



Academy of Rehabilitative Audiology
2007 ARA Institute

St. Louis, Missouri
October 18-20, 2007

FRIDAY, OCTOBER 19

8:05 - 8:10 ARA Welcome

*Gabrielle Saunders; VA National Center for Rehabilitative
Auditory Research, Portland, Oregon*

8:10 - 8:15 Welcome

*Dr. William W. Clark; Director, Program in Audiology and
Communication Sciences, Washington University School of
Medicine*

8:20 - 9:20 KEYNOTE SPEAKER

**Audiovisual Speech Perception: From Consonant to
Discourse**

*Nancy Tye-Murray; Washington University Medical School,
St. Louis*

Many persons begin to lose their auditory and visual acuity as they age. The purpose of this study was to examine how degraded listening and viewing conditions affect the discourse comprehension of older adults. The results suggest that older adults may use cognitive resources to compensate for decreased word recognition skills.

9:20- 9:50 Lipreading Skills in Children – Final Data Analysis for Year 1 and Year 2 and 3 Update

Elizabeth Mauze, Nancy Tye-Murray, and Susan Jerger;
Washington University Medical School, St. Louis

These results suggest that older children perform better than younger children, children with more hearing loss perform better than children with less hearing loss and children with normal hearing, and that there is a relationship between articulation proficiency and lipreading performance.

10:05 - 10:35 Dual Sensory Loss: A Neural Perspective

Judith T. Blumsack; *Auburn University*

Various studies indicate central nervous system reorganization following visual deprivation. Visual cortex reorganization is suggested, for example, by responses to auditory input in the visual cortex of people who are blind. There is also evidence that auditory cortex reorganization may be associated with blindness. The presentation will review available evidence of central nervous system reorganization associated with blindness and it will address auditory rehabilitative implications of these findings.

10:35 - 11:05 Shifts in Children’s Vowel Production Associated With Hearing Aid Signal Processing Changes

Sheila Pratt and Kyoung Yuel Lim; *University of Pittsburgh*

The impact of hearing aid signal processing on the vowel characteristics of speech produced by children with hearing loss was evaluated. The vowels of children (aged 5-7 years) with moderate to severe sensory hearing loss was assessed while wearing laboratory hearing aids that were programmed to three different signal processing schemes, and then without hearing aids. The vowel formant characteristics of single word production by the children were assessed and compared to the productions of a group of children with normal hearing. Differences were observed between the hearing aid configurations and the normal hearing children.

11:05 - 11:35 Unilateral Hearing Loss in School-Aged Children

Judith E.C. Lieu; *Washington University Medical School,
St. Louis*

Unilateral hearing loss (UHL) in children has become an emerging area of concern for clinicians. Beyond the known effects on sound localization and speech perception in noise, the existing research report conflicting data about the more global effects on speech-language, educational, and quality-of-life outcomes in children with UHL. A case-control study of school-aged children with UHL compared with their normal hearing siblings is currently underway to determine whether UHL has a significant effect on educational achievement, and to examine potential risk factors. Preliminary results from this study and others, along with possible implications, will be discussed during the presentation.

**11:35 - 11:55 Educational Munchausen Syndrome by Proxy:
Manifestations in Audiology**

Jodell Newman-Ryan; *Northern Illinois University*

This presentation includes (a) a case study of one family who rejected a diagnosis of “normal” and insisted that the school system provide services for their child; (b) discussion of how these families may present in communicative disorders, especially in pediatric/educational audiology settings; and (c) some suggestions for counseling and managing these families.

**1:15 - 1:45 The Perception of Hearing Handicap by People With
Hearing Loss and Significant Others: A New Look at
an Old Problem**

Jill E. Preminger; *University of Louisville*

Previous research has examined the perception of hearing handicap by Persons with Hearing Loss (PHL) and their Significant Others (SOs) and discrepant results have been reported. Some studies report an “SO-Minimization Effect”: PHLs report greater handicap than that which is perceived by their SOs, while other studies report a “PHL-Minimization Effect”: PHLs report lesser degrees of handicap than their SO. The purpose of the present study is to determine whether the perception of hearing handicap reported by both the PHL and the SO are related to individual measures of stress, mood, and communication in the marriage. Results for a group of individuals with hearing loss along with their SOs will be discussed.

