



*Academy of Rehabilitative Audiology  
Summer Institute 2001*

*University of British Columbia  
Vancouver, British Columbia  
June 8-10, 2001*

**FRIDAY, JUNE 8**

**8:00 - 8:30 Opening Remarks**

Miriam Henoeh, Program Chair; *University of North Texas*  
David Wark, President; *University of Memphis*

**8:30 - 9:30 Keynote Address – Implication of ICDH-2 on  
Intervention Effectiveness Research in Audiological  
Rehabilitation**

Jean-Pierre Gagné; *University de Montréal*

A main tenant of treatment effectiveness research is that the issues investigated and the experimental paradigms used to conduct this type of research should be consistent with clinical intervention practices and service delivery models. Within this perspective, a universally accepted conceptual model of health and disablement will be presented. Specifically, the application of the

World Health Organization's *International Classification of Functioning, Disability and Health* (WHO: ICFIDH-2, Dec., 2000) to audiological rehabilitation services will be described. Then, the implications of this model to treatment effectiveness research will be addressed. Finally, some investigative paradigms of treatment effectiveness research that are consistent with both the ICFIDH-2 classification scheme and the goals of audiological rehabilitation will be outlined.

**9:30 - 10:30 Hearing Loss and Depression: Facts vs. Myths**

Sue Erdman; *University of Maryland, Baltimore County*

The belief that hearing loss can result in certain psychological problems, most notably depression and paranoia, has been perpetuated for many years. Reviewing the literature pertaining to hearing loss and depression reveals that anecdotal reports and research-based studies have contributed to the persistence of this belief. Upon examination, one discovers a "house of cards" constructed of ill-founded literature citations, flawed research designs, and the erroneous assumption that correlation equals causation. Recent studies from NIA and NIH will be compared to illustrate why myth continues and why it should be dispelled.

**10:45 - 11:15 Client, Hearing Aid, and Subjective Variables as Predictors of Hearing Aid Success**

Christopher Jerram; *University of Auckland Faculty of Medicine and Health Sciences*

This study evaluated the effects of hearing aid technology, expectations, and adjustment to hearing loss: as predictors of the outcome measures of hearing aid benefit, overall satisfaction, and frequency of use. Clients with higher expectations and acceptance of hearing loss showed greater daily use time. High expectations led to greater benefit for both easy and difficult listening situations. Multiple memory aids were associated with high satisfaction. Results were consistent with previous studies showing positive outcomes for newer hearing aid technologies but also showed that pre-fitting hearing aid expectations and acceptance of hearing loss significantly affected hearing aid outcomes.

**11:15 - 11:45 Aural Rehabilitation of Multi Perception and Enjoyment of Adult Cochlear Implant Users**

Kate Gfeller; *University of Iowa*

Maureen A. Mehr and Shelly Witt; *University of Iowa Health Care*

At the 1999 ARA Summer Institute, we presented a portion of the results

from approximately half the sample enrolled in an in-progress field trial of a computerized music training program developed specifically for adult cochlear implant recipients. The field trials have subsequently been completed, and data analyzed for six different areas of musical perception and enjoyment. This presentation will be practical strategies (based on the research data) that rehabilitative audiologists can share with implant recipients, in order to enhance enjoyment of music post-implantation.

**1:00 - 2:00 Verifying the Performance of Advanced Hearing Aid Circuitry**

Linda Thibodeau and Paul Dybala; *University of Texas at Dallas*

With the advent of many options to improve benefit received from amplification, the audiologist is responsible for verifying the performance using techniques that are not addressed in published standards. This presentation will include a review of electroacoustic and real ear measurement techniques to evaluate amplification options including noise reduction, release time, boot FM receivers, and multi-microphones.

**2:00 - 3:00 The Updated ABCs of Pediatric Hearing Aid Fitting**

John A. Nelson; *Widex Corporation*

Historically, the primary goal of fitting hearing aids on children has been early identification followed by hearing aids that provided audibility without over amplification. With advances in technology and legislation, audiologists can achieve these goals with greater accuracy and at an earlier age. Some of these advancements include ABR measurements that provide frequency-specific threshold estimations, government mandated infant hearing screenings that provide earlier identification, and high-technology hearing aids that provide advanced signal processing.

