

Hearing Assessment in Infants and Young Children: Objective Auditory Tests and Cochlear Implants

Saturday, July 20 - Tuesday, July 23, 2019

This course will provide a detailed description of the structure and function of the auditory system. The course will cover basic mechanics and physiology of auditory detection and transduction at the level of the cochlea, as well as important aspects of the central auditory nervous system. The classes will cover details of normal cochlear function as well as pathophysiology. These concepts will be linked to issues relating to diagnosis of hearing loss, cochlear implantation, and hearing aids in children and in adults. Clinical protocols and considerations for measuring otoacoustic emissions and auditory evoked responses will be presented. Regarding CI, we will cover details about cochlear implant sound processing, cochlear electrode stimulation of neurons and other electrophysiological CI issues. Special topics of clinical relevance will include basic science studies of otoacoustic emissions, and auditory neuropathy spectrum disorder. In general, the basic science concepts will be related to clinical issues in audiology, as a way of providing insight into underlying deficiencies, and thus providing insight into improved diagnosis in diagnosis and treatment.

Faculty

Dr. Ryan McCreery
Dr. Josh Sevier

Disclosure Information

Dr. Ryan McCreery, Dr. Josh Sevier and all relevant personnel have completed disclosure forms. There are no relevant financial or nonfinancial relationships to disclose.

Learning Objectives

After this course participants will be able to:

1. Describe the physiology and micro-mechanism of cochlear function.
2. Identify causes of cochlear dysfunction.
3. Identify potential uses and limitations of otoacoustic emission testing
4. Implement evidence-based clinical protocols for otoacoustic emissions and auditory evoked potentials.
5. Describe the relation between tone burst frequency and latency of the auditory brainstem response (ABR) wave V component.
6. Define what is meant by "chirp" stimulus in auditory brainstem response (ABR) measurement.
7. Understand the history of cochlear implants.
8. Describe the proper candidacy assessment for a cochlear implant (CI) in infants and young children.
9. Record and interpret electrically evoked compound action potentials (eCAP) and understand the role of the measures for the purpose of programming CIs.
10. Measure Electrical Stapedial Reflex Thresholds (eSRT) and understand their purpose in the mapping CIs.
11. Understand and compare strategies for evaluating speech recognition in background noise for various modalities.

Learning Objectives Continued

12. Counsel patients and families through cochlear implant candidacy and post-surgical outcomes.
13. Troubleshoot complex CI cases and identify signs of potential complications.

Time Ordered Agenda

<i>Please note: Unless otherwise noted, all classes will take place in ROOM S303.</i>	
Saturday, July 20	
8:00 am – 8:30 am	Registration and Continental Breakfast
8:30 am – 9:00 am	Complete Pre-Test
9:00 am – 11:00 am	Auditory Physiology – Ryan McCreery, PhD <ul style="list-style-type: none"> • History and Evolution of OAEs; Neurophysiology of the Auditory System
11:00 am – 11:15 am	BREAK
11:15 am – 12:45 pm	Auditory Physiology – Ryan McCreery, PhD <ul style="list-style-type: none"> • Auditory Neural Plasticity; Relevance to Cochlear Implants
12:45 pm – 1:45 pm	LUNCH <i>Café</i>
1:45 pm – 2:45 pm	OAE Measurements and Analysis – Ryan McCreery, PhD <ul style="list-style-type: none"> • Current OAE taxonomy; OAE test protocols; Trouble-shooting in OAE measurement; Guidelines for OAE analysis; Relation between OAE findings and auditory function
2:45 pm – 3:00 pm	BREAK
3:00 pm – 5:30 pm	Hands-On Lab – Ryan McCreery, PhD / Josh Sevier, AuD <ul style="list-style-type: none"> • Evidence-Based Clinical Applications of OAEs; Distortion Product OAE; Transient Evoked OAE
5:30 pm – 6:30 pm	DINNER & COMPLETE DAILY EVALUATION <i>Café</i>
Sunday, July 21	
8:30 am – 9:00 am	Registration and Continental Breakfast
9:00 am – 10:30 am	Principles of Auditory Evoked Responses and Emerging Issues – Ryan McCreery, PhD / Josh Sevier, AuD <ul style="list-style-type: none"> • Identifying responses from the cochlea to the cortex; Historical Overview: A 70-Year Perspective; Stimulus and averaging principles; Anatomy and physiology of evoked responses; Electrode montage; Stimulus polarity; Calibration of short-duration stimuli; Chirp stimuli; Cortical evoked potentials
10:30 am – 10:45 am	BREAK
10:45 am – 12:15 pm	Frequency-Specific and Bone Conduction ABR and ASSR – Ryan McCreery, PhD
12:15 pm – 1:15 pm	LUNCH <i>Café</i>
1:15 pm – 2:45 pm	Hands-On Lab – Ryan McCreery, PhD / Josh Sevier, AuD <ul style="list-style-type: none"> • Brief review of morning material; Electrode application; Test protocol; Factors influencing measurement; Waveform analysis; Individual hands-on ABR click recording; Individual hands-on ABR tone recording
2:45 pm – 3:00 pm	BREAK
3:00 pm – 5:30 pm	Hands-On Lab Continued – Ryan McCreery, PhD / Josh Sevier, AuD <ul style="list-style-type: none"> • Trouble-shooting problems in AER measurement; Waveform interpretation 101; Review of ABR in hearing assessment
5:30 pm – 6:30 pm	DINNER & COMPLETE DAILY EVALUATION <i>Café</i>

