



**ARO 2024**

*Travel Award Brochure*

# THE 47TH ANNUAL MIDWINTER MEETING

February 3-7, 2024  
ANAHEIM, CA



## DON HENDERSON TRAVEL AWARD RECIPIENTS



### **Christian Candler, B.S.**

Christian Candler is a third-year PhD candidate at Arizona State University under the mentorship of Dr. Timothy Balmer. By utilizing both in vivo and slice electrophysiology techniques in mice, his work aims to develop a better understanding of how unipolar brush cells in the dorsal cochlear nucleus transform non-auditory information to give context to auditory processing. Christian grew up in Birmingham, Alabama and received a bachelor's degree in Neuroscience from Belmont University before gaining research experience as a technician studying ocular dominance plasticity in the lab of Mark Bear at MIT. Outside of the lab, Christian enjoys hiking and camping around the Southwest, swimming, cooking, and sim racing.



### **Joy Franco, Ph.D.**

Dr. Franco is a Postdoctoral Research Fellow and an NIH DSPAN Scholar who is co-mentored by Drs. Lisa Goodrich and Rosalind Segal at Harvard Medical School in the Department of Neurobiology, supported by a K00 from the National Institute on Aging. In her research, Dr. Franco examines the origins and impacts of calcium dysregulation in sensory neurons as it relates to noise-induced and age-related hearing loss. She completed her PhD in mechanical engineering at Stanford University, as an NSF Graduate Research Fellow, where she studied the localization of mechano-electrical transduction ion channels under the co-advisement of Drs. Miriam Goodman and Beth Pruitt. As an undergraduate student, Dr. Franco transferred from community college to San José State University, where she completed her bachelor's degree in mechanical engineering while also researching the links between muscle mechanics and proprioceptor firing rates as an NIH MARC U\*STAR fellow mentored by Dr. Katherine Wilkinson. Since beginning her postdoctoral work, Dr. Franco has developed a passion for understanding how excessive physical stress within the cochlea accelerates damage throughout the sensory epithelium. Following her postdoctoral work, she aims to lead her own research group to study the cellular processes responsible for repairing sensory neurons in the wake of such damage with the goal of identifying therapeutic targets for protecting cochlear function.

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### **Amy Wang, B.A.**

Amy Wang is a second-year M.D. student at the University of Texas Medical Branch (UTMB) John Sealy School of Medicine in Galveston, TX. She is a native of Houston, TX and graduated in 2022 from Rice University, double-majoring in Economics and Kinesiology with a concentration in sports medicine. During her first year of medical school, Amy participated in a summer research program and joined Dr. Tomoko Makishima's lab, whose research focuses on molecular mechanisms of hearing and balance disorders using mice models and human studies. Currently, she is investigating the interplay between gender, olfactory function, and hearing. Over the summer, Amy conducted auditory behavioral analysis in mice by way of Auditory Brainstem Response (ABR) and Distortion Product Otoacoustic Emissions (DPOAE) assessments. She is excited to attend the 2024 MidWinter Meeting, which will be her first time presenting her Otolaryngology research to a widespread audience, and she is looking forward to meeting others in the field. Amy is passionate about otolaryngology and surgery, and is a chair for UTMB's chapter of the Association of Women Surgeons (AWS), as well as multiple other community organizations. In her free time, Amy enjoys traveling, performing with UTMB's acapella group, and going to the beach.

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### **Andie Zang Felix, Au.D, Ph.D.**

Andie completed her undergraduate degree at the University of Mississippi in 2018, where she majored in communication sciences and disorders. The environment and her experiences at Ole Miss laid the groundwork for developing an intense interest in translational research in hearing. Andie went on to enroll in the Doctor of Audiology clinical program at the University of Texas at Dallas. This highly competitive clinical program has a strong research component that fostered her commitment to component that fostered her commitment to evidence-based practice and scientific principles. Under the mentorship of Dr. Edward Lobarinas, Andie seamlessly merged her clinical training with hearing science research in the Translational Auditory Perception (TAP) lab at the University of Texas Southwestern Medical Center (UTSW). Her Ph.D. was focused on studying the impact of selective inner hair cell loss and noise-induced cochlear synaptopathy on higher-order auditory processing and suprathreshold auditory function. Using innovative approaches, Andie has developed skills in electrophysiological and psychoacoustic measures. Her commitment to advancing hearing healthcare extends beyond the laboratory, as evidenced by her involvement in a non-profit Audiology clinic, One Mission Foundation, and her dedication to teaching at both undergraduate and graduate levels. Following the completion of her Ph.D., Andie will Post Doc at Duke University under the guidance of Dr. Jianxin Bao.



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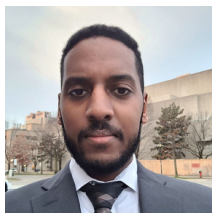


### ARO 2024 TRAVEL AWARDEES



#### **Ajmal Abdul Azees, PhD Student**

Ajmal is a dedicated researcher and Ph.D. candidate in Biomedical Engineering and Neuroscience, having a background in Electronics Engineering (B.Sc.). His work focuses on advancing neural stimulation technology, with a particular emphasis on optical stimulation to activate auditory neurons. Ajmal is also working on integrating optical and electrical stimulation, to harness advantages of both technologies. His recent publication, a collaborative effort with his research team, underscores his commitment to advancing scientific knowledge. Ajmal's research lies at the intersection of engineering and neuroscience, aiming to bridge theoretical understanding with practical applications. His ultimate goal is to contribute to the development of medical technologies that positively impact lives.



#### **Robel Alemu, M.S.**

My name is Robel Alemu and I am a PhD candidate at the University of Toronto's Institute of Medical Science (Faculty of Medicine) under the supervision of Dr. Karen A. Gordon at Archie's Cochlear Implant Laboratory at the Hospital for Sick Children. My current research focuses on spatial hearing in pediatrics with hearing loss who use various configurations of hearing devices/prostheses including cochlear implants, hearing aids and bone conduction devices depending on their hearing loss severity, etiology and other related factors. This work closely informs clinical practices to improve health outcomes in children with hearing loss which for me is a rewarding outcome. My research is clinical in nature and I regularly utilize various methodologies to address a broad range of research questions. I enjoy working with data, and regularly produce my own scripts across various coding languages to tell scientific stories from elaborate data visualizations and statistical analyses. I am a returning presenter at ARO where I always enjoy engaging in insightful knowledge exchanges and disseminating my research to the world's leading experts in auditory research.

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### **Anahita Alipanahi, Ph.D.**

Anahita Alipanahi holds a bachelor's and master's degree in mechanical engineering from the University of Tabriz, Iran, and is currently pursuing a Ph.D. in Mechanical Engineering at Worcester Polytechnic Institute (WPI). As a dedicated Ph.D. candidate, Anahita serves as a research assistant in the Center for Holographic Studies and Laser Micromechatronic (CHSLT) laboratories at WPI and contributes to research efforts at the Eaton-Peabody Laboratories, Massachusetts Eye and Ear (MEE) in Boston.

Anahita's research is intricately focused on the design and optimization of electromechanical systems, coupled with a specialization in quantitative optical metrology. Her expertise spans the utilization of non-destructive testing methods and the exploration of innovative approaches to mechanical and microelectromechanical components and systems. A substantial portion of her work delves into the complexities of hearing damage mechanics, where she plays a pivotal role in developing methodologies for both damage prevention and hearing restoration.

In her pursuit of groundbreaking research, Anahita employs cutting-edge imaging techniques, such as high-speed Digital Image Correlation (DIC) and Schlieren imaging. These advanced methodologies afford her the capability to measure blast-induced vibrations of the middle ear with nanometer-scale precision, providing invaluable insights into hearing mechanics. Her work contributes to the diagnosis of middle-ear diseases, facilitates preoperative treatment planning, and aids in the development of more effective protective gear. Ultimately, her efforts aim to enhance the safety and well-being of individuals exposed to damaging noises through advanced research and technology.

