BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Hornsby, Benjamin W.Y.	Research Assistant Professor
eRA COMMONS USER NAME hornsbby	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Maryville College, Maryville, TN	BA	1985	Interpreting for Deaf
Vanderbilt University, Nashville, TN	M.S.	1995	Audiology
Vanderbilt University, Nashville, TN	Ph.D.	2001	Audiology

A. Positions and Honors

Positions and Employment

1995- 2001 Research Assistant, Hearing & Speech Sciences, Vanderbilt University School of Medicine, Nashville, TN

2001-pres Research Assistant Professor, Hearing & Speech Sciences, Vanderbilt University School of Medicine, Nashville, TN

Honors

1985 Cum Laude Graduation, Maryville College

1993-1995 Graduate Training Full Tuition Scholarship, Vanderbilt University

1995 Jay W. Sanders Honors in Audiology Award presented by Vanderbilt University and The Bill Wilkerson Center

2000 Biennial International Hearing Aid Conference student scholarship recipient

2002 American Auditory Society Mentored Student Research Award recipient

B. Selected peer-reviewed publications (in chronological order)

Hornsby, B., Kelly, T., Hall, J.W. III. (1996). Normative data for five FDA-approved distortion product OAE systems. *The Hearing Journal, 49*(9), 39-46.

Hornsby, B. and Ricketts, T. (2001). The effects of compression ratio, presentation level, and signal-to-noise ratio on speech recognition in normal-hearing subjects. *The Journal of the Acoustical Society of America, 109*(6), 2964-2973.

Mueller, H. G., Hornsby, B. (2002). Selection and verification of maximum output. In: Valente M, ed. *Strategies for selecting and verifying hearing aid fittings (2nd edition)*. New York: Thieme Medical Publishers, Inc.

Ricketts, T., and Hornsby, B. (2003). Distance and reverberation effects on directional benefit. *Ear and Hearing, 24*(6), 472-483.

Grantham, D., Hornsby, B., and Erpenbeck, E. (2003). Auditory spatial resolution in horizontal, vertical, and diagonal planes. *The Journal of the Acoustical Society of America, 114*(2), 1009-1022.

Hornsby, B., and Ricketts, T. (2003). The effects of hearing loss on the contribution of high- and low- frequency speech information to speech understanding. *The Journal of the Acoustical Society of America, 113*(3), 1706-1717.

Ricketts T., Henry P., & Hornsby B. (2005). Application of Frequency Importance Functions to Directivity for Prediction of Benefit in Uniform Fields. *Ear and Hearing*, 26(5), 473-486.

Hornsby, B., Trine, T. & Ohde, R. (2005). The Effects of High Presentation Levels on Consonant Feature Transmission in Normal-Hearing Subjects. *The Journal of the Acoustical Society of America*, 118(3), 1719-1729.

Ricketts TA, Hornsby B. (2005). Sound quality measures for speech in noise through a commercial hearing aid implementing “digital noise reduction”. *Journal of the American Academy of Audiology*, 16, 272-279.

Ricketts T., Hornsby B., & Johnson, E. (2005). Adaptive Directional benefit in the near field: Competing sound angle and level effects. *Seminars in Hearing, 26*(2), 59-69.

Hornsby, B., and Ricketts, T. (2006). The effects of hearing loss on the contribution of high- and low- frequency speech information to speech understanding II. Sloping Hearing Losses*. The Journal of the Acoustical Society of America*, 119(3), 1752-1763.

Hornsby, B., and Ricketts, T. and Johnson, E. (2006, in Press). The Effects of Speech and Speech-like Maskers on Unaided and Aided Speech Recognition in Persons with Hearing Loss. *Journal of the American Academy of Audiology.*

C. Research Support

Ongoing Research Support

R03-DC006576 08/01/04- 07/31/07
NIH/NIDCD
High Frequency Speech Information: Limiting Factors
The primary goals of this study are to 1) improve our understanding of the role that audiometric configuration (i.e., flat versus sloping hearing losses) plays in altering the relative utility of specific frequency regions to speech understanding of persons with SNHL, and 2) evaluate the relationship between audiometric configuration, audio-visual speech information, and the relative utility of specific frequency regions to speech understanding.
Role: PI

N/A 11/15/05-05/14/07
GN Resound
Factors limiting binaural benefit with directional microphones
The primary goals of this project are to identify the acoustic and perceptual factors that limit bilateral directional hearing aid benefit. The study design includes multiple experiments designed to obtain converging evidence that binaural processing is limited in noisy situations when persons with hearing loss are fit using an asymmetric fitting paradigm with an omnidirectional aid in one ear and a directional aid in the other (as opposed to a symmetrical directional fit). These study findings will have a direct impact on clinical strategies for fitting hearing aids to provide optimal speech understanding in noise for persons with hearing loss.
Role: Co-PI

N/A 02/01/06-02/01/07
Siemens, Inc
Benefits of Digital Noise Reduction Algorithms in Hearing Aids
The major goals of this project are 1) to evaluate the perceptual benefit in terms of increased tolerance to background noise provided by an experimental digital noise reduction algorithm and 2) to evaluate the potential benefit in speech understanding at high speech and noise levels provided by digital noise reduction algorithms for persons with hearing loss.
Role: PI

Completed Research Support

H133G020097 09/01/02-08/31/05
Department of Education
Factors Affecting Directional Hearing Aid Performance in Children
The major goals of this project are to determine the factors that impact children's success with directional hearing aids. Classroom observation, mapping of head position, and simulated real world evaluation of directional benefit data are currently being collected. This study will have a direct impact on directional hearing aid recommendations for children. This study is currently in the first year of data collection. This study is not directly related to the proposed project with the exception that both are designed to improve hearing aid recommendations and protocols for individuals with hearing loss.
Role: Co-Investigator

N/A 02/01/04-06/31/05
Siemens, Inc.
Effects of Volume Control Adjustment and Monaural/Binaural Directional Microphone Use on HA Benefit
The major goal of this study is to investigate the benefits and hindrance of specific hearing aid technology, for elderly individuals with hearing loss. Specifically, the benefits and disadvantages, in terms of speech understanding, of user manipulation of the hearing aid volume control, in a variety of listening environments, will be investigated in a group of elderly persons with hearing loss. In addition, a second portion of the study will investigate directional microphone benefit as a function of monaural versus binaural directional microphone use and noise source configuration.
Role: PI

N/A 02/01/04-01/31/05
GN Resound
Bandwidth and Digital Feedback Reduction in Current Digital Hearing Aids
The general goal of this research is to investigate the beneficial effects of specific hearing aid processing strategies (i.e. digital feedback reduction and extended high-frequency amplification) on listening comfort and speech understanding in elderly subjects with hearing loss. The study will first examine the potential positive impact of feedback reduction, independent of the positive impact associated with relief from occlusion effect (improvements in sound quality), and then systematically examine the interaction between feedback reduction and occlusion by varying vent size. In addition, the benefits in terms of improved listening comfort and sound quality, provided by extended high-frequency amplification will be investigated in elderly individuals with varying degrees of hearing loss.
Role: Co-Investigator