**1:45 - 2:05 Evaluation of Home-Based Computer Training
Programs in Improving Communication and/or
Quality of Life of Older Experienced Hearing Aid
Users**

Jeffrey Shannon and Jill E. Preminger; *University of Louisville*

Computer-based training may be a realistic cost-effective tool in providing audiologic rehabilitation for adult hearing aid users. The purpose of this project is to evaluate two programs: Sensimetrics Seeing and Hearing Speech and Listening and Communication Enhancement using a between-group, within-subject design with pre- and post-test objective and subjective measures. Sixteen experimental subjects and 16 control subjects were evaluated using quality of life scales and speech recognition testing in both the auditory alone and the auditory-visual conditions. Results will be discussed and relevant suggestions will be made for implementation in the clinical setting.

2:05 - 2:30 A Multimedia Hearing Loss Prevention Program for Adults

Gabrielle Saunders; *VA National Center for Rehabilitative Auditory Research, Portland, Oregon*

Susan Griest; *Oregon Health and Science University and the VA National Center for Rehabilitative Auditory Research, Portland, Oregon*

About 10 million adults in America have noise induced hearing loss (NIHL). Most noise damage is gradual, cumulative, and preventable, therefore intervention and education can be effective. We have developed a multimedia hearing loss prevention program consisting of seven informational modules that educate adults about hearing loss, noise damage, and hearing protection. The program combines video clips, interactive units, and a self-administered hearing screening to change knowledge, attitudes, and intended behaviors concerning hearing conservation. The program takes approximately 15 min and is entirely self-directed. In this presentation the program will be demonstrated and discussed.

2:30 - 3:00 Online FM Counselware Update

Jay Sheehan; *Phonak Hearing Systems*

Clinical experience indicates there is limited usage of FM systems in the adult population. There are a few potential reasons for the minimal application of FM systems among adults. Among them, the lack of clearly defined candidacy criteria and “considerable counseling, instruction, and coaching” regarding FM use. The FM CounselWare is developed as a tool to make advanced technology simpler to handle. It provides current, comprehensive, critical information and suggests a structured process of intervention for the hearing care professional. It makes learning to use an FM system for maximum benefit easy for the consumer.

3:15 - 3:50 Patient Centered Ethics in Audiology

John Greer Clark; *University of Cincinnati*

Everyone agrees that basic ethical guidelines are a central tenant of professional practice. However, professional ethics are not always fully attentive to the patient's desire to be rehabilitated. This presentation will examine three case scenarios in which the audiologist's treatment recommendations may not accord with what the patient is willing to accept. Discussion will explore ways of guiding patients to recognize alternatives to their viewpoint and at the same time help audiologists to recognize and accept conditions which may be coloring patient decisions. Participants are invited to come prepared to bring their own case studies for discussion.

3:50 - 4:15 Audiological Rehabilitation for People With Aphasia: Bridging the Gap

Rebecca Kelly, Erica Bland, Matthew Guggemos, Marcy Smith, and Stephanie Wood; *California State University, East Bay*

Research in audiological rehabilitation has tended to focus on individuals without other communication problems. There is a gap in the research to inform clinical practice in providing audiological rehabilitation to people with additional communication difficulties. To help address this growing need, we have created an audiological rehabilitation workshop for members of an aphasia treatment program who were identified as having hearing impairment through an audiological evaluation or who self-identified as having hearing problems. Pilot data from this workshop will be presented and directions for future research will be discussed.

