



*Academy of Rehabilitative Audiology
Summer Institute 1998*

*The Abbey on Lake Geneva
Fontana, Wisconsin
June 11-14, 1998*

FRIDAY, JUNE 12

8:00 - 9:15 POSTER SESSION

1. Use of the Communication Profile for the Hearing Impaired (CPHI) in a Cochlear Implant Population

Susan M. Binzer and Timothy A. Holden; *Washington University
School of Medicine, St. Louis, Missouri*

This poster will compare: (a) normative data for the CPHI (Erdman & Demorest, 1998) with preoperative values from 60 cochlear implant candidates; (b) average scale scores for users of the SPEAK strategy for the Nucleus Cochlear Implant Systems preoperatively, and at 3 months post initial stimulation; and (c) scale difference scores of these users, with their ability to communicate (categorized as above average, average, and below average) at 3 months post initial stimulation. Results indicate that preoperatively, implant clients respond differently than the general population with hearing impairment. The average difference scores for several scales increase with improved performance.

2. Determining Handicap and Coping Abilities: A Comparison of Methods

L. Dillon Edgett, N. Lamb, K. Roodenburg, M.K. Pichora-Fuller, and C. Johnson; *University of British Columbia, Vancouver, British Columbia, Canada*

Many clinicians attempt to estimate a client's handicap and coping ability as part of the rehabilitative process. What is the most accurate and reliable method to obtain this information? We will compare and contrast results from several approaches in a case study format. The methods used include (a) the Hearing Performance Inventory (HPI); (b) discourse analysis of conversations held between the client and a rehabilitative audiologist in a controlled environment (e.g., quiet/noisy background, defined/undefined topic); and (c) a qualitative interview regarding importance of communication in everyday life, attitudes toward communication, and impact of hearing loss.

3. The Effects of Hearing Loss on Conversational Interactions of Couples: A Preliminary Study

Susan K. Harned, Alice E. Holmes, and Norman Markel; *University of Florida, Gainesville, Florida*

How does hearing loss affect communication within a marriage relationship? This preliminary study analyzed content of conversational samples from two pairs of couples, young and old, hearing impaired and normal. Attention was paid to differentiating between conversational elements that could be a consequence of hearing impairment. Non-verbal indicators were primarily used for motivational and perceptual judgments of conversational commitment. Analyses were conducted to identify positive and negative conversational elements, as well as elements not used or attempted in spontaneous interactions, which can contribute to reported spousal feelings of disengagement and loss of intimacy.

4. Comparison of Performance Intensity Functions Obtained With Isophonemic, W-22 and NU-6 Word Lists

Laura J. Kelly; *Miami University, Oxford, Ohio*

There is little data comparing speech recognition scores obtained using isophonemic, W-22, and NU-6 word lists. Yet isophonemic word lists may represent a faster, more efficient means of obtaining speech information for use in diagnostics and hearing loss management. The administration of two 10-word isophonemic word lists takes about the same time as a half list of the W-22 or NU-6. This study compares performance intensity functions obtained with the three lists and discusses interpretation and implications of the results for diagnostics and hearing loss management.

5. Use of DYALOG to Measure Conversational Fluency of Children With Cochlear Implants

Elizabeth Mauzé, Nancy Tye-Murray, and Ann Geers; *Central Institute for the Deaf, St. Louis, Missouri*

This poster will illustrate ways in which DYALOG (Erber, 1997) can be used to quantify important aspects of a fluent conversation beyond its original intent, which was to record communication breakdown. Ten-minute segments of videotaped conversations with deaf children were used to code the occurrence of selected events. Ratios were calculated to quantify dominance of the conversation by the child or by the adult and the tendency of the conversation to be characterized by silence or by breakdown. These metrics are examined in relation to other measured characteristics of this sample in order to determine factors predictive of conversational fluency.

6. User-Friendly Approaches to Information Dissemination

Mary Pat Moeller; *Boys Town National Research Hospital, Omaha, Nebraska*

The Center for Hearing Loss in Children is a NIDCD-sponsored research and training center at the Boys Town National Research Hospital. A major charge of the Research and Training Center grant is to disseminate information to parents, family members, and the general public related to hearing loss. This poster session will review strategies implemented to date, products developed, and future needs. The poster will include examples of dissemination approaches, including a www site, public information fact sheets, video tapes (information and support for parents, sign language curricula, etc.), instructional manuals, and Public Service Announcements.

