

Virtual Conference on Computational Audiology (VCCA)

25-26 June, 2026

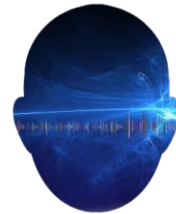
*Bridging auditory science: From neural mechanisms to
clinical practice*

Program & Abstracts

Hosted by



UNIVERSIDAD
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Computational Audiology
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Session 3A – Hidden Hearing Loss and Subclinical Auditory Disorders

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Session 5A – Cochlear Implants: Challenges and Prospects

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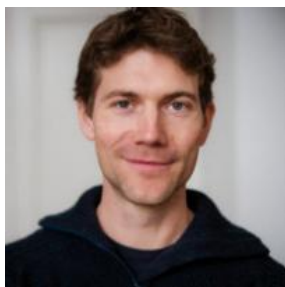


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Session 1A – Computational Audiology & Digital Hearing Research

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Session 1B – Binaural Hearing & Spatial Sound Perception

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Session 2B – Cognition, Listening Effort & Brain Connectivity

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Session 3B – Objective Measures and Biomarkers in Hearing Research

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Session 5A – Cochlear Implants: Challenges and Prospects

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Session 6A – From Lab to Clinic: Ensuring Impact of Computational Hearing Research

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Session 6B – Multisensory and Vestibular Integration

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Program

Day 1 (Thursday 25th June, 2026)

Time UTC+2	Room A	Room B
12:00 – 12:15	Opening ceremony Welcome. Dr. Jan-Willem Wasmann, President of the Computational Audiology Network. Dr. Joaquin T. Valderrama, Dr. María Amparo Callejón Leblic, Dr. Miriam I. Marrufo-Pérez, VCCA 2026 chairs.	
12:15 – 13:00	Keynote Lecture 1 <i>“Separating the Causes of Listening Difficulties when Thresholds are Normal: Concepts and Data”</i> Prof. Harvey Dillon (Macquarie University, Sydney, Australia) <i>Presented by Dr. Jan-Willem Wasmann</i>	
13:00 – 13:10	Mini-Break	
13:10 – 14:25	Session 1.A. Computational Audiology & Digital Hearing Research <i>Model-based approaches, auditory simulations, and data- driven insights into hearing processes.</i> Chaired by Dr. Helia Relaño Iborra.	Session 1.B. Binaural Hearing & Spatial Sound Perception <i>Localization, spatial cues, and listening in complex acoustic environments.</i> Chaired by Dr. Jaime Andres Undurraga Lucero.
	Featured. “The Effect of Hearing Loss on the Characteristics of Daily Life Conversations,” by Carlota Sabaté Cao.	Featured. “Contralateral sound attenuation can help hearing-aid users understand speech in realistic, dynamic “cocktail party” listening situations.” by Paula García Zaballos.
	Podium. “Auditory Models for Hearing-loss Compensation – some Candidates,” by Lars Bramsløw.	Podium. “Longitudinal Training Enhances Interaural Timing Sensitivity in Cochlear Implant Users,” by Raymond Goldsworthy.

	Podium. “Joint Estimation of Attentional and Masking Error Rates for Speech Recognition in Competing Speech,” by Adam Bosen.	Podium. “Headphone-based Spatial Perception Tests in Listeners with Sensorineural Hearing Loss: Insights from Receiver Operating Curve (ROC) diagnostics,” by P Prameela.
	Podium. “Measurement-Aware Registry Design for Cochlear Implant Outcomes: Lessons from a 25-Year Clinical Dataset,” by Apurv Shukla.	Podium. “Binaural Neural Processing in children with and without a history of otitis media,” by Laura Hansen.
	Podium. “Software-Assisted Analysis and Classification of Cortical Auditory Evoked Potentials,” by Manuel Lazo-Maestre.	Podium. “Speech and Spatial Feature Encoding in Binaural, Naturalistic Audio Representation Models,” by Meike Span.
	Podium. “Listener-Aware Speech Representations for Hearing-Aid Applications,” by Sarthak Mangla	Podium. “Perceptual Weighting of Auditory Localization Cues Across Frequency Bands in Free-field,” by Nele Naumann.
14:25 – 16:00	Lunch / Dinner Break	
16:00 – 16:30	Invited Speaker 1. <i>“A Novel Gamified Neurofeedback System for Enhancing Attention in Naturalistic Listening Environments in Normal-Hearing and Cochlear Implant Users”</i> A/Prof. Andrew Dimitrijevic (University of Toronto, Toronto Canada) <i>Presented by Dr. María Amparo Callejón Leblic</i>	
16:30 – 16:40	Mini-Break	
16:40 – 17:55	Session 2.A. Speech-in-Noise and Auditory Scene Analysis <i>Perceptual and neural mechanisms supporting speech understanding in real-world conditions.</i> Chaired by Dr. Miriam I. Marrufo-Pérez.	Session 2.B. Cognition, Listening Effort & Brain Connectivity <i>Neuro-cognitive models, EEG/fMRI correlates, and individual differences in listening effort.</i> Chaired by Dr. Yue Zhang
	Featured. “Attention to Speech Modulates Distortion Product Otoacoustic Emissions Evoked	Featured. “Decoding of Speech Acoustics from EEG: Going Beyond

