

MONDAY MARCH 19, 2012 – VA Breakout Day

Title: Meeting the Challenges of VA Audiology Care in the 21st Century

Presenter: Lucille Beck, PhD

Abstract:

This presentation will include, but will not be limited to, the following topics: (1) current audiology practices for VA audiologists and anticipated changes in policy driving best practices; (2) new VAI2 initiatives that may impact on the clinical care delivery model for VA Audiology; (3) data from hearing aid outcome measure (VA-wide) and its impact on best practice with hearing aids; (4) strategic initiatives which may impact on clinical care and audiology services; (5) telehealth initiatives and their impact on delivery of audiological services in the VA; and (6) highlights educational opportunities that are available for VA audiologists.

Learner Outcomes:

1. The participant will be list 2 potential uses of hearing aid outcomes data
2. The participant will be to identify at least 2 educational opportunities in the VA for Audiologists
3. The participant will be to summarize the transformational initiatives put forth by the Secretary of the VA and describe how Audiology can be a part of the transformation in VA health care.

Bio Sketch:

Lucille B. Beck, Ph.D. is Chief Consultant, Rehabilitation Services and Director of the Audiology and Speech Pathology Program in the Office of Patient Care Services, Veterans Health Administration for the Department of Veterans Affairs (VA). She is also Chief of Audiology and Speech Pathology Service (ASPS) at the Washington, DC VA Medical Center. As Chief Consultant for Rehabilitation Services, responsibilities include oversight and direction for Audiology and Speech Pathology Service, Blind Rehabilitation Service, Physical Medicine and Rehabilitation Service and Polytrauma, and Recreation Therapy Service. Dr. Beck received the Presidential Rank Award for Meritorious Executive Service in 2000, and in 2007 received the Presidential Rank Award for Distinguished Executive Service. The Pennsylvania College of Optometry, School of Audiology, conferred upon Dr. Beck the honorary degree, Doctor of Science, in 2008 for her commitment to Americans with hearing loss. Dr. Beck received her Ph.D. from the University of Maryland. She has jointly held faculty appointments at Gallaudet University, George Washington University, and the University of Maryland. She has authored numerous publications, scientific papers, and is a well known presenter on topics ranging from amplification, outcomes, patient satisfaction, professional issues in Audiology and Rehabilitation for the nation's veterans. She is a recognized subject matter expert in hearing technology.

Title: Primary Aligned Care Teams - Where does Audiology fit in?

Presenter: Colleen Noe, PhD

Abstract

VHA's Patient Aligned Care Teams (PACT) initiative replaces episodic care which was based on illness and patient complaints with coordinated care and a long term healing relationship. The PACT teams have taken a collective responsibility for patient care with each team member working to their full scope of practice. PACT teamlets consist of four members – PC provider, RN, LPN/Tech, and a clerk. Specialty team members include Clinical Pharmacy, Social Work, and Behavioral/Mental Health. The challenge for Audiology is to integrate with the PACT teams at each facility. This will be customized at each facility. Approximately 25% of Veterans seeking care from VA Medical Centers receive care in a Rehabilitation Service (Audiology and Speech,

PM&R, Blind Rehabilitation, Chiropractic Care and Recreation Therapy). Almost half of those Veterans are seeking care from Audiology and Speech Pathology Services. Audiology's challenge is to find ways to step out of booth and interact with PACT teams to enhance the hearing health care of Veterans. Some initiatives to be discussed include educating PACT teamlets, working side by side with providers, participating in morning huddles, and providing educational materials for patients. Different models of interaction for different types of facilities such as medical centers, outpatient clinics, and community based outpatient clinics will be presented.

Learning Objectives:

1. The participant will be able to list the members of PACT teams.
2. The participant will be able to list three different ways for Audiology to interact with PACT.
3. The participant will be able to define the role of PACT within VHA.

Bio Sketch

Colleen M. Noe, Ph.D. has been the Chief of Audiology and Speech Pathology Service at the Mountain Home, TN VA Medical Center since 2004. She served as the Acting Director of the Audiology & Speech Program Office for the Department of Veterans Affairs from April – December 2011. She is a member of the ASPS Field Advisory Council and is Co-Chair of the Health Tech Workgroup for the FAC. She has been a member of several national committees including the Rehab PACT Integration Team, Veterans Affairs Schedule for Ratings Disabilities Audiology Workgroup, VHA National Hearing Aid Contract Committee, ROES Task Force, and the Assistive and Alerting Device Workgroup. She is a Past President of AVAA and a recipient of the First LT Frank B Walkup IV Distinguished Service Award. She received her Ph.D. in Hearing Science from The Ohio State University in 1994 and has published in the areas of amplification systems and outcome measures. Dr. Noe is also an Associate Professor in the College of Clinical and Rehabilitative Health Sciences at East Tennessee State University. She is active in her community through the Johnson City Evening Rotary Club and serves on the Board of Directors for Girls Incorporated.

Title: LEAN - A systematic approach to improving processes

Presenter: Charles Martinez, PhD

Abstract:

Systems Redesign is the overarching framework for retooling the way any work requiring multiple steps is performed. The main goals of Systems Redesign are to 1) improve efficiency, 2) reduce waste, 3) reduce errors, and as a result of these actions, 4) improve customer and employee satisfaction. Systems Redesign in the VA began with Advanced Clinical Access activities designed to decrease the wait times for patients wanting appointments. These SR activities have been expanded to now be applied to all processes involved in the delivery of a myriad of services and other work activities. Lean Improvement, which will be the focus of this presentation, is a systematic approach to improving processes through the identification of barriers, sources of errors, and waste in its many forms. It also involves the restructuring of the processes to eliminate, to the extent possible, the barriers, waste and/or errors. The tools used in this process involve very detailed analysis of each step of every aspect from the initial request to the final outcome. This analysis can be performed from the producer's (i.e., clinician) or from the customer's (i.e., patient) point of view. Examples of the various types of waste found in healthcare systems and the use of various tools in creating value stream analyses to reduce or eliminate the waste will be presented.

Learner Outcomes:

As a result of this activity, participants will be able to:

1. Generate process flow diagrams for both the clinician and the patient experience.
2. Will be able to describe seven areas of waste found in healthcare systems.

3. Will be able to create a spaghetti diagram of a clinical activity.

Bio Sketch:

Charles Martinez is the Chief of the Audiology and Speech Pathology Service at the Greater Los Angeles VA Healthcare System. He received his MA in Audiology from Northwestern University and his AuD from Central Michigan University. He initially became involved in implementing Systems Redesign strategies when Advanced Clinical Access first became an integral part of the delivery of Audiology Services in the VA. In addition to his Chief position, he is a member of the ASPS Field Advisory Council, a member of the technical committee for the Hearing Aid Contract, a member of the National Professional Services Board and serves as a mentor in the ASPS Mentoring Program.

Title: Using Disability Benefit Questionnaires to complete disability exams for hearing loss

Presenter: Kyle Dennis, PhD

Abstract

Disability Benefit Questionnaires (DBQs) have been developed to assist with the Compensation and Pension (C&P) process for Veterans and Service members. The Veterans Benefits Administration (VBA) has released approximately 80 DBQs, including one for audiology (hearing loss and tinnitus). These DBQs will reside within the Compensation and Pension Record Interchange (CAPRI) and some will be available to the general public. Additionally, contract providers are also required to use DBQs and negotiations are underway with the Department of Defense (DoD) to provide access to DBQs. Many questions have been raised regarding the completion and transmittal of examination results. To address this knowledge gap, this workshop is designed for audiologists to obtain information regarding this new process. This workshop will also provide audiologists an opportunity to ask questions about the DBQ and the C&P process in general and to provide feedback. Case studies and examples will be presented.

Learner Outcomes:

- (1) Explain the purposes of the DBQ
- (2) Identify key features of the DBQ
- (3) Identify procedures and pitfalls in completing DBQ
- (4) Explain key forensic concepts

Biosketch

Kyle C. Dennis, Ph.D. is an audiologist currently assigned as a rehabilitation planning specialist in the National Audiology and Speech Pathology Program Office for the Department of Veterans Affairs (VA). Dr. Dennis received a Masters of Science degree from Tulane University in 1977 and a Ph.D. from Northwestern University in 1987. Dr. Dennis began his VA career as a clinical audiologist at the New Orleans VA Medical Center and the VA Chicago Health Care System and went on to become the Chief of Audiology and Speech Pathology at that facility before coming to VA Central Office in 2000. He has authored and co-authored numerous publications and papers and is a frequent presenter on a broad range of topics including evidence-based practice, productivity, clinical issues, practice management, and coding. He received a Presidential Award from the American Academy of Audiology in 2003 for his contributions to the profession, the Distinguished Service Award from Association of VA Audiologists in 2006, and the President's Award from Association of VA Speech-Language Pathologists in 2007.

Title: Remote Programming of Hearing Aids through TeleAudiology

Presenters: Gail Takahashi, PhD, Chad Gladden, AuD

Abstract:

The VA Audiology and Speech Pathology National Program Office and the Office of Telehealth Services are currently conducting a teleaudiology pilot project that includes remote programming of hearing aids at ten sites (Denver, Durham, Hines, Iowa City, Madison, Mountain Home, Omaha, San Juan, Togus, and Washington, DC). Audiologists and patients communicate with each other via videoconferencing, and probe microphone measurements are obtained remotely with assistance from a telehealth clinical technician. Teleaudiology makes care more convenient for patients by decreasing travel time, reducing time away from work and family, and reducing travel costs. The availability of teleaudiology services may also lead to increased use of audiology services for veterans already enrolled in the VA and may attract new patients to VA. This session will provide an overview of the TeleAudiology Pilot as well as practical information about how to get started in teleaudiology. Outcome measures will be discussed and data from the pilot will be presented.

Learner Outcomes:

As a result of this activity the participant will be able to:

1. List three benefits of teleaudiology
2. Describe the National TeleAudiology Pilot
3. Identify key steps and considerations in getting started with remote programming of hearing aids

Bio Sketches:

Gail Takahashi has served as the Chief of the Audiology and Speech Pathology Service at the VA Medical Center in Iowa City since 2002. She received her Ph.D. in Audiology from the University of Iowa in 1990 and served as the Director of the Hearing Aid Center at the University of Iowa Hospitals and Clinics from 1996-2002. As a member of the VA Audiology and Speech Pathology Field Advisory Council, she has focused her efforts on promoting telehealth and developing the mentoring program for new service managers.

Chad Gladden is the Telehealth Program Manager of the William S. Middleton VA Hospital, and previously served as the Supervisor of the Audiology and Speech Pathology Department. Chad completed his undergraduate degree in communication disorders from the University of North Dakota, his master's degree in audiology from the University of Wisconsin-Madison, and his doctorate in audiology from the University of Florida. Prior to joining the Madison VA staff, Chad worked in VA Maryland Health Care System for three years, where he served as the cochlear implant lead audiologist and advanced access team leader. Chad is currently the clinical champion for the VISN12 teleaudiology initiative and serves at the national co-chair of the Audiology and Speech Pathology Telehealth Task Force. Chad is a member of the Master Preceptor Program of the Rocky Mountain Telehealth Training Center. He has presented nationally on various aspects of telehealth and its applications to clinical practice. He has a strong commitment to advancing telehealth and preparing staff for involvement in this important service to Veterans.

Title: DALC Horizons

Presenters: Kim Whorton – DALC Director, Kevin Quitmeyer – ROES Program Manager, Kip Sheppard – DALC Supervisory Contract Specialist

Abstract:

VA Audiology is the pace-setter in hearing care, and the Denver Acquisition & Logistics Center (DALC) is in stride with the Audiology Program. Whether in the form of acquisition for products and services, delivery of automation and information management tools, customer care for VA clinicians and Veteran patients, or advocacy for Program objectives, the DALC is a proud partner of the Audiology community. This session will highlight the latest DALC developments and new

capabilities to be introduced. It will also examine related opportunities and challenges in the offering as VA continues at the forefront of hearing care delivery. Attendees will see how the DALC responds to enhance their clinical environments, and will leave with their imaginations sparked with new ideas and possibilities for their clinical practice and the Audiology Program!

Learner Outcomes:

Attendees will be able to:

1. Describe operational improvements at the DALC designed to enhance the organization's support of the VA Audiology Program and other customer programs
2. Describe at least one significant Audiology innovation or process improvement supported by the DALC and/or the ROES application
3. Implement the proper procedures for addressing and referring non-contracted vendor sales efforts to field audiologists
4. Describe the contract administrative process for incorporating replacement item models and emerging technology into current contract vehicles

Bio Sketches:

Kevin Quitmeyer holds the position of ROES Program Director for the VA Office of Enterprise Development (OED), and is the senior IT official for the VA Office of Acquisition & Logistics' Denver Acquisition & Logistics Center (DALC) in Lakewood, Colorado. Under his oversight, the DALC IT team supports the mission and business operations of the DALC. DALC support also extends to VHA clinical programs in the form of data management and process automation, such as through the Remote Order Entry System (ROES), the DALC audiometric module, and interfaces with Prosthetic and Sensory Aids Service (PSAS) systems. Mr. Quitmeyer graduated from the University of Nebraska-Lincoln with a Bachelor of Science degree in Education. He also holds a Master's Certificate in Project Management from George Washington University, and received VA Project Management Certification in 2006. He has participated in and successfully completed Executive Education and Management Development programs at the Harvard Kennedy School of Government and the OPM Management Development Centers. He is also a frequent presenter at conferences and meetings within the information technology, acquisition & logistics, and audiology disciplines.

Kimberly A. Whorton is the Director of the Department of Veterans Affairs, Office of Acquisition and Logistics', Denver Acquisition & Logistics Center (DALC). Ms. Whorton also served as the Chief Operating Officer for the DALC and Chief, Information Resources Management Division (IRMD). Previous VA assignments include Assistant Chief, IRMD, VAMC, Oklahoma City, Oklahoma, and Assistant Chief, IRMD, VAMC, Denver, Colorado. The DALC provides logistical management for the VA's hearing aid program. It is the contracting, order, and distribution point for hearing aids, cochlear implants, assistive devices, hearing aid accessories, and batteries. The DALC is the centralized hearing aid repair facility within the VA, allowing veterans to receive hearing aid repairs by sending their aids directly to the DALC. The DALC also manages prosthetic socks, aids for the visually impaired, and orthopedic items for the VA. Ms. Whorton was the driving force in the initial development of the DALC's Remote Order/Entry System (ROES). ROES was developed at the DALC to provide VA medical facility staff in Audiology and Speech Pathology Service, Prosthetic and Sensory Aids Service, and other Government agencies with the ability to electronically order products and services from the Center. A career VA employee, Ms. Whorton has completed more than 29 years of federal service. Twenty-one of those years have been with the DALC.

Kip Sheppard holds the position of Supervisory Contract Specialist at the DALC. His team of contracting officers and contracting specialists procure all the medical supplies and equipment offered at the DALC. This includes the digital hearing aids, cochlear implants, and all the batteries required for these items. Mr. Sheppard is new to the Department of Veterans Affairs but is a veteran of the United States Army and has over 20 years of experience in government acquisition with the General Services Administration.

MONDAY MARCH 19, 2012 – AIR FORCE Breakout Day

Title: ADP & AF Development Teams

Presenter: JEFFREY L. WISNESKI, Major, USAF, BSC, Au.D Chief, Force Development

Abstract:

As the Chief of Force Development at AFPC I will be discussing two aspects of my job: ADP and Development Team meetings. Both of these are critical to the career field and how we posture individuals for the future. The ADP portion will focus on what it does, how it's completed, and when to do it. The Development Team portion will address the function of it, when you meet them, and products they produce.

Learning Objectives:

1. Understand the IDE/SDE process and how ADP's and DT play a role in that.
2. Understand ADP's, how to complete, and when they are necessary.
3. AFPC/Force Development general discussion and our role.

Bio Sketch: Major Jeffrey L. Wisneski is currently the Chief, Force Development, Assignment Support Division, Air Force Personnel Center. He leads a section that is charged with coordinating Squadron Officer School billets AF wide, developing and troubleshooting the Airmen Development Plan, and providing Development Team tool support for 117 annual meetings for over 1,000 senior leaders. (Full bio is attached)

Title: Shortcomings of Military Hearing Conservation Programs: an Aircraft Maintainer's Viewpoint

Presenter: Daniel Williams, Capt, USAF

Abstract:

Noise induced hearing loss and tinnitus are two leading disabilities for service members while on active duty and after concluding their active duty service, despite the significant efforts and resources invested in hearing conservation programs (HCP) and hearing protection devices (HPDs). This presentation will relate the personal experiences and viewpoint of an Air Force audiologist and former aircraft maintainer with over 10 years of experience in two separate branches of the armed forces. The speaker will discuss the shortcoming of HCPs and HPDs based on his personal experiences from a line maintainer's perspective followed by gap analysis and recommendations.

Learning Objectives:

1. At a minimum, verbalize two key differences of hearing conservation programs among the branches of the armed forces.
2. List two shortcomings of current HPDs and hearing conservation programs.
3. Identify three ways to improve hearing conservation in the Air Force.

Bio Sketch:

Capt Daniel Williams is an Au.D student at East Tennessee State University and is currently completing his 4th year externship at Wilford Hall Ambulatory Surgical Center, Lackland AFB, TX. He completed his B.S. in communication disorders at Missouri State University in Springfield, MO in 2007. He began his military career in August of 2000 by enlisting in the U.S. Navy as an Avionics Technician and has also served in the Air Force Reserves and the Tennessee Air National Guard in the same capacity. Capt Williams has deployed to Al Udeid AB Qatar, Bagram

AB Afghanistan, and the Northern Arabian Gulf in support of OEF/OIF. He is married to Sara Williams of Liberty, MO. They have one son, Alex, age 1.