Monday, July 22	
8:30 am – 9:00 am	Registration and Continental Breakfast
9:00 am – 10:30 am	Cochlear Implants (CI) – Josh Sevier, AuD <ul style="list-style-type: none"> History; Factors influencing candidacy; Language development and clinical learning periods; Residual hearing and pediatric speech perception; Changes/challenges in CI candidacy
10:30 am – 10:45 am	BREAK
10:45 am – 12:45 pm	Electrophysiology and CI – Josh Sevier, AuD <ul style="list-style-type: none"> Electrically Evoked Auditory Brainstem Response (EABR); Electrical Compound Action Potential (ECAP); Neural Response Telemetry (NRT); Cortical Evoked Potential (CAP)
12:45 pm – 1:45 pm	LUNCH <i>Café</i>
1:45 pm – 3:15 pm	Hands-On Lab – Josh Sevier, AuD <ul style="list-style-type: none"> Brief review of morning material; Live demonstration of EABR; Live demonstration of NRT; Live demonstration of CAP; Individual hands-on Electrical Stapedial Reflex Test (ESRT); Individual hands-on EABR; Individual hands-on NRT; Individual hands-on CAP
3:15 pm – 3:30 pm	BREAK
3:30 pm – 5:30 pm	Hands-On Lab Continued – Josh Sevier, AuD
5:30 pm – 6:30 pm	DINNER & COMPLETE DAILY EVALUATION <i>Café</i>
Tuesday, July 23	
8:30 am – 9:00 am	Registration and Continental Breakfast
9:00 am – 10:30 am	Cochlear Implants and other Implantable Devices – Josh Sevier, AuD <ul style="list-style-type: none"> Factors influencing Middle Ear implants; BAHA; Candidacy issues; Binaural Cochlear Implants; Unilateral Implants and Influences; Special population and CI
10:30 am – 10:45 am	BREAK
10:45 am – 12:15 pm	Neuro-Prosthetic Restoration of the sense of Audition in Deaf Children: Surgical Issues – Josh Sevier, AuD
12:15 pm – 1:15 pm	LUNCH <i>Café</i>
1:15 pm – 2:45 pm	Hands-On Lab – Josh Sevier, AuD <ul style="list-style-type: none"> Brief review of morning material; Electrically Evoked Auditory Brainstem Response (EABR); Electrical Compound Action Potential (ECAP); Neural Response Telemetry (NRT); Cortical Evoked Potential (CAP)
2:45 pm – 3:00 pm	BREAK
3:00 pm – 5:00 pm	Importance of Counseling Patients and Families in the CI Process – Josh Sevier, AuD
5:00 pm – 5:30 pm	Complete Post-Test, Daily Evaluation, and Program Evaluation
5:30 pm – 6:00 pm	DINNER <i>Café</i>

Registration Details

Standard Cost: USD \$1,025.00

OCA Active Preceptors (20% Discount): USD \$820.00

Recent OCA Graduates (10% Discount): USD \$922.50

Standard Cost Per Day: \$265.25

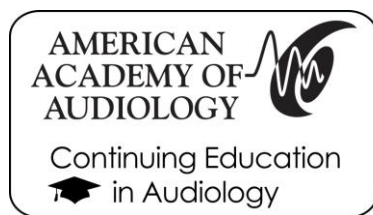
Registration Details Continued

OCA Active Preceptors (20% Discount): \$212.20 per day
Recent OCA Graduate (10% Discount): \$238.72 per day

For more information, please contact: sreese@salus.edu

For information on Salus' CE policy on cancellation and complaints, please visit: salus.edu/CE

**All attendees are strongly encouraged to bring their personal laptops or tablet*



TM

Salus University is approved by the American Academy of Audiology to offer Academy CEUs for this activity. 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 presenter/CE Provider and not necessarily of the American Academy of Audiology.

This course is offered for 2.8 AAA CEUs (Intermediate Level, Professional area).



Salus University is approved by the Continuing Education Board of the American Speech-Language-Hearing Association (ASHA) to provide continuing education activities in speech-language pathology and audiology. **See course information for number of ASHA CEUs, instructional level and content area.** ASHA CE Provider approval does not imply endorsement of course content, specific products or clinical procedures.

This course is offered for 2.8 ASHA CEUs (Intermediate Level, Professional area).