Maximizing Performance in CI Recipients: Programming Concepts

December 4-5, 2016

NYU Faculty

David Landsberger, Ph.D
Electric Auditory Research Lab (EAR Lab)
Department of Otolaryngology

William H. Shapiro, Au.D.
Lester S. Miller, Jr and Kathleen V. Miller Clinical Assistant
Professor of Hearing Health
Supervising Audiologist, NYU Cochlear Implant Center

Mario Svirsky, Ph.D
Noel L. Cohen Professor of Hearing Science
Vice-Chairman for Research
Department of Otolaryngology

Susan B. Waltzman, Ph.D
Marica F. Vilcek Professor of Otolaryngology
Co-Director, NYU Cochlear Implant Center

Invited Faculty

Uwe Baumann, Ph.D
Professor and Head
Department of Audiological Acoustics-ENT
Goethe-University, Frankfurt

Stefan Brill, Ph.D
Head of Research and Clinical Studies
MED-El Germany

Andreas Buchner, Ph.D
Associate Professor-Audiology
Professor for Auditory Implants
Medizinischen Hochschule Hannover

Barb Buck, Au.D
Principal Clinical Project Manager
Cochlear Americas
Invited Faculty (cont.)

Michael Dorman, Ph.D
Professor Emeritus
Speech & Hearing Science
Arizona State University

Camille C. Dunn, Ph.D, CCC-A
Director of Cochlear Implant Program
University of Iowa

Chris Durst, MSc.
Technical Director, MED-EL UK Ltd.

Jill Firszt, Ph.D
Professor, Department of Otolaryngology
Professor, Program in Audiology and Communication Sciences
Director, Cochlear Implant and Electrophysiology Laboratory
Washington University School of Medicine-St. Louis

Rene Gifford, Ph.D
Director, Cochlear Implant Program
Associate Director, Implantable Hearing Technologies
Vanderbilt Bill Wilkerson Center

Karen Gordon, Ph.D
Director, Archie’s Cochlear Implant Laboratory
The Hospital for Sick Children

Prof. Dr. Paul Govaerts M.D, M.Sc, Ph.D
Director, The Eargroup
Antwerp, Belgium

Jessica Messersmith, Ph.D
Associate Professor
Department of Communication Disorders
University of South Dakota

Ed Overstreet, Ph.D
Research Audiologist
Oticon Medical

Tony Spahr, Ph.D
Senior Manager of Fitting Innovation
Advanced Bionics Corporation

Jace Wolfe, Ph.D
Director of Audiology and Research
Hearts for Hearing

Teresa Zwolan, Ph.D
Professor and Director
University of Michigan Cochlear Implant Program

Course Description:

This course will address topics related to routine and special programming issues and methods in pediatric and adult recipients. It will also present new and promising techniques to assist in programming including genetic algorithms, CT guided imaging and the use of objective measures. Consideration will be given to the programming of bimodal, electroacoustic and SSD fittings. Format will include lectures, roundtable discussions and audience participation, with special emphasis on case studies.
**Target Audience:** Professionals involved in the programming of cochlear implants.

**Learning Outcomes:**

Participants will be able to:

- Describe the basic components of cochlear implant programming that are necessary to optimize the outcomes of pediatric and adult cochlear implant recipients.
- Describe the concepts of different cochlear implant aftercare models.
- State the underlying mechanisms most likely responsible for spatial hearing abilities for different hearing configurations.
- Describe how to perform ESRT testing.
- Discuss the relationship between ESRT recordings and electrical dynamic range.
- Explain clinical indications for performing ESRT measures.
- Identify effects of mismatched bilateral auditory input during development.
- Outline methods to provide balanced or matched bilateral cochlear implant stimulation.
- Summarize some key elements of artificial intelligence applied to CI fitting and evaluate the quality of the target driven, computer assisted approach
- Describe 3 issues affecting programming for children and adults with single sided deafness.
- Identify how selecting an appropriate candidate for the hybrid technology is the first step in maximizing performance.
- State possible patterns associated with hearing loss.
- Outline the components of the external EAS speech processor and the different electrode arrays designed for preservation of hearing.
- State the programming parameters affecting EAS fittings.
- Describe the effect of cochlear implant bandwidth and acoustic hearing bandwidth on speech understanding and subjective estimates of listening difficulty.
- Identify at least one objective measure that may be used to estimate appropriate upper stimulation levels (e.g., C levels, M levels, MCL).
- Identify tests of speech understanding for cochlear implant patients that rely more, or rely less on top-down processing.
- Discuss the benefits of cochlear implantation in individuals with asymmetric hearing loss.
- Explain how functional electrodes can be placed at any location along the electrode array using current steering and the potential applications of choosing these locations after implantation.
- Describe how the combination of electrode location and frequency allocation determines the amount of frequency mismatch for postlingually deaf cochlear implant users.
Discuss the protocol for assessing the problem patient and describe the information the clinician can obtain in the CDX file.