Given these changes, the protocols for fitting hearing aids on children need to be updated. Audiologists now need procedures to fit hearing aids that will improve development of auditory, speech, and language skills. Digital signal processing that will increase the child's quality of life. The presentation will focus on these advanced hearing-aid options and how to implement them with children.

**3:15 - 4:15 Online Audiologic Rehabilitation**

Perry C. Hanaven; *Augustana College*

Increasingly, individuals with hearing loss are utilizing the Internet for information concerning their hearing impairment. Likewise, health care provi-

der websites provide information and resources that can facilitate the audiologic rehabilitative process. However, the bulk of hearing health care Internet resources are not implemented by professionals providing audiologic rehabilitation. This workshop will demonstrate how hearing health care professionals and consumers utilize the Internet to supplement and facilitate the audiologic rehabilitative process.

**4:15 - 5:15 "The Best in You" – An Experimental Aural Rehabilitative Program for Youth with Hearing Loss**

Pamela Spencer; *Western Institute for the Deaf and Hard of Hearing*

An experimental approach to aural rehabilitation for youth with hearing impairments was evaluated. A proven leadership development program was modified to accommodate the needs of youth with hearing loss and designed to facilitate positive changes towards adjusting to the social and emotional impact of hearing loss. Twenty-four youth with hearing loss, ages 14 to 18 years, participated in the program. Subjectively, the participants stated that the program helped them learn more about themselves and others, to communicate effectively, to better understand their hearing loss, and to gain greater acceptance of themselves and their hearing loss. The action plans indicated that the participants were enabled to initiate steps towards positive adjustment to their hearing loss. "The BEST in You" program is potentially an effective program to assist youth with hearing loss to adjust positively and effectively to the impact of their hearing loss.

## SATURDAY, JUNE 9

**8:00 - 9:00 Aural Rehabilitation in the New Millennium**

Nancy Tye-Murray; *Central Institute for the Deaf*

The advent of interactive computer technology and the Internet enhances our ability to provide effective aural rehabilitation to clients around the country. This presentation will focus on two aural rehabilitation programs currently available through Central Institute of the Deaf (CID), which are designed to take advantage of technology. The CID Word of Mouth Program, developed by Elizabeth Mauze, utilizes CD-ROM interactive programs to teach executives and community leaders who have a hearing loss how to use communication strategies and other speechreading skills. The CID COMPRO (Communication Training for Professionals) currently provides instruction to service providers who routinely interact with the elderly person who has hearing loss. The program includes curriculum materials for both in-

structor and student. We are currently developing a distance learning program that will be able to provide services through use of the Internet. The CD-ROMs and the COM-PRO materials are available to other aural rehabilitation centers and providers.

**9:00 - 10:00 Applying Concepts of Neural Plasticity to Aural Rehabilitation**

Robert W. Sweetow; *University of California, San Francisco*

An unfortunate consequence of technological advances in hearing aids has been a decrease in the amount of time devoted to counseling and training patients to listen. Recent discoveries in neuroscience raise the possibility that enhanced learning might occur in response to programmed brain re-training. In this paper, the interaction of neural plasticity with acclimatization, counseling, and aural rehabilitation strategies are discussed. In addition, interactive computer programs designed to facilitate plasticity and training hearing-impaired adults to compensate for reduced selectivity and resolution are described.

**10:15 - 11:15 AudiSee – An Audiovisual FM System for Students with Hearing Loss: Results of a Preliminary Study**

Jean-Pierre Gagné; *University de Montréal*

Recently, a novel assistive device that may be helpful to students with a hearing loss in classroom settings was developed. *AudiSee* is an Auditory-Visual FM system. It differs from other commercial personal auditory FM-systems currently available in that it provides the student with visual-speech cues as well as amplified auditory speech information. The system consists of a miniature camera, a microphone, an FM-signal transmitter unit, and an FM student-receiver unit and a viewing monitor. With this system, the student is able to speechread the teacher at all times, regardless of where he or she is located in the classroom. During the presentation, the *AudiSee* system will be demonstrated and its components will be described. Also, the findings of laboratory investigations designed to assess the efficacy of the system in classroom settings will be reported and discussed.