4:15 - 4:40 Preliminary Evaluation of the Speech Perception Assessment and Training System (SPATS) With Hearing-Aid and Cochlear-Implant Users

James D. Miller; *Indiana University*

SPATS is evaluated as a testing and training system for hearing-aid (HA) users and cochlear-implant (CI) users. Criterion measures include the HINT, CNC tests, W22 tests, and Cox's CDT, parts of Gatehouse's SSQ, and a special SPATS inventory. SPATS measures include the identification of syllable constituents (onsets, nuclei, and codas) and measures of top-down and combined top-down and bottom-up recognizing spoken sentences. Control subjects were measured on criterion and SPATS tests and then retested after a pause of several weeks. Trained subjects took all of the same tests, but in the time between first and second testing underwent either 12 or 24 hr of systematic training using special SPATS algorithms that focus training on items of intermediate difficulty in quiet and noise. Trained subjects show gains on speech-perception measures in quiet and noise and in look-and-listen tasks

even though there was no training of visual speech perception. Subjects report that SPATS training and testing gave them a much clearer understanding of the severity of their hearing impairments and led to improved speech perception in everyday life through greater attention to detail and to differences between talkers. Supported by Grant No. R44DC006338 from NIH/NIDCD.

4:40 - 5:25 AR Coding and Reimbursement Advocacy

Steven White; *ASHA*

This session will cover the coding and reimbursement issues with a large interactive component for participants to ask questions related to this area. This will include information on items such as CPT code modifiers, specific documentation requirements with emphasis on developing recommendations, and just-passed and planned CPT codes.

SATURDAY, OCTOBER 20

8:10 - 9:00 FEATURED SPEAKER

Technology Advances With Hearing Aids and Cochlear Implants in Children

Lisa Davidson; *Coordinator of Pediatric Audiology at CID and Washington University Medical School, St. Louis, MO*

In order for children to receive the maximum benefit from sensory devices, hearing professionals must fully evaluate and utilize the technology offered by hearing aids and cochlear implants. This presentation will summarize the potential benefits of bilateral cochlear implants and bi-modal fittings and discuss the issues related to candidacy, fitting, and evaluation for young children. Recommended fitting and evaluation procedures will be illustrated using group data and individual case studies.

9:00 - 9:35 Recognition and Localization of Speech by Adult Cochlear Implant Recipients Wearing a Digital Hearing Aid in the Non-Implanted Ear (Bimodal Hearing)

Lisa G. Potts and Margaret Skinner; *Washington University, St. Louis*

This study documented the effects of wearing a cochlear implant in one ear and a hearing aid in the opposite ear (bimodal hearing). Binaural summation occurred for soundfield thresholds and loudness growth contours in the bimodal condition. Localization and speech recognition were signifi-

cantly better in the bimodal condition compared to the monaural conditions. Performance was significantly better when the words were presented from the side of the array closest to the ear wearing amplification but was equal in the bimodal condition (i.e., with both ears amplified) regardless of which side of the array presented the word for localization and speech recognition.

9:35 - 10:05 Emotion Perception and Talker Discrimination by Adult Cochlear Implant Users

Rosalie M. Uchanski, Kristen P. Peters, and Laura K. Holden;
Washington University School of Medicine

In addition to the important linguistic content of a spoken message, non-linguistic properties of speech are also present in a spoken message. And, this nonlinguistic information (e.g., a talker's age or gender) should also be considered important for understanding the entirety of a spoken message. In the experiments presented here, the perception of two of these nonlinguistic properties, a talker's emotional state and a talker's individuality, is examined for adult cochlear implant users.

10:20 - 11:15 An Outline of the Adult Aural Rehabilitation Program at Washington University School of Medicine

Brenda D. Gotter, Karen Mispagel, and Sallie S. Vanderhoof;
Washington University School of Medicine

This presentation will describe components of the auditory rehabilitation program at Washington University School of Medicine (WUMS). At WUMS, each adult cochlear implant recipient participates in weekly aural rehabilitation sessions. These sessions occur concurrently with programming of the cochlear implant for 3 to 4 months post-activation. The focus of this aural rehabilitation is to determine the individual's auditory performance in the clinic as well as everyday life, to provide guidance for improving this performance, and to facilitate the process of learning to listen to soft speech and in the midst of background noise.