	by Speech-Derived Stimuli in Humans,” by Janna Steinebach.	the Amplitude Envelope,” by Alexis MacIntyre.
	Podium. “Speech-in-Noise Difficulties in Aminoglycoside Ototoxicity Reflects Combined Afferent and Efferent Dysfunction,” by Lina Motlagh Zadeh.	Podium. “Auditory Processing Differences in Stuttering: Evidence from Load Theory of Attention,” by Fjorda Kazazi.
	Podium. “Behavioural and Neurophysiological Correlates of Adaptation to Noise in AM Detection,” by Iñigo Santamaría Fernández.	Podium. “Effect of Reverberation and Signal to Noise Ratio on Listening Effort in Native and Non-native Kannada Speakers,” by Shivani Sharma.
	Podium. “The Effect of Changing Talker Voices on Speech Perception in Individuals with Normal Hearing,” by Saranya Mundayoor.	Podium. “HD-fNIRS Assessment of Listening Effort in CycleGAN-Enhanced Virtual Acoustics,” by Ali Syed.
	Podium. “Speech Perception in Noise in Individuals with Misophonia: Evidence from the Audible Contrast Threshold Test,” by Hamssika Sudhakar.	Podium. “Infants Behave Like Adults During Speech-in-Noise Processing—but What Happens in the Brain?” by Irene Arrieta.
	Podium. “A Comparison of Speech Recognition Between Humans and Modern Machine Systems,” by Annika Magaro.	
17:55 – 18:15	Break	
18:15 – 18:45	Invited Speaker 2. <i>“Hidden Hearing Loss: From Animal Models to Human Translation”</i> Prof. Sharon Kujawa (Harvard Medical School, Massachusetts Eye and Ear, Boston, USA) Presented by Dr. Joaquin T. Valderrama	
18:45 – 18:55	Mini-Break	
18:55 – 20:10	Session 3.A. Hidden Hearing Loss and Subclinical Auditory Disorders <i>From synaptopathy to auditory fatigue: mechanisms, models, and diagnostic markers.</i>	Session 3.B. Objective Measures and Biomarkers in Hearing Research <i>Electrophysiological, pupillometric, and behavioural indices for assessment and prognosis.</i> Chaired by Dr. Andrew (Andy) J. Beynon.

	Chaired by Dr. Joaquin T. Valderrama.	
	Featured. “Efficient Coding Explains Altered Neural Representations in Hidden Hearing Loss,” by Juan M. Fuentes.	Featured. “Multichannel Auditory Cortical Evoked Potentials and Source Localization Analyses in Misophonia: A Neurophysiological Investigation,” by Kamalakannan Karupaiah.
	Podium. “Objective SNR Benefits from Hearing Aids Fitted with the NAL-NL3 MHL Module: Effects of Performance Level and Dome Type,” by Gilles Courtois.	Podium. “Measurement-Aware Registry Design for Cochlear Implant Outcomes: Lessons from a 25-Year Clinical Dataset,” by Apurv Shukla.
	Podium. “Phenotypic Changes of Auditory Nerve Fibers After Excitotoxicity,” by Jérôme Bourien.	Podium. “Triggered: Using Computer Vision to Measure Sound Intolerance,” by Samuel Smith.
	Podium. “Subclinical Effects of Recreational Noise Exposure: A Pre-registered Longitudinal Study,” by Chris Plack.	Podium. “Altered Central Auditory Gain in Misophonia: N1–P2 Slope and Categorical Loudness Findings,” by Ishita Marwaha.
	Podium. “Extended High-Frequency Hearing Predicts Rapid Spoken-Word Recognition,” by Tugba Lulaci.	Podium. “Thalamocortical Auditory Processing in Misophonia: Evidence from Middle Latency Auditory Evoked Potentials,” by Santhosh Periyasamy.
	Podium. “Deep Learning–Based Classification of Hidden Cochlear Pathologies based on ABR Waterfall Plots,” by Prasad Darveshi.	Podium. “Otoacoustic Emission Screening Extended to the Assessment of Auditory Neural Health,” by Francois Deloche.
20:10 – 21:00	Lunch / Dinner Break	
21:00 – 21:45	Keynote Lecture 2. <i>“Hijacking and helping auditory attention: How interruptions and prediction shape everyday communication”</i> Prof. Barbara Shinn-Cunningham (Carnegie Mellon University, Pittsburgh, PA, USA) <i>Presented by Dr. Miriam I. Marrujo-Pérez</i>	
21:45 – 21:55	Mini-Break	