**11:15 - 1:00 POSTER SESSIONS**

**1. Counseling Behaviors of Clinicians: Does Academic Coursework Make a Difference?**

Elizabeth Kennedy; *Temple University*

Counseling clients and their families is an integral part of the scope of practice for both Speech Language Pathology and for Audiology. The acad-

emic preparation of clinicians in counseling is highly variable, with some academic programs providing training in counseling skills via formal coursework while others assume these skills will be acquired in the clinical experience. A survey of 300 speech-language pathologists and audiologists indicated that clinicians with academic training in counseling provide more affective counseling than those without such coursework. Respondents indicated the need for formal training via continuing education to acquire and develop these skills.

## **2. Communication Patterns of Fully Included Children with Hearing Impairment**

Elizabeth Kennedy; *Temple University*

Public law requires the "least restrictive environment" for children with hearing impairments. It is unclear if full inclusion in a "regular" classroom is "least restrictive." When determining educational placement, all facets of the child's life must be considered including peer interaction communication between peers and social development. A recent study indicated that a least restrictive environment might become a socially restricting environment. Factors influencing social success in fully included environments include linguistic competency and presence of other hearing impaired children.

## **3. Efficacy of Group Aural Rehabilitation**

Diane Brewer; *The George Washington University*

Designing programs of aural rehabilitation for adults and evaluating their effectiveness provides a challenge for the audiologist. One model of offering group aural rehabilitation classes will be presented. The results of the Hearing Handicap Inventory for Adults (HHIA) administered pre and post aural rehabilitation classes will be presented. The usefulness of this and other tools to evaluate treatment efficacy will be discussed.

## **4. Early Results from Patients Using the Clarion CII Bionic Ear and High Resolution Sound-Processing Mode**

Douglas P. Sladen; *Advanced Bionics Corporation, Sylmar, CA, USA*

Since the inception of cochlear implants, speech perception performance in cochlear-implant users has improved dramatically. The increase in benefit is directly related to improvement in cochlear-implant technology and in the capability to process and transmit more sound information to the auditory system. The CII Bionic Ear incorporates an entirely new electronics platform with improved input amplitude resolution (12-bit analog-to-digital converter), enhanced frequency resolution (70,000 samples/sec), a wide input dynamic

range (82 dB), and advanced pre-processing options.

The CII Bionic Ear has FDA approval for use as a standard cochlear implant. When programmed with conventional Continuous Interleaved Sampler (CIS), Simultaneous Analog (SAS), or Multiple Pulsatile (MPS) strategies, only a portion of the electronic capability of the device is used. A clinical trial of the CII Bionic Ear system is in progress to investigate the speech perception benefit associated with a first version of High Resolution signal. In the protocol, patients are programmed with and use a conventional speech-processing strategy (CIS, SAS, or MPS) for 3 months. Patients then are programmed with and use High Resolution mode for 3 months. Speech perception performance then is compared using a within-subjects analysis. This poster will showcase data from the first patients who have used both a conventional strategy and the first version of High Resolution mode.

## 5. Measuring Auditory Progress in Infants and Toddlers

Douglas P. Sladen; *Advanced Bionics Corporation, Sylmar, CA USA*

Cochlear implants have become a widely accepted form of (re)habilitation for children with severe-to-profound hearing loss. Currently, all available cochlear implant technology in the US has commercial or investigational approval for use in children as young as 12 months of age. Because of the trend to implant children at younger ages, it becomes a challenging task to determine implant candidacy and implant benefit in infants and toddlers. Even though the identification of a severe-to-profound sensorineural hearing loss can be made reliably in newborns, quantifying the amount of *functional* sensory aid benefit in this population is difficult.