7. Effects of In-Service Training on Nursing Staff Perception and Knowledge of Hearing Loss

Joanne E. Morgan and Laura J. Kelly; *Northern Kentucky Easter Seal Center, Covington, Kentucky and Miami University, Oxford, Ohio*

The role of audiologists in nursing homes includes staff education about hearing loss. In this study, 30-min in-services were presented in seven nursing homes. Nursing assistants, licensed practical nurses, and registered nurses participated. Participants completed the DanPat questionnaire pre- and post-training. The questionnaire has 31 items divided into four major categories: (a) attitudes and perceptions, (b) hearing aids, (c) hearing loss, and (d) speechreading and aural rehabilitation. Results demonstrate the effectiveness of the in-services. Discussion includes implications for future audiologic care in nursing homes and recommendations for improving in-services and hearing care in nursing homes.

8. Reducing Hearing Aid Returns Through Patient Education

Jerry L. Northern and Cindy Beyer; *HEARx, West Palm Beach, Florida*

Audiologists often question the necessity of aural rehabilitation as it relates to hearing aid dispensing. Records were reviewed from a large sample of patients ($N = 9,868$) who ordered hearing aids between January and June of 1997. Approximately one-third of the patients ($n = 3,306$) elected to attend a free series of aural rehabilitation classes. Rehabilitation participants showed a 3.5% hearing aid return rate compared to a 12% return/cancellation rate from those patients who did not attend the classes.

9. Soundscape: The Concept and its Potential Application in Audiologic Rehabilitation

M. Kathleen Pichora-Fuller, P. Kooner, and B. Truax; *University of British Columbia, Vancouver, British Columbia, Canada*

A soundscape is a sound sample of auditory events in a specific environmental context. An extensive library of sounds found in the Vancouver soundscape have been recorded and published. We have extended this method to record the sound world of specific hard-of-hearing individuals so as to learn about their listening environments and their responses to these environments. This approach will be demonstrated using a case study of a hearing-impaired senior in a care facility. Audio recordings of her sound world will be presented along with her reflections on the meaning of sound to her in daily life.

10. Interdisciplinary Training of Early Intervention Specialists for Children with Hearing Impairment and Their Families

Ronald Sommers, Irvin Gerling, John Hawks, Harold Johnson, and Carol Sommer; *Kent State University, Kent, Ohio*

Traditionally, audiologists and deaf educators have not worked together, although both disciplines advocate for clients and perform rehabilitation with hearing-impaired clients. There is a pressing need for specialized personnel to serve very young children (birth to 3 years) and their families, in a family-centered program. This federally funded training program combines deaf education and audiology students into a comprehensive transdisciplinary climate.

9:30 - 10:15 1998 KEYNOTE ADDRESS

Effects of Hearing Impairment on Family Life

Lillemor Hallberg, 1998 Keynote Speaker; *University of Göteborg, Göteborg, Sweden*

The burden of hearing disability is shared with close relatives. Studies on

the effects of hearing disability, however, are commonly focused on the person with the impairment. The purpose of this qualitative study was to describe, from the perspective of spouses, their experiences of living with a male with a severe noise-induced hearing loss. Transcribed in-depth interviews were analyzed in the grounded theory tradition. Two primary issues emerged from the data: the husband's reluctance to acknowledge hearing difficulties and the impact of hearing loss on the intimate relationship.

10:15 - 10:45 Reducing Hearing Aid Returns Through Patient Education: Implications for Rehabilitation

Jerry L. Northern, Invited Speaker; *HEARx, West Palm Beach, Florida*

The difference in hearing aid return rates between patients who do and do not attend aural rehabilitation classes is evidence of the effectiveness of these services. All too often, dispensing audiologists do not include formal counseling or patient education programs beyond a hearing aid orientation. The rationale for formalizing rehabilitative intervention, the implications for practitioners, and suggestions for implementing these services in a variety of clinical settings will be discussed.

10:45 - 11:15 Update on the Fitting of Amplification in Infants and Young Children

Richard Seewald, Invited Speaker; *University of Western Ontario, London, Ontario, Canada*

In theory, the identification of hearing impairment in infancy leads directly to family-centered habilitation including the fitting and optimal use of amplification. This presentation will review the key elements of a contemporary approach to pediatric hearing aid fitting as described in the recent *Position Statement on Amplification for Infants and Children with Hearing Loss*. Specific procedures discussed in the Position Statement will be demonstrated through video presentation.