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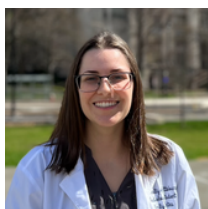
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#### **Emily Antes, M.A.**

Emily Antes is a third-year Doctor of Audiology student at the University of Pittsburgh. She received her Bachelor of Science in Speech, Language, and Hearing Sciences at Purdue University in May 2021 and her Master of Arts in Audiology at the University of Pittsburgh in April 2023. She will be completing her fourth-year externship at the Stanford Ear Institute beginning in June 2024. Emily is currently a Graduate Student Researcher in the Systems Neuroscience of Auditory Perception Lab at the University of Pittsburgh studying theoretical accounts of tinnitus, specifically focusing on the role of the dorsal cochlear nucleus in the generation of tinnitus. Within this lab, she has taken on several responsibilities, including the development of their testing protocol and training fellow students in the execution of their testing measures. In addition to her ongoing research at the University of Pittsburgh, Emily has a keen interest in vestibular research, aligning with her clinical focus. She hopes to develop pediatric normative data for vestibular test results as this is a critical and under-researched area of audiology.



#### **Ogechukwu Anwaegbu, B.S.**

Ogechukwu Anwaegbu is a second-year MD/MPH student at the University of Texas Medical Branch, John Sealy School of Medicine, in Galveston, TX, with an interest in the intersection of medicine and public health. She graduated with a degree in Biomedical Science from Texas A&M University. Currently immersed in her second year of the MD/MPH program, Ogechukwu is actively contributing to research focusing on sex differences in hearing newborn Transient Evoked Otoacoustic Emissions (TEOAE) outcomes. This research reflects her passion for understanding and addressing nuanced healthcare issues from the early stages of life. Ogechukwu envisions a future where her research contributes to advancing our understanding of newborn hearing outcomes, paving the way for targeted interventions that account for sex-based differences. Her passion for bridging medicine and public health positions her as an advocate for inclusive and effective healthcare solutions.

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### **Isabelle Arseneau-Bruneau ,M.A., B.A.,DESIM**

Isabelle Arseneau-Bruneau is a PhD Candidate in Neuroscience at McGill University - Montreal Neurological Institute. She investigates enhancements in brain functions associated with musical training under the supervision of Robert Zatorre. Her thesis examines the influence of auditory-motor and predictive mechanisms on the frequency following response (FFR). She uses several neuroimaging methods (EEG, MEG, MRI, TMS) as well as behavioural measures. Isabelle received multiple provincial scholarships for her doctoral work and presented her research at several international conferences. Licenced as an educator as well, Isabelle supervised numerous research assistants and interns at the lab. She has been a guest lecturer at McGill University, the Université du Québec à Montréal, the Conservatoire de musique de Québec, and the World Trumpet Society Conference. She is involved in many knowledge translation projects, notably Quebec Bio-Imaging Network's exhibition, The Art of Imaging, also available online. Isabelle's previous research training includes a Master's in Music and Human Learning at the University of Texas at Austin (2017), and she worked as a research assistant at the SoundBrain Lab supervised by Dr. Bharath Chandrasekaran. Originally trained on the trumpet, she earned an undergraduate degree from the Conservatoires de musique et d'art dramatique du Québec, a Master's in Performance and Undergraduate degree in Teaching from Laval University, and pursued graduate studies in trumpet performance at The Glenn Gould School of the Royal Conservatory of Music of Toronto. Isabelle freelances with various ensembles in Québec and Ontario and has given master classes in Canada, the United States, and Ecuador.



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### **Francisco Barros-Becker, Ph.D.**

I am a postdoctoral research fellow in Dr. David Raible's lab at the University of Washington, Seattle. My work tries to understand how aminoglycosides, a family of antibiotics with known ototoxic side effects, are compartmentalized in vesicles within mechanosensory hair cells of zebrafish. Using fluorescent probes, genetic tools, and super-resolution live microscopy, I aim to explore how aminoglycosides travel through different vesicular compartments to better understand how they influence the hair cell death pathway. Originally from Chile, I completed my PhD degree at the University of Wisconsin-Madison under the mentorship of Dr. Anna Huttenlocher. During this time, my studies focused on how wound signals attract innate immune cells, as well as the molecular mechanisms these cells use to migrate to the wound site in zebrafish. Throughout my graduate studies I got very interested in answering biological questions by using molecular tools coupled with live microscopy. Although my research field has changed, my expertise has allowed me to embark into new areas, where I'm passionate about understanding biological processes through the use of live models. I recently received an HHF Emerging Research Grant to study the role of vesicles during aminoglycoside toxicity. My future goal is to build my own lab that expands my research into the other roles the vesicular network has on disease, as well as during homeostasis of hair cells.



### **Mit B. Bhavsar, Ph.D.**

My background is in Biomedical Engineering and currently, I am serving as a postdoc at Hannover Medical School, Germany with a research focus on the detection of cell occupation on the cochlear implants for the long-term monitoring of stimulation efficiency. A cochlear implant is an electronic device that improves hearing in people who have severe hearing loss due to damage of the inner ear. As of December 2019, approximately 736,900 registered devices have been implanted worldwide. As the quality of speech recognition achieved with cochlear implants increases, the implants are becoming the therapy of choice for people who have some residual hearing but are achieving inadequate benefit from acoustic hearing aids.

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### **Antonio Bon-Nieves, B.S.**

**Antonio A. Bon-Nieves, B.S.** is a third-year medical student at the University of Puerto Rico School of Medicine. He is completing a Master's in Clinical and Translational Science at the Mayo Clinic Graduate School of Biomedical Science. Currently, he is a Clinical Research Fellow in the Department of Otolaryngology-Head and Neck Surgery at the University of Kansas Medical Center, working mainly in the Auditory and Vestibular Neuroscience Laboratory led by Dr. Hinrich Staecker, M.D., Ph.D. Through the research fellowship, Bon-Nieves discovered his passion for a career integrating both basic science research with direct clinical application in Otolaryngology – Head and Neck surgery, particularly in understanding inner ear disorders and the genetics of hearing loss. Bon-Nieves grew up in a small town in Puerto Rico, where research experiences have been sparse. This led him to pursue research experiences far from his home, igniting his passion to create an environment where other members underrepresented in medicine can explore research as a career path. As an underrepresented minority student in medicine, Bon-Nieves aspires to serve as an example and encourage others from underrepresented backgrounds to pursue careers in healthcare, ultimately strengthening the field by diversifying the workforce.



### **Katelyn Comeau Boulanger, Ph.D. Student**

**PhD Student in the lab of Dr. Lisa Goodrich**

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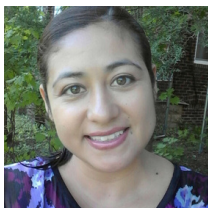


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### **Georgia Cantisani, Ph.D.**

I received my PhD at Télécom Paris on the topic of neuro-steered music source separation, combining neural signal analysis, music information retrieval, and machine learning for building a Brain-Computer Interface for music technologies. I am now a postdoctoral researcher with Laboratoire des Systèmes Perceptifs at École Normale Supérieure, investigating statistical learning mechanisms behind music and speech perception in ecologically valid scenarios with Prof. Shihab A. Shamma. I am also a visiting researcher at Trinity College Dublin in the group of Giovanni Di Liberto group, where I am deepening how these mechanisms evolve during infants' first year of life. My research uses statistical machine learning, signal processing, and scientific computing for audio inverse problems, music information retrieval and brain signal analysis. Other research interests include promoting reproducible and cross-disciplinary research through open-source software and datasets.