21:55 – 22:30	<p>Session PB1. Poster Blitz Presentations from Sessions 1A, 2A and 3A. <i>Chaired by Dr. Joaquin T. Valderrama</i></p>	<p>Session PB2. Poster Blitz Presentations from Sessions 1B, 2B and 3B. <i>Chaired by Dr. Miriam I. Marrufo-Pérez</i></p>
	<p>Poster [1A]. “R-based Systematization of Advanced Audiometric Formulas: Beyond the 25 dB Threshold,” by Ramón Hernández-Villoria.</p>	<p>Poster [1B]. “Effect of Binaural Cue Distortions on Music Quality Ratings with Simulated Hearing Loss and Hearing Aids,” by Jack Webb.</p>
	<p>Poster [1A]. “Audiometric Data Reproducibility with Differential Privacy Using the Laplace Mechanism,” by Hector Gabriel Corrale de Matos.</p>	<p>Poster [1B]. “Task-Optimized Models of Uncertainty Reproduce Human Confidence Judgments,” by Lakshmi Narasimhan Govindarajan.</p>
	<p>Poster [1A]. “Re-examining Auditory Filter Parameters: A Characteristics-Based Framework with Updated Estimates for Humans,” by Samiya Alkhairy.</p>	<p>Poster [1B]. “Impact of Misophonic Triggers on Binaural Auditory Integration: Evidence from Dichotic Listening Testing,” by Nesmah Parackodan.</p>
	<p>Poster [1A]. “Capturing Real-World Listening Experiences with Smartwatch-Based Ecological Momentary Assessment,” by Nicky Chong-White.</p>	<p>Poster [1B]. “How Does Action-Type Computer Game Playing Affect Hearing?” by Dilara Usta.</p>
	<p>Poster [1A]. “A Neural Mass Model of the Auditory Corticothalamic Circuitry,” by Spencer Olson.</p>	<p>Poster [1B]. “Influence of Spatial Hearing on Auditory Parallel Subitizing Efficiency,” by Emil Zawistowski.</p>
	<p>Poster [1A]. “Student-Led Digital Innovation in Audiology: Virtual Platforms, Games, and VR for Learning and Hearing Health,” by Selvarani Moodley.</p>	<p>Poster [2B]. “Corticothalamic Mechanisms of Human Auditory Selective Attention,” by Ana-Maria Gore.</p>
	<p>Poster [1A]. “From Part Task Training to Integrated Simulation: Addressing Clinical Capacity and Assessment Challenges in Audiology Education,” by Selvarani Moodley.</p>	<p>Poster [2B]. “Effects of Environmental Auditory Complexity on First- and Higher-Order Mismatch Negativity: A Test of Hierarchical Predictive Processing,” by Sahana Murali.</p>
	<p>Poster [1A]. “Perceived Time vs Objective Time in Audiometric Testing: Fast Bayesian vs Hughson-Westlake Methods in</p>	<p>Poster [2B]. “Extending Dynamic Causal Modelling with Interlaminar Connectivity for Laminar fMRI,” by Alicia Gonsalves.</p>

	Young Musicians,” by Ines Ben Aïssa.	
	Poster [2A]. “Test–Retest Reliability of the Audible Contrast Threshold (ACT) in Young Normal-Hearing Adults,” by Kavya Sreekumar.	Poster [2B]. “Autonomic Responses to Affective Sounds in Misophonia and Hyperacusis,” by Naser Salas-Husain.
	Poster [2A]. “Effect of Online Music-Based Workshops on Music Perception in Older Adults with Hearing Loss,” by Alexis Whittom.	Poster [3B]. “Exploring Auditory Encoding in Misophonia using Frequency Following Response,” by Hamssika Sudhakar.
22:30 – 22:40	Mini-break	
22:40 – 23:15	Poster [2A]. “Extended High-Frequency (EHF) Hearing and Speech-in-Noise Difficulty Despite Normal Conventional High-Frequency Hearing and Preserved Word Recognition in Quiet,” by Navid Shahnaz.	Poster [3B]. “Auditory Sensory Gating in Misophonia: A Neurophysiological Evaluation,” by P. R. Sujeeth.
	Poster [2A]. “Cadenza: Lyric Intelligibility Prediction for Musical Enjoyment,” by Rebecca Vos.	Poster [3B]. “Inference of Cochlear Amplifier Gain Using Simulated Distortion-Product Otoacoustic Emission Level Maps,” by Vaclav Vencovsky.
	Poster [2A]. “Effects of stimulus degradation and attention on hierarchical auditory processing: Evidence from brainstem and cortical responses,” by Srikanth Nayak.	Poster [3B]. “Age-Related Alteration of Neural Correlates of Tone-in-Noise Detection in the Auditory Midbrain,” by Dimitri Brunelle.
	Poster [2A]. “Cortical Speech Tracking in Older Adults with Hearing Loss,” by Mridula Sharma.	Poster [3B]. “Multi-Response Deconvolution preserves pABR Estimation Quality Despite Increasing Response Overlap,” by Pilar Castillo.
	Poster [3A]. “Investigating the Link Between Sleep Quality, Acoustic exposure, and Proxy Measures of Hidden Hearing Loss in Young Adults,” by Sreelakshmi Suresh.	Poster [3B]. “Effect of Context on Cortical Speech Tracking in Young Adults with Normal-Hearing,” by Fauve Duquette-Laplante.
	Poster [3A]. “Effect of Aging on Forward-Masking Estimates of Medial Olivocochlear Gain Reduction: Computational	Poster [3B]. “Test–Retest Reliability and Agreement of Ear-Canal and Mastoid Wave I Auditory Brainstem

	simulations and Behavioral Data,” by David López Ramos.	Responses in Healthy Young Adults,” by Blandine Duval.
	Poster [3A]. “Epidemiology and Profiling of Tinnitus in Adolescents,” by Merin Benny.	
	Poster [3A]. “Computational Closed-Loop Methods to Compensate for Standard and Hidden Hearing Losses,” by Matthias Inghels.	
	Poster [3A]. “Tuning In to the Phantom Sound,” by Jack Stevenson.	
	Poster [3A]. “Speech-in-Noise as a Biomarker of Peripheral Auditory Neuropathy in Metabolic Disorders: Proof of Concept in Patients with Uncontrolled Type 2 Diabetes,” by Mathieu Schué	
23:15 – 23:20	First-day conference closure	
23:20 – 00:00	Post-Conference Poster Meet & Connect <i>Dedicated breakout rooms will be available for all posters presented in Sessions PB1 and PB2, allowing attendees to meet the authors, discuss the work in more detail, and ask questions.</i>	

Day 2 (Friday 26th June, 2026)