Title: Prospective recommendations for assessment and management for TBI in theater and higher levels of care.

Presenter: Alex H. Gubler, Capt, USAF, BSC, Au.D.

Abstract:

The purpose of this presentation is to present prospective recommendations and to initiate discussion regarding assessment and management of individuals who suffer TBIs as it concerns for audiology, while deployed, at the various levels of care. As part of the presentation current practices will be reviewed and recommendations for what could or should be done will be addressed. The presentation will also address current scientific literature regarding, pathophysiology, symptoms, and assessment tools for TBI in regards to audiology.

Learning Objectives:

1. Participants will be updated on current literature regarding pathophysiology and symptoms for individuals with traumatic brain injuries.
2. Current audiological assessment tools and treatment practices for patients with traumatic brain injuries will be addressed.
3. Prospective recommendations for audiological assessment and treatment for patients, with TBI, while deployed and at the various levels of care will be presented to participants for discussion.

Bio Sketch: I recently finished my clinical rotation at Wilford Hall Ambulatory Surgical Center where I am serving at my first assignment at Lackland AFB. I graduated with my Bachelor in Communication Science Disorders from Brigham Young University in Provo, UT and my Au.D. from the University of Utah.

Title: Future Applications for Audiologists Using Smart Computer Technology

Presenter: Malisha Martukovich, Capt, USAF, BSC, Au.D.

Abstract:

This presentation aims to gear military audiologists with knowledge on applicable technologies available through smart computers. It is estimated that 38% of mobile users in the United States use smart phone technology. The patients that we see from recent wars in Iraq and Afghanistan use this technology and there are apps available to help them with hearing loss, tinnitus, PTSD and memory loss. In 2010, the VA estimates there are 22.7 million veterans 17 years and older. Of that number, the VA reports that over 1 million Iraq and Afghanistan war veterans have discharged from the military and are eligible for VA healthcare/benefits. Audiologists also need to be aware of these technologies so we can differentiate our services from others professions such as audio-visual engineers and electrical/computer engineers. Finally, examples are given on how these technologies were used to improve patient care.

Learning Objectives:

1. Describe types of smart computers and how patients can use them to help with hearing loss, tinnitus, dizziness, TBI, PTSD.
2. Describe positive and negative Audiology examples of Apps available for smart computers.
3. Describe how audiologists can incorporate these technologies in the clinical setting.

Bio Sketch:

Captain Malisha Martukovich is a staff audiologist assigned to 374th Aerospace Medicine Squadron, 374th Medical Group, Yokota Air Base, Japan. Captain Martukovich received a Bachelor of Arts in Speech and Hearing Science from The Ohio State University in 2003. In 2005, she completed a Master of Arts in Audiology from The Ohio State University. Next she received a

direct commission into the United States Air Force (USAF) Biomedical Sciences Corp (BSC) in June 2005 to complete an Audiology Fellowship year at Wilford Hall Medical Center, Lackland AFB, Texas. Upon completion of her fellowship, she remained at Lackland AFB as a staff audiologist until September 2009. Since arriving at Yokota in September 2009, she served as a staff audiologist as well as Group Executive officer. In 2010, she completed the Doctor of Audiology degree from A.T. Still University, Arizona School of Health Sciences and attended Squadron Officer School in Maxwell AFB, Alabama.

Title: CPT Coding & Maximizing RVUs

Presenters: Maj Catherine Wynn & Capt Jolene Mancini

Abstract:

As clinics and hospitals have moved into the electronic medical record era, it has forced clinicians to take on a new responsibility: coding. Every year the AMA brings new changes which require constant vigilance. Current procedural terminology (CPT) codes seem to change annually, which can lead to over-and under-coding. This presentation is designed to review new changes in the 2011 CPT codes for audiology, and will also highlight the use of modifier codes to increase RVUs. At the end of this presentation individuals should have a better understanding of how to efficiently and accurately code for audiologic services using the 2011 codes. (If available prior to the presentation 2012 codes will be addressed.)

Learning Objectives:

1. List changes to Audiologic CPT codes put into effect in 2012.
2. List the highest valued RVU procedure codes for a comprehensive audiologic exam.
3. List the highest valued RVU procedure codes for a hearing aid exam and for hearing aid dispensing.
4. List the proper documentation required for CPT and RVU codes used during exams.
5. List the modifier code used to document review of audiologic exams performed by another provider.

Bio Sketches:

Maj. Wynn: Catherine Wynn is an active duty AF audiologist. After graduating from LSU Health Sciences Center, she accepted a direct commission into the AF. In addition to working as a clinical audiologist at Lackland AFB and currently at Eglin AFB, she was the Course Director for Hearing Conservation Courses at the USAF School of Aerospace Medicine at Brooks AFB, Texas. In 2010, Major Wynn obtained her Au.D. from the University of Florida.

Capt Mancini: Jolene Mancini is an active duty AF audiologist. After graduating from the University of Maryland, College Park, she earned her Au.D. from Gallaudet University in Washington, D.C. She spent over 10 years as an enlisted member of the Air Force on active duty and in the Air National Guard while pursuing her education. In 2008 she accepted a direct commission into the AF. After working as a clinical audiologist at Lackland AFB, she is currently stationed at Joint Base Andrews in the National Capitol Region.

Title: Research Audiology at AFRL

Presenter: April J. Taylor, Maj, USAF, BSC, Au.D.

Abstract:

Audiologists assigned to the Air Force Research Laboratory have the unique opportunity to participate in various research projects and programs. This research assignment at Wright-Patterson AFB is very different from any other position available for Air Force Audiologists. Currently, several projects and studies are being conducted in hopes to contribute new findings and improved technologies in areas of tactical communication and speech recognition, noise

measurements, and hearing protection for Battlefield Airmen. Current interests and studies performed in this unique environment will be discussed.

Learning Objectives:

1. List some of the challenges that AFRL's research addresses
2. Identify some current research opportunities in Audiology at AFRL
3. Recognize some of the primary objectives of the BATMAN program

Bio Sketch:

Capt April Taylor is currently stationed at Wright-Patterson AFB and serves as Deputy Chief, Battlespace Acoustics Branch. She obtained her Au.D. from the University of Cincinnati and has served on Active Duty in the Air Force for 7 years.

Title: Effective Performance Evaluations Part I & II

Presenters: Quintin Hecht, Capt, USAF, BSC, AuD., Staff Audiologist
Brandon M. Tourtillott, Maj, USAF, BSC, Ph.D., SQ Sect CC

Abstract:

This presentation will be a two-part presentation which will focus on the importance of OPRs, EPRs and PRFs. Field-grade promotions and leadership positions within the BSC are highly competitive. Accurate and well-written evaluations are paramount to a successful military career. Likewise, inaccurate and poorly written evaluations can lead to less than fruitful careers. During this session effective performance evaluations will be explained and example evaluations will be reviewed. Evaluations are a moving target, the latest trends and recommendations for bullet-writing will be discussed as well as preferred formatting, and recommendations.

Learning Objectives:

1. Participants will learn history and trends regarding performance evaluations and how they affect evaluation writing
2. Participants will understand the impact of these evaluations on their careers and the careers of personnel they are evaluating
3. Participants will be able to differentiate effective vs. ineffective evaluation writing and identify ways to improve their own evaluation writing skills

Bio Sketches:

Capt Quintin A. Hecht is a Staff Audiologist at Wilford Hall Ambulatory Surgical Center, Lackland AFB, TX. Capt Hecht received his commission in February 2010 and earned his Au.D. from Illinois State University.

Maj Brandon Tourtillott is currently serving as the Uniform Services University of the Health Sciences (USUHS) Air Force Medical Student Squadron Section Commander/Assistant Commandant in Bethesda, MD. He completed a Master of Science degree in Audiology at Missouri State University in 2002 and accepted a direct commission into the Biomedical Sciences Corps (BSC) in United States Air Force. Maj Tourtillott completed an Air Force Institute of Technology (AFIT) sponsored Ph.D. in Audiology from the University of Kansas in 2009. His research interests include auditory and vestibular electro-physiologic measures and their relationship to cognitive and vestibular function.

Title: The Case for the Words-In-Noise (WIN) Test in an Air Force Audiology Clinic.

Presenters: Daniel Williams, Capt, USAF & Ben Sierra, Au.D, GS-13, DAF

Abstract:

One of the most common complaints of active duty and retired beneficiaries with hearing loss is difficulty understanding speech in the presence of competing noise. There are many tests

available to evaluate a patient's ability to understand speech in noise but few have the attributes most valued by clinician, quick administration, ease of use and meaningful results. A test that may have these valuable attributes is the Words-In-Noise or WIN Test. This test uses the right level of difficulty by using NU 6 word lists presented in babble at seven SNRs ranging from 24 to 0 dB in 4-dB decrements resulting in good specificity; it is easy to score and interpret; and its quick administration time makes it an ideal tool for a busy clinic. This presentation will describe the WIN Test in detail; discuss its clinical advantages and feasibility for adoption as a routine test in Air Force audiology clinics.

Learning Objectives:

1. Verbalize the 3 main reasons for using speech in noise tests in the clinical practice.
2. List and discuss the 3 criteria for selection of a Speech In noise test for clinical applications.
3. List the pros and cons of using the Words in Noise Test in a clinical practice.

Bio Sketches:

Capt Daniel Williams is an Au.D student at East Tennessee State University and is currently completing his 4th year externship at Wilford Hall Ambulatory Surgical Center, Lackland AFB, TX. He completed his B.S. in communication disorders at Missouri State University in Springfield, MO in 2007. He began his military career in August of 2000 by enlisting in the U.S. Navy as an Avionics Technician and has also served in the Air Force Reserves and the Tennessee Air National Guard in the same capacity. Capt Williams has deployed to Al Udeid AB Qatar, Bagram AB Afghanistan, and the Northern Arabian Gulf in support of OEF/OIF. He is married to Sara Williams of Liberty, MO. They have one son, Alex, age 1.

Dr. Sierra, had a long and distinguished military career that started in 1969 when he enlisted in the Puerto Rico, US Army National Guard. He completed a Master of Science in Audiology at the School of Medicine, University of Puerto Rico in 1974. He joined the United States Air Force (USAF) Biomedical Sciences Corps (BSC) in 1975. His Air Force career encompassed a wide range of medical assignments, including clinic, hospital, medical center Audiology Clinics, the Armstrong Laboratory and Headquarters Air Staff. He served as Audiology consultant in two major commands, as well as Consultant to the Air Force Surgeon General in Audiology and Speech Pathology. In 1994, he received the Military Audiology Association, Elizabeth Guild Award for outstanding contributions to military hearing conservation. Dr. Sierra served as the Chief of Technology Transfer, Armstrong Laboratory, Brooks AFB, Texas, from 1994 to 1995. Subsequently he was selected by the Air Force Surgeon General to serve as Deputy Director, Biomedical Sciences Corps, HQ USAF/SG, Bolling Air Force Base, D.C. where he was responsible for policy and programming oversight of over 2600 Biomedical Sciences Corps personnel. Dr. Sierra holds the distinction of being the first Air Force Audiologist promoted to the rank of Colonel. He concluded his military service as Director of the Audiology and Speech Pathology Clinic, 59 MDW, Lackland AFB where he retired 1 July 2005.

MONDAY MARCH 19, 2012 - ARMY Breakout Day

Title: Mentoring the Technician from a Technicians perspective

Presenters: Mr. James Hite, Mr. Alando Lawrence

Abstract:

The perceived face of the Army Hearing Program (AHP) is the Hearing Technician. It is imperative for Hearing Technicians to represent the AHP as motivated subject matter experts. An AHP Hearing Technician who is improperly mentored is unable to support AHP Managers with – early detection, NIHL prevention and hearing conservation intervention including appropriate patient education. From the authors perspective there are three keys to successful Mentorship: Communication, Education, and Availability. These create an environment where both audiologist and technician perceived expectations are supported; where motivation, accountability, and performance to standard are the rule not the exception. Properly trained Hearing Technicians will

successfully be able to perform the four components of the (AHP): readiness, clinical services, operational hearing services, and hearing conservation. This allows the first face of the Army Hearing Program (AHP) to be a motivated, knowledgeable proponent.

Learner Outcomes:

1. Attendees will be able to list the advantages of establishing personalized mentoring tools for communication between AHPMs and Hearing Technicians.
2. Attendees will be able to describe the importance of continued education for their Hearing Technicians, beyond the DOEHRS-HC certification.
3. Attendees will be able to identify two reasons that support the provider being available to Hearing Technicians, in order to facilitate quality care in the absence of the AHPM.

Bio Sketches:

Mr. James Hite, I have been with the USAPHC-AHP as a lead Hearing Technician since May 2011. I was the Hearing Technician for the Audiology Department at KACC FT Meade MD from 2008-2011, from 1998-2007 I served proudly in the U.S. Army as a 68W (Combat Medic) and have been DOEHRS-HC certified since 2003.

Mr. Alando Lawrence, one of 2 Lead Hearing Technicians with the Army Hearing Program. I am a DOEHRS-HC/CAOHC Certified Hearing Technician since 2008. I am also a Desert Storm Veteran, Combat Medic of 8 years.

Title: In-Flight Speech Intelligibility Evaluation in Service Member with Peripheral Hearing Loss: Case Report

Presenter: LTC Kristen L. Casto

Abstract:

Determination of auditory fitness for duty in the military is often made based on pure tone audiometric thresholds and arbitrary speech intelligibility testing; however, the pure tone audiogram is not predictive of functional hearing ability. This case involves a service member who was referred to the U.S. Army Aeromedical Research Laboratory (USAARL) for an in-flight speech intelligibility evaluation to assist in the determination of his flight safety. In-flight testing was requested due to pure tone audiometric hearing thresholds that exceeded the standards required for continued flight status. An in-flight speech evaluation was conducted in USAARL's JUH-60 aircraft encompassing a variety of flight conditions, ranging from a hover to flight at maximum speed with high noise and vibration. Recorded and live voice speech materials were presented to the service member through the internal communication system (ICS), and speech intelligibility testing was conducted in four conditions: 1) communications earplugs (CEP) on with the aircraft doors closed, 2) CEPs off with the aircraft doors closed, 3) CEPs on with aircraft doors open, and 4) CEPs off with aircraft doors open. In general, this service member's ability to hear and understand phrases and sentences in flight was acceptable, using the generally accepted pass point of 84% for speech intelligibility testing for flight status. When trying to understand single syllable words, however, his performance was below standard, particularly when the words were pre-recorded. These findings are not surprising because of the advantage of using contextual cues in phrases and sentences to aid in speech understanding. Under most test conditions, his performance was improved when using CEP, although his understanding of pre-recorded single syllable words remained below 84%. This case report describes the in-flight speech intelligibility evaluation of an aircraft crewmember with pure tone audiometric thresholds that exceeds the U.S. Army's flight standards. Results of in-flight testing highlight the inability to predict functional auditory abilities from pure tone audiometry and underscore the importance of conducting functional hearing evaluations to determine fitness-for-duty

Learner Outcomes:

- 1) The participant will be able to describe the steps involved in the current aviation auditory fitness-for-duty determination.
- 2) The participant will be able to list the criteria for continued flight status based on current Army Aeromedical policy.
- 3) The participant will be able to identify the conditions under which the service member in the case report was evaluated.

Bio Sketch:

Lieutenant Colonel Kristen Casto is the Chief, Acoustics Branch at the U.S. Army Aeromedical Research Laboratory at Fort Rucker, Alabama. She received a Ph.D. in Human Factors Engineering from Virginia Tech in 2009. Her research interests include the communication challenges of the hearing impaired Soldier, auditory fitness-for-duty assessment, and Army aviation communications.

LTC Casto is certified by the American Speech-Language-Hearing Association (ASHA) and is a Fellow of the American Academy of Audiology (AAA). She is a member of the Human Factors and Ergonomics Society and the Military Audiology Association. Lieutenant Colonel Casto has served as Hearing Conservation Program Manager and Director of Audiology at a variety of military installations; Ft. Riley, Kansas (1st Armor Division), Ft. Rucker, Alabama, (U.S. Army Aeromedical Center and U.S. Army flight training center), Ft. Campbell, Kentucky (101st Airborne (Air Assault) Division), and Schofield Barracks, Hawaii (25th Infantry Division (Light)) and Tripler Army Medical Center in Honolulu, Hawaii.

Title: Working to Get the Right Information into the Right Hands

Presenter: MAJ Dan Ohama, Au.D., US Army

Abstract:

Brigade commanders and senior leaders have wanted to know the answers to two questions when addressing training-related hearing injuries among their Soldiers: 1) What actions have been taken at the Garrison/Installation level so that we attack this issue from every angle?, and 2) How can we develop a plan of action so that we can get the right information into the right hands? This presentation will cover methods used to help commanders and other key leaders understand the actions being taken at the Garrison/Installation level toward preventing hearing injuries among Soldiers and noise-exposed civilian employees.

Installation-level Hearing Program Managers are responsible for evaluating the program and identifying areas where efforts must be focused in order to support all commanders within the area of responsibility. Program reports must also be provided for commanders and key leaders. Over the past two years, commanders, unit surgeons, command staffs, safety officers, and other leaders in Hawaii have assisted in developing a method for providing hearing program compliance and quality assurance measures. These measures have been very useful when providing a quick evaluation and overview of the program for leaders at all levels, to include any visiting VIPs. To date, this method has made it much easier to get the right information into the right hands. The hearing program staff is able to view charts and gain a clear understanding of what needs to be done to improve support for commanders. The information has provided commanders with a clearer picture of what is being done at the installation to prevent hearing injuries. The end result has been that commanders report it is easy for them to provide the command emphasis when they understand their compliance status and the level of program support in place at the Garrison/Installation level.

