Roger™ for young children

The big picture: Using remote microphone technologies to breach the ear / doorway for brain development

**Speaker:** Carol Flexer, PhD, CCC-A, LSLS Cert. AVT is Distinguished Professor Emeritus of Audiology, The University of Akron. An international lecturer in pediatric and educational audiology and author of more than 155 publications including 14 books, Dr. Flexer is a past president of the Educational Audiology Association, the American Academy of Audiology, and the AG Bell Academy for Listening and Spoken Language.

**Abstract:** Historically, conversations about hearing loss have focused on the ear. Now, the conversation centers on the brain because we hear with the brain; the ear functions as the doorway that channels sound/auditory information to the brain. Because pediatric audiologists focus on the family, the purpose of this talk is to create a context for early home use of technologies, including remote microphone systems, in order to develop the child’s brain with knowledge.

Remote microphone systems for children who are hard of hearing: Access, utilization, and impact on language acquisition

**Speaker:** Elizabeth Walker, PhD, CCC-A/SLP is an assistant professor in the Department of Communication Sciences and Disorders at the University of Iowa and Director of the Pediatric Audiology Laboratory. Her NIH-funded research focuses on pediatric aural habilitation, specifically examining malleable factors that relate to individual differences in speech perception and language outcomes for children who are deaf or hard of hearing.

**Abstract:** Children who are hard of hearing (CHH) have restricted access to acoustic and linguistic information. In most cases, hearing aids (HAs) are the primary approach to improving auditory access for this population. HAs are not the only option available for increasing auditory access in CHH, however. Personal remote microphone (RM) systems reduce the negative effects of noisy, reverberant room acoustics, or distance between speakers and listeners. It is unclear how many preschool-age CHH have access to this assistive technology, when children are being fit with personal RM, or how often children utilize personal RM on a daily basis. The goals of this presentation are twofold: to report current practices with RM use in preschool-age CHH to provide insight into how this assistive technology is being used and to compare language outcomes of preschool-age CHH with and without access to RM system.
Speaker: Jace Wolfe, Ph.D., is the Director of Audiology and Research at the Hearts for Hearing Foundation in Oklahoma City, OK. He also is an adjunct Assistant Professor in the Audiology Department at the University of Oklahoma Health Sciences Center and Salus University. He previously served as the editor for the American Speech Language Hearing Association’s Division 9 journal and is currently a co-editor for the Plural Publishing, Inc. Core Clinical Concept Series on Cochlear Implants. Dr. Wolfe is a member of the Better Hearing Institute’s Pediatric Advisory Board as well as the Audiology Advisory Boards for Cochlear Americas, Advanced Bionics, and the Phonak Hearing Aid Company. He is also serves on the Editorial Board of The Hearing Journal. Additionally, Dr. Wolfe co-authors a periodic column entitled “The Tot Ten” in The Hearing Journal, and he has published numerous book chapters and articles in professional peer-reviewed and trade journals. He is also a co-author of the textbook entitled “Programming Cochlear Implants, Second Edition.” He is author of the textbook entitled “Cochlear Implants: Audiologic Management and Considerations for Implantable Hearing Devices,” and he is co-editor (with Carol Flexer, Jane Made II, and Erin Schafer) of the textbooks “Pediatric Audiology: Diagnosis, Technology, and Management, Third Edition” and “Pediatric Audiology Casebook, Second Edition.” His areas of interests are pediatric amplification and cochlear implantation, personal remote microphone technology, and signal processing for children. He provides clinical services for children and adults with hearing loss and is also actively engaged in research in several areas pertaining to hearing aids, cochlear implants, hybrid cochlear implants, and personal remote microphone systems.

Abstract: Phonak Roger is a proprietary digital radio frequency (RF) technology that may be used to wirelessly deliver audio signals from Phonak Roger transmitter to a Phonak Roger receiver via 2.4 GHz RF transmission. Roger contains numerous features that distinguish it from other remote microphone systems available for use with hearing aids and cochlear implant sound processors. For instance, Roger systems adaptively alter the receiver gain as a function of the ambient noise level. Research has shown that the use of Roger technology results in better speech recognition in noise when compared to frequency-modulated analog remote microphone systems and fixed-gain digital systems. Roger contains numerous features that enhance sound quality and hearing performance. These features will be reviewed in this presentation along with research examining the potential benefits of Roger technology.

Speaker: Imran Mulla, Ph.D. holds responsibilities in clinical audiology, research audiology, and lecturing. He is the Audiology Lead for Sensory Support Services in Bolton, Greater Manchester, where he overlooks the technological uptake of hearing devices and rehabilitation for 0-18-year-olds. He has worked part time as a clinical audiologist for over ten years including both adult and senior paediatric roles. His research commitments include being a consultant to the research team at The Ear Foundation and Research Course Module Lead for the MA/MSc in Educational Audiology at the University of Hertfordshire. He has coordinated over 25 research projects since 2011 and has published reports, co-authored in scientific journals and presented and been invited to national and international conferences. He has a keen interest in clinical research focussing on improving the quality of life for individuals with hearing loss and their families through rehabilitation and increased access to the latest advancements. He has worked closely with leading manufacturers, clinics, and national charities to optimise hearing technologies, enhance their uptake and bridge the gap between technological advancements, professionals and service users and their families.

Abstract: The aim of this present research was to evaluate and explore the benefits of radio aid/remote microphone technology with preschool children with hearing loss. The research was of a longitudinal prospective design, including both quantitative and qualitative analysis. Overall the study highlighted the potential benefits, barriers and challenges to preschool use of radio aid/remote microphone technology.
Communication impact related to RMS use in the homes of children with hearing loss

**Speaker:** Mr. Carlos Benitez-Barrera is a Ph.D. candidate in the Auditory Development Laboratory led by Dr. Anne Marie Tharpe in the Department of Hearing and Speech Sciences at Vanderbilt University. His research interests include the intersection of auditory electrophysiological and behavioral outcomes, and technological interventions with young children who have hearing loss. Mr. Benitez-Barrera was awarded the Singh Memorial International Scholarship from the ASHA Foundation (2015), the Fonds Jean Fal-Variant Award from University of Lausanne (Switzerland, 2017), and the James and Susan Jerger Award for Excellence in Student Research from the American Academy of Audiology (2018).

**Abstract:** Remote microphone systems (RMS) are known to improve speech recognition skills of children with hearing loss in settings where noise and distance are present (e.g., the classroom, the home; Bertachini, 2016). However, although RMSs are widely recommended in the classroom setting, very few and inconclusive studies have examined the possible language benefits related to the use of RMS use in the home environment. In this presentation, we will discuss a series of projects in which we investigated the effects of home-use of an RMS on the communication of 10 families with young children with hearing loss. Language Environmental Analysis (LENA™) recorders were used during two consecutive weekends (one weekend with the remote microphone and one without). Caregiver talk, child-directed speech, and other caregiver communication strategies were compared across both weekends. Caregiver perceptions related to RMS use will also be discussed.

Roger for young children

**Speaker:** Stacey Rich is the Senior Pediatric Audiology Manager at Phonak in Switzerland. She joined the Phonak family in 2008 as a Pediatric and school specialist and moved to the global headquarters in Stäfa in 2014.

**Abstract:** This brief presentation will provide an overview of Phonak's comprehensive portfolio of Phonak Sky™ B hearing aids and Roger systems for young children.