### **Martha Canto-Bustos, Ph.D.**

A self-driven scientist with multifaceted research experience in Pharmacology, Cellular Mechanisms, Neuronal Circuitry, and Hearing Loss. Throughout my academic pathway, I have authored over 10 peer-reviewed publications through numerous collaborations on cross-functional teams. Passionate about translating scientific discoveries into tangible solutions, I am eager to leverage my skills and knowledge in the hearing loss field to advance the development of novel therapies and treatments.

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### Valeria Castagna, B.S.

My name is Valeria Castagna. In 2018, I obtained my degree in Biological Sciences from the University of Buenos Aires with a focus on Neurosciences. In 2019, I started my doctoral studies in the Laboratory of Auditory Physiology and Genetics in Buenos Aires, Argentina, under the supervision of Dr. Maria Eugenia Gomez Casati. My project is centered on understanding the role of the olivocochlear efferent system in the development of the auditory system and the consequences of early exposure to intense sounds. From my beginnings in the academic world, I found sensory systems, particularly the auditory system, to be very fascinating. Therefore, it is a pleasure and an honor to participate in a conference like ARO. My name is Valeria Castagna. In 2018, I obtained my degree in Biological Sciences from the University of Buenos Aires with a focus on Neurosciences. In 2019, I started my doctoral studies in the Laboratory of Auditory Physiology and Genetics in Buenos Aires, Argentina, under the supervision of Dr. Maria Eugenia Gomez Casati. My project is centered on understanding the role of the olivocochlear efferent system in the development of the auditory system and the consequences of early exposure to intense sounds. From my beginnings in the academic world, I found sensory systems, particularly the auditory system, to be very fascinating. Therefore, it is a pleasure and an honor to participate in a conference like ARO.



### Federico Ceriani, Ph.D.

Dr Federico Ceriani is a senior postdoc at the School of Biosciences, University of Sheffield. He is a biophysicist by training, with a background in both Physics and Neurobiology. In his research he combines computational and experimental approaches to investigate the mechanisms underpinning the function of the auditory system. Recently, his research interests have focused on the molecular mechanisms and the diagnosis of age-related hearing loss.



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### **Lauren Chiriboga, B.S., M.S.**

Lauren Chiriboga is a third-year Ph.D. student in the Biomedical Engineering department at Columbia University. She studies in the Fowler Memorial Laboratory and is advised by Dr. Elizabeth Olson. Her main field of interest is cochlear mechanics, specializing in the mechanical and electrical properties of the organ of Corti and utilizing optical coherence tomography (OCT) for vibrometry. Lauren grew up in Somers, New York, and received her B.S. in Physics from NYU in 2021 and M.S. in Biomedical Engineering from Columbia in 2023. In her free time, Lauren enjoys photography, crocheting, and spending time with her friends and family.



### **Carolina Chu, M.S.**

My name is Carolina Chu and I grew up in Irvine, CA. I attended Johns Hopkins University where I completed the BS/MS program in Molecular and Cellular Biology and conducted research with Dr. Xin Chen on the epigenetic regulation of stem cell fate. I am currently an M3 at the University of Iowa Carver College of Medicine and am planning on pursuing Otolaryngology for residency. My current research focuses on the potential for RAAS blockade in providing otoprotection against noise induced hearing loss. Outside of lab, I like to try new recipes, go for walks, and hang out with my 3 cats. This is my first Otolaryngology conference and I am very excited to be here.

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### **Grace Conchas, Au.D.**

I've always been interested in the human body and helping my community. I had a personal connection to hearing loss as I grew up very close to a family member who had limited hearing as a result of a childhood illness. This led me to pursue a degree in audiology from the University of Minnesota. I was excited to enter the workforce following graduation after a few extra months delay due to the pandemic. I focused heavily on helping those with vestibular disorders while working in a clinic but saw many people who were desperate for help with tinnitus. I wished I had all the answers for my patients, but unfortunately, I felt there were many gaps in the audiology world when it comes to tinnitus treatment. Through my desire to further the current options for treating tinnitus, I pursued a post-doctoral fellowship focusing on research in neuromodulation and using the ability to modulate neural activity to reduce the subjective perception of tinnitus. I'm looking forward to attending my first ARO conference to learn from leading experts in auditory research, to network with those who have similar research interests, and to share my current research observations and data to interested attendees. I hope that I can continue my research on tinnitus and pursue other areas of audiology, such as hyperacusis and give back to the community through research and educating future clinicians.

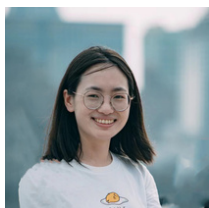
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### **Chong Cui, B.Med.**

Chong is currently a fifth-year M.D./Ph.D. candidate conducting research in Dr. Yilai Shu's lab at the Department of Otolaryngology, Eye & ENT Hospital of Fudan University. Her research is dedicated to the areas of gene therapy and translational medicine, with a specific focus on hereditary deafness. During her graduate research training, Chong constructed an animal model that faithfully mimics patients with the most common deafness-causing gene, GJB2, utilizing a combination of tetraploid compensation and gene editing technology. Additionally, she rescued several instances of dominant and recessive deafness in animal models such as *Kcnq4*, *Tmc1*, and *Otof* through the development of DNA or RNA editing therapeutic systems. Chong actively participated in the first successful global clinical trial of gene therapy for hereditary deafness. She was awarded the title of Outstanding Graduate Student of the "One Health Fund" and the National Scholarship for Doctor's Degrees at Fudan University. Looking ahead, Chong's long-term objective is to contribute to the advancement of safer and more effective gene therapy strategies and drugs for deafness. Her commitment stems from the aspiration to enhance the quality of life for individuals with hearing impairment, ensuring that a broader population can benefit and connect with the audible world.

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### **Dimitrios Daskalou, M.D.**

Dimitrios Daskalou is a fourth-year resident in Otolaryngology-Head and Neck Surgery at Geneva University Hospitals and a second-year MD-PhD student in the Inner Ear and Olfaction Lab at Geneva University, working under the supervision of Prof. Pascal Senn. Originally hailing from the small town of Edessa in northern Greece, Dimitrios pursued his medical studies at Aristotle University of Thessaloniki, Greece, where he graduated with honors in 2018. Subsequently, he attended a master's program in Medical Research Methodology, obtaining a solid and robust understanding of good scientific practice. His clinical and research interests focus on otology with a specific emphasis on otoprotection from acquired forms of hearing loss. His current efforts center on mitigating radiation-induced hearing loss associated with vestibular schwannoma treatment. His research endeavors are centered on exploring the potential of NADPH oxidase 3 inhibition as a strategic intervention. In parallel, he works on harnessing cutting-edge technologies, such as functional MRI neurofeedback, to empower individuals with chronic severe tinnitus to modulate their neuronal activity and alleviate tinnitus. Dimitrios believes that currently, hearing loss and related disorders constitute a significant societal burden, with future projections underscoring a potential surge in the number of affected individuals. Thus, hearing research has a pivotal role in improving the lives of millions today and shaping a better future for generations to come.



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### **Elise Dr Cuyper, M.D.**

Dr. Elise De Cuyper is a dedicated medical professional whose journey in the field of healthcare and research reflects a commitment to advancing our understanding of congenital cytomegalovirus (cCMV) infection and its impact on hearing outcome. Graduating as a medical doctor in 2020, Elise swiftly embraced a path of scientific inquiry and specialization in Ear, Nose, and Throat (ENT) medicine. Currently serving as a PhD researcher at Ghent University (Belgium) under supervision of Prof. Dr. Ingeborg Dhooge and Prof. Dr. Frederic Acke, Elise has been awarded a grant from the Research Foundation Flanders (FWO). Her primary focus is on hearing loss in children with cCMV infection, leveraging over 15 years of data from the Flemish CMV registry. In this extensive dataset, Elise has explored risk factors for congenital hearing loss, risk factors for natural hearing evolution, and the impact of antiviral therapy on long-term hearing outcome. Beyond the clinical field, Elise's curiosity extends to fundamental research. She is currently investigating the feasibility of inner ear therapy for cCMV-related hearing loss using mice. This demonstrates her commitment to bridging the gap between theoretical understanding and practical solutions in the medical field. Her journey showcases dedication, eagerness to learn, perseverance, and passion for contributing to both clinical and fundamental research.

