



# Translational Perspectives in Auditory Neuroscience: Hearing Across the Lifespan - Assessment and Disorders

By Kelly Tremblay, Robert Burkard

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## Translational Perspectives in Auditory Neuroscience: Hearing Across the Lifespan - Assessment and Disorders By Kelly Tremblay, Robert Burkard

Hearing Across the Life Span is the second of the three-book series.

Virtually anything related to hearing that has a scientific basis could be included in a book so labeled, but this book is part of a mission to improve dialogue between basic and applied scientists so that health-related science can translate in many directions: from bench to bedside and vice versa. The editors are clinical audiologists as well as classically-trained hearing scientists, who, are committed to the advancement of translational research. To do this, colleagues who work along each step of the scientific continuum, from basic to applied, provided information that was theoretically deep, but contextually broad. In some instances this meant pairing authors (clinicians and scientists) who would not normally write together and asking them to co-author chapters. A diverse group of students, post-docs, and scientists also interacted with the authors by asking questions and infusing comments during the review process. This process ensured both basic and applied material would be integrated. One example is the final chapter in the third book in the series on Auditory Plasticity and Auditory Training. Rather than simply review evidence of experience-related physiological changes documented in animal models, the authors chose to address the functional significance of auditory plasticity as it pertains to auditory learning. By simply revisiting the concepts of plasticity in relation to learning there has been a resurgence of interest in the area as it pertains to auditory rehabilitation. The challenge was to present the literature in a way that allowed us to ask the tough questions like, Does a statistically-significant change in perception (or biology) necessarily constitute a functionally relevant change in behavior? More importantly, do the observed changes impact a person's ability to communicate? And does it impact their quality of life?

This title is the second book in the three-book set of Translational Perspectives in Auditory Neuroscience. Buy all three by purchasing the Translational Perspectives in Auditory Neuroscience bundle. See also, book 1 in the set - Translational Perspectives in Auditory Neuroscience: Normal Aspects of Hearing, and book 3 in the set - Translational Perspectives in Auditory

Neuroscience: Special Topics.

Section I Life Span and Disordered Hearing

1. Hearing Loss: Conductive and Sensorineural

Mark Chertoff and Dana Jacobson

2. Maturation of the Auditory System

Lori J. Leibold and Lynne A. Werner

3. The Aging Auditory System

Curtis Billings, Kelly Tremblay, and James Willott

Section II Physiological Assessment of Audition

4. Physiological Mechanisms Assessed by Aural Acoustic Transfer Functions

M. P. Feeney and D. H. Keefe

5. Otoacoustic Emissions Mechanisms and Applications

Christopher A. Shera and Carolina Abdala

6. The Auditory Brainstem Response (ABR)

Robert Burkard and Manuel Don

7. Physiological Mechanisms Underlying ASSRs

Susan A. Small and Andrew Dimitrijevic

8. Physiological Mechanisms Underlying MLRs and Cortical EPs

Hillel Pratt and Guy Lightfoot

9. Fundamental Principles Underlying Magnetic MRI and Functional MRI

Deborah A. Hall and Dominik C. Wild

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### **Editorial Review**

#### **Review**

"Translational research is the bridge that connects research and clinical practice and at present there is a lot of interest in this field. As Dr. Tremblay identified...scientists and clinicians are often driven by very different perspectives. Sadly, there are not many books in audiology that address the question of translational research and hence the arrival of the books edited by Drs. Tremblay and Burkard are very timely. The themes within each chapter pertain to common clinical findings and the authors have maintained a style that is easy to read...A number of books are currently available on objective techniques for investigating auditory function, but the emphasis on the translation of these techniques into clinical practice makes this book very topical and [a] useful addition to the literature...linking research and clinical perspectives in an accessible format. Students, practicing audiologists, and researchers would certainly benefit from this text..." --Mridula Sharma, Macquarie University, The HEARING Cooperative Research Centre, International Journal of Audiology, 2013

#### **About the Author**

Kelly Tremblay, Ph.D., CCC-A is Professor in the Department of Speech and Hearing Sciences at the University at Washington. She earned a bachelor's degree in Psychology from the University of Western Ontario, Canada and a M.Sc. in Audiology from Dalhousie University in Halifax, Nova Scotia. Her interest in hearing science began in Colorado, as an audiologist who worked with hearing aid and cochlear implant users. Interested in auditory rehabilitation, she returned to school to learn more about the neuroscience underlying rehabilitation. She completed a Ph.D. at Northwestern University, followed by post-doctoral training at the House Ear Institute in Los Angeles, California.

Robert Burkard, Ph.D., CCC-A is Professor and Chair, Department of Rehabilitation Science, at the University at Buffalo. He earned his B.S. in Communication Disorders at Buffalo State College, and his M.S. and Ph.D. in Audiology at the University of Wisconsin-Madison. He did a post-doc in the Department of Biology at Washington University. His first faculty position (Assistant then Associate Professor) was in the Department of Communication Disorders at Boston University. He moved to the University at Buffalo, where he was an Associate then Full Professor, in the Departments of Communicative Disorders and Sciences, and Otolaryngology. He moved to the Department of Rehabilitation Science, in the School of Public Health and Health Professions, in 2006.

### **Users Review**

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##### **Julia Hale:**

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