MASH 2025

Mid-Atlantic Speech and Hearing (MASH) Cochlear Implant Conference

The University of Maryland at College Park
October 17th – 18th, 2025

AGENDA

FRIDAY, OCTOBER 17, 2025

8:00 AM – 5:00 PM

8:00 AM *Registration and Breakfast*

9:00 AM **Matthew Goupell, *University of Maryland***
Introduction of the Tenth Annual MASH Conference

9:15 AM **Kristina DeRoy Milvae, *University at Buffalo***
Listening effort with practice in cochlear implant simulations

9:45 AM **Charlie Fisher, *University of Maryland***
Improving speech-in-noise listening: Neuroplasticity evidence in older adults from auditory-cognitive training

10:15 AM **Claire Bernstein, *Gallaudet University* &**
Diane Brewer, *George Washington University*
Exploring the effect of auditory-cognitive training with older CI users

10:45 AM *Coffee Break*

11:15 AM **Josh Bernstein, *Walter Reed Medical Center***
Auditory methods targeting rehabilitation and cognition for binaural processing with cochlear implants

11:45 AM **Madeleine Beyer, *New York University***
Predicting cochlear implant outcomes from pre-operative psychophysics

12:15 PM *Lunch*

1:45 PM **Jim Mahshie, *George Washington University***
Insights and questions about speech perception derived from findings on speech production

2:15 PM **Sima Azhang & Kara Hawthorne, *Gallaudet University***
The impact of hearing devices on speech intelligibility, naturalness and likeability

2:45 PM *Cookie Break*

3:00 PM **Gretta Richter & Meg Dillon, *University of North Carolina at Chapel Hill***
Influence of mapping procedure on the speech recognition and sound source localization of adult cochlear implant users with unilateral hearing loss

3:30 PM **Grace Caplan & Sierra Stecklein, *University of Pittsburgh***
Listening strategy determines how neural signals are filtered in a "spatial attention" task

4:00 PM **Mike Johns, *Walter Reed Medical Center***
SSD-CI selective attention

4:30 PM **Stephen Dennison, *MED-EL***
Comparing sound localization and spatial release from masking in unilateral, bilateral, single-sided deaf, and bimodal cochlear implant users

SATURDAY, OCTOBER 18, 2025

8:00 AM – 12:30 PM

8:00 AM *Registration & Breakfast*

9:00 AM **Obada AlQasem, *University of Maryland***
The relationship between neural health asymmetry, interaural loudness mismatch and localization accuracy in bilateral cochlear implant users

9:30 AM **Ben Richardson, *Carnegie Mellon University***
ITD-to-ILD transformation aids in spatial selection for bilateral cochlear implant users

10:00 AM **Nirmal Srinivasan, *Towson University***
Perceived listening effort for simulated CI speech

10:30 AM *Coffee Break*

11:00 AM **Paul MayoBenjamin Gordon, *University of Maryland***
Interaural-time-difference distributions for simulated fine-structure stimulation strategies

11:30 AM **Matthew Goupell, *University of Maryland***
The strange case of split hemifield spatial response distributions

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Learner Outcomes

Session 1: Kristina DeRoy Milvae, *University at Buffalo*
Participants will be able to:

- Define listening effort
- Connect listening effort to potential aural rehabilitation goals

Session 2: Charlie Fisher, *University of Maryland*
Participants will be able to:

- Interpret neural encoding models and outputs of neural decoding models
- Summarize pre and post-training behavioral and neural differences

Session 3: Claire Bernstein, *Gallaudet University*
Participants will be able to:

- Describe three key areas of focused training for an auditory cognitive treatment protocol with older adult cochlear implant users.
- Identify at least two key outcome measures for the assessment of cognitive function in older post-lingually deafened adult cochlear implant users.
- Identify one speech recognition and two psychosocial outcome measures to use when evaluating the effectiveness of auditory cognitive training.