11:15 - 11:45 The World Health Organization's Definition of Handicap: Implications for Training in Audiological Rehabilitation

Louise Getty and Jean-Pierre Gagné; *Université de Montréal, Montréal, Québec*

The World Health Organization (WHO), as early as 1980, presented a conceptual framework for the classification of handicaps, clarifying the concepts of impairment, disability, and handicap. Since then, researchers in re-

habilitation have worked to improve this model. In 1989, it became the International Classification of Impairments, Disabilities and Handicaps (ICIDH) model, that is more interactive and takes into account life habits and environmental factors in the creation of situations of handicap. The presentation will review this more recent conceptual framework, discuss the training of students in rehabilitative audiology, and identify in a curriculum, the courses that target these concepts. Conclusions will follow.

1:15 - 2:00 Psychological Factors in the Outcomes Experienced by Adult Cochlear Implant Users: Implications for Rehabilitation

John F. Knutson, Invited Speaker; *University of Iowa, Iowa City, Iowa*

Although modern cochlear implants provide considerable optimism for the restoration of hearing for post-lingually deafened adults, the documented variability in the audiological outcome of implants can temper that optimism. In an effort to understand the variability in outcome and to evaluate alternative indices of benefit, psychological factors in implant use and benefit have been studied for almost two decades. Based on a sample of consecutively referred adult implant candidates between 1980 and 1998, findings related to three specific topics will be presented: (a) psychological characteristics of post-lingually deafened adults seeking a cochlear implant, (b) psychological factors that predict implant benefit among post-lingually deafened users of multi-channel implants, and (c) changes in psychological function following sustained implant use. Within each topic, the implications of the findings for clinicians working with implant recipients will also be considered.

2:00 - 2:30 A Computerized Music Training Program for Adult Cochlear Implant Recipients

Kate Gfeller and Shelley Witt; *University of Iowa, Iowa City, Iowa*

This presentation describes the development and assessment of a computerized music training program for adult cochlear implant recipients that can be self-administered. The format and content of the program are based on: (a) models of adult aural rehabilitation, (b) existing knowledge of music cognition and pedagogy, (c) models of adult learning, (d) feedback from implant recipients garnered through surveys and interviews with regard to music listening, and (e) data taken from a pilot study using a workbook and cassette tape. Components of the training program consist of pitch sequence perception, song recognition, timbre recognition and appraisal, and appraisal of different musical styles.

2:30 - 3:00 Multichannel Cochlear Implant Update for Postlingually Deafened Adults

Cathleen O'Connor and Joanne Schupbach; *Chicago Otology Group, Hinsdale, Illinois*

Recent advances in cochlear implant technology have resulted in significantly improved patient performance necessitating change in cochlear implant candidacy criteria to include severely and profoundly impaired persons with more residual hearing and with better aided speech understanding. The goal of this paper is to review changes in candidacy criteria, steps in referral, evaluation, and rehabilitation process. We will also present distinguishing characteristics of four multi-channel cochlear implants. Objectives will be geared for audiologists working outside an implant center so they may appropriately refer candidates for cochlear implantation.

3:15 - 3:45 Preparing Aural Rehabilitation Students for Clinical Interaction and Functional Assessment

Norman P. Erber; *LaTrobe University, Melbourne, Victoria, Australia*

A brief self-teaching AR activity is described in which university students: (a) experience different amounts of simulated hearing/vision loss, (b) play roles of both client and clinician, (c) apply clarification requests and behaviors, and (d) learn to apply two different methods for evaluating conversational performance. Students converse under six perceptual conditions via closed-circuit audio/video (CONAN) incorporating adjustable hearing-loss (HELOS) and vision-loss simulators (Erber, 1996). A videotape will permit participants to observe interactions under various hearing-loss and vision-loss conditions, rate conversational fluency, and observe how computer-based DYALOG conversation-analysis data is obtained. Summary data will be presented and discussed.

3:45 - 4:15 Evaluation of Behind-the-Ear FM Technology

Linda Thibodeau; *Callier Center for Communication Disorders and University of Texas at Dallas, Dallas, Texas*

With the development of smaller FM components, options for receiving the signal through ear level instruments have increased. Following a description of ear level options, several issues regarding the performance evaluations, maintenance, variations in antenna strength, and battery drain will be reviewed.

4:15 - 5:00 1998 ROUND TABLE
Everything You Ever Wanted to Ask About AR!

Moderator:

Patricia A. McCarthy; *Rush University, Chicago, Illinois*

Panelists:

Jerome G. Alpin; *Hear Now, Denver, Colorado*

Jerry L. Northern; *HEARx, West Palm Beach, Florida*

John J. O'Neill; *University of Illinois at Urbana-Champaign,
Champaign, Illinois*

Laura A. Wilber; *Northwestern University, Evanston, Illinois*

This special session brings together a group of individuals whose careers have exemplified rehabilitative audiology. Their collective experience, perspective, and wisdom provide a unique opportunity for participants to pose some of those questions for which they have yet to find satisfactory answers. The panelists have agreed to address questions from the audience and to discuss the ways in which their experiences as clinicians, researchers, and teachers contributed to their commitment to rehabilitative audiology.