Learning objectives:

1. Generate ideas and plans for evaluating a hearing program.
2. Identify areas of a hearing program where efforts should be focused.
3. Develop a method for providing a program status/progress report for commanders and visiting VIPs.

Bio Sketch

MAJ Dan Ohama has worked as a licensed audiologist since 1996 and has been an active-duty Army audiologist since 2002. He has complete assignments as an installation-level Hearing Program Manager in Korea and at Fort Lewis, Washington. He completed one overseas deployment to Iraq where he served as the Theater Audiology Consultant and provided audiology services at a combat support hospital in Baghdad. He is currently assigned to Tripler Army Medical Center in Hawaii as the Chief of Audiology at Schofield Barracks and Hearing Program Manager for installations in Hawaii. He also serves as the Regional Audiology Consultant for the Pacific Regional Medical Command.

Title: Army Audiology Consultant's Report

Presenter: COL Vickie Tuten

Abstract:

Presentation will include, but will not be limited to, the following topics: (1) current audiology practices for medical profiling and hearing fitness for duty evaluations, along with some recent changes and anticipated changes in policy driving best practices; (2) new tinnitus screening protocol that will be initiated across Department of Defense in Audiology; (3) tinnitus management therapies being proposed by DoD as best practices; (4) strategic initiatives which will impact on clinical care and audiology preventive services; (5) appropriate coding and Manpower Expense Reporting System (MEPRS) changes impacting medical care at the local medical facilities; and (6) highlights in some internal communication tools that have been developed to assist with networking the audiology community. Time will also be allowed for questions and discussion about current problems experienced in delivery of audiology services across the Army.

Learner Outcomes:

1. Will understand the reason for interim changes and know the interim hearing profile changes guiding fitness for duty evaluations.
2. Will understand the new tinnitus screening protocol being implemented across the Department of Defense.
3. Will understand the strategic objectives for the Army Audiology Balanced Score Card.
4. Will understand the new organizational structure for Army Audiology and the role of the Regional Audiology Consultants

Bio Sketch:

COL Vickie Tuten was appointed as the Army Audiology Consultant to the Surgeon General in July 2010. Concurrently she is also serving as an Audiology Staff Officer at the Proponency Office for Preventive Medicine at the Office of the Surgeon General and in the position since December 2008. She obtained her Master's degree in Audiology at the University of North Carolina in 1984 and finished her AuD at Central Michigan University in December 2003. During her military career, which spans over 20 years, she has served both as an enlisted Soldier, and a Commissioned Officer in both the Active Duty and Reserve Component. COL Tuten has been awarded the A Proficiency Designator for Audiology. She is a recipient of the Order of Military Medical Merit. She also received the Founders Award from the Military Audiology Association in 2010. COL Tuten is married to her husband of 26 years, has 4 children, and 6 grandchildren. Her plans are to retire to New Braunfels, TX in several years.

MONDAY MARCH 19, 2012 - NAVY Breakout Day

Title: Productivity Lost to Follow Up Testing

Presenter: LCDR Paula Johnston

Abstract:

Every year the Navy and Marine Corps lose manpower hours to follow up audiogram testing for both active duty and civilians. While the annual audiogram is a requirement of the Hearing Conservation Program, follow up testing can be equated to one hour of lost productivity. This presentation will provide data for lost man hours and quantify lost productivity in meaningful terms for aviation, fleet, and Marine communities. The purpose of this presentation is to demonstrate to these communities the amount of productivity lost due to a + STS requiring follow up testing, with the goal of increasing hearing conservation compliance at the deckplate, and thus reduce man hours lost to follow up testing.

Learner Outcomes:

- 1) Explain data and trends associated with follow up testing that contribute to loss of productivity in the Navy and Marine Corps.
- 2) Demonstrate to our "customers", ie the line community, how enforcement of hearing conservation and protection can reduce lost productivity.
- 3) Discuss strategies to increase hearing conservation compliance that can be presented to the line community.

Bio Sketch:

LCDR Johnston is currently the hearing conservation program manager in the San Diego region. Her previous duty stations were also San Diego, Sigonella, Camp Pendleton, and Okinawa.

Title: Navy Regional Hearing Conservation Program Update

Presenters:

Dr. Kelly Paul, Regional Hearing Conservation Program Mgr, Navy Medicine West
Dr. Lynn Cook, Regional Hearing Conservation Program Mgr, National Capital Area
CDR Kelly Williams, Regional Hearing Conservation Program Mgr, Navy Medicine East

Abstract:

Responsibility for medical aspects of the Navy & Marine Corps Hearing Conservation Program falls under the Bureau of Medicine and Surgery, an Echelon 2 command, which is further divided into Echelon 3 regions: Navy Medicine East, Navy Medicine West and National Capitol Area. Each of these regions has a Regional Hearing Conservation Program Manager (HCPM) who oversees, inspects and supports Navy Occupational Audiology and Hearing Conservation Program policies, practices and services within these regions. These Regional Program Managers will present a state-of-the-regions address to the Navy Audiology community.

Methodology: Based on findings from Safety and Occupational Health Management Evaluations (SOHME) conducted during fiscal year 2011, Regional HCPMs will provide a summary of issues, concerns and challenges that were discovered in the areas of Occupational Audiology and Hearing Conservation Program Management. Thoughts, ideas and proposed resolutions to these issues will be presented and discussed in group format. In instances where policy or protocol does not currently exist, Regional HCPMs will take issues forward to BUMED for action. Feedback will be sought from the community on new ideas to prevent or mitigate noise-induced hearing loss, and to understand roadblocks toward accomplishing this mission. Hot topics and current issues will also be discussed, to include:

- An upcoming policy change to incorporate 100% of all USMC into the HCP
- Appropriate use of the Medical Matrix to satisfy occupational medicine requirements while minimizing unnecessary workload on the provider
- Hearing conservation coding issues

- Enforcement of 50% of Occupational Audiologist time spent in outreach and prevention efforts and the new paradigm shift that results (more training, HPD fittings, worksite visits and less clinic)
- Status of new Hearing Conservation Course materials
- Contribution to and use of the Hearing Conservation Toolbox as a shared resource
- Staffing issues or concerns
- Update on new DOEHRS software
- Suggestions for special projects or resources

Results: This group presentation on the state of the occupational audiology community and regional issues will serve to update all Audiologists and HCPMs within the regions on current issues and provide necessary communication and feedback toward resolving roadblocks and longstanding challenges to the mitigation of noise induced hearing loss in the Navy and Marine Corps.

Learner Outcomes: After the presentation, participants should be able to:

- 1 Name at least 3 current issues and their status within Navy Medicine.
2. Identify two weaknesses in their HCPs and methods for improvement.
3. List 2 tangible initiatives/methods for attaining better success.

Bio Sketches:

Dr. Kelly Paul is a civil service Occupational Audiologist with the US Navy. She received her Bachelor's and Master's degrees in Audiology at East Carolina University, and her Doctorate degree from Central Michigan University. She served 20 years in the military (Army & Navy) as an Audiologist and has worked extensively in Hearing Conservation and Occupational Audiology. She is currently employed as the Regional Hearing Conservation Program Manager at Navy Medicine West in San Diego, CA.

Dr. Lynn Cook is an occupational audiologist with the Department of the Navy. She received her B.S. in Audiology and Speech Pathology at the University of Virginia in 1977, followed by M.Ed. in Audiology at UVa in 1979. She completed her AuD at Salus University in 2002. After 7 years as an educational audiologist at the Virginia School for the Deaf and the Blind, she began her Navy career in 1987 as the first audiologist/Hearing Conservation Program manager at Naval Hospital Bethesda, simultaneously serving as Regional Audiologist for National Capital Region. She served in that capacity for 25 years, and is currently employed as the Navy's Regional Audiologist, Navy Medicine, National Capital Area.

Title: Navy Auditory Fitness for Duty (AFFD)

Presenter:

CDR Antony Joseph, Au.D., Ph.D.
Operational Audiologist
Navy Environmental Preventive Medicine Unit Five

Co-authors:

Lynn Cook, Au.D.
Regional Audiologist
Navy Medicine National Capital Area

LCDR Jamie Daut, Au.D.
Department Head, Occupational Audiologist Naval Hospital Okinawa JA

Abstract:

The Navy AFFD Committee was charged in 2010 with the objective of developing Fitness for Duty standards and protocols for the functional hearing assessment of Navy and Marine Corps service members. In 2010, the Committee presented an overview of the work that had been

completed at that time, which included a review of assessment tools and literature, epidemiologic data, a survey of Navy Audiologists, safety mishap versus audiogram data, and a discussion of the AFFD trigger mechanism.

Select Navy sites have compiled clinical AFFD data, including QuickSIN, Words in Noise (WIN) test, Northwestern University monosyllabic words (NU-6), and other clinical observations that will be presented. Using the resultant clinical data, the Committee has formulated an AFFD protocol with parameters and requisite instrumentation. Job analysis categories, operational risk assessment protocols, and localization measures will be introduced.

Learner Outcomes:

1. The participant will be able to identify patients requiring referral for AFFD testing.
2. The participant will understand the fundamental requirements for a Navy AFFD Evaluation.
3. The participant will be familiar with methods of interpreting and dispositioning AFFD test results.

Biosketch for presenter:

CDR Joseph received his Doctor of Audiology (AuD) degree in 2001 from Central Michigan University, the very first military audiologist to complete such a program. He reported to Michigan State University in 2001 for a DUINS tour, and completed a Doctor of Philosophy (PhD) degree in Experimental Audiology and Epidemiology, becoming one of only three audiologists in the entire United States with double-doctorate clinical-science credentials in audiology. He then transferred to Naval Hospital Okinawa, Japan where he held several positions, including Director of Public Health Services and Command Research Coordinator. Dr. Joseph then served as Director of Public Health at Naval Hospital Jacksonville and Officer-in-Charge, Branch Health Clinic, Naval Air Station, Jacksonville, Florida. While there, he deployed as Officer-in-Charge, Troop Medical Clinic, Camp Buehring, supporting Operation Iraqi Freedom for the Expeditionary Medical Facility Kuwait. He also served as occupational audiologist for six Branch Health Clinics across Florida, Georgia, and Joint Task Force Guantanamo Bay, Cuba. His current assignment is Audiologist for Navy Environmental and Preventive Medicine Unit FIVE, San Diego, where he serves as operational-hearing consultant for units within the Western Hemisphere. Joseph's personal awards include: Meritorious Service Medal; Navy Commendation Medal(3); Army Commendation Medal; Navy Achievement Medal and Air Force Achievement Medal.

POSTER SESSION –ALL (VA, AIR FORCE, ARMY, NAVY)

Title: Electric-Acoustic stimulation: Effectiveness and safety using the MED-EL Duet EAS Hearing System

Presenter: Michelle Montes, AuD

CoAuthors: Michael Ruckenstein, MD, Douglas Bigelow, MD, Stacy Lunetta AuD

Abstract:

The benefits of electric acoustic stimulation (EAS) in individuals with precipitous sensorineural hearing loss have been documented in the literature. Benefits include improved speech perception, improved sound quality, and preserved low-frequency hearing. The MED-EL Duet hearing system provides electrical stimulation of the auditory nerve via the SONATA FLEX cochlear implant and acoustic stimulation via the Duet behind-the-ear speech processor, which houses both the electrical and hearing aid components. The purpose of the study is to determine the effectiveness and safety of combined stimulation. The preliminary review is part of a multi-center on-going clinical trial. Four participants with precipitously sloping sensorineural hearing loss were evaluated pre-operatively and at pre-determined post-operative intervals to assess changes in hearing sensitivity and speech perception.

Summary: Although a small number of participants are included in this analysis, trends in performance are observed across the three conditions tested. CI alone and EAS performance is

appreciably better than HA alone. Performance was not observed to improve after 3 months post EAS. Given these preliminary observations, review of the larger data set across clinical trial centers will be necessary to determine the effectiveness of EAS over CI alone.

Learning Objectives:

1. The participant will be able to identify potential EAS candidates based on the type and audiometric configuration of hearing loss.
2. The participant will be able to list three benefits of electric acoustic stimulation
3. The participant will be able to summarize the performance trends in the conditions studied (ie. combined electric acoustic stimulation, electric stimulation alone, and acoustic stimulation alone).

Bio Sketch:

Michelle Montes has been practicing clinical audiology at the University of Pennsylvania Health System since 1989. Her clinical focus is on cochlear implants and vestibular diagnostics in the adult population. She received her Bachelor's of Science and Master's of Science from Purdue University. She received her Doctor of Audiology from PCO School of Audiology.

Title: HPD use among OEF/OIF casualties

Presenter: Kenneth Grant, PhD, LTC Eric Fallon, Laura Stephenson, BA

Abstract:

There is interest in reviewing the use of HPDs (hearing protection devices) in Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) casualties. The use of HPDs in noise are a preventative measure against permanent hearing loss from noise exposure. Hearing acuity is vital to the soldier in combat. If a soldier is no longer able to meet hearing standards for performance he may be removed from noisy work environments or removed from service. Currently, the Audiology Clinic at Walter Reed National Military Medical Center Bethesda (WRNMMCB) administers an audiologic evaluation for service members. The standard of care currently includes case history, otoscopy, tympanometry, acoustic reflex screening, pure tone thresholds 250-6000 Hz via insert earphones and bone conduction thresholds (as necessary). Standard case history includes: pre-deployment HPD issued, HPD use at time of injury, cause of injury: blast, gunshot wound, or motor vehicle accident, and subjective complaints regarding hearing. A Quality Improvement evaluation was completed at WRNMMC regarding medical reporting of patient encounters. Currently multiple providers obtain audiologic evaluations and case histories on service members. To ensure consistency among provider reporting, a review of patient medical records was conducted. There is a lack of data regarding use of HPDs in theater. This review is beneficial to our Audiology colleagues at other Military Treatment Facilities to bring awareness to the actual use of HPDs in theater and the relationship between HPD usage (or lack thereof) and subsequent hearing injury.

Learning Objectives:

1. The participant will be able to quantify HPD use among OEF/OIF casualties
2. The participant will be able to better understand the relation between use of HPD and degree of hearing loss
3. The participant will be able to assess the efficacy of HPD use in the prevention or reduction of hearing loss as part of the DoD Hearing Conservation Program

Bio Sketches:

Kenneth Grant Ph.D., Chief Scientific and Clinical Studies, WRNMMC

LTC Eric Fallon, Director, Audiology and Speech Center WRNMMC

Laura Stephenson is a Navy Audiology extern at the newly integrated Walter Reed National Military Medical Center in Bethesda, MD. She is under the supervision of Dr. Robin Pinto.

Preceptors that were critical to the completion and success of this project include Ken W. Grant

Ph.D., Chief, Scientific and Clinical Studies, WRNMMC and LTC Eric Fallon Au.D., Director, Audiology and Speech Center WRNMMC.

Title: ReSound Tinnitus Sound Generator (TSG): An Innovative TSG Device to Assist in Tinnitus Management

Presenter: Michael Piskosz, MS, GN ReSound Global Audiology,

CoAuthor: Snehal Kulkarni, AuD, GN ReSound Global Audiology

Abstract:

Tinnitus is a concern for many people, and affects approximately 10-15% of the overall population, with approximately 3-5% of the population suffering from clinically treatable tinnitus (McFadden, 1982). As hearing loss is increasingly identified and diagnosed, this trend is most likely to continue and grow (Vernon, 1998). Many tinnitus sufferers, and clinicians, have struggled finding flexible tinnitus-related devices that are suitable components of a tinnitus management and counseling support program, in addition to treating hearing loss. ReSound TSG is an advanced combination hearing instrument and Tinnitus Sound Generator (TSG) device that provides fitting flexibility for clinicians, and an innovative TSG solution for users.

Learning objectives:

1. The participant will be able to define common tinnitus terms.
2. The participant will be able to identify the benefits of sound therapy.
3. The participant will be able to list and explain the features of AleraTS, including wireless streaming, and will be able to demonstrate these features can be clinically applied.

Bio Sketch

Michael Piskosz started with GN ReSound as an Audiologist Regional Manager in New Zealand, and has been with the organization over 5 years. His clinical experience includes the University of Miami, in Miami, FL, as well as a private ENT practice in Hollywood, FL. He earned his M.S. from Syracuse University and is board certified in Audiology. Currently, Michael serves on the Global Audiology team for GN ReSound and his primary responsibilities include the development of training and marketing materials based on research and development activities, and training of ReSound personnel and hearing care professionals. He also has developed a focus on tinnitus and helping deliver innovative tinnitus solutions from Resound

Title: DOEHS DR Audiometric Summary

Presenters: Merry Brantley, AuD, Rob Pluta MEd

Abstract:

Compensation for service connected disability for hearing loss and/or tinnitus in FY 2010 was awarded to 1,525,066 individuals¹. This number accounts for 12.1% of the total number of disabilities awarded. The VA has the task of reviewing the audiometric history of members applying for compensation. Acquiring the audiometric history for individual service members is a challenging task. This project stems from the need to share information collected during a member's military career and stored in the DOEHS Data Repository (DOEHS DR) with the VA when a member files a claim for hearing loss. A database query was developed to gather audiometric and identifying information. A simple parameter is input by a VA user and the query will pull the stored audiometric information from the Data Repository. The display provides the VA with a summary of the audiometric information, the serial audiograms, which can then be viewed. This will assist the VA with acquiring the audiometric information needed and making a decision regarding hearing loss compensation faster than can be done by reviewing archived paper audiograms.

Learning Objectives:

1. The participant will be able to query DOEHRS DR for audiometric summary information.
2. The participant will be able to identify threshold shifts in the audiometric summary.
3. The participant will be able to identify the occupations of the member while on active duty.