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### Amanda D'Espessailles, Ph.D.

Amanda D'Espessailles has a Bachelor and Master degree in Biology and finished her PhD (2019) in Food and Nutrition, at Universidad de Chile, Chile. During her master and doctoral studies, Amanda researched inflammatory processes subjacent to non-transmissible chronic diseases in hepatic and adipose tissues, and how it could be modulated by functional food. This interest led to studying the relationship between obesity and obesity-associated metabolic alterations with hearing loss. Her main research line aims to discover and understand physiological and molecular mechanisms subjacent to this relationship, centered on the role of inflammation. Currently, Amanda is working at the Cognitive and Perceptual Neurosciences Laboratory, Health Science Institute, Universidad de O'Higgins, Rancagua, Chile, conducting a Postdoctoral Research Grant (ANID-FONDECYT) titled: "Effect of obesity induced by the consumption of a high-fat diet on the activation of the NLRP3 inflammasome in the cochlea and the function of the auditory system".



### Lemira V. Esparza, M.S.

I am currently a doctoral student in the Department of Psychology at the University of Texas at San Antonio (UTSA). While my educational background is in Psychology (M.S. in Psychology at UTSA; B.A. in Experimental Psychology at the University of the Incarnate Word; employed at Texas A&M University – San Antonio), my graduate research background is in cognitive hearing. I currently work in the Cognitive Neuroscience Lab with Edward Golob, Ph.D., conducting research in auditory spatial cognition and motion perception, and the Mathematical Cognitive Modeling Lab with Joseph Houpt, Ph.D., where I conduct research in Human Factors and sonification. I am interested in studying how cognitive processes (i.e. memory and attention) influence auditory spatial localization of moving sounds. Upon completion of my doctoral training (May 2024), I intend to complete a postdoc to expand my research background of auditory science beyond the cognitive component. My ultimate career goal is to obtain a full-time faculty position at an R1 university to continue my research in auditory spatial cognition and motion perception, and to make meaningful impacts of people with hearing impairments.

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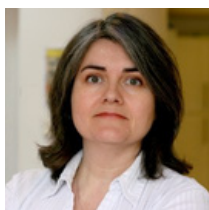


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### **Garner Fincher, M.S.**

My name is Garner Fincher, and I am a second year MD/PhD student at the University of Mississippi Medical Center. I am pursuing a PhD in neuroscience in the lab of Dr. Brad Walters. My research Primarily focuses on the inner ear.



### **Sheila Flanagan, Ph.D.**

Sheila Flanagan is a research associate in the Department of Psychology, University of Cambridge, and a bye-fellow at Selwyn College, Cambridge. Sheila has an H.N.D.(Distinction) in Electronic Engineering, a BSc. (Hons. 1st Class) in Psychology, an MSc. in Music Technology, and a Ph.D. in Experimental Psychology. Sheila's career began as an electronic engineer, designing audio-visual electronics. Whilst enrolled on the MSc. in Music Technology, she first encountered psychoacoustics. So began her passion for auditory perception. Subsequently she was employed as a research engineer for a manufacturer of audio equipment. During this time her interest in auditory perception grew. She conducted her PhD. in the Auditory Perception Group, University of Cambridge, under the supervision of Professor Brian C.J. Moore, looking at the effects of different types of acoustic radiator on timbre perception. Her post-doctoral research has been with Dr R. Carlyon in the Hearing-Speech and Language Group (MRC-CBU), in the Auditory Perception Group of Prof. Moore (Cambridge), and in the Centre for Neuroscience in Education (Cambridge) with Professor U. Goswami, where she has used EEG to investigate rhythmic entrainment to auditory stimuli as a longitudinal predictor of language development. She is currently working on a longitudinal project, looking at the phonological deficit theory and low frequency speech envelope encoding, in developmental dyslexia. Her current research interests remain in developmental auditory processing. Research projects have included MEG/EEG, behavioural, psycho-acoustic, and signal processing methods. Participant groups have included: infants to elderly; dyslexic and typically developing; mild-Moderate hearing impairment, and auditory processing disorder.

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#### **Haon Futamata, M.S.**

Haon Futamata is a current Ph.D. candidate majoring in Biological Sciences at the University of Tokyo, with an expected completion date of March 31, 2024. For her Ph.D. studies supervised by Prof. Nureki, she has performed structural analysis of prestin (SLC26A5), the motor protein expressed in outer hair cells and responsible for cochlear amplification. This work includes a paper titled 'Cryo-EM Structures of Thermostabilized Prestin Provide Mechanistic Insights Underlying Outer Hair Cell Electromotility,' published in Nature Communications in 2022. The paper explores the molecular mechanics of prestin's electromotility. Haon specializes in structural and molecular biology, focusing on proteins responsible for detecting physical stimuli, particularly using single-particle analysis in cryo-electron microscopy. Before her Ph.D., Haon completed her undergraduate and master's degrees in science at the University of Tokyo, graduating with a Master's Thesis Award. During her undergraduate studies, she gained valuable experience in structural analysis of rhodopsin proteins using X-ray crystallography, which laid the groundwork for her current research. After studying prestin, Haon developed a keen interest in hearing research. Most recently, Haon began working as a visiting scholar student at the Feinberg School of Medicine, Northwestern University in the U.S., where she had the opportunity to conduct the research of deafness-associated MYO6 variants under the guidance of Dr. Homma. Looking forward, she is enthusiastic about contributing new knowledge to the field of pharmacology and is keen on further developing her expertise in structural-based drug development, particularly for middle and large molecule drugs.



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### **Anselm J. Gasenstaetter, M.D.**

Anselm J. Gadenstaetter is a third-year Ph.D. student supervised by Prof. Christoph Arnoldner at the Medical University of Vienna, Austria. He graduated from medical school in 2020 (M.D.) and subsequently completed his military service in the Austrian Armed Forces before starting his Ph.D. studies in 2021. Anselm's research primarily focuses on translational studies using animal models to investigate cochlear implantation, pharmacokinetics, and novel pharmacotherapeutics. These experiments involve performing surgeries on small and large animals, conducting electrophysiological measurements, tissue processing, and molecular analysis. Furthermore, he studies the clinical outcomes of patients with vestibular schwannoma.



### **Lucas Garcia Camargo, M.S.**

Lucas Garcia Camargo is a Ph.D. Student in Bioengineering in the Department of Bioengineering at Rice University. He received a University Certificate in Teaching & Learning from Rice University. He graduated from the University of Campinas, in Brazil, with both a B.S. and an M.S. in Chemical Engineering. He was awarded a Science Without Borders Fellowship for international mobility at Rice University. His primary research focus has been on developing a computational model to understand ion transport and fluid homeostasis in the inner ear by approaching this complex problem with a systems engineering perspective. Under the guidance of professors Dr. Robert Raphael and Dr. K. Jane Grande-Allen, he has studied the crucial role of ion transport and tight junctions in the generation of the endocochlear potential.

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#### **Aditi Gargeshwari, Ph.D.**

Aditi Gargeshwari is a Postdoctoral Research Associate in Dr Ruth Litovsky's Binaural Hearing and Speech Lab in UW-Madison. Aditi completed her doctoral degree in December 2023 from Purdue University, under Dr Ravi Krishnan. Her research interests are studying the neural representations of complex sounds at the subcortical and cortical levels in hearing aid and cochlear implant users.



