

Dr. ANTJE IHLEFELD

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NATIONALITY: GERMAN

EDUCATION

Boston University, Department of Cognitive and Neural Systems, Hearing Research Center
Ph.D. September 2002-May 2007

Topic: Strategies of spatial listening for speech comprehension

Boston University, Department of Cognitive and Neural Systems
M.A. , September 2002

Dresden University of Technology, Germany, Department of Electrical Engineering
Prediploma in Electrical Engineering , September 1999

Recommendation for Bachelor of Science, transfer to Boston University 2001

Gymnasium Dresden-Blasewitz, Germany

Abitur, Grade average: 1.1 (out of a range from 1.0 to 4.0) 1997

POST-GRADUATE RESEARCH EXPERIENCE AND TRAINING

Research Associate, Psychoacoustics Lab, Sargent College, Boston University *since April 2007*

Dr. Gerald Kidd, Associate Professor of Communication Disorders

- Studying mechanisms of binaural processing in informational masking.

Post-doctoral Scientist, Medical Research Council, Cognition and Brain Sciences Unit, Cambridge, U.K. *June 2007 – November 2007*

Dr. Robert Carlyon, Programme Leader

- Developed research interface for cochlear implant testing.
- Conducted psychophysical tests with cochlear implant listeners and normal hearing listeners.

GRADUATE RESEARCH EXPERIENCE AND TRAINING

Cognitive and Neural Systems Graduate Program Thesis Research

Dr. Barbara Shinn-Cunningham, Associate Professor of Cognitive and Neural Systems and Biomedical Engineering, Instructor, Harvard/MIT Division of Health Sciences and Technology

- Conducted psychophysical studies on the role of auditory spatial attention in speech intelligibility.
- Developed a model of the processes that underlie informational masking.
- Studied spatial hearing in echoic environments (measured head-related transfer functions, analyzed the spatial information using computational models of auditory processing, ran psychophysical experiments to measure the effect of reverberant energy on sound localization performance).

Workshop on Neuromorphic Engineering Summer 2005

Telluride, CO

- Three-week workshop focusing on VLSI implementations of neural circuits.

Neural Systems and Behavior Advanced Course Summer 2004

Wood's Hole Marine Biology Laboratory, MA

- Intensive eight-week course focusing on the neural basis of behavior, covering a range of neural recording techniques (lectures and laboratories).

NATO Advanced Study Institute Summer 2002

Il Ciocco, Italy

- Two-week lecture course focusing on the dynamics of speech production and perception.

LANGUAGES

German (native), English (fluent), Russian (basic).

PROGRAMMING LANGUAGES/ SOFTWARE

Matlab, C/C++, Adobe Illustrator, Microsoft Office

AD-HOC REVIEWER FOR

Journal of the Acoustical Society of America
IEEE Transactions on Audio, Speech and Language Processing
Perception
International Conference on Auditory Display (ICAD)
Statistical And Perceptual Audition (SAPA)

POSITIONS HELD

Graduate Student Representative (2003 - 2004)

AWARDS/SCHOLARSHIPS

Association for Research in Otolaryngology, Graduate Student Travel Award (2005)
Marine Biological Laboratory (2004)
Boston University, Graduate School of Arts and Sciences (2001-2007)
NATO Advanced Study Institute (2002)
Cultural Foundation of the Dresdner Bank (2000-2001)

PUBLICATIONS

Peer-reviewed Journals

A **Ihlefeld** and BG Shinn-Cunningham, "Spatial release from energetic and informational masking in divided listening," (*in press*)

A **Ihlefeld** and BG Shinn-Cunningham, "Spatial release from energetic and informational masking in selective listening," (*in press*)

A **Ihlefeld** and BG Shinn-Cunningham, "Disentangling the effects of spatial cues on selection and formation of auditory objects", (*conditionally accepted for publication*)

V Best, FJ Gallun, A **Ihlefeld**, BG Shinn-Cunningham B.G. (2006), "The influence of spatial separation on divided listening" J. Acoust. Soc. Am. 120, 1506

BG Shinn-Cunningham, A **Ihlefeld**, Satyavarta, E Larson (2006). "Bottom-up and top-down influences on spatial unmasking," Acta Acustica united with Acustica 91, 967

Book Chapter

Devore S, A **Ihlefeld**, BG Shinn-Cunningham, B Delgutte (2007), "Neural and behavioral sensitivities to azimuth degrade with distance in reverberant environments," in *Hearing - from basic research to applications*, Kollmeier, Klump, Hohmann, Langemann, Mauermann, Uppenkamp, Verhey, eds.