Time UTC+2	Room A	Room B
12:00	Second-day conference welcome	
12:00 – 12:45	Keynote Lecture 3. <i>“Characterizing auditory physiologic responses in pediatric populations at risk”</i> Prof. Linda J. Hood (Vanderbilt University Medical Center, Nashville, TN, USA)	

	<i>Presented by Dr. Jan-Willem Wasmann</i>	
12:45 – 12:55	Mini-Break	
12:55 – 14:10	<p>Session 4.A. Machine Learning & AI for Hearing Science <i>Intelligent algorithms for diagnosis, prediction, and personalisation of hearing interventions.</i> Chaired by Prof. Dr. Tobias Goehring.</p>	<p>Session 4.B. Tele-Audiology and Next-Generation Clinical Tools <i>Remote assessment, AI-assisted monitoring, and digital rehabilitation platforms.</i> Chaired by Dr. Nikki Philpott.</p>
	<p>Featured. “Perceptual Sensitivity is Explained by Optimization for Ecological Hearing Tasks,” by Mark Saddler.</p>	<p>Featured. “VIA+: A Gamified Digital Ecosystem for the Integrated Phenotyping of Auditory and Cognitive Development,” by Frank Betances Reinoso.</p>
	<p>Podium. “Frequency Following Response in Children with School Difficulties or Stroke: Integrating Traditional Statistics and Machine Learning Techniques,” by Jheniffer Raimundo.</p>	<p>Podium. “A Digital Ecosystem for Scalable Tinnitus Rehabilitation,” by Zahi Tubul.</p>
	<p>Podium. “Mapping the Hearing Loss Landscape: A Data-Driven Phenotyping Framework Beyond Pure-Tone Audiometry,” by Gerard Encina-Llamas.</p>	<p>Podium. “ULIXES: Universal Language-Independent eXploration of Effects of Speech Cues: Pilot Evidence of SNR-Dependent Multisensory Reweighting as a Novel Clinical Index,” by Jorge Mejia.</p>
	<p>Podium. “DeepFS4: A Deep Neural Network-Based Sound Coding Strategy for Cochlear Implants,” by Xavier Pérez Ruiz.</p>	<p>Podium. “Development, Implementation, and Clinical Benefits of a Sound Preference Tool,” by Frederic Marmel.</p>
	<p>Podium. “An AI Voice Agent for Speech Communication Assessment,” by Joanna Luberadzka.</p>	<p>Podium. “Exploration of the Effectiveness of Online Remote Programming for Domestic Cochlear Implant Systems,” by Tianyi Liu.</p>
	<p>Podium. “Inferring Cochlear Cell Damage From Auditory Evoked Potentials Using Physics-Informed Machine Learning,” by Miguel Temboury.</p>	<p>Podium. “Loudness Scaling with Variations in Remote Mobile Hardware: Can we Trust the Results?” by Thomas Schwarz.</p>
14:10 – 15:30	Lunch / Dinner Break	
15:30 – 16:00	<p>Invited Speaker 3. “Extracochlear Electric–Acoustic</p>	

	Interaction as the Basis for a Novel Hearing Device for Restoration and Diagnosis” Prof. Dr.-Ing. Waldo Nogueira (Hannover Medical School, Hannover, Germany) <i>Presented by Dr. María Amparo Callejón Leblic</i>	
16:00 – 16:10	Mini-Break	
16:10 – 17:25	Session 5.A. Cochlear Implants: Challenges and Prospects <i>Advances in signal processing, computational models, neural interfaces, and personalised stimulation strategies.</i> Chaired by Prof. Tania Hanekom.	Session 5.B. Hearing-Aid Innovation and Performance Assessment <i>Algorithms, real-ear analysis, and adaptive processing in modern devices.</i> Chaired by Dr. Raul Sanchez Lopez.
	Featured. “Neural Response-Driven Optimization of Cochlear Implant Stimulation Using Differentiable Auditory Models,” by Julie Van Heghe.	Featured. “A Large-Scale Database and Predictive Model of Listener-Rated Ease of Speech Understanding in Commercial Hearing Aids,” by Andrew Sabin.
	Podium. “Comparative Study of AutoNRM Intelligent Mapping and Manual Mapping in Nurotron Cochlear Implant Recipients,” by Yipeng Lin.	Podium. “Performance Assessment for DNN-based Speech Enhancement Algorithms,” by Stefan Raufer.
	Podium. “Prediction of Speech Outcomes with Cochlear Implants: Limitations and Opportunities for Clinical Practice,” by Marta Campi.	Podium. “Technical Evaluation of Scene-Aware Dynamic Compression for Hearing Aids Using a Database of Natural Conversations,” by Moritz Bender.
	Podium. “From Clinic to Reality: Integrating Sound Field Testing and Hearing Quality Measures in Cochlear Implant Users,” by Marta Álvarez-Cendrero.	Podium. “Individualized Amplitude Compression for Improved Listening Outcomes at Moderate to High Sound Levels,” by Lukas Jürgensen.
	Podium. “Clinical Validation of the Web-based Platform AUDITO for Cochlear Implant Patients,” by Andreas Markidis.	Podium. “Integrating Neural Network Denoisers in Hearing Aids Under Real-Time Constraints,” by Clara Yaiche.
	Podium. “A combined Computational Model of Hair Cell and Auditory Nerve Responses to Acoustic and	Podium. “Participant-in-the-Loop Research on Speech Enhancement for Multi-Talker Scenarios in Hearing Aids,” by Melika Kianian.

