

# Hearing, Audio and Audiology Sciences Meeting

**12-13 SEPTEMBER 2022**  
**SOUTHAMPTON, UK**

**Programme**

## Day 1: Monday, 12 September

- 09:00 – 09:45 Registration & Coffee
- 09:45 – 10:00 Welcome Session
- 10:00 – 11:00 Session 1: *Hearing-Assistive Technologies***
- 11:00 – 11:30 Break + Posters
- 11:30 – 12:30 Session 2: *Spatial Hearing and Immersive Audio Rendering***
- 12:30 – 14:00 Lunch + Posters
- 14:00 – 15:00 Session 3: *Advances in Our Understanding of Hearing from Neuroimaging***
- 15:00 – 16:00 Break + Posters
- 16:00 – 17:00 Session 4: *The Physiology of Hearing***
- 19:00 – Late BBQ

## Day 2: Tuesday, 13 September

- 10:00 – 11:00 Posters
- 11:00 – 12:00 Session 1: *Measuring and Understanding Hearing Loss***
- 12:00 – 13:30 Lunch + Posters
- 13:30 – 14:30 Session 2: *Modelling and Measuring Hearing and Hearing-Assistive Devices***
- 14:30 – 15:00 Break + Posters
- 15:00 – 16:00 Session 3: *New Technologies for the Hearing Sciences***
- 16:00 – 16:10 Closing Session

## PRESENTATIONS: MONDAY 12 SEPTEMBER

### SESSION 1: HEARING-ASSISTIVE TECHNOLOGIES

*Chair: Mark Fletcher*

#### **Benefits and limitations of assistive listening devices**

Moore, B.C.J.

#### **Cochlear implant outcomes and changes in implant technology**

Vickers, D.A.

#### **Using haptics to enhance listening for cochlear implant users**

Perry, S.W., Fletcher, M.D.

### SESSION 2: SPATIAL HEARING AND IMMERSIVE AUDIO RENDERING

*Chair: Lorenzo Picinali*

#### **Development and evaluation of auditory-model-aided non-individual HRTF selection procedure**

Daugintis, R.; Geronazzo, M.; Barumerli, R.; Picinali, L

#### **Assessing non-target hearing through immersive audio**

Picinali, L.; Chait, M.; Shiell, M.

#### **Identification of veridical room acoustics from binaural audio-visual presentation**

Culling, J.F.; Wylie, A.E.M.

### SESSION 3: ADVANCES IN OUR UNDERSTANDING OF HEARING FROM NEUROIMAGING

*Chair: Debi Vickers*

#### **EEG Responses to Auditory Figure-Ground Perception**

Guo, X.; Dheerendra, P.; Benzaquén, E.; Sedley, W.; Griffiths, T.

#### **Neural Correlates of Stream Formation during Active Listening in the Ferret Auditory Cortex**

Lebert, J.; Griffiths, C.; Sollini, J.; Bizley, J.

#### **Using interleaved stimulation to measure temporal smoothing and growth of the sustained neural response to cochlear-implant stimulation**

Guerit, F.; Deeks, J.; Gransier, R.; Wouters, J.; Carlyon, R.

### SESSION 4: THE PHYSIOLOGY OF HEARING

*Chair: Joe Sollini*

#### **A direct inhibitory projection from hippocampus to inferior colliculus: a descending pathway for auditory memory and emotion?**

Olthof, B.M.J.; Gartside, S.E.; LeBeau, F.E.N.; Clowry, G.J.; Rees, A.

#### **Cortical adaptation to sound reverberation**

Ivanov, A.Z.; King, A.J.; Willmore, B.D.B.; Walker, K.M.M.; Harper, N.S.

#### **Cooling visual cortex impacts multisensory responses in ferret auditory cortex**

Norris, R.H.; Town, S.M.; Wood, K.C.; Bizley, J.K.

## PRESENTATIONS: TUESDAY 13 SEPTEMBER

### SESSION 1: MEASURING AND UNDERSTANDING HEARING LOSS

*Chair: Esma Akis*

**Relating noise exposure and temporal envelope processing using unvoiced speech recognition**

Zhang, M

**Measuring speech recognition and quality of life in Arabic children with OME using the PAAST SiQ and Arabic OM-6 questionnaire**

Alsebai, S.; Rowan, D.; Lineton, B.; Campbell, N.; Semeraro, H.

**Finite Element Simulation of the Inner Ear Component in Bone Conduction Hearing**

Kersten, S.; Taschke, H.; Vorlaender, M.

### SESSION 2: MODELLING AND MEASURING HEARING AND HEARING-ASSISTIVE DEVICES

*Chair: Tobi Goehring*

**BlurCAP: Investigating changes in current spread with blurred stimulation in cochlear implant users using the Panoramic ECAP Method**

Garcia, C.; Morse-Fortier, C.; Guérit, F.; Goehring, T.; Carlyon, R.P.; Arenberg, J.G.