Bio Sketches:

Merry Brantley is an Occupational Audiologist at the Naval Branch Health Clinic located in the Portsmouth Naval Shipyard in Portsmouth, New Hampshire. She has been working as an occupational audiologist since 2006. Her background has been divided between clinical audiology, and research. Clinically she has worked in medical settings. Her research interests were concerned with psychoacoustics and hearing aid development.

Robert Pluta has been a practicing audiologist for the past 18 years. His assignments with the US Air Force include Lackland AFB (Wilford Hall Medical Center), MacDill AFB, FL, Offutt AFB, NE, Brooks City-Base, TX, and Tinker AFB, OK. During 2003-2006 his duties included meetings with the DoD Hearing Conservation Working Group and regular interaction with DOEHRS (Defense Occupational and Environmental Health Readiness System) software and database developers. Since 2009 he has been practicing audiology with the Department of Veterans Affairs, Corpus Christi, TX.

TUESDAY – MARCH 20, 2012

Title: Today's hearing aid features: Just fluff or really true patient benefit?

H. Gustav Mueller, Ph.D.
Professor, Vanderbilt University

Todd A. Ricketts, Ph.D.
Associate Professor, Vanderbilt University

Abstract: So many hearing aids, so many features. What's the best "bang for the buck" and what is really best for the patient? What can be supported by evidence? In this session we'll address three questions: Is there research to support patient benefit for each feature? Does the benefit vary among manufacturers? What patients would be expected to benefit? We'll review the latest research related to noise reduction, frequency lowering, feedback reduction, trainable, wireless, high frequency amplification, and maybe even a little on cognitive issues. It's going to be fun!

Learner Outcomes: As a result of this activity, participants will be able to:

- Identify the methods used to make evidence based decisions regarding hearing aid features.
- Describe the *intended* patient benefit for six different modern hearing aid features.
- List the true patient benefit for six different hearing aid features, and identify which patients would most probably benefit.

Bio Sketches: "LTC (Ret) H. Gustav Mueller is Professor of Audiology, Vanderbilt University, and has a private consulting practice nestled on an island west of Bismarck, N.D. He also holds faculty positions with the University of Northern Colorado and Rush University. He is the Senior Audiology consultant for Siemens Hearing Instruments and Contributing Editor for *AudiologyOnline*. Dr. Mueller is a Founder of the American Academy of Audiology and a Fellow of

the Military Audiology Association and the American Speech-Language-Hearing Association. He is an internationally known workshop lecturer, serves on the editorial board of several journals, and has published extensively in the areas of diagnostic audiology and hearing aid applications. He has authored several books including *Communication Disorders in Aging*, *Probe Microphone Measurements*, *The Audiologists' Desk Reference, Volumes I and II.*, and *Fitting and Dispensing Hearing Aids.* LTC Mueller's most notable publication is in *Military Officer* (Sept, 2010) where he describes his experiences conducting PGSR testing with Vietnam-era military draftees.

Todd A. Ricketts, Ph.D, is an associate professor at the Vanderbilt University Medical Center; the Director of AuD Education at the Vanderbilt Bill Wilkerson Center; and, the Director of the Dan Maddox Hearing Aid Research Laboratory. Todd has published more than sixty scholarly articles and book chapters and provided over 200 presentations nationally and internationally. He continues to pursue a federally and industry funded program studying various aspects of hearing, hearing aids and cochlear implants. He was named a Fellow of ASHA in 2006 and received the Editors award from the American Journal of Audiology at the 2008 AHSA convention. He also is the current chair of the Vanderbilt University Institutional Review Board: Behavioral Sciences Committee.

Title: VA/DOD Panel: Utilizing support personnel to delivery audiology services

Presenters: Maj Jennifer Tay, MAJ McIlwain,

Abstract

Noise-induced hearing loss has been documented as early as the 16th century when a French surgeon, Ambroise Pare´, wrote of the treatment of injuries sustained by firearms and described acoustic trauma in great detail. Even so, the protection of hearing would not be addressed for three more centuries, when the jet engine was invented and resulted in a long overdue whirlwind of policy development addressing the prevention of hearing loss as well as the use of audiologists and audiology assistants in a combat theater. With the change of our nation's posture from peace to a time of war, the need of training for these professionals changed as well. Form our experiences in Iraq, it has been determined that audiologists and audiology assistants are best utilized in a combat support hospital's head and neck surgical team when deployed. This is the busiest specialty team in the combat support hospital due to the nature of the injuries sustained due to modern insurgent warfare techniques. These types of specialty teams did not previously exist in combat support hospitals, but has been added to the way the Army goes to combat due to its high value to the Warfighters. Stateside, Army audiologists and audiology assistants are highly utilized in pre and post deployment processing, treatment of wounded warriors, research, education and training, and hearing conservation. One of the major changes in the education and training of the Army audiology assistants over the past ten years is that they now have a larger focus on head and neck surgical techniques due to their utilization in the combat support hospital and the nature of today's combat injuries. This lecture presents a synopsis of the development and utilization of uniformed audiologists and audiology assistants in the US Army and describes the current Army Hearing Program, which relies heavily on audiology assistants to ensure its success.

Learner Outcomes

As a result of this activity, participants will be able to:

1. list four roles that an Army audiology assistant will be utilized.
2. identify the type of Army unit an Army audiologist and audiology assistant will be assigned to in combat.
3. list the number of phase I and phase II hours of education and training an Army combat medic must successfully complete to become an audiology assistant.

Bio Sketches:

Maj Jennifer Tay was commissioned a 2nd Lieutenant in the U.S. Air Force in 1999 upon completion of her Master's degree in Communication Disorders (M.C.D.) at Louisiana State University Medical Center. She reported to Wilford Hall Medical Center, Lackland AFB, Texas in June 2001 and served as Staff Audiologist; Chief, AF Cochlear Implant Program; and Chief, Audiology Services. From 2004-2007, she was Chief, Pediatric Audiology Services at RAF Lakenheath, United Kingdom. In 2007 she separated from the Air Force and began working at the San Antonio Frank Tejeda VA Audiology Clinic as a Contract Audiologist performing Audiology Compensation and Pension evaluations. In June 2009, she re-entered active duty as Chief, Audiology Services/ Hearing Conservation Diagnostic Center at MacDill AFB, Florida. Maj Tay was awarded her Clinical Doctorate (Au.D.) from the University of Florida in August 2010. She is currently the Flight Commander, Flight Medicine Clinic at MacDill AFB, FL and oversees 20 personnel providing medical care to pilots and aircrew.

MAJ McIlwain was first commissioned a 2nd Lieutenant in the US Army Reserve in 1998. After completing his graduate education and clinical fellowship year, he worked in private practice until a competitive position for active duty as an audiologist in the US Army became open. After being selected, he entered active duty in March 2001 and was first stationed in Heidelberg Germany as a Hearing Conservation Program Manager. Shortly after arriving at that duty station, the nation was at war and he was privileged to serve our nation's finest men and women in Iraq as well as peace keeping operations in Kosovo and Bosnia. His next assignment took him to the US Army Aeromedical Research Laboratory, Department of Acoustics at Fort Rucker, AL where he focused his research efforts on the hazardous effects of noise on the vestibular system and 3 dimensional audio in radio communications. He next served with the 10th Combat Support Hospital at Baghdad ER where he became a jack of all trades in the ambiguous environment of combat. From Baghdad, he was chosen for the honor of serving at the US Army Academy of Health Sciences where he still teaches young officers epidemiology, statistics, and outbreak investigation in the Texas A&M Graduate School of Rural Public Health. He eventually progressed to the roles of Otolaryngology Technologist Program Director and Physician Extenders Branch Chief. He currently serves at the Medical Education and Training Campus as a Joint Program Director and Army Audiology Historian.

Title: Clinical practice approach for BPPV

Presenter: Faith Akin, PhD

Abstract:

Benign Paroxysmal Positioning Vertigo (BPPV) is the most common cause of dizziness related to vestibular dysfunction, and the use of canalith repositioning therapy (CRT) is the standard of care for treatment of BPPV. Although CRT is quick, safe, and effective, many patients with BPPV do not have access to treatment. For the past 12 years, Veterans have been diagnosed and treated for BPPV in the Vestibular/Balance Clinic of the Audiology Service at the Mountain Home VAMC. The clinic protocol has included a 2-week follow-up visit to determine the effectiveness of the CRT. In addition, BPPV patients with recurrences were often overbooked to be re-tested and treated as soon as possible. Approximately 2 years ago, the Audiology Service established a BPPV clinic designated for the diagnosis, treatment, and/or follow-up of BPPV. Veterans who have been referred to the vestibular clinic for motion-provoked dizziness are often triaged into the BPPV clinic. The purpose of this session is to familiarize the audience with the diagnosis and treatment for BPPV, present several BPPV case studies, and summarize recommended clinical practice guidelines for managing BPPV. In addition, results will be presented from a chart review that was performed to determine the characteristics of Veterans diagnosed with BPPV and the effectiveness of the Mountain Home clinical practice approach for BPPV.

Learner Outcomes:

- 1) The participant will be able to interpret BPPV test findings.
- 2) The participant will be able to list recommended clinical practice guidelines for managing patients with BPPV.
- 3) The participant will be able to describe the characteristics of Veterans diagnosed with BPPV.

Bio Sketch

Faith W. Akin, Ph.D. is the director of the Vestibular/Balance Laboratory at the Mountain Home VA Medical Center and an Associate Professor in the Department of Audiology and Speech Pathology at East Tennessee State University. Her research in the area of vestibular assessment is funded by the Rehabilitation Research and Development Service of the Veterans Health Administration.

Title: Tri-Service Hearing Readiness Panel

Presenters: CDR Joel Bealer, LTC Eric Fallon

Abstract

Military audiologists are working in a Tri-Service environment, where policy and regulations need to be shared among the services. This panel consists of subject matter experts from the Air Force, Army, and Navy who will update the audience on readiness, fitness for duty, and hearing conservation issues. Regulatory updates will be shared if needed. After service updates, the audience will be invited to ask questions. The intent of this panel is to open a forum of discussion and facilitate connectivity among audiologists navigating the Tri-Service environment.

Bio Sketches

CDR Joel Bealer has been an Occupational Audiologist with the US Navy for 15 years. He is currently serving as the Navy Audiology Specialty Leader, member of the DOD Hearing Conservation Working Group and an advisor to the DOD Hearing Center of Excellence. Duty assignments include Naval Hospital Bremerton, Naval Hospital Portsmouth, Naval Hospital Naples Italy, and the Army Hearing Program in Aberdeen Proving Grounds.

LTC Eric Fallon currently serves as the Director, Audiology and Speech Center at Walter Reed National Military Medical Center. LTC Fallon has enjoyed a wide variety of assignments over his career to include the Army Research Lab, in which he was deployed to Afghanistan to field a counter IED measure, The Public Health Command in which he deployed as an audiologist with the 31st Combat Support Hospital as well as to Joint Task Force Katrina where he served as the JTF Preventive Medicine Officer, and the 714th Preventive Medicine Detachment, where he served as commander and was deployed during the initial stages of Operation Iraqi Freedom.

Title: The neurobiological basis of tinnitus

Presenter: James A. Kaltenbach, PhD

Abstract:

This presentation will examine current theories concerning the neurobiological basis of tinnitus. The presentation will begin with a review of the main causes and characteristics of tinnitus in human subjects and an overview of currently available treatments. This will lead into an examination of current theories concerning the neural underpinnings of tinnitus. The focus will be on localization of the neural generators and the cellular defects and abnormal patterns of activity leading to tinnitus. Emphasis will be placed on the concept of neural plasticity as a key element in

the induction of tinnitus. The presentation will end with a perspective of the impact that knowledge of tinnitus mechanisms is having on the therapeutic treatment of tinnitus.

Learner Outcomes:

Individuals who attend this presentation will:

- a) Participants will be brought up to date on contemporary concepts of tinnitus
- b) Participants will be able to identify and list the sites in the auditory system where tinnitus related changes occur and what mechanisms are involved.
- c) Participants will be able to describe how treatments for tinnitus are being reshaped by knowledge of underlying mechanisms

Bio Sketch

James A. Kaltenbach, Ph.D., is the director of otology research in the Head and Neck Institute and in the Department of Neurosciences at the Cleveland Clinic.

Title: Thinking about Ethics

Presenter: Stephen Gonzenbach, EdD

Abstract:

This talk is designed to define ethics, describe the basis of ethical precepts, and provide an understanding of true interests and both universal and professional truths. The goal of this presentation is to increase attendee's knowledge and understanding of the essential role of ethics in Audiology. Specifically, how ethical decisions are involved in Audiology and how to address ethical situations will be discussed.

Learner Outcomes:

- 1. The participant will be able to list the three functions of integrated ethics
- 2. The participant will be able to identify areas of ethical concern in Audiology
- 3. The participant will be able to describe how to use an ethical approach in various situations

Bio Sketch:

Dr. Steve Gonzenbach is the Chief, Audiology & Speech Pathology Service at VA New York Harbor Healthcare System. He has been with VA for 28+ years holding many professional positions and completing multiple collateral assignments. He has written on leadership, report writing and productivity measures among other topics. He has served the National Audiology & Speech Pathology Program in such areas as data capture and management and is currently a member of the Field Advisory Council. He has served as mentor in the ASPS mentoring program, has been a member of the Ethical Practices Committee of the American Academy of Audiology and is an Adjunct Professor at St. Johns University Au.D. Program. He continues to serve AVAA in an advisory capacity.

Title: Speech Perception Enhancement with Auditory-visual Stimuli

Presenter: Julie Ganio, BS

Abstract: The purpose of this study was to build on previous research in the area of auditory speech recognition in noise assessment to determine the clinical utility of currently available auditory-visual materials (i.e., City University of New York (CUNY) everyday sentences, Boothroyd et al, 1988) for the assessment of auditory and auditory-visual speech recognition in noise performance of veterans with hearing loss. By assessing the performance of a listener in an auditory and an auditory-visual test protocol, the ability of the listener to utilize visual cues to enhance their speech recognition could be measured. Individuals who are making optimal use of

visual information in addition to auditory cues but continue to have difficulty communicating in adverse situations may benefit from an assistive listening device, such as an FM system. Other individuals who demonstrate little benefit from the addition of visual cues may be candidates for auditory-visual training. Currently auditory-visual training programs are being developed (Levitt, 2006; Boothroyd, 2006). Prior to determining the efficacy of these training programs for veterans, a valid and reliable method for measuring auditory-visual performance is required. Data for listeners with and without hearing loss for both the auditory and auditory-visual version of the CUNY sentences will be presented. In addition, suggestions for utilization of this new test to guide rehabilitation approaches will be discussed.

Learner outcomes

1. As a result of this activity, participants will be able to list the benefits of using visual cues for speech understanding in difficult listening situations and the importance of developing a clinical tool for measuring enhanced perception with visual cues.
2. As a result of this activity, participants will be able to explain the influence of aging on the utilization of speech cues.
3. As a result of this activity, participants will be able to list clinical applications of the diagnostic tool to aid in treatment planning.

Biosketch:

Julie Ganio is a fourth year AuD and a second year PhD student at the University of South Florida. She is currently a pre-doctoral fellow completing her fourth year externship at Bay Pines VA Healthcare system. During her fellowship, she has had the opportunity to work on a variety of research studies with Dr. Rachel McArdle and will share current research from the auditory lab at Bay Pines. Her areas of interest include the effects of aging and cognitive impairment on speech perception in noise and language processing.

Title: Validation of a telephone-administered screening test for hearing

Presenter: Victoria Williams, AuD,

Abstract: During the past eight years, telephone screening tests for hearing impairment have been developed and implemented in seven countries outside the US. Each of these tests has been based on a method originally developed in the Netherlands by Smits and colleagues at the VU Medical University, Amsterdam. The tests employ spoken three-digit sequences presented in a noise background. The speech-to-noise ratios of the stimuli are determined by an adaptive tracking method that converges on the level required to achieve fifty percent correct recognition. The stimuli for these tests are, of course, presented in the language or dialect appropriate to each country, and efforts have generally been made to ensure that the recorded sequences are equally identifiable. A US version of this test has been developed in a collaborative effort between CDT, Inc., Indiana University, and VU University, Amsterdam. The objective of this study was to validate the accuracy and feasibility in addition to the sensitivity and specificity of the English telephone hearing screening test for national use in the US and, specifically, in the VA. In addition, the relationship between the telephone screening task and data from other standard of care tests (i.e., audiometric thresholds, speech recognition tests, immittance values) was examined.

Learner Outcomes:

As a result of this activity, participants will be able to:

- (1) Identify the need for the development of a telephone hearing screening protocol especially for implementation within the VA system.
- (2) Describe the relationships between the telephone hearing screening results and the standard audiologic measures obtained across multiple VA and non-VA clinics.

- (3) Explain the accuracy and feasibility in addition to the sensitivity and specificity of the telephone hearing screening test for national use in the US and, specifically, in the VA.

Biosketch

Victoria Williams is a research audiologist at the Bay Pines VA Healthcare System. She received her BA in Interdisciplinary Sciences in 2007 at The University of California, Santa Barbara. With 3-years of VA funding as a pre-doctoral fellow she obtained her Doctor of Audiology degree from the University of South Florida in 2011. Currently, Victoria is a Ph.D. student in the Department of Communication Sciences and Disorders at the University of South Florida with an anticipated graduation year of Spring 2013. Her areas of interest include auditory cognitive neuroscience, speech perception, and audiologic rehabilitation.

Title: Divided Attention, Perception and Auditory Recall

Presenter: COL Lynnette B. Bardolf, Ph.D.

