaze a path into the future to ensure our military beneficiaries receive the advanced, compassionate individual care they deserve.



**The Spatial Hearing Research Laboratory contains a loudspeaker array and a head and torso simulator.**