Session 4: Josh Bernstein, *Walter Reed Medical Center*
Participants will be able to:

- Assess the efficacy of a binaural-hearing rehabilitation paradigm for cochlear-implant users
- Modify experimental training procedures to maximize rehabilitative success

Session 5: Madeleine Beyer, *New York University*
Participants will be able to:

- Describe limitations of the audiogram to describe auditory function
- Use a non-linguistic psychoacoustic test to evaluate preoperative auditory function

Session 6: Jim Mahshie, *George Washington University*
Participants will be able to:

- Describe the segmental and suprasegmental speech production patterns observed in children with cochlear implants
- Describe possible audible elements of speech that might explain these production patterns

- Describe less audible elements that raise questions about how these children perceive these aspects of speech

Session 7: Sima Azhang & Kara Hawthorne, *Gallaudet University*
Participants will be able to:
- Identify the difference between intelligibility, naturalness and likeability
- Identify the impact of hearing loss on intelligibility, naturalness and likability
- Identify the impact of different hearing devices on intelligibility, naturalness and likeability
- Identify the effect of experience with deaf speech on judgements of speech produced by deaf talkers

Session 8: Gretta Richter & Meg Dillon, *University of North Carolina at Chapel Hill*
Participants will be able to:
- List the variables that contribute to frequency-to-place mismatch and how mismatch may influence performance with a cochlear implant for patients with unilateral hearing loss
- Describe potential outcomes with an individualized map as compared to a default map within the first six months of cochlear implant use for adults with unilateral hearing loss

Session 9: Grace Caplan & Sierra Stecklein, *University of Pittsburgh*
Participants will be able to:
- Comprehend how EEG responses are modulated by spatial attention
- Learn how fNIR responses relate to the recruitment of the prefrontal cortex in a spatial attention task

Session 10: Mike Johns, *Walter Reed Medical Center*
Participants will be able to:
- Connect a CI user's executive function abilities (i.e., selective attention) to their ability to understand masked speech.
- Integrate measures of executive function into their assessments of how well CI candidates and current CI users will be able to understand speech in noise.

Session 11: Stephen Dennison, *MED-EL*
Participants will be able to:
- Summarize differences in performance on sound localization and spatial release from masking for individuals with different cochlear implant device configurations
- Predict a cochlear implant user's sound localization performance from their spatial release from masking performance and vice versa

Session 12: Obada AlQasem, *University of Maryland*
Participants will be able to:
- Identify the relationship between auditory neural health asymmetry and lateralization biases in BICI users
- Identify the relationship between lateralization biases and localization biases in the free-field

Session 13: Ben Richardson, *Carnegie Mellon University*
Participants will be able to:

- Explain how interaural time differences (ITDs) work in our custom sound processing and describe the perceptual consequences of this transformation for spatial hearing in CI users.
- Analyze experimental evidence showing how exaggerated ILDs influence spatial release from masking in bilateral cochlear implant users and evaluate the implications of improving speech perception in noisy environments.

Session 14: Nirmal Srinivasan, *Towson University*
Participants will be able to:

- Describe how listening effort changes when the quality of the signal is altered
- Describe the relationship between fundamental frequency and spatial locations of sound source on perceived listening effort

Session 15: Paul Mayo, *University of Maryland*
Participants will be able to:

- Explain why fine-structure cochlear implant stimulation strategies jitter interaural time differences
- Describe the probability distributions for interaural time differences created by fine-structure cochlear implant stimulation strategies

Session 16: Matthew Goupell, *University of Maryland*
Participants will be able to:

- Classify different localization patterns into typical and atypical categories
- Predict sound localization errors depending on hearing status

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Disclosures

Kristina DeRoy Milvae receives salary from the University at Buffalo for employment. She also participates in other research activities with the University of Maryland, College Park.

Charlie Fisher has no relevant relationships to disclose.

Claire Bernstein has no relevant relationships to disclose.

Diane Brewer has no relevant relationships to disclose.

Josh Bernstein receives grants from the National Institute on Deafness and Other Communication Disorders (NIDCD) to investigate the contralateral disruption phenomena. He also has a professional relationship with the American Auditory Society as a section editor for Ear & Hearing.

Madeleine Beyer has no relevant relationships to disclose.

Jim Mahshie receives salary and grants from George Washington University for employment.

Sima Azhang has no relevant relationships to disclose.

Kara Hawthorne has no relevant relationships to disclose.

Gretta Richter receives grants from MED-EL to support her research.

Meg Dillon receives grants from MED-EL to support her research.

Grace Caplan has no relevant relationships to disclose.

Sierra Stecklein has no relevant relationships to disclose.

Mike Johns has no relevant relationships to disclose.

Stephen Dennison receives salary from MED-EL for employment.

Obada AlQasem has no relevant relationships to disclose.

Ben Richardson has no relevant relationships to disclose.

Nirmal Srinivasan has no relevant relationships to disclose.

Paul Mayo has no relevant relationships to disclose.

Matthew Goupell receives salary and grants from the National Institute of Health to perform grant related research.