SATURDAY, JUNE 13

8:30 - 9:30 Effectiveness of Early Intervention

Mary Pat Moeller, Invited Speaker; *Boys Town National
Research Hospital, Omaha, Nebraska*

This presentation explores three fundamental questions related to the effectiveness of early intervention for children with hearing loss: (a) Why should we intervene early? – with focus on the need for prevention and broadening of the outcome variables we examine; (b) What do we know about early intervention effectiveness? – including literature reviews and outcome data from the Diagnostic Early Intervention Project at BTNRH; and (c) What else do we need to know? – with implications for research and practice.

9:30 - 10:00 A Unique Listening Experience for Children With Cochlear Implants

Linda Thibodeau, Diana Terry, Jennifer Basham, and Emily Tobey; *Callier Center for Communication Disorders and
University of Texas at Dallas, Dallas, Texas*

An annual summer day camp for children with cochlear implants was initiated at the Callier Center for Communication Disorders at the University of Texas at Dallas in 1996. Through an interdisciplinary team approach includ-

ing psychologists and speech pathology/audiology graduate students, faculty, and practicum supervisors, a multifaceted program was presented for children ages 2 to 10. Families also participate through specialized sibling and parent workshops. The activities center around a theme and are designed to develop listening skills.

10:00 - 10:15 The Impact of Otitis Media in Infancy on Maternal Language in Mother-Infant Interactions

Sheila Pratt and Michele Morrissey; *University of Pittsburgh, Pittsburgh, Pennsylvania*

The purpose of this study was to look at the linguistic behaviors of mothers of infants with positive histories of otitis media. Twenty-six infants were monitored monthly from 1 through 12 months of age for otitis media. Hearing also was monitored monthly. At 12 months of age, infants and their mothers were video-recorded in a laboratory play-setting. From the recordings, the mothers' MLUs and verbal density were calculated and verbal directiveness was analyzed. The productions of the mothers of otitis-positive infants were similar to those of the mothers of the otitis media-negative infants.

10:30 - 11:15 Life After Hearing Loss: Providing Services for Adults with Late-Onset Hearing Loss

Mary Clark and Cathleen O'Connor; *Hearing Loss Link and Chicago Otology Group, Chicago, Illinois*

Individuals who experience acquired hearing loss can face a challenging identity crisis. The rehabilitative audiologist must understand this type of hearing loss and the grief process in order to enable the client to cope with the loss, to determine communication needs, and to develop and employ appropriate communication strategies. The workshop will also address issues that affect family members, friends, workplace associates, and professionals who work with the individual with acquired hearing impairment.

11:15 - 11:45 Group Rehabilitation of Men With Noise-Induced Hearing Loss and Their Spouses

Lillemor Hallberg, 1998 Keynote Speaker; *University of Göteborg, Göteborg, Sweden*

According to an environmentally related definition of handicap, imperfections and barriers in the physical and social milieu are triggers for a handicap to arise. Based on these assumptions and on results from earlier research on predictors of handicap, a group rehabilitation program for men with noise-induced hearing loss (NIHL) and their spouses was designed. The aim of the

program was to offer the couples psychosocial support, adequate knowledge on the nature of NIHL, and training in effective coping strategies and hearing tactics. Short- and long-term results will be discussed with emphasis on the implications for program planning.

11:45 - 12:15 The Application of a Client-Centered Approach to Evaluate the Effectiveness of Intervention Programs for Persons with a Hearing Loss

Jean-Pierre Gagné, Stéphane McDuff, Denis Charron, and Louise Getty; *Université de Montréal and Institut Raymond-Dewar, Montréal, Québec, Canada*

The findings of a preliminary investigation designed to evaluate the effectiveness of intervention programs based on the principles underlying a client-centered problem-solving approach to rehabilitation will be presented. The results of the investigation provided some insights into the benefits provided by assistive listening devices (sound transmission systems and alerting devices) to solve specific situations of handicap. In addition, interviews conducted with the participants ($N = 10$) provided important information concerning the implementation of the intervention programs designed for individual participants. Finally, the documented impacts and consequences of the intervention programs will be discussed.