Abstract

This research evaluated the effects of divided attention on speech perception and auditory recall. Military and non-military adults subjects, aged 18-50, with hearing thresholds no worse than those categorized as the US Army's Hearing 1 profile standards participated. Participants studied selected words and sentences prior to testing to accomplish implicit and explicit priming. Hearing-In-Noise Test (HINT) sentences were presented with and without uncorrelated combat noise in the sound field to assess speech perception. Participants were required to repeat HINT sentences in each of four conditions: 1) in quiet, 2) in the presence of combat noise, 3) in quiet with additional task, and 4) in combat noise with additional task. Participants answered questions to assess recall of the HINT sentence material. Results showed no group differences in HINT items in the four conditions. Significant differences were found in HINT item identification scores between the quiet and noise conditions, and among priming conditions. Auditory recall performance was significantly altered by noise, task and priming conditions, with significant interactions noted between each pairing of conditions. The mean reaction times for the military group were generally longer than the non-military group. Age effects and reaction times for self-rated skill will also be discussed.

Learning Objectives:

1. The participant will become familiar with the terminology and tests used in this research (ie. HINT, divided attention, auditory recall, implicit and explicit priming, etc.).
2. The participant will be able to recognize the conditions used to test the subjects in this research and how each condition may affect the ability to understand and recall information.
3. The participant will be able to understand how age effects and reaction times may impact overall performance.

Bio Sketch

COL Lynnette Bardolf has spent over 21 years in the active duty Army mostly as a clinical and hearing conservation Army audiologist, with some experience as an audiology researcher. She is currently assigned to the Lyster Army Health Clinic in Ft. Rucker, Alabama. She has been married for over 20 years to a fellow Army Officer and Medevac Pilot; They have 3 daughters.

Title: Overview of Tinnitus Retraining Therapy Trial (TRRT): A Military Treatment Study

Presenter: Craig Formby, PhD, Roberta Scherer, PhD

Abstract:

Over the past twenty years, Tinnitus Retraining Therapy (TRT) has been promoted globally for the treatment of debilitating tinnitus. However, in the absence of randomized controlled studies, TRT remains unproven and controversial. The Tinnitus Retraining Therapy Trial (TRTT) is an

NIH-sponsored, multi-center, randomized controlled trial designed to investigate the efficacy of TRT and its component parts, directive counseling (DC) and sound therapy (ST). The TRTT is enrolling individuals with subjective debilitating tinnitus to one of 3 treatment groups: (1) DC and ST achieved with conventional sound generators (SG); (2) DC and placebo SG; or (3) Standard of Care (SC), a consensus treatment approach developed from surveys of the participating military medical centers. Study candidates are active and retired military personnel and dependents, who are eligible for care at one of six flagship US military medical centers: Wilford Hall Ambulatory Surgical Center, Lackland AFB, Tx; David Grant Medical Center, Travis AFB, Ca; Walter Reed National Military Medical Center, Bethesda, Md; Naval Medical Center Portsmouth, Va; Naval Medical Center, San Diego, Ca; Naval Hospital Camp Pendleton, Ca. Our plan is to enroll 228 participants (76 per treatment group). The primary aim of the study is to evaluate the efficacy of TRT (DC and conventional SG) compared with SC. Secondary aims are to evaluate the efficacies of the component parts of TRT by comparing DC + placebo SG with SC, and conventional with placebo SGs in study participants assigned to DC. The primary outcome is change in Tinnitus Questionnaire (TQ) score assessed longitudinally at follow-up, taking place at 3, 6, 12, and 18 months following the initial treatment session. Secondary outcomes include change in TQ sub-scores, in Tinnitus Handicap Inventory and Tinnitus Functional Index scores, and in the visual analogue scale of the TRT Interview. Other secondary outcomes include audiometric measures, psychoacoustic measures, and change in quality of life. We hypothesize that (1) full TRT will be more efficacious than SC, (2) DC + placebo SG will be more efficacious than SC, and (3) conventional SG will be more efficacious than placebo SG, in habituating the tinnitus awareness, annoyance, and impact on the study participant's life. [The TRTT is sponsored by the National Institute on Deafness and Other Communication Disorders through awards U01DC007422 and U01DC007411.]

Learner Outcomes:

As a result of this activity, participants will be able to:

1. Document the limited evidence of treatment efficacy for tinnitus;
2. List reasons why there is need for a definitive clinical trial of Tinnitus Retraining Therapy (TRT);
3. Define the inclusion criteria in order to refer prospective participants to the military clinical centers that are participating in an NIH-sponsored multi-center randomized, placebo-controlled clinical trial of TRT.

Bio Sketch:

In 2007, Dr. Craig Formby joined The University of Alabama faculty as a Distinguished Graduate Research Professor with appointments in the Colleges of Arts & Sciences, Medicine, and Engineering. In addition, Dr. Formby directs the campus-wide Office for Research Faculty Development; holds an affiliate appointment in otolaryngology at the University of Alabama Birmingham (UAB); and is a rehabilitation research investigator at the Tuscaloosa VAMC. Dr. Formby served on the University of Florida faculty from 1983-1990, where he was recipient of an NIH career development award. His current research, funded by an NIH Phase-3 clinical-trial award, is assessing the efficacy of Tinnitus Retraining Therapy at flagship military hospitals across the U.S. From 1990-2006, Dr. Formby directed clinical services and training programs at the JHU School of Medicine and the University of Maryland School of Medicine (UMSOM), including co-direction of a joint graduate training program with the University Maryland, College Park. From 2004-2007, Dr. Formby served in a dual capacity as an assistant dean for research in the UMSOM and as an assistant dean in the Graduate School at the University of Maryland Baltimore. Over the past 25 years, Dr. Formby's research in the areas of hearing impairment and balance disorders has been supported by more than \$7 million from the NIH, the NSF, and the DOD, and has resulted in more than 70 peer-reviewed reports. He is a past editor for the *Journal of Speech, Language, and Hearing Research*, and is a fellow of the Acoustical Society of America.

Roberta W. Scherer, PhD is an Associate Scientist at the Johns Hopkins Bloomberg School of Public Health. She is the Director of the Coordinating Centers for the Tinnitus Retraining Therapy Trial and the Apathy in Alzheimers Dementia Methyphenidate Trial. She has been involved in the

design and conduct of several other multi- and single-centered randomized controlled trials in vision, women's health, and complementary and alternative medicine and taught courses on the design and conduct of randomized controlled trials. Dr. Scherer also serves as the Associate Director of the US Cochrane Center, and the US Satellite of the Cochrane Eyes and Vision Group. She has completed systematic reviews of treatments, etiology, methodology, and diagnostic accuracy on topics related to eye disease, kidney disease, and cancer. She also produced the first Cochrane methodology systematic review, examining publication bias in the subsequent full length publication of conference proceeding abstracts. Dr. Scherer's research interests include clinical trial design and conduct, biases associated with publication of randomized controlled trials, registration of trials at inception, and representation of trial participants by age, sex, and race.

Title: Evaluation of a New Treatment for Tinnitus

Presenter: LTC Kristen L. Casto

CoAuthors: Melinda Hill, Amy Nedostup

Abstract:

The most current data indicates that tinnitus and hearing impairment are the Number 1 and 2 disabilities associated with service in Operations Iraqi Freedom and Enduring Freedom (OIF/OEF). Both injuries can result from exposure to blast or impulse noise from friendly- or opposing-forces weapon systems. Thus, tinnitus caused by acute acoustic trauma and traumatic brain injury (TBI) is an obstacle to be overcome in return to duty decisions and represents a serious hazard to the retention of a healthy and fit force. This study was a between-subjects design in which the experimental group was treated with the Neuromonics *Oasis™* tinnitus treatment device and Neuromonics' counseling protocol ($n = 30$ active duty personnel). The control group was treated with an iPod Touch with downloaded tinnitus applications and followed the Tinnitus Retraining Therapy Protocol (TRT) ($n = 10$ active duty personnel). Dependent variables for both groups were the Tinnitus Reaction Questionnaire (TRQ), the Tinnitus Handicap Inventory (THI), measures of tinnitus awareness and tinnitus disturbance, broad band minimum masking levels (BBMML), and loudness discomfort levels (LDLs). Preliminary analysis of tinnitus measures indicates that the Neuromonics' tinnitus treatment strategies were effective, showing a statistically significant reduction in the negative effects of tinnitus (i.e., reduction in TRQ, tinnitus awareness, and tinnitus disturbance between pre- and post-treatment measures). Similar results were seen with the iPod group, with statistically significant differences in pre- and post-treatment measures of TRQ and tinnitus awareness. Analysis of BBMMLs and LDLs did not indicate differences between pre- and post-treatment for either group, suggesting no change in either the amount of masking needed to blend with the participants' tinnitus or the participants' tolerance for loud sounds. Both the Neuromonics tinnitus treatment and the iPod downloaded applications in conjunction with the TRT appear effective for the alleviation of debilitating tinnitus that adversely affects military operational performance and for reducing associated subjective negative effects of tinnitus on the quality of life. However, these data should be interpreted cautiously due to the small sample size and unequal groups. Furthermore, care should be taken not to draw a premature conclusion as to the permanency of the treatment effect at this time (especially with the iPod group). Future research is warranted with larger, equal sample sizes, coupled with objective pre- and post-treatment imaging studies to identify and evaluate measures of neuroplasticity.

Learner Outcomes:

As a result of this activity, participants will be able to:

- 1) Explain the difference of the two stages of treatment in the Neuromonics tinnitus treatment protocol.
- 2) Identify the counseling protocol used with iPod sound therapy tinnitus treatment.

3) List the chronology of appointments for the Neuromonics and iPod sound therapy tinnitus treatments.

Bio Sketch

Lieutenant Colonel Kristen Casto is the Chief, Acoustics Branch at the U.S. Army Aeromedical Research Laboratory at Fort Rucker, Alabama. She received a Ph.D. in Human Factors Engineering from Virginia Tech in 2009. Her research interests include the communication challenges of the hearing impaired Soldier, auditory fitness-for-duty assessment, and Army aviation communications.

LTC Casto is certified by the American Speech-Language-Hearing Association (ASHA) and is a Fellow of the American Academy of Audiology (AAA). She is a member of the Human Factors and Ergonomics Society and the Military Audiology Association. Lieutenant Colonel Casto has served as Hearing Conservation Program Manager and Director of Audiology at a variety of military installations; Ft. Riley, Kansas (1st Armor Division), Ft. Rucker, Alabama, (U.S. Army Aeromedical Center and U.S. Army flight training center), Ft. Campbell, Kentucky (101st Airborne (Air Assault) Division), and Schofield Barracks, Hawaii (25th Infantry Division (Light)) and Tripler Army Medical Center in Honolulu, Hawaii.

Title: Using performance improvement tools to streamline Audiology C&P

Presenter: Susan R. Lloyd, AuD, Danny Fesler, AuD

Abstract:

With shorter deadlines and increasing caseloads, audiologists look to other fields for tools to solve the problem at hand. Baseline data was collected in a pilot program December 2010, with full implementation January to July 2011. Data included dates for each step in the claim process: origination, appointment, c-file arrival, report submitted, and report signed. Exams were scheduled throughout the week on the schedules of two staff audiologists and two in-house fee-basis audiologists. Two staff audiologists were assigned full-time C&P responsibility and one sound suite and one office were allocated for exclusive C&P use. The Audiology C&P process was MAPped, combining flowchart, timeline, and stakeholder features to identify redundant, inefficient, and smooth flow segments. A GEMBA Walk was conducted to identify waste in the local processes. Routing forms were redesigned to track individual paperwork and tracking spreadsheet was updated daily. Performance (productivity) Improvement tools facilitated new ways of looking at the problem and highlighted solutions; even those components originally thought to be beyond Audiology control were impacted by actions within the department. Total time from origination of the claim at VARO to signature in CAPRI was reduced from 28 to 14 days. Time from appointment to signature in CAPRI was reduced from 9 days to 3 days. Goal of 95% complete-in-under 25 days was met, while goal of 95% appointment-to-signature interval is declining steadily. Join us at JDVAC to see if this blistering pace can be maintained and learn about the newest goals set for this project.

Learner Outcomes:

1. The participant will be able to apply performance improvement principles to local clinic practices.
2. The participant will be able to leverage PI changes within audiology practices to overcome or minimize external constraints.
3. The participant will be able to utilize PI methods to reduce inefficiency.

Bio Sketch:

Dr. Susan Lloyd, CCC-A, FAAA, ABA, began her audiology career at the Gainesville, Florida, VA. After five years in a private ENT practice, she moved to Las Vegas and has worked in private practice, hospital, dispensing, and university practices as well as over six years at Nellis Air Force Base as a contractor. She has served on the Nevada hearing aid and SLP/A licensure boards

and the ASHA CCSR, and taught in the speech pathology program at Nevada State College for eight years. Her current focus at the Las Vegas VA is C&P and preparation for the new VA hospital north of town.

Danny Fesler, Au.D., CCC-A, FAAA, is a staff audiologist at the Department of Veterans Affairs in Las Vegas, NV, practicing diagnostic and forensic audiology. Dr. Fesler holds a B.S. from Purdue University, an M.S. from the University of Southern Mississippi, and an Au.D. from A.T. Still University. From 2006-2009, Dr. Fesler served as an adjunct instructor at Nevada State College teaching undergraduate audiology to the speech pathology program students. From 2010-2012, he served as the audiologist for ASHA's *Listen To Your Buds* campaign at the International Consumer Electronics Show. At the 2011 CES convention, he was a guest panelist for Mommy Tech as CTO Summit and radio guest on Dave Graveline's *Into Tomorrow*. In 2011, he was a guest speaker for the Nevada Speech-Language-Hearing Association Annual Conference discussing *Noise-Induced Hearing loss and Personal Listening Devices*.

Title: Prevalence of Noise Induced Hearing Injury (NIHI) and Comorbidities in Post-deployment Cohorts and in the General Military Population

Presenter: Thomas Helfer, PhD

Abstract:

Deployment to combat environments presents noise and blast exposures that significantly increase risk of hearing impairment and comorbidities. Training exercises between deployments also put the military at hazard for noise induced hearing injury (NIHI). Multidisciplinary public health analysis study teams at US Army Institute of Public Health have pursued two avenues of approach to NIHI surveillance: 1) postdeployment Soldier cohort surveillance and 2) general military population NIHI surveillance, all services, in collaboration with the Armed Forces Health Surveillance Center (AFHSC).

In the present studies, inpatient, outpatient, and purchased care medical records for Active Duty military were reviewed for ICD-9 diagnoses code groups suggestive of NIHI and blast trauma comorbidities. Records were extracted from the Medical Data Repository for the period April 2003 through March 2011. Deployment status was verified through review and integration of personnel records from the Defense Manpower Data Center (DMDC).

Public health analysts determined and compared prevalence rates evaluating postdeployment NIHI and comorbidities trends. NIHI prevalence trends for the general active duty military population are also presented. These report formats can be used in future years for annual and quarterly reports to monitor prevention outcomes effectiveness and to help estimate the number of veterans needing hearing and related services in future years.

Learner Outcomes- As a result of this activity, participants will be able to:

- (1) Know what disciplines should be represented on the population health analysis studies teams
- (2) State the meaning of the term "incident injury"
- (3) State what happened to TBI and STS rates in the postdeployment cohorts after 2006.

Bio sketch:

Dr. Helfer is a Hearing Conservation Consultant (Audiologist) at the US Army Public Health Command, Institute of Public Health. He has worked with Department of Defense Occupational Health Officers on hearing loss risk mitigation issues for over 40 yrs as an Army Audiologist and Dept of Army Civilian.

He received his Ph.D. at the University of Texas at Dallas; he is a licensed audiologist and a retired US Army Lieutenant Colonel. He served on the American Speech-Language and Hearing

Association's Advisory Committee on Evidence-Based Practice and is a fellow of the American Academy of Audiology and a certified course director by the Council on Accreditation of Occupational Hearing Conservationists (CAOHC).

Title: Getting to BEST: DoD Qualified Hearing Protectors, Part I

Presenter: LTC Marjorie Grantham

Abstract:

For many years, DoD audiologists have relied primarily on manufacturer and vendor data, in order to make determinations regarding the best hearing protectors to recommend. Current acquisition, technology, and logistics doctrine will be reviewed and recommendations for joint efforts toward achieving an evidence-based, medical standard for labeling hearing protectors as "DoD Qualified" will be discussed.

Learner Outcomes:

As a result of this activity, participants will be able to:

- 1) Identify the basic steps in the process for a hearing protection device to be included on the qualified product list (QPL)
- 2) Refer manufacturers and vendors to the appropriate sources to initiate this process
- 3) Discuss the difference between QPL and approved products list (APL).

Biosketch:

LTC Marjorie Grantham, Ph.D., has served as a U.S. Army audiologist for 19 years. She is currently assigned to the U.S. Army Public Health Command's Army Institute of Public Health, as the Army's Hearing Program Manager. Her research interests include moving sound localization, multimodal perception, auditory situational awareness, and auditory fitness for duty.

Title: Meeting the Audiology Service Needs of the Army National Guard in High Optempo Periods

Presenter: Richard "Allan" White, MA

Abstract:

Multiple deployments to combat environments have stretched the hearing readiness capabilities of the 360,000 Army National Guard force. That force has no authorized 72C positions. ARNG Soldiers follow the same Army Regulations and have the same hearing service needs and requirements as their active duty Compo 1 counterparts yet have limited internal assets to meet those requirements. Complicating the establishment of a best practice model is the fact that ARNG Soldiers are available only two days a month. Deployment statistics, STS rates and hearing profile statistics for the 360,000 Compo 2 Army National Guard Soldiers will be reviewed. Current audiology services, DOEHS-HC hearing technician training and issues related to over utilization of contractor services will be reported with best practice examples presented. A status report of past and present approaches for providing hearing services to a force with no allocations for 72C audiology positions will be presented. Strategies for better quality services moving forward will be discussed. Input from the 72C community will be requested during the conclusion/discussion portion of the presentation. Currently, there are some good hearing programs within the ARNG with good, cooperative support from the active duty Army 72C community. Those best practices will be recognized. Hearing readiness of the 360,000 Compo 2 Soldiers will be discussed and strategies for improving the ARNG hearing programs will be developed. The STS rate and the number of H-2 and H-3 profiles are higher for the ARNG. Best practice approaches for developing better Army Hearing Programs for the ARNG will greatly improve their hearing readiness.