#### **Dinesh Gawande, Ph.D.**

Hi, I am Dr. Dinesh Gawande, and currently hold the position of Research Associate II within the Department of Otolaryngology at Rutgers's Brain Health Institute, part of Rutgers, the State University of New Jersey, USA. Before joining Rutgers University, I worked as a Research Associate at Creighton University, where my focus was on investigating the role of NMDA receptor subtypes in various brain disorders. I earned my PhD in Pharmacology from India, specializing in neuroscience drug discovery. My current research is centered on the intricate dynamics of immune cells in ribbon synapse degeneration and regeneration following noise-induced cochlear synaptopathy. I have authored approximately twenty-four research papers published in esteemed scientific journals such as Biological Psychiatry, Journal of Neuroscience, Neurobiology of Disease, European Neuropsychopharmacology, and Scientific Reports. In addition to my contributions to the academic literature, I actively participate in the scholarly community by serving as a reviewer for more than fifteen journals, lending my expertise to the peer-review process. My multifaceted contributions underscore my commitment to advancing knowledge in the field of otolaryngology and neuroscience.

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### **Deborah George, B.S. M.S.**

Deborah George is a PhD candidate at Georgetown University and second year TL1 scholar in the GHUCCTS TBS Training Program. She focuses on understanding the development of a subset of auditory neurons in the cochlea of the inner ear, and the axon guidance signaling systems involved in directing neuronal navigation and circuit formation. Her research is on the involvement of Eph/Ephrin signaling in type II SGN turning and outer hair cell innervation, as well as the potential interaction of Eph/Ephrin and PCP signaling during this process. Her overarching goal is to contribute to the development of novel innovations in treatments and therapies, to improve the lives of those suffering from disorders including hearing loss. She received her Bachelor of Science in Animal and Poultry Science from Virginia Tech University and received her Master of Science in Biology from American University. Following her Bachelor's degree, she worked at HHMI's Janelia Research Campus as a Study Support Associate, where she was responsible for breeding mice of various genetic background for scientific and medical research. She presented posters at the 2022 and 2023 ARO MidWinter meetings, as well as Society of Neuroscience (SfN), the Auditory Systems Gordon Research Conference (GRC), and Association for Clinical and Translational Science (ACTS). She was selected for three speaker presentations at the William Schnaper TL1 Visiting Scientists Mini Symposia. She received the First Runner-up Presentation Award at the symposium entitled "Circumventing Road Blocks in Clinical and Translational Science".

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#### **Jackson Graves, Ph.D.**

My two passions are music and languages, and my research focuses on human perception of pitch, an auditory feature that is critically important for perceiving both music and speech. In my research, I ask questions like: "how is pitch coded by the auditory system?", "what makes some combinations of pitches sound good together?", and "can we consciously observe pitch perception?" I did my PhD in Psychology with Dr. Andrew Oxenham at the University of Minnesota (2012–2018), exploring various questions about pitch perception. During my PhD, I spent 6 months in 2017 working with Dr. Barbara Tillmann and Dr. Anne Caclin at the Lyon Neuroscience Research Center (CRNL) in Lyon, France. This short stay produced a lot of continuing collaboration on projects about congenital amusia (tone deafness). After finishing my PhD in Minnesota, I then spent 5 years (2018–2022) as a postdoc in the Perceptual Systems Laboratory (LSP) of the École Normale Supérieure in Paris, France. Working with Dr. Daniel Pressnitzer and Dr. Paul Egré, we used measures like pupillometry to identify signals of perceptual uncertainty. I am currently (since 2023) a postdoc working with Dr. Anahita Mehta at the University of Michigan's Kresge Hearing Research Institute (KHRI), studying pitch perception using stimuli informed by physiological models of the auditory system. In my free time, I enjoy playing and writing music on the piano, as well as studying foreign languages.

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### **Ian Griffith, B.A.**

Ian is a PhD candidate in the Harvard/MIT Speech and Hearing Bioscience and Technology program, working with Josh McDermott in the Laboratory for Computational Audition. His current work focuses on developing human-like models of auditory attention using deep learning. Previously, Ian was a research assistant with Liberty Hamilton at the University of Texas, and received his undergraduate degree in Cognitive Science from UC Berkeley.



### **Roni Hahn, M.Sc.**

Roni Hahn is a Ph.D. candidate under the supervision of Prof. Karen B. Avraham in the Department of Human Molecular Genetics and Biochemistry at the Faculty of Medicine, Tel Aviv University. She received her B.Sc. in Life Science and M.Sc. in Molecular Genetics from the Faculty of Natural Sciences at Ben-Gurion University of the Negev, Beer-Sheva. Her research focuses on determining the molecular mechanisms of pathogenesis in mouse models and studying different genetic strategies to treat hereditary hearing loss and vestibular dysfunction. Her work is being performed in collaboration with the Holt and Géléoc labs at Boston Children's Hospital and the Harvard Medical School.



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#### **Elli Harting, B.S.**

I am a Ph.D. candidate in Mammalian Genetics at The Jackson Laboratory through a cooperative graduate program with Tufts University School of Medicine. My dissertation work in the laboratory of Dr. Basile Tarchini focuses on the development and maintenance of the hair cell sensory organ. My goal is to gain insight as to how we might better preserve sensory cell structure and function with age, in hopes of extending the healthspan of our aging population. Preceding my graduate work, I was a Research Assistant at MDI Biological Laboratory for 6 years, where I studied the impact of chronic early life stress using the zebrafish as a model organism. My broader scientific interests include developmental & regenerative biology, aging, and the interaction of genetic background with environmental factors. When not in lab, I can be found adventuring in nearby Acadia National Park or lounging with a cat on my lap and my nose in a book. I'm very excited and grateful to be presenting at the 2024 ARO MidWinter Meeting!



#### **Isabel Herb, Au.D.**

Isabel (Izzy) Herb is a first-year Ph.D. student under the mentorship of Melissa Polonenko, Ph.D. in the Department of Speech-Language-Hearing Sciences at the University of Minnesota, Twin Cities. Isabel received her Doctorate of Audiology (Au.D.) from Northwestern University, as well as a B.S. in Speech Pathology and Audiology and a B.A. in Sociology from Miami University of Ohio. In addition, she completed her final year audiology externship at Stanford University, where she engaged in research experiences that motivated her decision to pursue a Ph.D. Isabel is interested in bridging the gap between research and clinical practice, specifically using electroencephalography (EEG), and would like to work towards developing more optimal ways to measure hearing for groups unable to respond using traditional behavioral measures. Her current research involves validating new methods for measuring the auditory brainstem response and evaluating the impact of movement during sound field EEG. As she develops independent projects, she hopes to focus on clinically-minded research.

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### **Adam Hockley, Ph.D.**

Adam Hockley completed his Ph.D. at the University of Nottingham in 2019, working at the Institute of Hearing Research in Nottingham under the mentorship of Mark Wallace within the lab of Alan Palmer. Here he studied the function of nitric oxide in the cochlear nucleus as a tinnitus generation mechanism, using a guinea pig model of tinnitus and single-unit recordings with iontophoresis drug delivery. To further understand auditory processing within the cochlear nucleus, he then moved to a postdoctoral position in Susan Shore's lab at the University of Michigan, where he studied the neural coding of intensity in cochlear nucleus small cells, and coding of tone-in-noise stimuli in animals with cochlear synaptopathy. In 2022 he transitioned to study neural mechanisms underlying prediction in the prefrontal and auditory cortices using single-unit and optogenetic techniques.