	Electric Stimulation,” by Roman Stracke.	
17:25 – 17:45	Break	
17:45 – 18:15	Invited Speaker 4. “The Changing Brain: Cross-Modal Neuroplasticity in Hearing loss and its Clinical Implications” Prof. Anu Sharma (University of Colorado Boulder, Boulder, CO, USA) <i>Presented by Dr. Joaquin T. Valderrama</i>	
18:15 – 18:25	Mini-Break	
18:25 – 19:40	Session 6.A. From Lab to Clinic: Ensuring Impact of Computational Hearing Research <i>Translation, reproducibility, and open-science frameworks for clinical relevance.</i> Chaired by Dr. Ángel Ramos de Miguel.	Session 6.B. Multisensory and Vestibular Integration <i>Balance, cross-modal perception, and earable technologies.</i> Chaired by Dr. Seba Ausili.
	Featured. “PECAP Online: Translating the Panoramic ECAP Method to Clinic,” by Charlotte Garcia.	Featured. “Audio-Visual Speech Recognition: Effects of Auditory Masking and Visual Interference for Healthy Young Adults,” by Emma Søndergaard Pedersen.
	Podium. “Reliability and Validity of the Audiometric Weber Test,” by Michael Finkelstein.	Podium. “Exploring the Auditory-Tactile Integration of Complex Acoustic Features using the Multichannel Vibrotactile Gloves,” by Loonan Chauvette.
	Podium. “Toward Ecologically Valid Hearing Assessment,” by Zahi Tubul.	Podium. “The Effects of Cochlear Implants on the Vestibular System,” by Christian Steyn.
	Podium. “Data Standards in Audiology: Data Models and Community Participation,” by Mareike Buhl.	Podium. “Effects of Chiropractic Interventions on the Audio-Vestibular System: A Systematic Review,” by Beyza Yilmaz.
	Podium. “From Detection to Understanding: Speech-in-Noise Screening Identifies Functional Auditory Deficits with Electrophysiologic Correlates in	

	a Clinical Subset,” by Jacqueline Scholl.	
19:40 – 20:30	Lunch / Dinner Break	
20:30 – 21:15	<p>Keynote Lecture 4. <i>“Computational auditory models in the service of improving audiology”</i> Prof. Enrique A. Lopez-Poveda, University of Salamanca, Salamanca, Spain <i>Presented by Dr. Miriam I. Marrufo-Pérez</i></p>	
21:15 – 21:25	Mini-Break	
21:25 – 22:00	<p>Session PB3. Poster Blitz Presentations from Sessions 4A, 5A and 6A. <i>Chaired by Dr. María Amparo Callejón Leblic</i></p>	<p>Session PB4. Poster Blitz Presentations from Sessions 4B, 5B and 6B. <i>Chaired by Dr. Jan-Willem Wasmann</i></p>
	<p>Poster [4A]. “Predicting Early Cochlear Implant Outcomes in Adults: A Machine Learning Approach Using Cognitive and Linguistic Measures,” by Benjamin Burns.</p>	<p>Poster [4B]. “Knowledge and Attitudes Toward Tele-Audiology among Hearing Care Professionals,” by Hande Çakiroğlu.</p>
	<p>Poster [4A]. “Machine Learning-Based Prediction of High-Frequency Hearing Risk in Airport Catering Personnel Using Demographic, Occupational, and Baseline Audiometric Variables,” by Şeyma Öztürk.</p>	<p>Poster [4B]. “Developing RNID’s Vision for the Future of Hearing Healthcare,” by Lola Russell.</p>
	<p>Poster [4A]. “EdgeConvGRU: A Lightweight Hybrid Architecture for Robust Acoustic Scene Classification for Medical Hearing Aids,” by Soumen Sinha.</p>	<p>Poster [4B]. “Comparative Study of Auditory Gestalt Perception Using AI-Generated Clear Speech in Sports and Non-Sports Trainees,” by Sneha Chandra Sekar.</p>
	<p>Poster [4A]. “Intelligent System for the Classification and Segmentation of Middle Ear Pathologies,” by Roua Kammoun.</p>	<p>Poster [5B]. “Do Premium Hearing Aids Offer Better Outcomes Than Basic Models? A Systematic Review and Meta-Analysis,” by Nausheen Dawood.</p>
	<p>Poster [4A]. “The Differentiable Auditory Loop (DAL): Neural Activity Alignment for</p>	<p>Poster [5B]. “Adult Hearing Aid Users’ Perspectives on Outcome Expectations and Perceived Value</p>

	Personalized Hearing Aids,” by Jason Mikiel-Hunter.	for Money: A Qualitative Study Using the Health Belief Model,” by Nausheen Dawood.
	Poster [5A]. “Longitudinal Analysis of Cochlear Implant Stimulation Levels in the First Year: Optimizing Adult Fitting,” by Maryam Hussain.	Poster [5B]. “Voice Cues and Vocal Emotions Perception in Adult Hearing Aid Users,” by Kateryna Skupovska.
	Poster [5A]. “Optimizing Amplitude Modulation Enhancement for Music Transmission Through Cochlear Implants,” by Luuk Schipper.	Poster [6B]. “The Digital Triad: Screen Time, Sleep Disruption, and Vestibulo-Cochlear Dysfunction -A Pilot Study,” by Jerlin Glites.
	Poster [5A]. “Towards Modelling the Impact of Spread of Excitation on Classical Psychophysical Paradigms with Cochlear Implant Users,” by Rutendo Chatiza.	Poster [6B]. “Multisensory Balance Assessment in Patients with Muscle Tension Dysphonia,” by Azra Sivari.
	Poster [6A]. “Data Modelling for openEHR Data Standards in Audiology: Archetypes for three typical Audiological Tests,” by Mareike Buhl.	
	Poster [6A]. “Hearing Data: Unlocking the potential of the Noah database,” by Nicolas Vannson.	
22:00 – 22:15	Awards & Closing ceremony	
22:15 – 23:00	Post-Conference Poster Meet & Connect <i>Dedicated breakout rooms will be available for all posters presented in Sessions PB3 and PB4, allowing attendees to meet the authors, discuss the work in more detail, and ask questions.</i>	