Learner Outcomes:

1. Participants will be able to identify three significant differences in COMPO 1 and COMPO 2 Hearing Programs.
2. Participants will be able to discuss three strategies for improving the ARNG Hearing Program COMPO 1- COMPO 2 partnerships.
3. Participants will be able to discuss implications of over use of contractor hearing service for the ARNG.

Bio Sketch:

Richard "Allan" White currently serves as the Hearing Conservation Consultant, U.S. Army Public Health Command. He is a retired Lieutenant Colonel who served as the Deputy Commander of Clinical Services for the Kansas Area Medical Detachment, Kansas Army National Guard with one deployment to Iraq as the Brigade Medical Operations Officer. He has also held positions as a Kansas State Representative and as a staff and contract audiologist in Kansas.

POSTER SESSION

Title: Improving Efficiency of the Hearing Aid Evaluation Clinic

Presenter: Dan Bell, Au.D., Earl Johnson, Au.D, Ph.D.,

Co Authors: Jennifer Robinson, M.S., Kelly Koder-Carr, Au.D.

Abstract:

The Mountain Home, Tennessee Veterans Affairs Medical Center Audiology staff improved the efficiency of the Hearing Aid Evaluation Clinic without compromising the effectiveness of service delivery. Prior to January 2010 the Hearing Aid Clinic issued hearing aids in 60 minute appointments that included the evaluation/fitting of the hearing aids and counseling (orientation) with the audiologist. As our patient load increased from 15,117 patients/year to 17,345 patients/year, hearing aid fittings were being scheduled 12-15 weeks after the hearing evaluation. After the VA-TAMMCS (Team-Aim-Map-Measure-Change-Sustain) process, the clinic is issuing hearing aids in 30 minute time slots with the audiologist followed by a 60 minute group orientation conducted by other team members. This resulted in an additional 56 hearing aid fittings per month which decreased the wait time for hearing aids to 3 weeks after the hearing evaluation. Additionally, the gold standard of using real ear measures for verification of the accuracy of a hearing aid fitting was maintained and the actual face time with patients increased from 1 hour to 1.5 hours.

Learning Objectives:

- 1.The participant will be able to identify components of the VA-TAMMCS process of system redesign.
- 2.The participant will be able to visualize a system redesign of hearing aid fittings from only individualized orientations to also include a group orientation option.
- 3.The participant will be recognize the use of outcomes measures as a way to monitor the potential effects of a system redesign project.

Bio Sketches:

Earl E. Johnson, AuD, PhD is an Advanced Practice Audiologist at the James H. Quillen VA Medical Center in Mountain Home, Tennessee and an Assistant Professor in the Department of Audiology and Speech-Language Pathology Program at East Tennessee State University in Johnson City, Tennessee.

Dan Bell, AuD is an Advanced Practice Audiologist at the James H. Quillen VA Medical Center in Mountain Home, TN and a Clinic Supervisor for graduate students at East Tennessee State University in Johnson City, Tennessee.

Title: Audiology Access Improvement Poster

Presenter: Laura Cote, Au.D.

Abstract:

Audiology had significant backlogs in all clinics creating the need for a radical action plan to address waits. With limited space, equipment and staffing, we needed to find a way to improve our patient access without sacrificing care. Our overall goal was to reduce the number of days from consult origination until dispense of the hearing aids. To address this goal staff implemented principles from systems redesign and Lean think training. First, we broke the process down to small steps and created 2 secondary goals. One was to reduce the number of days from consult origination to exam completion and the other was to reduce the number of days from the initial exam to dispense of the hearing aids. In 2010 we used system redesign principles to reduce wait. Action items for 2010 included hiring a part time consultant to assist with hearing aid backlog, offering voluntary overtime clinics on Saturdays, overbooking dispense classes and staff ordering hearing aids during the 45 minute exam appointment whenever possible. Saturday clinics were flexible and patient care was provided based on greatest backlogs. After lean training in Mar, 2011, it was decided that a Master A3 project was required. The A3 was designed in Mar 2011 to indentify waste and improve throughput. Major points of the A3 include our Reason for action, Initial state, and Target state, Gap Analysis, Solution Approach, Rapid Experiments, Completion Plan, Confirmed State and Insights. In the Gap Analysis a fishbone diagram was created identifying every possible barrier and opportunity for improvement. We systematically worked to correct the areas identified. Some corrections included replacing old equipment, redesigning clinic flow with 5S theory, eliminating non value added waste to allow more value added time with the patient in various ways. With the expectation of increasing staff in existing space, we moved 70% of our exams back to 60 minutes eliminating a second (HAO) appointment step for many patients in Aug 2011. This required staff to flip between booth and office every 30 minutes to complete the care. While total encounters per provider were less, RVUs remained the same and patient satisfaction significantly increased due to resulting decrease in wait for hearing aid and elimination of a return visit.

Learning Objectives:

1. Identify the 9 parts of an A3
2. Understand the 9 types of waste targeted for reduction in a rapid improvement cycle event
3. Identify the use of the 5 S's and the 1x1 in sequence on demand production style for the rapid improvement cycle event.

Bio Sketch:

Dr. Laura Cote is the Audiology Supervisor at the VA Southern Nevada Health Care System in Las Vegas Nevada. She received her Au. D. from the A.T. Still University, Arizona School of Health Sciences. Dr. Cote also completed an Education with Industry fellowship in neuro-audiology at the Michigan Ear Institute while serving in the United States Air Force. She serves as a member of the ROES Task Force and as a member for the Western Region Professional Standards Board.

Title: Evaluation of "Noise Notches" from 744,553 Audiogram Pairs

Presenter: Rachel McArdle, PhD, Richard H. Wilson, PhD

Abstract:

Air-conduction audiograms with 3000-, 4000-, and/or 6000-Hz thresholds at higher hearing levels than the adjacent 2000 and 8000-Hz thresholds are referred to as notched audiograms. Since the initial observations of the notched audiograms, noise exposure has been the designated causal factor. Evidence from animal and human studies has led many investigators to question whether or not noise exposure is the sole contributing factor to the notched audiogram. Intuitively, because noise exposure typically occurs in a free or sound field, it is reasonable to expect both ears to be equally affected by noise incidences. This line of reasoning may not, in fact, be the case. Recent observations indicate that it is more common to observe unilateral high-frequency notches than bilateral high-frequency notches. The purpose of the current study was to extend the previous report on veteran audiometric data to a substantially larger sample of audiograms and to include an examination of the inter-octave frequencies that often are associated with high-frequency audiometric notches, *viz.*, 3000 and 6000 Hz. These goals were accomplished with audiometric data from 1,000,001 veterans that were archived at the Denver Acquisition and Logistics Center (DALC), which is the component of the Department of Veterans Affairs through which hearing aids and associated devices are procured and dispensed to veterans. As in the earlier paper, the audiometric notch was defined when the thresholds at 2000 Hz and 8000 Hz were both minimally at hearing levels 10-dB lower than (better than) the threshold at the notch frequency of interest (3000 Hz, 4000 Hz, or 6000 Hz). Because the issue of unilateral, bilateral notches was paramount in this study, an inclusion criterion was that each participant had to have measurable thresholds in both ears at 2000, 4000, and 8000 Hz, which were necessary to define a 4000-Hz notch. This criterion reduced the participants to 744,553, which is about 75% of the original pool. The majority of the 744,553 audiogram pairs (573,850 or 77.1%) did not have a 4000-Hz notch in the AC audiogram of either ear. Of the remaining 170,703 audiogram pairs (22.9%) with a 4000-Hz notch in at least one ear, 51,731 (6.9%) had notches in both ears, 62,088 (8.3%) had a notch only in the LE, and 56,884 (7.6%) had a notch only in the RE. Overall, there were 113,818 (15.3%) notched LE audiograms with a mean notch depth of 23.1 dB (SD = 9.5 dB) and 108,616 (14.6%) notched RE audiograms with a mean notch depth of 23.4 dB (SD = 9.5 dB). For both ears, the low-frequency side of the 4000-Hz notch was about twice as deep as the high-frequency side of the notch with a mean 30-dB difference (SDs = 16 dB) between the 4000 Hz and 2000 Hz thresholds and a 16.5-dB difference (SDs = 8 dB) between the 4000 Hz and 8000 Hz thresholds.

Learner Outcomes:

1. The participant will be able to define a noise notch
2. The participant will be able to describe the most prevalent hearing loss configurations from the VA audiometric database by age cohort
3. The participant will be able to list potential reasons to explain the noise notch configurations

Bio Sketch:

Rachel McArdle, PhD is the Chief of the Audiology and Speech Pathology Service at the Bay Pines VA Healthcare System in Bay Pines, Florida. She is currently funded by VA Rehabilitation Research and Development through a Research Career Development Award. Dr. McArdle is also an Associate Professor in the College of Health and Behavioral Sciences at the University of South Florida.

Dr. Richard H. Wilson is a VA Senior Career Research Scientist, funded by the Department of Veterans Affairs, Research Rehabilitation and Development, at the James H. Quillen VA Medical Center in Mountain Home, TN. He received his Master's degree from Vanderbilt University and his PhD from Northwestern University. Dr. Wilson is also a Professor in the Departments of Communication Disorders and Surgery at East Tennessee State University.

Title: Performance improvement tools in Audiology C&P

Presenters: Danny Fesler, Au.D.; Susan Lloyd, Au.D.;

CoAuthor: Dana Culligan Au.D.

Abstract:

With Shorter deadlines and increasing caseloads, audiologists look to other fields for tools to solve the problem at hand. The Audiology C&P process was MAPped, combining flowchart, timeline, and stakeholder features to identify redundant, inefficient, and smooth flow segments. A GEMBA Walk was conducted to identify waste in the local processes. Total time from origination of the claim at VARO to signature in CAPRI was reduced from 28 to 14 days. Time from appointment to signature was reduced from 9 to 3 days. Goal of 95% complete-in-under 25 days was met, while goal of 95% appointment-to-signature interval is declining steadily

Learning Objectives:

1. The participant will be able to apply performance improvement principles to local clinic practices.
2. The participant will be able to leverage PI changes within audiology practices to overcome or minimize external constraints.
3. The participant will be able to utilize PI methods to reduce inefficiency.

Bio Sketches

Dr. Susan Lloyd, CCC-A, FAAA, ABA, began her audiology career at the Gainesville, Florida, VA. After five years in a private ENT practice, she moved to Las Vegas and has worked in private practice, hospital, dispensing, and university practices as well as over six years at Nellis Air Force Base as a contractor. She has served on the Nevada hearing aid and SLP/A licensure boards and the ASHA CCSR, and taught in the speech pathology program at Nevada State College for eight years. Her current focus at the Las Vegas VA is C&P and preparation for the new VA hospital north of town.

Danny Fesler, Au.D., CCC-A, FAAA, is a staff audiologist at the Department of Veterans Affairs in Las Vegas, NV, practicing diagnostic and forensic audiology. Dr. Fesler holds a B.S. from Purdue University, an M.S. from the University of Southern Mississippi, and an Au.D. from A.T. Still University. From 2006-2009, Dr. Fesler served as an adjunct instructor at Nevada State College teaching undergraduate audiology to the speech pathology program students. From 2010-2012, he served as the audiologist for ASHA's Listen To Your Buds campaign at the International Consumer Electronics Show. At the 2011 CES convention, he was a guest panelist for Mommy Tech as CTO Summit and radio guest on Dave Graveline's Into Tomorrow. In 2011, he was a guest speaker for the Nevada Speech-Language-Hearing Association Annual Conference discussing Noise-Induced Hearing loss and Personal Listening Devices.

WEDNESDAY – MARCH 21, 2012

Title: Acute and long-term consequences of noise-induced hearing loss

Presenter: Sharon G. Kujawa, PhD

Abstract:

Noise-induced hearing loss is a widespread problem, and understanding the acute and long-term consequences of exposure is important to the health and safety of military personnel. The prevailing view is that a noise-induced insult has no ongoing, progressive influences on auditory function. Changes that occur at times remote from the exposure are presumed related to other causes and ears without permanent threshold shifts after noise are thought to be fully recovered from the insult. Our work in two mammalian models suggests that these views require substantial

revision. We have demonstrated that noise exposure can result in rapid loss of afferent synapses on IHCs and delayed loss of spiral ganglion cells, even when thresholds return to normal and no hair cells are lost. As noise-exposed ears age, they show greater neural losses over extended cochlear locations compared to age-matched controls. The close agreement between the acute noise-induced damage to cochlear nerve terminals and the delayed loss of the nerve cell bodies themselves suggests that the long-term fate of these neurons is sealed in the acute post-exposure period, although it may take months to years for the nerve cells to degenerate. Such observations raise important concerns about the long-term effects of apparently benign exposures and our inability to identify such underlying damage with threshold-based assessments in common use. The phenomenon of slow-onset, noise-induced, primary, cochlear-nerve loss is potentially a very common problem and a major contributor to the auditory perceptual handicaps of noise-exposed, aging individuals.

Learner Outcomes:

1. The participant will describe common structural and functional consequences of noise overexposure in the acute post-exposure period.
2. The participant will assess strengths and limitations of threshold sensitivity metrics in characterizing noise-induced functional compromise.
3. The participant will discuss noise-induced excitotoxicity as a potential contributor to neurodegeneration after noise.

Bio Sketch:

Sharon G. Kujawa, Ph.D. is an Associate Professor of Otolaryngology, Harvard Medical School and is Director of the Department of Audiology at the Massachusetts Eye and Ear Infirmary, Boston. She is on the faculty of the Harvard-MIT Program in Speech and Hearing Biosciences and Technology and is a Principal Investigator in the Eaton-Peabody Laboratory at the Massachusetts Eye and Ear Infirmary. She has served on the governing boards of the American Auditory Society and the American Academy of Audiology, and on the editorial board of the journal, *Ear and Hearing*.

Work in the Kujawa Lab focuses on understanding mechanisms by which inner ear function is compromised by noise exposure and how such noise-induced compromise alters the way ears and auditory nervous systems age. Her studies are directed toward understanding how vulnerability to noise-induced hearing loss and inner ear damage is shaped by genetic background, how it interacts with age and exposure history to influence auditory functional and neurodegenerative outcomes, and how it can be manipulated pharmacologically to reveal underlying mechanisms or for treatment or prevention. She is involved in a biomedical – engineering research partnership that seeks to develop an implantable drug delivery system suitable for chronic use in the human inner ear.

Title: Goal Setting in Audiologic Practice

Presenter: Mary Beth Jennings, PhD

Abstract:

Goal Attainment Scaling (GAS) (Kiresuk & Sherman, 1968) is a goal setting technique that provides a framework for organizing the rehabilitation process by involving all parties (client, clinician, significant others) in setting goals that address the specific activity limitations/participation restrictions. It provides a means of quantitative and qualitative documentation of intervention outcomes. *GAS* has been widely used with a variety of populations and in a wide range of medical and health care settings. This presentation describes the application of *GAS* in audiologic practice (Jennings, 2009). The application of *GAS* as a framework and a measure of change for current models of audiologic practice is discussed. The

role of goal setting within client-centered approaches to rehabilitation and within shared decision-making will be described.

Learner Outcomes

As a result of this presentation, participants will be able to:

1. Identify the purposes and outcomes of goal setting within audiologic practice.
2. Identify the steps in setting goals with clients/patients with hearing loss.
3. List the concepts that characterize client-centered approaches to rehabilitation.

Bio Sketch

Dr. Mary Beth Jennings is an Associate Professor in the School of Communication Sciences and Disorders and is the Principle Investigator of the Robert B. Johnston Aural Rehabilitation Laboratory within the National Centre for Audiology (NCA) at the University of Western Ontario in London, Ontario, Canada. Dr. Jennings' research is supported by the Canada Foundation for Innovation, the Ontario Research Fund, Canadian Institutes of Health Research, the Social Sciences and Humanities Research Council, and the Hear-the-World Foundation. Her areas of research include the assessment of group AR outcomes, the use of Goal Attainment Scaling, the impact of self-efficacy on AR outcomes, barriers and facilitators to the use of hearing assistive technologies for older adults, stigma and disclosure of hearing loss, assessing workplace accessibility for older workers with hearing loss, and the application of Universal Design Principles to hearing.

Title: Making a heart connection: Improving the patient journey

Presenter: Cathy Kooser, LSW

Abstract

Typically professionals engage their patients intellectually, by providing explanation regarding the audiogram and the use and benefits of instrumentation. While instrumentation can be extremely helpful for the majority of people with hearing loss, if emotional processing does not occur during counseling or through audiological rehabilitation, the opportunity for failure of use of instrumentation increases.

By making a heart connection with the patient and entering into their emotional journey, the professional uses a more holistic approach that improves the patient's ability to explore their feelings and the impact of hearing loss on their quality of life. Oftentimes after the emotional impact has been addressed, the patient is more motivated to use instrumentation, has a better understanding of appropriate, realistic expectations and therefore is more successful.

How does a professional engage the heart of their patients? Techniques such as establishing rapport, empathic listening of the patient's story and overcoming ambivalence through the use of motivational interviewing are critically important. This requires important intra/interpersonal relationship skills including reflective listening and knowledge and understanding regarding the difference between genders and the role and use of communication. Making a heart connection and using motivational interviewing fosters identification of the patient's readiness for change and/or facilitates their movement towards change.