### **Maria Camila Hurtado, M.S.**

Camila Hurtado is a second-year medical student at the University of Arizona College of Medicine-Tucson. She was born and raised in Colombia and at the age of 16 she moved to Tucson, Arizona. Camila received her B.S. in Physiology and a B.A. in Spanish Translation and Interpretation. She continued to work as a scribe at a community health clinic and then completed a master's degree in cellular and molecular medicine through P-MAP (Pre-Medical Admissions Pathway). Over the summer, she had the opportunity to participate in the NIH funded Medical Student Training in Aging Research Program (MSTAR) program at Johns Hopkins University School of Medicine. She had the privileged to engage, for the first time, in academic research to explore her interests in aging and otolaryngology. Her mentors are Dr. Amanda Lauer and Dr. Bryan Ward, and her research focused on temporal bone histopathology, endolymphatic hydrops, Meniere's disease, and age-related hearing loss. The challenges and successes she encountered as a first-time researcher this summer further developed her interest in academic research and reinforced in her that research is the foundation to assess the progression of disease and improve healthcare options. Outside of academics, Camila enjoys spending time with family and friends, strength training, spin classes, yoga, and trying new restaurants in town.

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### **Estelle in t'Zandt, B.S.**

I am a PhD candidate at NYU working with Dan Sanes. I am broadly interested in understanding the neural mechanisms underlying social behaviors and the relevant sensory processing that develops to allow organisms to create and maintain social bonds throughout their lifetimes. My project in the Sanes lab is studying how rearing in a family-specific acoustic environment affects the development of auditory cortex representations of family-associated vocalizations. Through my thesis work, I hope to further understand how natural, early life auditory experience shapes the way the brain processes vocalizations throughout development and into adulthood.



### **Aleksandra Ivanovix, Ph.D. Candidate**

Aleksandra has been a Ph.D. student at the University Hospital Bern, Inselspital (University of Bern), and the X-ray Tomography Group at Paul Scherrer Institut since the autumn of 2020. Before that, she received her BSc. in Biomedical Science from the University of Fribourg (Switzerland) in 2018 and her MSc. in Biomedical Engineering from the University of Basel (Switzerland) in 2020. Aleksandra's interdisciplinary research focuses on investigating the human middle ear's morphology and dynamic behavior using synchrotron-based X-ray phase-contrast imaging. Due to the size and location of the auditory ossicles, the physiological mechanism of sound transmission and the biomechanics of the middle ear still need to be understood entirely. With synchrotron-based phase-contrast X-ray tomography, we can overcome some limitations the gold standard techniques face for morphological and biomechanical assessments of the human middle ear and visualize the middle ear at high resolution up to 0.65  $\mu\text{m}$  and dynamically, during sound stimulation at a pixel size of 2.75  $\mu\text{m}$ .

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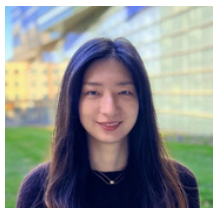


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#### **Amandine Jaysta, Ph.D.**

After a PhD with the Université Paris Orsay defended in 2017, where I worked on the role of the *fancg* gene on the development of primordial germ cells in the testis, I joined the Tarchini Lab. As a postdoctoral fellow, I have been investigating inner ear development, focusing on the role of hair cells polarization in sensory function and hearing loss. My research focuses primarily on the Galphai proteins pathways, and after elucidating the role of each individual members of the Galphai family in early hair cell development, I am currently working on the upstream regulator GPR156 and its roles in the cochlear and vestibular hair cells.



#### **HiJee Kang Ph.D.**

HiJee Kang is a postdoc fellow at Kanold lab, Dept. of Biomedical Engineering, Johns Hopkins University. She received her Ph.D in Cognitive Science at Ecole normale supérieure Paris, France, supervised by Dr. Daniel Pressnitzer at Laboratoire des Systèmes Perceptifs where she studied rapid incidental learning of temporal patterns, covering from normal hearing to cochlear implant listeners using psychophysics and pupillometry as research tools. Before joining Kanold lab, she worked with Professor Jan Schnupp at City University of Hong Kong investigating neural mechanisms for implicit learning of complex acoustic patterns in the auditory cortex using rodents as an animal model, funded by Fyssen Foundation. Her current research at Kanold lab focuses on understanding of neural circuit mechanisms in the early encoding phase of acoustic patterns for auditory memory at a population level, using 2-photon calcium imaging and holographic stimulation. She also studies changes in cortical activities and network due to aging as a potential factor for due to age-related central hearing degradation, funded by Emerging Research Grants from Hearing Health Foundation.



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#### **Amina Khan, B.S.**

My name is Amina Khan, I am a second-year medical student at the Keck School of Medicine of USC. I have a wide interest in career specialties which have led me to explore several research areas including Otolaryngology. I am a California native and have lived in Los Angeles for several years now since pursuing my undergraduate degree in Psychobiology at UCLA. After graduation, I worked as a K-12 teacher for a year before beginning my medical education at USC. I'm happy to be here today to present a project my team and I have been working hard on for the past year.



#### **Ippei Kishimoto, M.D., Ph.D.**

My long-term research goal is to find an innovative treatment of sensorineural hearing loss. Since graduating a medical school in 2008, I've worked as an otolaryngologist for more than 10 years, seeing and treating many patients with sensorineural hearing loss. After entering the graduate school of medicine, Kyoto university in Japan 2016, my academic interest moved to study hearing at more molecular level, and I was engaged in the basic research of the inner ear for the four years as a graduate student to get my PhD degree with my thesis about macrophage in the developing cochlea. Through academic training and research experience during my graduate studies, I was able to learn variety of technical skills and knowledge required for the experiment of basic research. During the four years as a graduate student, I also had the privilege of being able to present every year at Annual MidWinter Meeting of and became very intrigued in hair cell regeneration and development of the cochlea, hence my primary motivation for starting my early career postdoctoral training in Dr. Alan Cheng's laboratory in Stanford University. Since I became a postdoc research scholar in the lab 2020, I have been working on in vivo study of hair cell regeneration, supporting cell differentiation during development, and PCP (planar cell polarity) of cochlear hair cells. In the coming ARO meeting, I'm going to present my work to elucidate Wnt signaling in establishing PCP in the developing cochlea.



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### Miles Kilmara, M.D.

I am a resident physician in Otolaryngology – Head & Neck Surgery at University of Iowa Hospital & Clinics and researcher in the Molecular Otolaryngology & Renal Research Laboratories of Dr. Richard J.H. Smith and Dr. Hela Azaiez. My research efforts focus on the mutational spectrum of genetic deafness, correlations between genotype and phenotype, and novel strategies for ameliorating or preventing hearing loss. In addition to my primary research interests in the genetics of the auditory system, I am engaged in ongoing work to clarify the role of extraesophageal reflux in human disease.



### Samashi Kulasooriya, Ph.D

Samadhi Kulasooriya is a Biomedical Sciences graduate from Northumbria University, New Castle, UK, and currently she is pursuing her Ph.D in Biomedical Science at Creighton University School of Medicine. She is a fourth-year Ph.D candidate under the supervision of Dr. David Z. He, and her doctoral research work focuses on delving into the complexities of vestibular aging utilizing single-cell RNA seq, advanced imaging techniques, and RNAscope. Her work will provide new insights into how the onset of age-related vestibular dysfunction correlates with cellular and molecular degeneration of vestibular hair cells. Her work will be conducive to understanding the underlying mechanisms and development of interventions to mitigate presbycusis and enhance the well-being of those impacted.



### Jessica Landry, B.S.

Jessica earned a bachelor's degree in biology from Louisiana Tech University in 2019. She is currently a third-year PhD student in the Neuroscience Center of Excellence at Louisiana State University Health Science Center, in New Orleans, Louisiana. Her graduate research under the mentorship of Dr. Jennifer Lentz is focused on vestibular dysfunction in USHC which disproportionately affects the local Acadian population. Her current project uses the lab's mouse model of USHC to study the progression of vestibular dysfunction with plans to deliver targeted antisense oligonucleotides to the inner ear to improve vestibular function and balance in USHC mice.