Keynote speakers

Keynote speaker 1: “Separating the Causes of Listening Difficulties when Thresholds are Normal: Concepts and Data”

Prof. Harvey Dillon, Macquarie University, Sydney (Australia).

Abstract: Listening difficulties in the context of normal thresholds have multiple causes. These include deficits in several different binaural and central auditory processes, speech phoneme identification, language ability, working memory and attention. Determining the dominant cause(s) of the listening difficulty experienced by an individual is complex because individual tests aiming to measure one of these abilities invariably also rely on other abilities. Additionally, multiple deficits can co-occur and some deficits can lead to other deficits.



This talk will outline a non-controversial model of speech understanding in noise, and describe a novel cohesive set of tests built around the model and designed to estimate the degree of deficit in type of ability. Relationships between the abilities measured with these tests will be illustrated with analyses of several data sets, including a very large-scale data set gathered from multiple clinics using these tests. Remediation methods for different types of deficits will also be reviewed.

Biography: Harvey Dillon is currently a part-time Professor at Macquarie University. For the last eight years he has mostly focused on conducting and supervising research into auditory processing disorders and other causes of listening difficulties, including creating new tests for these conditions. He is the author of over 300 scientific publications and a widely used text book on hearing aids. He has been closely associated with various NAL prescription rules, COSI outcomes evaluation, the trainable hearing aid, the LiSN-S test of spatial processing, and clinical cortical response testing. He was previously the Director of the National Acoustic Laboratories, and a part-time Professor at the University of Manchester.

Keynote speaker 2: “Hijacking and helping auditory attention: How interruptions and prediction shape everyday communication”

Prof. Barbara Shinn-Cunningham, Carnegie Mellon University, Pittsburgh, Pennsylvania (USA).

Abstract: Communicating in social settings relies on the ability to focus on a relevant sound amid competing sources—for example, following a dinner conversation at a crowded restaurant. In healthy listeners, volitional, top-down goals and involuntary, bottom-up interruptions interact to prioritize behaviorally important sounds while maintaining situational awareness. In noisy environments, predictive processes can support this effort by helping listeners parse complex auditory scenes. This talk reviews behavioral and neurophysiological research on the brain networks engaged during auditory attention, with a focus on how bottom-up interruptions disrupt top-down focus and how expectation and learning help stabilize it. Together, these findings highlight how top-down and bottom-up attention, memory, and experience interact to support robust communication in everyday environments.



Biography: Barbara is an auditory neuroscientist who combines behavioral, neuroimaging, and computational methods to understand how listeners communicate in everyday environments. She currently serves as the Glen de Vries Dean of Mellon College of Science at Carnegie Mellon University (CMU). A Professor in CMU’s Neuroscience Institute, she also holds courtesy appointments in Psychology, Biomedical Engineering, and Electrical and Computer Engineering. She is a Fellow of the Acoustical Society of America (ASA) and the American Institute for Medical and Biological Engineering. She has received ASA’s Helmholtz-Rayleigh Interdisciplinary Silver Medal, the Brown Engineering Alumni Medal, and research fellowships from the Alfred P. Sloan Foundation, the Whitaker Foundation, and the Vannevar Bush Fellows program. Her mentorship has been recognized by the ASA and the Society for Neuroscience.

Keynote speaker 3: “Characterizing auditory physiologic responses in pediatric populations at risk”

Prof. Linda J. Hood, Vanderbilt University Medical Center, Nashville, TN (USA).

Abstract: Children with prenatal risk factors may be at risk for compromised neural function than can impact development of processes dependent on intact neural function. The primary focus of this presentation will be on results of an ongoing, longitudinal study of auditory physiologic responses from the brainstem to cortex and an extensive battery of language and cognitive measures in children with prenatal Zika virus exposure. A particular focus of this work is on identification of those children without overt characteristics of viral



exposure sequelae who remain at potential risk. The value of longitudinal datasets, well-characterized peripheral function, sensitive assays, and a comprehensive battery of measures will be highlighted.

Biography: Linda J. Hood, Ph.D., is a Professor and Hearing Scientist in the Department of Hearing and Speech Sciences and Director of the Auditory Physiology Laboratory at Vanderbilt University, Nashville, Tennessee, USA. Dr. Hood’s research career, supported primarily by research grants from the National Institute on Deafness and Other Communication Disorders (NIDCD) focuses on auditory physiology in peripheral and central systems across the lifespan, auditory neuropathy, efferent auditory function, hereditary hearing loss, and comparative hearing studies. Her research is reflected in peer-reviewed scientific publications, textbooks, chapters, invited review articles, and numerous scientific presentations at national and international venues. Dr. Hood participates in review panels of the NIDCD, the World Health Organization, and is an Associate Editor for the journal *Ear and Hearing*. Dr. Hood is a Past President of the American Academy of Audiology, the American Auditory Society, and the International Society of Audiology. She has served as an Honorary Professor at the University of Queensland, Australia, a visiting professor at the University of Hong Kong, and an International Key Scientist with the Australian Hearing Collaborative Research Centre. Dr. Hood has received the Honors of the Association from the American Speech-Language-Hearing Association, the Jerger Career Award for Research in Audiology from the American Academy of Audiology, the Hallowell Davis Lectureship from the International Evoked Response Audiometry Study Group, the Aram Glorig Award from the International Society of Audiology, and the Life Achievement Award from the American Auditory Society.