Peer-reviewed Conference Abstracts

Best, V, A **Ihlefeld**, and BG Shinn-Cunningham (2007). "Divided listening in auditory displays," Proceedings of the International Congress on Acoustics, Madrid, Spain, 2-7 September 2007

Best, V, **Ihlefeld** A, and BG Shinn-Cunningham (2005). "The effect of spatial layout in a divided attention task," Proceedings of the International Conference on Auditory Display, Limerick, Ireland

BG Shinn-Cunningham and A **Ihlefeld** (2004). "Selective and divided attention: Extracting information from simultaneous sound sources," Proceedings of the International Conference on Auditory Display, 6-9 July 2004.

Other Conference Abstracts

Ihlefeld A. and Carlyon R.P. (2007). "Simulations of cochlear-implant speech perception in steady and fluctuating noise," British Society of Audiology, Short Papers Meeting, London, UK, 20-21 September 2007 [poster]

Delgutte B, BG Shinn-Cunningham, S Devore, A **Ihlefeld** (2007), "Neural and Psychophysical Studies of Spatial Hearing in Realistic Acoustic Environments," Presented at the 30th MidWinter meeting of the Association for Research in Otolaryngology, Denver, CO, February 10-15.

Gallun FJ, NI Durlach, HS Colburn, BG Shinn-Cunningham, V Best, A **Ihlefeld**, CR Mason, G Kidd Jr (2007), "Binaural Release From Masking for a Tone in Noise and in Multitone Maskers," Presented at the 30th MidWinter meeting of the Association for Research in Otolaryngology, Denver, CO, February 10-15.

Ihlefeld A and BG Shinn-Cunningham (2006). "Listening strategies affect the benefit of spatial separation in informational masking," J. Acoust. Soc. Am.

Ihlefeld A and BG Shinn-Cunningham (2006). "Listening strategies affect the benefit of spatial separation in informational masking," Presented at the 29th MidWinter meeting of the Association for Research in Otolaryngology, Baltimore, February 5-9.

Best, V, **Ihlefeld** A, and BG Shinn-Cunningham (2005). "The effect of spatial configuration in a divided attention task," J. Acoust. Soc. Am. 117, 2562

Ihlefeld A, and BG Shinn-Cunningham (2005). "How natural environments alter spatial information in acoustic cues," Presented at Cosyne [Computational and Systems Neuroscience] 2005, Salt Lake City, Utah, March 17-22.

Ihlefeld A, Larson E and BG Shinn-Cunningham (2005). "Spatial unmasking at a spectrally sparse cocktail party," Presented at the 28th MidWinter meeting of the Association for Research in Otolaryngology, New Orleans, LA, February 19-24.

Ihlefeld, A and BG Shinn-Cunningham (2004). "Effect of source locations and listener location on ILD cues in a reverberant room," J. Acoust. Soc. Am. 115, 2598.

Ihlefeld, A and BG Shinn-Cunningham (2004). "Extracting sound location cues in reverberant space: Short-term interaural level differences in a classroom," Presented at the Eighth International Conference on Cognitive and Neural Systems, Boston, MA.

Popular Science Articles

Ihlefeld, A and M Slaney (2005). "AudioSapiana: an auditory robot that uses salience and binaural hearing," The Neuromorphic Engineer, 2(2), 5

INVITED TALKS

November 2007, "Disentangling the role of spatial cues on speech intelligibility," MRC Institute of Hearing Research, Nottingham, UK.

August 2007, "Strategies of spatial listening for speech comprehension," Hearing Group, Cambridge University

March 2007, **Ihlefeld**, A, S Chu and BG Shinn-Cunningham (2007). "Attending to space or intensity modulates spatial release from informational masking," Proceedings of the DAGA (German Acoustical Society), Stuttgart, Germany, 19-22 March 2007.

September 2006, "The impact of spatial attention on selective and divided listening," Séminaires Audition, Ecole Normale Supérieure, Paris

May 2006, "The impact of spatial attention on selective and divided listening," Eaton-Peabody Lab, Massachusetts Eye and Ear Infirmary, Boston

December 2005, "How spatial separation affects understanding one or two competing messages," University College London

REFERENCES AVAILABLE UPON REQUEST