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### **John Lee, Au.D., Ph.D.**

John Lee, Au.D. Ph.D., is a postdoctoral fellow at the National Institute on Deafness and Other Communication Disorders (NIDCD) at the National Institutes of Health. Dr. Lee received his Au.D. from Vanderbilt University and completed his Ph.D. at Harvard University in the Speech and Hearing Bioscience & Technology (SHBT) program. His research interests include differences in age-related and drug-induced changes to the cochlea and vestibular end organs, vestibular diagnostic testing, and gene therapy. Dr. Lee is currently developing a mouse model to evaluate cisplatin-induced vestibulotoxicity, evaluating mechanisms underlying protective effects of therapeutics against cisplatin-induced hearing loss, and characterizing vestibular function in patients with known vestibular pathologies.



### **Weisheng Liang, B.Sc.**

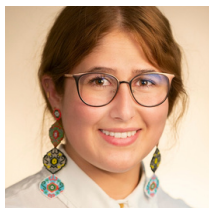
Weisheng Liang is a second-year graduate student in the Department of Laboratory Medicine & Pathobiology at the University of Toronto. She obtained her bachelor's degree in Biochemistry at the University of Calgary and joined Dr. Alain Dabdoub's Hearing and Balance Regeneration Lab at Sunnybrook Research Institute in 2022. Weisheng's thesis work focuses on characterizing the human fetal utricle at single-cell resolution using a combination of bioinformatics and wet lab techniques. Her current research goal is to provide insight into the development and regenerative capacity of the fetal utricle, with the aim to identify human-specific targets for the design of regenerative therapies to treat balance disorders.

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### Ana I. Lopez-Porras, PhD Student

Fueled by curiosity since childhood, I've always been that kid with dreams of becoming a scientist. In high school, my focus shifted to the human body, not in the conventional healing sense, but in a scientific quest to comprehend its intricacies. Certain that a medical degree wasn't my path, I chose something closely related: biomedical engineering. During my undergraduate, my destiny in research became unmistakable. Biology, biotechnology, and biomaterials emerged as my true passions, shaping my academic journey. Actively seeking hands-on experience, a pivotal moment came when I had the opportunity to work under Dr. Gregory Frolenkov mentorship at the University of Kentucky. This transformative experience fueled my passion for biological research as I witnessed the advantages of merging my engineering background with biology. It propelled me to pursue a Ph.D. in Physiology. Joining the program in 2021, I broadened my perspective through rotations in different basic science departments. However, shocked by the yet unknown mechanisms of hair cell maintenance, my curiosity drove me to join Catalina Velez-Ortega's lab. In my research, I use various techniques, with microscopy playing a crucial role. My focus is mainly on unraveling the molecular mechanisms of maintenance of the inner ear hair cells. My current training environment fosters competitiveness, independence, and creativity. With a long-term goal of making impactful contributions to the field, I aspire to lead my own research team as a principal investigator.



### Titilayo Mabogunje, B.A.

Titilayo Mabogunje is a M.D. student at Geisel School of Medicine at Dartmouth. She lived in England, Nigeria, and South Africa, before moving to the United States where she completed degrees in Molecular, Cellular, & Developmental Biology and Theatre Studies at Yale University. Her research interests include better understanding the biological and social implications of infectious diseases in low and middle income countries. Most recently, her research interests have taken her to Tanzania where she worked on a study looking at the differences in central auditory test performance between people living with and without HIV/AIDS. In her free time, if she's not working on her next baking challenge, telling punny dad jokes, or making plans to explore a new place, you'll probably find her traversing the intersection of medicine and the performing arts.

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### **Louay Madanat, M.S.**

I am a 3rd year PhD student in the Bizley lab at the UCL Ear Institute, UK. After completing my BSc Biomedical Science degree at St. George's, University of London, I knew my focus had to be neuroscience as a general fascination. After completing my MSc in Neuroscience at King's College London, I thought of integrating my two favourite interests in life - sound and neuroscience - together. As an avid music lover and producer, but also a sufferer of tinnitus and mild hearing loss, I deeply treasure the miracle of hearing and empathise with those who cannot fully experience it due to hearing loss or processing disorders. Thus began my journey in auditory neuroscience through my PhD, in which I investigate the role of the auditory cortex in several auditory processes in the ferret with the help of optogenetics, along with - more recently - human psychophysical experiments investigating the timecourse of adaptation to background noise. ARO presents a great opportunity to open up my research avenues to more translational impact in the wider hearing science community, and I am excited to gather input and inspiration from the many scientists and clinicians that will be joining.



### **Maryam Maghsoudi Shaghaghi, B.S.**

I am a second-year graduate student at the University of Maryland and am working as a research assistant at the Neural Systems Laboratory. I am passionate about exploring the mysteries of the human brain through leading experiments and analyzing brain data. My current research involves investigating the human brain's responses to auditory stimuli and leveraging this knowledge to enhance human abilities in the real world.

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### **Oskar Markkula, Ph.D.**

I am a third year PhD student at the Ludwig Maximilian University of Munich department of Neurobiology. I am affiliated with both the International Max Planck Research School of Translational Psychiatry, as well The Graduate School of Systemic Neuroscience. In my research, I am interested in ways in which neurons integrate electrical signals, and how disruptions to the interface between electrical potentials and molecular cascades interfere with the cell homeostasis over long timescales. I am currently working on a disease model of Spinocerebellar Ataxia Type 13, where aberrant action potential waveforms lead to a sound localization defect through disruption to auditory brainstem nuclei, while causing proteinopathic neurodegeneration in other neuronal populations. A comparative approach to understanding neuronal death and survival between these populations could lead to a translational treatment strategy to a number of yet poorly understood ataxic conditions. We aim to utilize our current animal disease model to gain insights into the ways in which different neuronal populations deal with calcium toxicity and temporal incoherence of network activity.



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### **Adele Moatti, Ph.D.**

**My previous research was in the areas of advanced imaging and technology development to characterize the development of porcine cochlea that reside deep in the bone by developing a bone-clearing method, working with a custom light-sheet microscope, and analyzing big datasets. Using these techniques, I established the pig as a suitable animal model to study hearing loss. I have also developed a porcine ex-vivo platform to improve therapeutics and complex biologics delivery to the inner ear. To that end, I have isolated extracellular vesicles from the inner ear cells and proposed their application as drug carriers to improve the safe delivery to the inner ear (NIDCD K99-R00 award). My goal is to dedicate my research career to the development of advanced materials and technology to address human health problems specifically hearing loss. The research in my lab (and with collaborators) will focus on: (i) Engineering techniques to improve biologics/therapeutics delivery. (ii) Advancement of smart therapeutics to respond to environmental stimuli. (iii) Translational applications, with a particular interest in hearing loss, aging, and tissue engineering. (iv) Utilizing imaging systems and algorithms to image deeper into tissue and to characterize disease states and the bio-distribution of drugs and biologics in the entire organ.**

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### **Nesrien Mohamed, M.D. Ph.D.**

I am originally from Libya, where I attended medical school and graduated with a medical degree (MBCH) in Medicine and Surgery from the University of Benghazi in 2010. After working as a clinician at Al Hawari General Hospital in Benghazi, I decided to move with my family to the United States in 2014 and pursue graduate school training. I obtained a Masters degree in 2017 and subsequently a PhD in Education and Neuroscience from the University of Northern Colorado in 2022. During graduate school, I taught several classes in Anatomy & Physiology and performed research in Dr. Mark Thomas' laboratory, where I learned how to do stereotaxic surgeries in mice and patch clamping on neurons in brain slices. For my thesis work, I studied the effects of dopamine D3 receptor activation on electrical resonance in mPFC layer V pyramidal neurons. Following my Ph.D. I sought out post-doctoral openings where I could further develop my research skills. I joined Dr. Katie Rennie's Vestibular Hair Cell Lab where I am currently a first year Postdoctoral Fellow in the Department of Otolaryngology at the University of Colorado School of Medicine. During the last several months, I have been involved in biobank studies with human vestibular epithelia removed during surgeries of the ear. I am currently performing whole cell patch clamp recordings to investigate the pharmacological actions of Fluoxetine on ionic currents in hair cells and calyx afferents of the rodent peripheral vestibular system.