Keynote speaker 4: “Computational auditory models in the service of improving audiology”

Prof. Enrique A. Lopez-Poveda, University of Salamanca, Salamanca, Spain

Abstract: Auditory computational models are algorithmic frameworks that simulate how sounds are processed by the auditory nervous system to produce perception. In other words, models are testable working hypotheses about how the anatomy and physiology of the auditory system explain psychoacoustical observations. Models serve to elucidate key physiological processes, acoustic cues, and other factors that determine perception. Beyond their theoretical significance, models may be used as tools to improve audiological diagnosis and treatment.



In this presentation, I will review over three decades of research dedicated to the development of auditory models. I will describe our efforts to leverage these models to improve hearing aids and cochlear implants. Finally, I will discuss approaches for developing models that account for listener-specific differences in perceptual outcomes, thereby supporting their successful application in the emerging field of “precision audiology”.

Biography: Enrique A. Lopez-Poveda is a Professor of Audiology and Director of the Auditory Computation and Psychoacoustics Laboratory at the University of Salamanca (USAL). He holds a BSc in Physics (USAL) and a PhD in Hearing Science from Loughborough University (UK). He is the author of three books, three patents, and over 110 publications on hearing sciences. He has been on the editorial board of JASA, JARO, Trends in Hearing, and Ear and Hearing. He has been honored with the Cross of Naval Merit (1999), the Salamanca Convention Bureau Ambassadors Award (2013), the USAL Alumni Award (2013), the Medical Award of the Spanish Federation of Associations of Cochlear Implantees (2022), the María de Maeztu Award for Scientific Excellence from USAL (2023), and the II Enrique Salesa Batlle National Audiology Award (2024). He is a fellow of the Acoustical Society of America, and the International Collegium of Rehabilitative Audiology.

Invited speakers

Invited speaker 1: “A Novel Gamified Neurofeedback System for Enhancing Attention in Naturalistic Listening Environments in Normal-Hearing and Cochlear Implant Users”

A/Prof. Andrew Dimitrijevic, University of Toronto, Toronto (Canada).

Abstract: Listening in noisy natural environments recruits both sensory and cognitive systems including attention and working memory. Individual variations in cognitive systems may underly some of the patient outcome variability observed after cochlear implant surgery. We developed a novel attention-based neurofeedback system designed to reward attentive listening to natural conversations. Using real-time EEG decoders, we show that a videogame-inspired neurofeedback system can be deployed in both normal hearing and cochlear implant users. Our data suggest that such systems can be used in rehabilitation after cochlear surgery and may promote hearing associated neural plasticity and learning.



Biography: Andrew Dimitrijevic is an Associate Professor with affiliations at the University of Toronto and Wayne State University. His research focusses on understanding the neural mechanisms associated with listening in people with hearing loss including those with cochlear implants. He uses high-density EEG to develop neural models to understand listening in complex environments including the effects of attention, working memory and neural plasticity. His research also involves the use of neurofeedback and neuromodulation.

Invited speaker 2: “Hidden Hearing Loss: From Animal Models to Human Translation”

Prof. Sharon Kujawa, Harvard Medical School, Massachusetts Eye and Ear, Boston (USA).

Abstract: Synaptic contacts between sensory inner hair cells and afferent cochlear neurons are highly vulnerable elements in multiple etiologies of acquired sensorineural hearing loss. The cochlear synaptopathy that results has been ubiquitous in all mammals evaluated thus far. It has been labeled “hidden hearing loss”, because large synaptic and neural losses can be present in ears with normal or recovered thresholds, creating significant diagnostic challenges. We have characterized noise- and age-related cochlear synaptopathy in ears with isolated neural vs. neural + sensory cell injury/loss. With our collaborators, we have assessed the role of excitotoxicity in producing acute effects of noise and instigating long-term consequences. Our cochlear modeling efforts will aid predictions in human ears where we do not have access to the underlying pathology, and allow tests of our predictions in animal models, where we do. In parallel studies, diagnostic assays in development show great promise in providing clues to cochlear synaptic and neural loss in humans, critical to diagnosis, identification of treatment candidates and assessment of treatment efficacy.



Biography: Sharon G. Kujawa, Ph.D. is a Professor of Otolaryngology-Head and Neck Surgery, Harvard Medical School and a Senior Scientist in the Eaton-Peabody Laboratories, Massachusetts Eye and Ear in Boston, Massachusetts. She serves on the faculty of the Speech and Hearing Biosciences and Technology Program at Harvard University. Prof. Kujawa is a clinician and an auditory neuroscientist whose current work focuses on clarifying how noise and aging cause loss of cochlear synapses and neurons, determining the functional consequences of that loss, and how the degeneration can be manipulated pharmacologically to reveal mechanisms and suggest treatments.

Invited speaker 3: “Extracochlear Electric–Acoustic Interaction as the Basis for a Novel Hearing Device for Restoration and Diagnosis”

Prof. Dr.-Ing. Waldo Nogueira, Hannover Medical School, Hannover (Germany).