SUNDAY, JUNE 14

8:00 - 8:45 Casting Audiologic Rehabilitation Within a Model of Miscommunication

M. Kathleen Pichora-Fuller, Carolyn Johnson, Noelle Lamb, Kristen Roodenburg, and Lisa Dillon Edgett; *University of British Columbia, Vancouver, British Columbia, Canada*

Two major functions of communication are transaction (information exchange) and interaction (forming and maintaining social relations). Many audiologists have been biased in their concern with the transactional function and their relative neglect of the interactional function. In our work, we have tried to understand when and how listeners chose conversational behaviors that achieve either transactional or interactional goals and how these may be pitted against each other. We propose a new way of organizing conversation therapy that deploys a model of "miscommunication" taken from the social psychology literature (Coupland, Wiemann, & Giles, 1991).

8:45 - 9:30 The Influence of Personal Beliefs in Adaptation to Hearing Loss

Tom Conran and Susan Binzer; *St. Louis University and Washington University School of Medicine, St. Louis, Missouri*

The objective of this study is to describe belief systems and coping mechanisms of patients who appear to deny typical reactions to communication problems as interpreted by the Communication Profile for the Hearing Impaired (CPHI). Using narrative ethnographies, we distinguish between those individuals who appear to have accepted the limitations of their hearing impairment, and those who appear to deny their anger, sadness, and panic. We have found that strong, adaptive belief systems assist some patients in achieving a high level of acceptance. Early identification and continuous amplification of positive belief systems can significantly aid audiologic rehabilitation.

9:30 - 10:00 Gender, Age, and Hearing Loss-Related Behaviors Among Older Adults

Susan F. Erler and Dean C. Garstecki; *Northwestern University, Evanston, Illinois*

There is a need to address the heterogeneity among older adults with impaired hearing. This paper reports on three investigations of hearing loss, giving consideration to gender, age, and degree of impairment. Results suggest that: (a) among adults with mild-moderate hearing loss, women perceive greater communication and personal adjustment difficulties; (b) in addition to gradual declines in hearing sensitivity, financial and emotional resources vary among women of different ages; and (c) moderate-severe hearing loss has a greater emotional impact on women. These findings underscore the need to develop evaluation and rehabilitative techniques that accommodate diverse segments of the aging population.

10:15 - 10:45 Hearing Impairment, Coping, and Perceived Handicap

Lillemor Hallberg, 1998 Keynote Speaker; *University of Göteborg, Göteborg, Sweden*

Coping has a central role in adaptation to illness and disability. The purpose of these studies was to describe coping with demanding auditory situations from the perspective of hearing-impaired persons. In-depth interviews were conducted, transcribed verbatim, and analyzed according to the grounded theory method. Two qualitatively different coping patterns or concepts were revealed: controlling the social scene and avoiding the social scene. A handicap can be created in situations related to environmental factors and in situations related to life habits and social roles. These conditions

can be distinguished by the hearing-impaired person's control over what is happening. There is an apparent relationship between the use and choice of coping strategies and the desire to prevent or minimize stigmatization.

10:45 - 11:15 Psychological and Marital Adjustment Among Adults With Hearing Impairment

Sue Ann Erdman and Marilyn E. Demorest; *UMBC, Baltimore, Maryland*

Results of a multicenter investigation refute the notion that hearing impairment is associated with specific psychological disturbances. Normative data mirror those for the general population on measures of anxiety, depression, loneliness, and coping behavior. Degree of hearing impairment did not predict *any* of the psychological measures; the psychological measures *do*, however, predict adjustment to hearing impairment. In a related investigation, spouses underestimated communication importance, environmental problems, and their hearing impaired partners' use of communication strategies, and overestimated their partners' self-acceptance. Correlations between the spouses' scores are moderate indicating that couples' views of adjustment to hearing impairment do not strongly agree. Marital adjustment for these couples, as assessed by three marital satisfaction scales, is highly similar to that of the standardization samples.

11:15 - 11:45 Adjustment to Hearing Impairment: A Model

Marilyn E. Demorest and Sue Ann Erdman; *UMBC, Baltimore, Maryland*

Studies of psychosocial and behavioral adjustment to hearing impairment have revealed relationships among several domains that form the basis of a working model of hearing impairment. Structural equation modeling was used to portray these patterns of association. Relationships between Hearing Ability and constructs assessed by the CPHI were modeled with data obtained from a heterogeneous sample of hearing impaired adults ($N = 1,051$). Variables assessing Psychological Distress were added ($N = 179$) with previously estimated parameters of the measurement model fixed. Direct and indirect effects in the model and the direction of these effects will be described for the following: Hearing Ability, Communication Performance, Communication Importance, Communication Strategies, Environmental Demand, Psychological Adjustment, and Psychological Distress.