One measure designed specifically to assess the auditory skills of very young children is the Infant-Toddler Meaningful Auditory Integration Scale (IT-MAIS). The IT-MAIS is a criteria-referenced measure that employs a structured interview technique to obtain information from parent(s) about the frequency with which a child demonstrates a set of 10 auditory or speech behaviors in everyday situations. The IT-MAIS is a modification of the Meaningful Auditory Integration Scale (MAIS), a measure originally designed to assess the use of everyday listening skills in school-age children. Items and criteria-response behaviors were modified on the IT-MAIS to be more appropriate for infants and toddlers.

The purpose of this study was to examine pre- and post-implant IT-MAIS scores for a large group of young children with cochlear implants, to compare scores of the implanted children to scores of normal-hearing children, and to examine whether communication mode has any effect on postoperative performance in very young children.

## SUNDAY, JUNE 10

### **8:30 - 9:30 Group Speech and Language Therapy with Hearing-Impaired Children**

Perri Hecht; *Perri Hecht Speech and Auditory Services/  
Brooklyn College*

Adrienne Rubenstein and Miriam Halberstam; *Brooklyn  
College*

Speech and language therapy for the hearing impaired child often focuses on structured tasks in a didactic framework. Such a direct approach limits the types of communication exchanges that occur. Less structured approaches, including activities such as general conversation and role playing, provide opportunities for more diverse speech acts, but communication is limited because the client's communication partner is only the clinician. The purpose of this workshop is to review literature on group therapy with hearing impaired children and with other populations in which the merits of group therapy have been explored. Potential goals for such groups will be discussed and sample activities will be proposed.

### **9:30 - 10:00 Programmable Hearing Aids: Verification of Attack and Release Time**

Gary Overson and Linda Thibodeau; *University of Texas at  
Dallas*

Many digital and programmable hearing analog hearing aids allow for the adjustment and programming of parameters that control the compression characteristics of the hearing aid. Two of these adjustable parameters are attack time and release time. This presentation will include comparisons between the attack and release time values given by the programming software and those obtained in a hearing aid test chamber, for five BTE style hearing instruments. Stability of measures and test-retest reliability will also be discussed.

### **10:15 - 10:45 What Brings You Here Today? Perspectives on Help-Seeking for Presbycusis and Interacting with the Audiology System: The Role in Self-Assessment**

Arlene J. Carson; *Gabriola Island, British Columbia*

The presentation highlights key findings of a qualitative study with older women, exploring their perspectives on hearing, help-seeking for presbycusis, and the influence that their initial audiologic assessment and interaction with



the audiologist may have on their future action for hearing loss. This research is unique in that, through in-depth interviewing and participant observation, it explores help-seeking prospectively, starting at the point when help is sought, follows each woman through and beyond her first audiologic assessment, and solicits the perspectives of a close family member and the assessing audiologist on the help-seeking and rehabilitative process.

**10:45 - 11:15 Adult Aural Rehabilitation in the Clinical Setting**

Lisa Illich; *The Listen for Life Center at Virginia Mason*

This course describes the development of an adult aural rehabilitation program in a busy clinical setting. Currently, the Listen for Life Center at Virginia Mason offers five different classes for hard-of-hearing patients and their families. Course participants will: (a) learn the benefit of offering rehabilitation to hearing aid patients, (b) be provided with suggestions and resources for developing their own rehab program, and (c) be given suggestions for making an aural rehab program fiscally viable.

**11:15 - 11:45 Prospective from the Board: Rehabilitative Audiology for the Next 35 Years**

David Wark; *University of Memphis*

Barbara Parker; *Southwest Speech and Hearing Center,  
DeSoto, TX*

Miriam Henoch; *University of North Texas*

Alice Holmes; *University of Florida*

Nancy Tye-Murray; *Central Institute for the Deaf*

Jody Newman Ryan; *Northern Illinois University*

Sheila Pratt; *University of Pittsburgh*