Abstract: For severe-to-profound hearing loss, hearing aids are often ineffective, making cochlear implantation (CI) the main treatment. However, CI surgery can damage residual hearing, which strongly enhances speech perception, particularly at low frequencies. We propose a novel approach based on extracochlear electric stimulation (EES), delivering electrical signals via an electrode outside the cochlea to avoid invasive insertion. This enables electric–acoustic stimulation (EAS) by combining low-frequency acoustic amplification with electrical stimulation of non-functional cochlear regions. Importantly, electric–acoustic interactions may provide diagnostic information for assessing low-frequency residual hearing, where current diagnostics are limited. This study evaluates the effectiveness of EES using an active ear-canal electrode or a transtympanic electrode with different reference electrode placements. We assess optimal stimulation configurations and their ability to evoke auditory sensations across frequencies from 250 Hz to 4 kHz. Participants include five normal-hearing adults, five adults with high-frequency hearing loss, and five CI users. Electrical stimuli consisted of 500 ms sinusoids. Perceived loudness and side effects were rated on 0–10 scales, and threshold and maximum comfortable levels were recorded for each condition. Results demonstrate that EES can elicit auditory sensations in all groups, with loudness growth and side-effect profiles depending on frequency and reference electrode placement. Results from the study show that combined EES and acoustic stimulation improved consonant identification compared to acoustic stimulation alone. Moreover, interactions between electric and acoustic stimulation suggest potential for EES-based diagnostic assessment of low-frequency hearing. These findings support the development of non-invasive hearing devices and diagnostics bridging hearing aids and cochlear implants.



Biography: Waldo Nogueira is Professor at Hannover Medical School, where he leads the Auditory Prosthetics Group within the Cluster of Excellence Hearing4all as Principal Investigator. He is also an ICREA researcher hosted by the Institut de Recerca Sant Pau, where he is establishing the Barcelona Hearing Center, and holds a full Professorship at the Universitat Autònoma de Barcelona in the Department of Microelectronics and Electronic Systems and the Institute of Neuroscience. He has received an ERC Consolidator Grant for the READIHEAR project and an ATRAE grant from the Spanish Research Agency for the NEURO HEAR project. His research focuses on technologies for hearing diagnostics and auditory implants, with particular emphasis on the fundamental

mechanisms underlying electrical–acoustic interactions in the auditory system. His methodological expertise includes signal processing, psychoacoustics, electrophysiology, and computational modeling. His teaching activities cover signal processing, integrated circuits, hearing technology, and audiology.

Invited speaker 4: “The Changing Brain: Cross-Modal Neuroplasticity in Hearing loss and its Clinical Implications”

Prof. Anu Sharma, University of Colorado Boulder, Boulder, CO (USA).

Abstract: One of the most remarkable aspects of the brain is neuroplasticity, or the brain’s ability to adapt in response to change. Sensory deprivation, as in hearing loss or deafness, results in both structural and functional changes in the brain. One form of compensatory plasticity seen in sensory deprivation is cross-modal neuroplasticity. Cross-modal plasticity is a textbook example of the brain’s ability to reorganize based on use. Cross-modal plasticity refers to the recruitment and repurposing of neuronal resources of a derived sensory modality by an intact modality. In



hearing loss, vision and somatosensation recruit and repurpose auditory cortical areas resulting in cortical re-organization. Cross-modal plasticity represents a neuronal process that is dynamic, versatile and reversible and can be exploited for improving clinical outcomes after neurosensory restoration with hearing aids and/or cochlear implants in persons with hearing loss.

Biography: Anu Sharma is Professor and Associate Chair in the Department of Speech Language and Hearing Science, and Fellow in the Institute for Cognitive Science and Center for Neuroscience at University of Colorado, Boulder, USA. Her research focuses on examining cortical neuroplasticity and neurocognitive outcomes in children and adults with hearing loss who are fitted with hearing aids and/or cochlear implants. Her research is funded by the United States National Institutes of Health.

Session 2.B. Cognition, Listening Effort & Brain Connectivity

Neuro-cognitive models, EEG/fMRI correlates, and individual differences in listening effort.

Chaired by Dr. Yue Zhang.

Auditory Processing Differences in Stuttering: Evidence from Load Theory of Attention

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Podium

Abstract

Background. The load theory of attention proposes that the detection of irrelevant information depends on perceptual load, with higher load reducing processing of distractors. This framework is relevant to listening effort and auditory scene analysis, where cognitive resources must be allocated across competing sounds. People who stutter (PWS) may rely more on cognitive resources during speech, but it remains unclear whether similar differences extend to non-speech spatial auditory processing.

Methods. Twenty-two PWS and 22 matched controls completed a dual-task spatial auditory paradigm with varying perceptual load. Auditory stimuli were spatialised to simulate real-world listening environments. Primary task performance (accuracy and reaction time) and secondary task detection sensitivity (DS) were measured to assess auditory processing under cognitive demand.

Results. Both groups showed reduced accuracy and increased reaction times with higher load. However, PWS showed lower detection sensitivity overall, with a significant Group \times Load interaction indicating greater impairment under high load. Exploratory analysis showed that DS predicted group membership (AUC = 0.81).

Conclusions. These findings suggest reduced auditory processing efficiency in PWS under high cognitive load in spatial listening conditions. The results extend load theory to auditory cognition in stuttering and highlight detection sensitivity as a potential behavioural marker of listening effort in complex acoustic environments.