**A new signal-detection theory based method for quantifying audiovisual speech perception**

Sumner, C.; Smith, S.; Baguley, T.; Stacey, P.

**Objective measurement of temporal resolution using auditory brainstem responses (ABRs)**

Akis, E.; Bell, S.; Simpson, D.

### SESSION 3: NEW TECHNOLOGIES FOR THE HEARING SCIENCES

*Chair: Sam Perry*

**Text-to-speech for the hearing impaired**

Schlittenlacher, J.; Baer, T.

**SEAT: A new platform for audiovisual speech intelligibility tests in virtual reality**

Moore, A.H.; Green, T.; Naylor, P.A.; Brookes, M.

**To learn or not to learn: Machine learning approaches in the hearing sciences**

Goehring, T.

## POSTERS

- 1. Leveraging temporal masking for speech transmission with cochlear implants: Extension to challenging listening conditions**  
Shahidi, L.; Vickers, D.; Carlyon, R.; Goehring, T
- 2. Phase vocoding at the frequency resolution of the auditory system: A feasibility study**  
Agus, T.R.
- 3. Effects on auditory stream segregation of sudden coherent changes in timbre without substantial peripheral channelling cues**  
Roberts, B.; Haywood, N.R.
- 4. Binaural temporal fine structure sensitivity in typically developing, normal hearing children**  
Flanagan, S.; Moore, B.; Wilson, A.; Gabrielczyk, F.; MacFarlane, A.; Mandke, K.; Goswami, U.
- 5. Investigating New Paradigms for Measuring DPOAE Input-Output Functions**  
Joshi, H.; Lineton, B.
- 6. *Withdrawn*: Measuring Amplitude Modulation Rate Discrimination with the Auditory Change Complex in Cochlear Implant users**  
Williges, B.; Salorio-Corbetto, M.; Haywood, N.; Undurraga, J.; Vickers, D.
- 7. Comparing Cortical Responses to Continuous Speech and Speech Modulated Noise During Passive Listening**  
Aljarboa, G.S.; Bell, S.; Simpson, D.M.
- 8. Comparing different electrically-evoked auditory responses in cochlear implant listeners**  
Arzounian, D.; Guérit, F.; Deeks, J.; Carlyon, R.
- 9. Preferred Music-listening Levels in Musicians and Non-Musicians, and Contribution of the Vestibular System**  
Cetinbag, O.; Kluk, K.; Couth, S.; Plack, C.J.
- 10. Predicting Speech Reception Threshold From Cortical Responses To Sound Stimuli**  
Deoisres, S.; Bell, S.; Simpson, D.
- 11. Characterisation of frequency-to-place mismatch using frequency shifted music: a vocoder study**  
Villejoubert, L.; Vickers, D.; Picinali, L.
- 12. Improving the detection of auditory brainstem responses to be closer to true behavioural thresholds**  
Li, X.; Bell, S.
- 13. Cortical Tracking in Speech Perception with Applications to Cochlear Implants**  
MacIntyre, A.D.; Carlyon, R.; Goehring, T.
- 14. Adaptation to noise for amplitude modulation detection measured with electroencephalography**  
Marrufo-Perez, M.I.; Haywood, N.R.; Undurraga, J. A.; Lopez-Poveda, E.A.; Vickers, D.
- 15. Analysing the diagnostic auditory brainstem response using machine learning**  
McKearney, R.; Bell, S.; Simpson, D.
- 16. Crosstalk Cancellation in Bilateral Bone Transducers**  
Barnsley, R.; Culling, J.; Mcleod, R.
- 17. Combining ABR and MLR waveform features using statistical detection tests**  
Nijo, G.; Bell, S.; Chesnaye, M.