This presentation focuses on the human dynamics of hearing loss and making a heart connection with your patient allowing for healing to occur. It will look at the family and the additional issues relevant when working with patients who are military personnel. With emotional and relational healing, significant improvement is made regarding successful use of hearing aids, improving quality of life for all involved.

Learner Outcomes:

1. Participants will be able to list at least 2 techniques to engage the "heart" or provide emotional processing during treatment planning
2. Participants will be able to demonstrate how to use reflective listening during patient care
3. Participants will be able to identify a patient's readiness for change as it relates to treatment for hearing loss

Biosketch

Cathy is a Licensed Independent Social Worker who has a severe sensorineural hearing loss. Using her own personal struggles as well as relevant research, she developed and teaches a counseling-based rehabilitation program entitled, The Kooser Program: The Hidden Impact of Hearing Loss. This program focuses on the psychosocial/emotional impact of hearing loss for the person with the loss as well as their loved ones and has been designed to educate both. It is currently being utilized by Vocational Rehabilitation in the states of Ohio and Michigan as part of the rehabilitation process for consumers requesting assistance related to their hearing loss. Cathy has conducted hundreds of groups with thousands of people in attendance to The Kooser Program. She has also conducted numerous nationwide professional trainings and presentations.

Title: Essentials of Progressive Tinnitus Management for Audiologists

Presenter: James Henry, PhD

Abstract: Progressive Tinnitus Management (PTM) is a comprehensive tinnitus management program that includes five levels of clinical care: (1) Triage, (2) Audiologic Evaluation, (3) Group Education, (4) Interdisciplinary Evaluation, (5) Individualized Support. Although PTM is an interdisciplinary program, audiologists are essential to conduct levels 2-5. This presentation will focus on the role of the audiologist, with a description of how other disciplines should be involved. Each level of PTM will be described, and the primary emphasis will be to provide audiologists with clinical tools that will assist them in providing clinical care to their patients who complain of tinnitus. The Sound Tolerance Evaluation and Management (STEM) protocol, which is used for treating patients for hyperacusis, also will be described.

Learner outcomes:

1. Describe the rationale and overview of the five levels of clinical care that are used with Progressive Tinnitus Management (PTM)
2. Conduct clinical services that are associated with PTM Level 2 Audiologic Evaluation
3. Identify patients who require PTM Level 3 Group Education
4. Describe the role of psychologists in providing PTM services

Biosketch

James Henry, Ph.D. is a certified audiologist with a doctorate in Behavioral Neuroscience. He works as a VA Research Career Scientist at the National Center for Rehabilitative Auditory Research (NCRAR) located at the Portland, Oregon VA Medical Center, and is a Research Professor, Dept. of Otolaryngology, Oregon Health & Science University. He has been employed at the VA for 25 years, and has conducted tinnitus research for 20 years. His research focuses on the development of standardized protocols for clinical assessment and management of tinnitus, and conducting randomized clinical trials to assess outcomes of different methods of tinnitus intervention.

Title: An Overview of Hearing Aid Outcome Measures

Presenter: Genevieve Alexander, MA

Abstract:

Over the years, numerous self-report measures of hearing aid outcomes have been reported in the literature. Each questionnaire takes a slightly different approach to evaluate the efficacy of hearing aid fittings. These questionnaire may evaluate one or a combination of several different domains of hearing aid outcomes (eg., satisfaction, benefit, use, handicap). The clinician is left with a bewildering array of options and must decide which measure is most appropriate for his or her practice. The purpose of this presentation is to provide an overview of different hearing aid self-report measures and how each might be used in a clinical setting. Data will be provided that summarizes the validity and sensitivity of each measure. The strengths and weaknesses of each questionnaire will also be described. Clinicians will be offered practical guidance to help identify when or why you might want to measure hearing aid outcomes and learn how to select an appropriate measure for the task. Discussion of how to administer and interpret the different test results will be provided. Finally, examples of how the questionnaire test results might be used to develop intervention strategies for individual patients will be provided.

Learning outcomes

1. The participant will be able to identify specific goals for selecting an outcome measure before initiating an outcome measure program.
2. The participant will be able to select appropriate hearing aid outcome measures that will be sensitive to their goals.
3. The participant will be able to interpret outcome test results and utilize the information to develop intervention strategies for the patient.

Bio Sketch:

Genevieve Alexander attained her MA in Audiology at the University of Memphis. She worked for over 20 years in the Hearing Aid Research Laboratory in Memphis, TN. Her areas of interest are hearing aids, hearing aid fitting strategies, aural rehabilitation and hearing aid outcome measures. In 2008 she began working at the James H. Quillen VAMC as a research audiologist.

Title: The use of implantable devices for the remediation of hearing loss

Presenter: Jaclyn Spitzer, PhD

Abstract:

The area of implantable devices for remediation of hearing loss has a long history and continues to evolve in terms of the devices available and candidacy criteria. This presentation will examine the array of current options for treating veterans with conductive, mixed, and sensorineural hearing loss. The categories of devices to be discussed are: bone anchored cochlear stimulators (also called bone anchored hearing aids), middle ear implants, cochlear implants and auditory brainstem implants. Familiar devices, such as bone-anchored stimulators, have recently introduced entries into the market. While the emphasis will be on those implantable devices that are currently approved by the Food and Drug Administration (FDA), some foreshadowing of current clinical trials or applications available in Europe will allow the audience to know "what is coming down the pike." The devices will be examined in their components and function. Surgical procedures for each type of device will be described briefly. Adult candidacy and examples of etiologic conditions for each device will be reviewed. Fitting requirements and "typical" rehabilitative follow up will be discussed.

Learner Outcomes:

As a result of this activity, participants will be able to:

1. Describe the latest generation of implantable devices for remediation of hearing loss;
2. Recognize the selection criteria for each of the devices;
3. Counsel potential candidates for these devices when appropriate.

Biosketch

Jaclyn B. Spitzer, Ph.D. is a Professor of Audiology and Speech Pathology in Otolaryngology/Head and Neck Surgery at Columbia University College of Physicians and Surgeons. She is the Director of Audiology and Speech Pathology at New York Presbyterian Hospital, Columbia University Medical Center campus. She is a Professor in Communication Sciences and Disorders at Montclair State University. Prior to these appointments, she was a VA Audiologist in Cleveland and then West Haven, Connecticut for a total of 18 years. Dr. Spitzer has been involved in research and clinical application of implantable devices for 28 years. Her over 70 journal publications are focused on cochlear implants, bone-anchored hearing devices, implantable hearing aids, rehabilitation with implants, and central auditory processing. She authored Rehabilitation of the Late Deafened Adult with Thomas G. Giolas, Ph.D. and Steven B. Leder, Ph.D., in which detailed therapeutic materials were presented for use with adult cochlear implantees. A new text Adult Audiologic Rehabilitation, edited with Joseph Montano, Ed.D., appeared in 2009. Her current research projects include: evaluation of a new test "Appreciation of Music In Cochlear Implantees [AMICI] test"; "Improvement of Spanish language speech recognition materials"; "Development of a sentence test of speech perception in reverberation"; and "Positron Emission Tomography (PET) as a predictive measure in cochlear implant evaluation", a mix of productive relationships with other Audiologists, Speech Scientists, Otolaryngologists, Nuclear Medicine physicians, and multicenter collaborations.

Title: Challenges in the Assessment of Auditory Processing in Adults

Presenter: Larry E. Humes, PhD

Abstract:

Older adults and adults with mild Traumatic Brain Injury (TBI) may often have difficulties perceiving sound and understanding speech that appear to be more involved than one would expect based on the pure-tone audiogram. Deficits in higher-level processing, frequently attributed to modality-specific auditory processing, are often believed to be important contributors to the observed greater-than-expected speech-understanding problems of these individuals. It is difficult, however, to obtain valid and reliable assessments of auditory processing in adults, especially in the presence of high-frequency hearing loss. Both peripheral hearing loss and cognitive function may impact test performance on measures of auditory processing. This presentation will review the challenges encountered by audiologists when assessing auditory processing in older adults or adults with mild TBI. Reliable and valid clinically feasible tests of auditory processing in adults will also be identified.

Learner Outcomes:

The participant will be able to identify threats to valid auditory-processing assessment.
The participant will be able to list valid and reliable tests of auditory processing in adults.
The participant will be able to describe the prevalence of auditory-processing disorders in adults.

Biosketch

Larry E. Humes is currently Distinguished Professor, Department of Speech and Hearing Sciences, Indiana University. He has been at Indiana University since 1986 and prior to that was on the faculty at Vanderbilt University for eight years. Professor Humes has served on the editorial board for the *Journal of the American Academy of Audiology* and the *Australian Journal of Audiology*, as Associate Editor for *Ear and Hearing* and the *Journal of Speech, Language and Hearing Research* (on two occasions), and as Editor-for-Hearing for the latter journal. He is currently the Editor for the *American Journal of Audiology*. He is a Fellow of the Acoustical Society of America and the American Speech-Language-Hearing Association. Professor Humes has also received the Honors of the Association and the Alfred Kawana Award for Lifetime Achievement in Publications from the American Speech-Language-Hearing Association and the Jerger Research Career Award and Presidential Award from the American Academy of Audiology. He chaired the *Institute of Medicine's* "Committee on Noise-Induced Hearing Loss and Tinnitus

Associated with Military Service from World War II to the Present” and is currently Chair of the American Academy of Audiology’s Task Force on Central Presbycusis. Professor Humes’ research laboratory has received Federal research support continuously since 1980. His most recent research activities have been focused on age-related changes in auditory perception, including speech-understanding ability, and on outcome measures for hearing aids.

Title: Automated Audiometry

Presenter: Don Morgan, PhD

Abstract:

Automated audiometry has been a subject of interest throughout the history of our discipline (does anyone remember the Bekesy Audiometer?). Recently, the interest has focused on the increasing population of individuals with hearing loss, the numbers of providers available to conduct hearing evaluations, and the increasing gap between these two factors when looking into the immediate and long-term future of hearing health care. It has been suggested that the application of “self-administered” testing might be one way to address the probable personnel gap between providers and the hearing impaired. This presentation provides a review of how current technologies have the potential of providing valid and reliable measures of auditory system function; and, a review of how some of the currently available systems, and under-development systems, have approached the application of technologies to introduce “automation” into the armamentarium of the Audiologist. We will investigate the potential advantages of automation, discuss the limitations of the concept, review the reaction of the profession to the concept, and discuss, in some detail, the advantages and disadvantages of systems currently available and under development.

Learner Outcomes:

After this session the participant will be able to:

1. Describe the test procedures proposed for use in automated systems
2. List two advantages of automated systems
3. Identify two concerns regarding the implementation of currently-available automated systems by the discipline of Audiology.

Bio Sketch:

Dr Morgan was, for 26 years, Professor of Otorhinolaryngology and Director of the Division of Clinical Audiology at the UCLA School of Medicine, Los Angeles, CA. Subsequently, he was Professor of Otorhinolaryngology and Director of Audiology at the University of Pennsylvania School of Medicine. After leaving Penn he spent three years as Vice President for Research with Decibel Instruments in the Silicone Valley. He has published more than 50 peer-reviewed articles across a wide range of topics in basic and applied aspects of Audiology, as well as book chapters. Since 2001 Dr. Morgan has been President of Hearing Resource Group, Inc. – a Company providing on-site management of hearing centers based in ENT-practice settings; and consulting support to providers of hearing healthcare in the areas of business development and clinical practice administration. He is an active member of several scientific and clinical associations including the American Speech/Language Hearing Association, American Academy of Audiology and the American Academy of Otolaryngology.

Title: Auditory Training and Veterans

Presenter: Melissa Teahen, AuD

Abstract:

There is evidence that auditory training can improve and change neural function through harnessing the neural plasticity of the brain. In turn these changes have been shown to improve auditory performance among cognitively-impaired and brain-injured individuals, the language skills of children with language learning disorders, the memory of older adults, and the satisfaction and performance of adult hearing aid users. The value of neuroplasticity-based rehabilitation lies in its ability to transfer to functional abilities other than those that are trained, generalize to patients' perceptions of their abilities and to their quality of life, and produce change that is sustained over time. The application of auditory training for rehabilitation of hearing-impaired Veterans thus has vast potential, if its effectiveness can be demonstrated.

In this presentation we will describe two ongoing auditory training studies that are being conducted with Veterans. The first study is a multisite clinical trial comparing the effectiveness of the *Listening and Communication Enhancement™ (LACE™)* training program, directed listening to books-on-tape, and standard-of-care hearing-aid counseling for improving hearing aid outcomes among hearing impaired Veterans. The second study is a multisite clinical trial in which the *Brain Fitness™* training program is being used alone and in conjunction with provision of a personal FM system as a form of rehabilitation for blast-exposed veterans with mild traumatic brain injury that complain of hearing difficulties and yet have normal or almost normal hearing. The rationale behind these studies will be discussed and preliminary data will be presented.

Learner Objectives

As a result of this activity, participants will:

1. Be able explain the principles underlying auditory training programs
2. Be able to describe the application of auditory training to rehabilitation for Veterans
3. Be able to describe the *LACE™* and *Brain Fitness™* training programs, and the rationale behind each

Bio Sketch

Melissa Teahen is a certified Research Audiologist at the National Center for Rehabilitative Auditory Research (NCRAR) at the Portland VA Medical Center. She attended school at the University of Iowa, and following a clinical externship at the University of Iowa Hospitals and Clinics (UIHC), graduated with a Doctor of Audiology (Au.D) in 2008. Her primary interests include rehabilitative audiology and the sensory and central effects of noise on the auditory system. She is currently involved in a project that is examining auditory rehabilitation for Veterans who have suffered mild traumatic brain injury due to blast exposure.

Title: Evaluation of Open-ear and Traditional Custom-Fit Hearing Aids : Results from a VA Clinical Trial

Presenters: Mia Rosenfeld, PhD, Genevieve Alexander, MA

Abstract:

Results from the VA Clinical trial, "Evaluation of Open-ear and Traditional Custom-Fit Hearing Aids" will be presented. This was a multi-site VA hearing aid clinical trial funded by VA Rehabilitation Research and Development. Participants (n=288) represent a wide range of hearing loss degree and configuration, and included both new and experienced hearing aid users. The goal of this study was to provide-evidence based data to guide clinicians in selecting the most appropriate styles for their patients. This study examined outcomes of three kinds of hearing aid fittings: Open fit behind-the-ear hearing aids with either receiver in the aid or receiver in the canal, and traditional custom fit in-the-ear. Each participant was fit with each of the three hearing aid styles for a trial period of two months, and a variety of outcome measures were used to examine the relative benefits and subjective preferences for each style. This presentation will include discussion of study background and goals, and study findings. Real ear data include best match to NAL-NL1 target across hearing aid style, and objective occlusion. Aided speech understanding measures include WIN (words-in-noise) and SPIN-WIN testing. Subjective

outcome measures included questionnaires of hearing aid benefit and satisfaction, and rating scales of subjective occlusion, external sound quality, telephone performance, and overall satisfaction. Qualitative data representing participants' favorable and unfavorable impressions of each style will be explored, along with participants' final ranking of the hearing aid styles and subjective comments regarding their choices. The presentation will conclude with discussion of implications of these findings for clinical decision-making regarding hearing aid style.

Learner Outcomes:

1. Participants will be able to identify proportion of individuals in this study who preferred open-fit BTE to ITE hearing aids.
2. Participants will be able to list three factors that will assist in selection between a RITA (receiver in the aid) and a RITE (receiver in the ear) hearing aid.
3. Participants will be able to identify three reasons why some individuals prefer ITE hearing aids to open-fit BTE's.

Bio Sketches:

Mia Alexandra Lee Rosenfeld, Ph.D., is a clinical and research audiologist at the VA Tennessee Valley Healthcare System in Nashville. She holds her audiology degree from Vanderbilt University, and a Ph.D. in Gerontology from the University of Kentucky. She served as the study coordinator for the VA RR&D grant, "Evaluation of Open-canal and Traditional Custom-fit Hearing Aids", and has also participated in several past VA multi-center clinical trials as either study coordinator or research audiologist. She is especially interested in provision of audiological services to the elder population, and teaches a Gerontology course to Vanderbilt AuD students.

Genevieve Alexander, M.A., obtained her master's degree at the University of Memphis. She worked in the Hearing Aid Research Laboratory at the University of Memphis for several years before becoming a research audiologist at the James H. Quillen VA Medical Center in Mountain Home, TN in 2008.

Title: The DoD/VA Hearing Center of Excellence

Presenter: Mark Packer, MD

Abstract:

The Hearing Center of Excellence (HCE) is a congressionally mandated function established by the Department of Defense with the Air Force as Lead Component to act as an integrating force to promote and encourage collaboration towards improving the hearing health of Service Members and Veterans. The HCE concept of a highly virtual network or system engaged in the prevention, care, and research of hearing loss and auditory system injuries will be facilitated by development of a Joint Hearing Loss and Auditory System Injury Registry (JHASIR), a functional network for data management, and outreach to academic and industry leaders in the auditory sciences. The scope and magnitude of the effect of war and Military Service on the auditory system warrants a vigilant, focused effort to combat the impact on auditory function. The HCE concept of an integrating collaborative, facilitating entity will be discussed.

Learner Outcomes:

1. Describe the role of the HCE in relation to clinical care across the VA Health care system.
2. Identify sites included in the Hearing Center network and how to access them.
3. List the proposed mechanisms to tie the clinical audiometric data into a common bidirectional network between the DoD and VA.