Identify the stages of cochlear implant programming and the potential efficiencies in programing cochlear implants and hearing aids.

Describe 3 advancements in the evolution of how we treat recipients with the Nucleus Cochlear Implant System.

Discover the current topics in fitting MED-EI systems with a focus on EAS (combined Electric and Acoustic Stimulation) systems including the challenges, opportunities and recent research outcomes relevant to fitting users.

Summarize the programming methodology used to configure the Neuro Cochlear Implant System and the methods by which sound intensity may be encoded using a Cochlear Implant.

To register, please visit the following website: http://www.med.nyu.edu/ent/maximizing_performance_in_cochlear

Course fee: $99

Conference Location:
NYU Langone Medical Center
Farkas Auditorium
550 First Ave
New York, NY 10016
Presenter’s financial and non-financial interests relevant to the content of their presentation for the Maximizing Performance in Cochlear Implant Recipients: Programming Concepts Conference is posted on our website at: http://www.med.nyu.edu/ent/maximizing_performance

This course is offered for a total of 1.2 ASHA CEUs
(Intermediate Level, Professional Area)

The Children’s Hearing Institute is approved by the American Academy of Audiology to offer Academy CEUs for this activity. The program is worth a maximum of 1.2 CEUs. Academy approval of this continuing education activity is based on course content only and does not imply endorsement of course content, specific products or clinical procedure, or adherence of the event to the Academy’s Code of Ethics. Any views that are presented are those of the presenters/CE Provider and not necessarily of the American Academy of Audiology.
**Agenda**

**Sunday, December 4th**
7:30am  Registration & Continental Breakfast

8:15am  Welcome – Susan Waltzman, Ph.D.

8:20am  Opening Remarks – William H. Shapiro, AuD

8:30am  Overview of Current Programming Concepts  
        Jace Wolfe, PhD

**Novel Approaches to Programming**  
        Moderator: William Shapiro, Au.D.

9:20am  Remote Programming – Andreas Buchner, PhD

9:40am  Device Programming: Improving Spatial Hearing Ability - Rene Gifford, Ph.D.

10:00am  Use of eSRT Measures in Device Programming  
         Jessica Messersmith, PhD

10:20am  BREAK

10:35am  Toward a bilateral fitting protocol in children: Why is it needed and what measures should be used?  
         Karen Gordon, Ph.D.

10:55am  Fitting to Outcome eXpert (FOX): Target Driven, Computer-Assisted Fitting  
         Paul Govaerts, M.D., MSc., Ph.D.  
         William H Shapiro, AuD

11:15am  **ROUNDTABLE**  
         Buchner, Gifford, Messersmith, Gordon, Govaerts

11:45am  Q&A

12:15pm  LUNCH

**Programming: Special Considerations**  
        Moderator: Paul Govaerts, M.D., MSc., Ph.D

1:15pm  Issues in Programming Single-Sided Deafness: Kids and Adults – Stephan Brill, Ph.D

1:35pm  Hybrid Hearing - Camille Dunn Ph.D

1:55pm  Electro Acoustic Stimulation – Uwe Baumann, Ph.D

2:15pm  Combined Electric and Acoustic Stimulation (EAS):  
         Bimodal Fitting - Rene Gifford, Ph.D.

2:35pm  BREAK

2:50pm  Incorporation of Assistive Technologies – Jace Wolfe, PhD

3:10pm  **ROUNDTABLE**  
         Brill, Dunn, Baumann, Gifford, Wolfe

3:30pm  Q&A

**Research**  
        Moderator: Susan Waltzman, PhD

4:00pm  Michael Dorman, PhD  
        Jill Firszt, PhD  
        David Landsberger, PhD  
        Mario Svirsky, PhD

5:20pm  Q&A

5:45pm  Adjourn
**Monday December 5th**

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<th>Time</th>
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<td>7:30am</td>
<td>Continental Breakfast</td>
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<td>8:00am</td>
<td>Evaluation and Programming Dilemmas in the Problem Patient – William H. Shapiro, AuD</td>
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<td>Management of the Difficult Patient: Programming Challenges-Case Studies- Faculty</td>
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<td>10:00am</td>
<td>Q&amp;A</td>
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<td>New Directions in Programming – Manufacturer Presentations</td>
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<td>11:35am</td>
<td>ROUNDTABLE- Q&amp;A</td>
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<td>12:15pm</td>
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