11:15 - 11:45 Fitting Cochlear Implants to Hearing-Impaired Children With Additional Disabilities

David Downs; *Wichita State University*
Rebecca Rich; *Aberdeen Hearing and Speech Clinic, Aberdeen, South Dakota*

Although many hearing-impaired children have additional disabilities, cochlear implants (CIs) traditionally were fitted to children with only hearing loss. A few empirical studies addressing outcomes of CIs in children with ad-

ditional disabilities, however, generally have supported implantation. Likewise, we present findings of a nationwide survey of CI centers suggesting hearing-impaired children with additional disabilities usually are regarded as legitimate, if not strong, candidates for CIs. Our survey and clinical experiences, nevertheless, suggest fitting CIs to children with additional disabilities poses challenges and expectations that some centers, professionals, families, and the children themselves may find difficult to meet.

1:30 - 1:50 On the Fence: When a Second Cochlear Implant for a Child is a Tough Decision

Angela Grasse and David Downs; *Wichita State University*

This case study chronicles difficult issues one family faced when deciding to get a second cochlear implant (CI) for their daughter who was highly successful with her first CI. The authors videotaped interviews with the mother, father, and child as they discussed their decision-making. The mother and father investigated the benefits and limitations of a second CI over 9 months, but they still disagreed about whether to get the CI at the time of this submission. Nevertheless, these results may be of value to other families who are on the fence about getting a second CI.

1:50 - 2:50 Training the Ear: Strategies for Self-Directed Listening Practice With Cochlear Implant Recipients

Sandra Mintz; *Advanced Bionics*

Your cochlear implant patient is eager to make the most of his or her new-found hearing abilities. Ideally, your patient can practice independently and systematically at home in a self-paced environment, but needs materials for guidance. This workshop is designed to teach formal and informal home techniques, and provide FREE resources for improving listening abilities and music enjoyment for adults with any amount of experience with their cochlear implant.

3:10 - 3:35 HERBERT J. OYER AWARD WINNER PRESENTATION

Real Ear Verification of Open Canal Hearing Aids: Does the Stimulus Matter?

Kristin Vasil (*Presenter*) and Kathleen M. Cienkowski (*Advisor*); *University of Connecticut*

Real ear verification of open canal hearing aids and stimulus types will be reviewed and discussed.

3:35 - 4:00 Health Literacy Concerns and Hearing Loss

Erika Nair and Kathleen M. Cienkowski; *University of Connecticut*

Health literacy – the “degree to which individuals have the capacity to obtain, process, and understand basic health information and the services needed to make appropriate health decisions” is a national concern. To maintain and improve hearing health, it is essential that individuals understand discussions with their audiologist, comprehend written health information, be adequately informed.

4:00 - 4:30 Facilitating Successful Use of Frequency Transposition, Widex Hearing Aids

Jane Auriemmo; *Widex Pediatric Hearing Assistance Program*

This session will review the function of linear frequency transposition as a feature in a hearing instrument utilizing integrated signal processing. In order to facilitate acceptance and benefit of the transposed signal, more than just fitting the hearing aid is required. This session will review the audiological candidacy and criteria involved in order for a successful fitting and highlight some simple ways to enhance the benefit of frequency transposition. Examples will be provided for both adult and pediatric fittings.

4:30 - 5:00 Speech Production in Children With Hearing Loss: An Examination of the Treatment Literature

Sheila Pratt; *University of Pittsburgh*

The published peer-reviewed literature documenting the evidence for treating speech production in children with hearing loss will be reviewed. After an exhaustive search, peer-reviewed publications were evaluated according to the categories used by the ANCDs Aphasia Writing Committee. A moderate number ($n = 42$) of published studies was found but nearly all consisted of case studies, single-subject designs, or within-group designs with no controls. Most of the studies documented a positive treatment effect, although all but 4 produced data that were pre-efficacious in type.

5:00 - 5:10 ARA CLOSING REMARKS

Gabrielle Saunders; *VA National Center for Rehabilitative Auditory Research, Portland, Oregon*