Bio Sketch

Lt Col Mark D. Packer is an Air Force Neurotologist recently appointed as the Interim Director for development of the congressionally mandated Hearing Center of Excellence. His military career began with acceptance to the Uniformed Services University in 1991 where he was inducted into the Alpha Omega Alpha medical honor society. He completed a general surgery internship at

Wright State University in Dayton Ohio in 1996, and was board certified in Otolaryngology Head and Neck surgery upon finishing his residency training in the San Antonio Uniformed

Title: Preliminary evaluation of functional auditory tests for simulating complex listening environments

Presenter: Douglas S. Brungart, PhD

Co-Authors: Benjamin Sheffield, Sandeep Phatak, Alice Franklin, Mary Cord

Abstract:

When conducting diagnostic auditory examinations, it is not uncommon to encounter patients who perform normally on clinical speech perception tests but complain of having difficulty understanding speech in complex environments like crowded restaurants. In this study, which was conducted on 22 military audiologists attending the 2011 JDVAC conference in San Diego, we collected preliminary data on two functional hearing tests that were designed to simulate difficult listening environments patients are likely to encounter in the real world. The first functional test was a modified QuickSIN test that examined sentence perception in eight different listening environments, including conditions with and without spatial cues and binaural cues, with and without room reverberation, and with and without a time-compressed talker. In each case, a method of adjustment was first used to obtain a subjective estimate of the SNR values required for 100% and 0% intelligibility, and then an objective test was used to determine the 50% SRT using the standard QuickSIN procedure. The results showed a very consistent pattern of relative difficulty across these conditions, with best performance in the condition with binaural and visual cues, and worst performance in the condition with reverberation and a time-compressed talker. The results also showed that the SRT values obtained using method of adjustment were comparable in terms of test-retest reliability with the objective SRT50 values obtained using the traditional QuickSIN method. The second functional test was an auditory localization task where a head-tracked virtual audio display was used to simulate a target talker originating from a randomly-selected azimuth location relative to the listener. The listener then responded by turning to face the perceived location of the target talker. The results of the localization experiment show that median absolute localization errors for normal listeners fall into a very tight range, suggesting that a screening test of this type might be a viable way to identify listeners with gross localization deficits. Surprisingly, the results also showed that the presence of an interfering voice had almost no impact on overall localization accuracy. Overall, the results suggest that these two tests, along with two other tests examining AV perception and dichotic perception that were evaluated at the 2011 JDVAC meeting, may be very helpful for evaluating functional performance of blast-exposed listeners and other listeners who report problems related to central auditory processing disorder.

Learner Outcomes:

1. The participant will be able to predict relative performance for normal listeners in eight different simulated listening environments
2. The participant will be able to identify the differences between subjective and objective measurements of speech reception thresholds
3. The participant will be able to discuss the range of localization performance that would be expected from a population of listeners with normal hearing.

Bio Sketch:

Dr. Brungart received his BS in Computer Engineering from Wright-State University in 1993 and his Ph.D. in Electrical Engineering from the Massachusetts Institute of Technology in 1998. His next 11 years were spent as a research scientist at the Air Force Research Laboratory in Dayton, Ohio, where he studied human speech perception and auditory localization and was issued 8 US patents for his work on auditory display technology. For the past two and a half years, he has served as Chief Scientist at the Audiology and Speech Center at the Walter Reed National

Military Medical Center, where his interests include spatial and binaural hearing, informational masking, speech intelligibility and the development of new auditory fitness-for-duty standards for the military.

Title: Perception in Noise: Measures of Brain and Behavior

Presenter: Curtis Billings, PhD

Co-Author: Tina Penman, AuD

Abstract:

Perception-in-noise difficulties are prevalent across many individuals and populations, including individuals with hearing loss, older individuals, and Veterans with blast-related injuries. The literature demonstrates that there are many stimulus-related factors that affect performance in noise; some of these include signal-to-noise ratio, signal type, noise type, and spatial separation of noise. Given the many patient and stimulus factors that contribute to perception in noise, a physiological measure of neural processing may be helpful in clarifying why individuals have difficulty and how to best treat these deficits. The underlying assumption is that accurate perception is dependent on the neural encoding of the auditory stimulus. Our approach is to combine measures of brain and behavior to gain more insight into the perception-in-noise difficulties experienced by an individual.

Brain and behavior measures were collected from 15 young normal-hearing individuals, 15 older normal-hearing individuals, and 15 older hearing-impaired individuals using signal-in-noise stimuli. Brain measures included the passively elicited P1-N1-P2 complex, which was recorded to a 1000-Hz tone and the syllable /ba/. Behavioral measures included sentence-level and word-level stimuli presented in noise. Target signals were presented at four levels (50-80 dB in 10 dB increments) in steady-state speech spectrum noise that was also varied in level (40 to 90 dB) resulting in signal-to-noise ratios of -10 to 35 dB.

Results demonstrate that signal-to-noise ratio and signal type are key contributors to the physiology and perception of signals in noise. The contribution of stimulus factors as a function of patient factors (e.g., age, hearing status) will be presented. The relationship between brain and behavior will also be discussed.

Learner Outcomes:

- (1) The participant will be able to identify important factors that contribute to encoding and perception of signals in noise.
- (2) The participant will be able to describe cortical auditory evoked potentials and important considerations when recording them.
- (3) The participant will be able to identify effects of age and hearing impairment on neural encoding and perception of signals in noise.

Bio Sketch

Curtis Billings is an audiologist and research investigator at the National Center for Rehabilitative Auditory Research (NCRAR) at the Portland Veterans Affairs Medical Center, and an Assistant Professor in the Department of Otolaryngology-Head and Neck Surgery at the Oregon Health and Science University. Dr. Billings uses auditory evoked potentials and behavioral methods to understand the effects of auditory deprivation and stimulation on the brain. This includes interests in the neural effects of hearing aids, hearing impairment, aging, and auditory training. Of particular importance to auditory rehabilitation are perception-in-noise difficulties. A current project focuses on the neural encoding and perception of signals in noise as a function of hearing impairment and age. The long-term goal of this research program is to improve diagnosis and treatment of hearing impairment by determining how experience-related changes in the brain facilitate and/or inhibit successful auditory rehabilitation.

Title: Hearing Fitness For Duty for Army Military Occupational Specialties (MOS)

Presenter: Odile Clavier, PhD

Co-Authors: Jed C. Wilbur, Sig D. Soli, PhD, LTC Kristen L. Casto

Abstract:

Some military occupational specialties (MOS) require the Soldier to perform hearing critical tasks (HCTs) that take place in non-optimal environments, such as high background noise, repetitive impulse noise, or with competing speech from several sources. Presently hearing abilities are only assessed with existing audiology tools, which rely primarily on standard auditory thresholds and monaural speech tests without regard to the hearing-critical needs or noise environment. Assessing hearing fitness-for-duty requires a rigorous analysis of hearing critical tasks that Soldiers of various MOS must perform in order to perform their missions. Development of new hearing standards for the Army requires hearing tests which correlate well with functional hearing tasks. The Hearing In Noise Test (HINT) has been adopted as a fitness-for-duty test in other industries, and military relevance needs to be assessed. A survey was developed to identify HCTs of several MOS. Subject Matter Experts (SMEs) were selected from instructors and combat trainers with a broad knowledge of the functional requirements for their MOS. Interviews, ambient sound and noise recordings were conducted in several TRADOC and training locations, including Fort Bragg, Fort Rucker, Fort Leonard Wood, Fort Irwin and Fort Polk. A human subject study was conducted to compare performance on the HINT with performance on functional tests. The functional tests consisted of HINT sentences in relevant military background noise and HINT sentences filtered through a radio transfer function combined with functional noise. The tests were administered to a cohort of normal hearing and hearing impaired subjects. Intelligibility versus the extended speech intelligibility index (ESII) was used as the comparison metric between the standard test and the functional tests. Furthermore, newly developed military-relevant phrases have been evaluated by human subjects to generate several military-specific HINT lists. Using the results of the interviews with the SMEs, as ambient noise analysis, a list of hearing critical tasks was assembled for several MOSs. Identified tasks include: hearing shouted speech in a noisy background (naked ear), hearing radio communications in background noise, hearing and listening to multiple radio channels at once, and noise discipline among others. Tasks common to most soldiers engaged in combat include the "nine-line" medevac read-back, radio communication and shouted speech in ambient noise. Functional noise was processed to use as background noise in speech tests for hearing fitness-for-duty. We present the results of our human subject study, comparing the speech intelligibility on the standard HINT with speech intelligibility on functional tests. The military background noise is highly variable, both in the temporal and spectral sense and it includes competing speech, informational masking, and impulsive noise. As a result, initial testing showed the use of the (ESII) provided a much better metric than the signal-to-noise ratio in relating performance between the standard and functional tests. In cases where informational masking is minimal, correlation between the HINT and the functional tests was good, even with the filtered speech. This work was supported through Army SBIR Contract # W81XWH-09-C-0048. The Abstract has been approved for public release.

Learner Outcomes:

1. The participant will be able to perform a hearing critical task analysis
2. The participant will be able to conduct a preliminary fitness for duty assessment
3. The participant will be able to outline the steps involved with using the HINT test

Bio Sketch

Dr. Odile Clavier received her bachelor's degree from Florida Tech and her master's and Ph.D. from Stanford University in the department of Aeronautics and Astronautics. For her graduate research, she developed a high precision superconducting sensor for the Satellite Test of the Equivalence Principle. After completing her Ph.D., Dr. Clavier worked as a Systems Engineer for

Seagull Technology, Inc. on several general aviation projects. In particular, she developed patented algorithms for automated airport system that provides “tower-like” services to small untowered airports. Dr. Clavier’s general areas of interest include dynamics, controls, and precision engineering with an emphasis on biomedical and aerospace applications. Since joining Creare, Dr. Clavier has worked on several projects including acoustics and hearing assessment manufacturing, navigation, space instrumentation, and the development of several biomedical devices.

Dr. Clavier's most recent work at Creare includes the development of a comprehensive field-ready hearing assessment instrumentation to evaluate the effects of HIV/AIDS on the hearing system and research in the use of advanced protocols for the detection of noise induced hearing loss using distortion product otoacoustic emissions. She has also directed several human subject tests of hearing for bone conducted sound investigations and has extensive experience in the acquisition and analysis of field data. Dr. Clavier has been involved in hearing fitness for duty research for the Army since 2008, working closely with Army audiologists and field experts to develop hardware, software and analysis techniques to obtain valid data that will support new hearing standards.

Title: Quick, easy and accurate tests for cisplatin ototoxicity.

Presenter: Marilyn Dille, PhD

Abstract:

Ototoxicity monitoring programs are becoming increasingly common in VA medical centers. Veterans undergoing cisplatin chemotherapy typically enter treatment with hearing loss. Therefore, any treatment-related hearing loss has immediate adverse effects on communication. In this presentation, we will introduce participants to a quick, easy and inexpensive approach to ototoxicity monitoring. This new technique includes: (1) a baseline Dose-Ototoxicity Risk Assessment (D-ORA) using information about the patient’s hearing and planned cisplatin dose obtained prior to treatment; and (2) an objective distortion product otoacoustic emissions (DPOAEs)-related Ototoxicity Risk Assessment (dp-ORA), which in combination with the D-ORA is used to identify significant hearing shifts during chemotherapy treatment with at least 80% accuracy. The D-ORA could be used prior to the surveillance period, to identify those individuals who may be highly susceptible to ototoxic damage. The dp-ORA could be used instead of direct measurements of pure tone sensitivity or compared with such measures to help interpret DP outcomes, depending on the patient’s ability to perform a behavioral hearing test as dictated by their health at each monitoring visit. We will provide the participant with specific examples of potential patients entering treatment, interpret those findings using these two prediction tools and craft oncology CPRS notes.

Learner Outcomes:

1. The participant will be able to describe the elements of the dose-ototoxicity risk assessment (D-ORA).
2. The participant will be able to describe the elements of the distortion product otoacoustic emission-related ototoxicity risk assessment (dp-ORA).
3. The participant will be able to describe the necessary components in order to develop a comprehensive, effective and accurate ototoxicity monitoring program that can be used on all Veterans undergoing cisplatin treatment.

Bio Sketch

Dr. Marilyn Dille has extensive clinical experience working as a VA audiologist for 12 years at the VA Puget Sound Health Care System in Seattle, WA. Dr. Dille received her MS in Audiology in 1978 at the University of Washington then returned to Washington earning her PhD in 1999. Upon completion of her doctorate, she taught at both the University of Washington in the

Department of Speech and Hearing Sciences and at the Department of Speech and Hearing Sciences at the University of Arizona. She was also the Director of the Hearing Clinic at the University of Arizona. Dr. Dille now works as a full-time researcher at the National Center for Rehabilitative Auditory Research at the Portland VA Medical Center and is an Assistant Professor in the Department of Otolaryngology/HNS at the Oregon Health and Sciences University. Her research interests include ototoxicity, auditory disorders related to diabetes, and the effects of age and hearing loss on auditory working memory.

Title: Vibrant Soundbridge: An Alternative to Traditional Amplification for Patients: Who Are Difficult to Fit

Presenter: Rhonda Tubbs, AuD

Abstract

Vibrant Soundbridge (VSB) is a partially implantable prosthetic device that is an alternative to traditional hearing aids and differs from hearing aids as it converts sounds into mechanical vibrations, which then stimulates the middle ear for better high frequency sound perception compared to hearing aids. VSB consists of an internal VORP and the external processor which attaches to the side of the head, similar to that of a cochlear implant. The VORP includes a Floating Mass Transducer (FMT), implanted by the surgeon, using the traditional surgical technique for sensorineural hearing loss, attaching to the incus or Round Window technique for mixed/conductive hearing loss in which the FMT is placed on the round window of the cochlea. VSB is currently under investigation with the FDA for use in mixed/conductive patients with the Round Window Technique. In a retrospective review, we gathered results for 9 ears; 3 sensorineural, 2 conductive, 4 mixed hearing losses. Aided and unaided soundfield thresholds, speech reception and recognition testing resulted in results similar to that of hearing aids. Unaided versus aided testing revealed average improvement of 19.75 dB over 8 frequencies when using the VSB. VSB aided speech recognition ability testing revealed 23.3 dB HL improvement over unaided. 3 frequency aided PTA improved by 21.6 dB, with an average of 30.1 dB HL. All testing was performed at users' preferred settings. With VSB, the ear canal is completely open allowing patients with atresia, stenotic or small ear canal, who cannot tolerate the occlusion effect or who do not tolerate a foreign body in their ear, to experience the benefit of amplification. Performance results are consistent with those of traditional hearing aids satisfying both the patient need for amplification and a unique and satisfactory alternative for the hearing professional.

Learning Outcomes

1. Attendee will be able to identify alternatives for those patients who cannot tolerate traditional amplification due to physical, cosmetic or medical contraindications.
2. Attendee will be able to identify the three types of hearing loss: sensorineural, conductive and mixed, which fit candidacy for the Vibrant Soundbridge.
3. Attendees will be able to identify approved and investigational coupling techniques of the Floating Mass Transducer.

Bio Sketch:

Rhonda Tubbs, AuD is a Senior Audiologist and holds the position of Coordinator of the Cochlear Implant and Implantable Devices Program at Pittsburgh Ear Associates. Other duties include audiologic, electrophysiologic and balance testing and intraoperative monitoring, as well as seeing patients in the Hearing Aid Center at Pittsburgh Ear Associates. Dr. Tubbs is co-investigator of several FDA Clinical Trials lead by Drs. Chen and Hillman as well as primary investigator of several cochlear implant studies.

Title: What the Apex Provides

Presenter: Margaret Dillon, AuD

Abstract

Cochlear implantation is the principal treatment option for patients with moderate to profound sensorineural hearing loss who are unsuccessful with amplification. Recently, patients with greater amounts of low-frequency residual hearing yet poor speech discrimination have elected to undergo cochlear implantation. This patient population may find improved speech perception from conventional cochlear implantation or an ipsilateral bimodal listening configuration utilizing a hearing preservation surgical approach. A potential benefit of apical stimulation may be improved speech perception in noise. Conventional cochlear implantation offers an electric representation of the low frequencies while a hearing preservation surgical approach with a shorter electrode array aims to acoustically stimulate the apical region. A review of postoperative speech perception over time in patients who have undergone conventional cochlear implantation versus hearing preservation procedures may reveal the most appropriate treatment for this patient population. The impact of electrode length and electric versus acoustic stimulation of the apical region on postoperative speech perception was reviewed. Speech perception performance was assessed over the first 12 months of listening experience. Comparisons between acoustic versus electric representation of the apical region were reviewed on CNC words, HINT sentences in quiet and steady state noise, and CUNY sentences in noise. Additionally, speech perception in more challenging listening conditions (speech babble) was assessed after extended listening experience (greater than 12 months). Significant improvements in speech perception in quiet and noise have been noted in both populations. Preliminary results from research on hearing preservation subjects and patients with a conventional cochlear implantation insertion will be discussed.

Learner Outcomes

As a result of this activity, participants will be able to:

1. List two potential benefits of apical stimulation
2. Identify the differences between acoustic and electric representation of low-frequencies
3. Contrast outcomes of patients with traditional cochlear implantation versus patients with hearing preservation.

Bio Sketch

Margaret Dillon is a Research Assistant Professor in the University of North Carolina School of Medicine Department of Otolaryngology / Head and Neck Surgery. Dr. Dillon earned her doctorate of audiology from the Division of Speech and Hearing Sciences at the University of North Carolina at Chapel Hill. She spent her clinical externship at UNC Hospitals specializing in cochlear implantation.

Dr. Dillon conducts clinical research with adult cochlear implant and middle ear implant recipients. She is a co-investigator and clinical coordinator on multi-center clinical trials involving electric-acoustic stimulation and middle ear vibratory stimulation. Additional research currently involves cochlear implant speech processing strategies, as well as objective and subjective outcomes of cochlear implantation.