- 18. *Withdrawn: The effect of age and hearing sensitivity at frequencies above 8 kHz on auditory stream segregation and speech perception***  
Moore, B.; Jain, S.; Narne, V.; Nataraja, N.; Madhukesh, S.; Kumar, K.
- 19. *The Threshold of Perceptual Significance for TV Soundtracks***  
Acheson, R.J.; Agus, T.R.
- 20. *Investigating cortical dependency of auditory processing in the ferret brain via optogenetic inactivation***  
Madanat, L.; Katarina, P.; Town, S.; Bizley, J.
- 21. *The influence of sound statistics on auditory decisions in ferrets***  
Bochtler, K.S.; Dick, F.; Holt, L.L.; King, A.J.; Walker, K.M.
- 22. *Neural correlates of perceptual invariance in the ferret auditory cortex***  
Griffiths, C.; Sollini, J.; Lebert, J.; Bizley, J.
- 23. *Is the eye a window to our hearing brain? Investigating the internal validity of pupilometry as a measure for listening effort***  
Fairless, J.S.
- 24. *Development of the Arabic Commands in Noise Test for studying auditory fitness for duty***  
Rawas, I.; Rowan, D.; Bleeck, S.; Semeraro, H.
- 25. *Using the virtual implementation of the Spatial BKB Sentence Test and the Spatial Speech in Noise test to assess spatial hearing abilities of children with bilateral cochlear implants***  
Parmar, B.; Picinali, L.; Bizley, J.; Salorio-Corbetto, M.; Williges, B.; Vickers, D.
- 26. *Attitudes towards hearing healthcare, hearing aids and “hearables” amongst adults over 50 years***  
Rajasingam, S.; Goehring, T.; Archer-Boyd, A.; Chundu, S.; Nakubulwa, M.; Handscomb, L.; Vickers, D.; Moore, B.
- 27. *Perception of Pitch Height and Prominence by Old and Young listeners***  
Jeon, H.; Heinrich, A.
- 28. *The pivotal role of hearing for pragmatic language development as highlighted by parents of deaf children and Teachers of the Deaf***  
Chilton, H.; Sambah, I.; Adams, C.; Theakston, A.; Heinrich, A.
- 29. *Turning a deaf ear to auditory biases in cognitive assessment?***  
Füllgrabe, C.
- 30. *Diagnosing listening difficulties in children: The relationship between auditory processing, speech processing, language processing, and cognitive abilities in typically developing children***  
Zhou, X.; Dillon, H.; Heinrich, A.; Burgoyne, K.; Gudkar, A.I.
- 31. *Deaf Awareness, Accessibility and Communication in the NHS: How can we do better?***  
Parmar, B.; Henshaw, H.; Howe, S.; Stapleton, E.; Turton, L.
- 32. *Difficulty  $\neq$  1 - Ability: Insights from developing a predictive model of adult hearing loss using self-reported outcomes***  
Whitmer, W.M.; Scutt, P.
- 33. *The effect of recreational noise exposure on hearing thresholds, TEOAEs, and DPOAE above 8 kHz.***  
Alenzi, H.; Lineton, B.
- 34. *Priorities in hearing – towards a common goal.***  
MacKinnon, R.; Heinrich, A.; Sumner, C.

- 35. Understanding the relationship between hearing experiences, music listening behaviours and chord discrimination abilities for adult cochlear implant users**  
Lam, C.C.; Moore, B.; Vickers, D.
- 36. Clarity and Cadenza: Machine-Learning Challenges to Improve Speech and Music Listening for People with Hearing Loss**  
Greasley, A.; Whitmer, W.; Vos, R.; Culling, J.; Akeroyd, M.; Graetzer, S.; Bailey, W.; Barker, J.; Fazenda, G.; Tu, Z.; Bannister, S.; Cox, T.
- 37. Do interventions informed by the viability of the electrode-neural interface improve cochlear implant outcomes? A systematic review**  
Tzu-Hsien Lien, J.; Williges, B; Deborah V.
- 38. Reported stream segregation in cochlear implant listeners: Revisiting the effect of presentation rate**  
Haywood, N.; Vickers, D.
- 39. Assessing the effect of head-related transfer function on spatial stream segregation**  
Vicente, T.; Shiell, M.M.; Picinali, L.
- 40. Stream segregation from interaural timing differences**  
Haywood, N.; McAlpine, D.; Vickers, D.; Roberts, B.
- 41. The role of fluid viscosity in cochlear tuning**  
Marquardt, T.
- 42. Deep learning strategies for compensation of noise and reverberation: single- vs multi-microphone approaches and application to cochlear implants**  
Gaultier, C.; Tobias G.
- 43. Stacked Gated Control Network**  
Cui, J.; Bleeck, S.
- 44. Within and between-channel amplitude modulation processing in cochlear implant users**  
Vickers, D.; Haywood, N.; Boyle, P.; Salorio-Corbetto, M.; Williges, B.; Schlittenlacher, J.; Moore, B.
- 45. New measurements of the relative strength of audition and vision to perceived spatial lateralization**  
Akeroyd, M.; Firth, J.; Griffiths, H.; Nam, S.
- 46. Assessing and Optimising Audio-visual Integration for Listening**  
Alampounti, C.; Bizley, J.
- 47. An investigation into facial depth data for audio-visual speech recognition**  
Ralph-Donaldson, T.; Bleeck S.
- 48. Using the Compact Model of the Noise Covariance Matrix for Acoustic Scene Analysis**  
Vos, R.R.; Moore, A.H.; Guiraud, P.H.; Naylor, P.A.; Brookes, M.
- 49. Do you know who you're talking to: Talker identity priming improves hearing-in-noise**  
Sollini, J.; Dhewa, R.; Hadley, L.