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### **Nathaniel Nowak, Ph.D.**

Nathaniel Nowak is a postdoctoral scholar at the Caruso Department of Otolaryngology-Head and Neck Surgery at the University of Southern California. In 2020, he received his Ph.D. from the Neuroscience graduate program at Johns Hopkins University, where he studied the damage response of type II spiral ganglion neurons under the mentorship of Dr. Paul Fuchs. His current work in the laboratory of Dr. Radha Kalluri uses patch clamp electrophysiology to characterize the biophysical diversity within the mammalian spiral ganglion neuron population. In particular, he is interested in how efferent neuromodulation and intrinsic neuronal differences interact to lead to selective protection following traumatic insults.



### **Hannah Oberle, B.A.**

Hannah Oberle earned her Bachelor of Arts from Gustavus Adolphus College in St. Peter, Minnesota, where she majored in Psychology and minored in Music and Neuroscience. During her undergraduate career, she developed an interest in auditory neuroscience due to her passion for music and science. With this, Hannah was excited to join the Kresge Hearing Research Institute at the University of Michigan as a graduate student in the lab of Dr. Pierre Apostolides. Hannah, a student in the Neuroscience Graduate Program, has worked on determining the mechanisms of top-down control at the inferior colliculus by applying both in vivo and slice whole-cell electrophysiology. Outside of the University of Michigan, Hannah continued to expand her knowledge of the auditory system by participating in the Biology of the Inner Ear course at Marine Biological Laboratory in 2022. After her Ph. D., Hannah plans to continue in auditory neuroscience by pursuing an academic post-doc position.

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#### Kelly Otsuka, B.S.

Kelly Otsuka is a Ph.D. candidate in Dr. Anna Beaudin's lab in the Department of Pathology at University of Utah. Previously, Kelly obtained her Bachelor of Science in Microbiology from the University of California, Davis. She worked for 4 years in small molecule drug discovery and immunotherapy clinical trials before pursuing her Ph.D. Her current research involves a collaboration with Dr. Albert Park to investigate fetal-derived resident tissue macrophages in cochlear development and their dysregulation during CMV infection. Her Ph.D. work has received recognition and support through University of Utah's Immunology, Inflammation, and Infectious Disease (3i) T32 funding and F31 funding through the NIDCD.



#### Ryan Panela, HBSC

Ryan is currently attending the University of Toronto pursuing his PhD in Cognitive Psychology and Neuroscience within the Rotman Research Institute and University of Toronto under the supervision of Dr. Björn Herrmann. His current research is focused on event processing, specifically in understanding how environmental conditions affect speech comprehension and memory encoding in younger and older adults. He is interested in applying computational models and artificial intelligence to accelerate and automate existing experimental methods in the cognitive neurosciences. He recently completed his Honours Bachelor of Science in Biological Physics, Psychology, and Mathematics. His passion for the natural sciences and mathematical theory has compelled him to pursue a career in research. Ryan's commitment to academics is evidenced through his Isabel Bader Scholarship from Victoria College for his 3.7 GPA in his third year of university. He is an active member of his community, previously working as a peer mentor within the Faculty of Arts and Science and Victoria College where he facilitated community building and academic success. Beyond his work, Ryan is an avid traveler, enjoys playing tennis, and going for runs in the warm weather.

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### **Jinho Park, Ph.D.**

Dr. Jinho Park is a postdoctoral fellow with Dr. Jonathan Bird at the Department of Pharmacology and Therapeutics in the University of Florida. Her research interest is in the field of hair cell biophysics, especially discovering the underlying mechanism of two MYO7A isoforms which are localized in the upper-tip link density of the stereocilia and necessary for hair cell mechano-transduction. Before joining the Bird lab, she received her Ph.D. at the Department of Materials Science and Engineering in the University of Central Florida, gaining a background of biophysical properties of the cytoskeletal protein actin and actin binding proteins. Her knowledge of biophysical perspective in actin cytoskeleton allowed her to expand the understanding of biophysical and biochemical properties of MYO7A, which will help better understanding of its regulatory mechanism and pathogenic effects of Usher Syndrome type 1 (USH1B) and hearing loss DFNB2.



### **Braulio Peguero, Ph.D.**

Dr. Braulio Peguero is a post-doctoral Fellow in the Section on Developmental Neuroscience at the National Institute on Deafness and other Communication Disorders (NIDCD) in Bethesda, Maryland. Dr. Peguero earned a B.A. in Neuroscience from Bowdoin College and a Ph.D. in Neurobiology & Behavior from the University of Washington in Seattle. He has worked in the auditory field since Graduate school where he looked at the physiological and genetic characteristics that contribute to age-related and noise-induced hearing loss. His current research focuses on the role genes play in the development of the different cell types and anatomical structures within the inner ear necessary for normal hearing.



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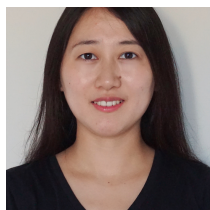


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#### **Jason Putnum, B.S.**

Jason is a second year in the Neuroscience and Cognitive Sciences (NACS) program at the University of Maryland, College Park. He currently works under Dr. Nikolas Francis studying cortical neural activity to better understand auditory perception and cognition. His current project aims to understand pitch perception through behavioral and neural imaging methods. He aims to understand how cortical activity relates to how we interpret the auditory world around us. He also hopes to use his training to support future generations of minority scientists through mentorship and related activities.



#### **Jingyun Qiu, M.S.**

Jingyun Qiu is a Ph.D. candidate in Dr. Kelvin Kwan's lab at Rutgers University-New Brunswick. Her research explores epigenetic changes during inner ear stem cell differentiation. She earned a B.S. in Biotechnology from Henan Normal University in China and an M.S. in Biology from City College of New York (CCNY). At CCNY, she conducted her Master's thesis in Dr. Adrian Rodriguez-Contreras's lab and investigated the correlation between maternal care behavior and auditory system development in rats. Before joining Rutgers University, she worked as a research technician in Dr. Yuanquan Song's lab at the Children's Hospital of Philadelphia, where she contributed to multiple projects that unraveled the cellular and molecular mechanisms of axon regeneration in *Drosophila*. Her efforts led to several co-first and co-authored publications. She currently combines experimental and bioinformatics approaches to study how epigenetic alterations at enhancer elements contribute to neuronal differentiation of inner ear stem cells. Her ultimate goal is to advance regenerative medicine and accelerate efforts to treat hearing loss.

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### **Kimberly Ramirez, B.A.**

Kimberly Ramirez is a third year medical student at the University of Massachusetts Medical School, and intends to apply into otolaryngology. She is currently spearheading multiple projects at the Massachusetts Eye and Ear Infirmary focusing on the study of Meniere's disease in human subjects and temporal bone specimens. She hopes these projects will shed light on the pathophysiology of Meniere's disease and further diagnostic methods and treatment options. Kimberly grew up in Los Angeles, California and received her B.A. in molecular and cell biology at the University of California, Berkeley. In her free time, she enjoys attending live comedy shows, spending time with her family in California, and baking pies.



### **Rebecca Revol, M.S.**

My name is Rebecca Revol, I was born and raised in Geneva, Switzerland and became interested in medicine and surgery as a teenager. I set myself a goal which was to succeed in med school and enter a specialty which could enable me to practice medicine and also operate. I studied in the University of Geneva, graduated in 2018, discovered the field of ENT during my studies and immediately felt it was perfect for me, so after a year as a resident in general surgery, I became an ENT resident. It has been a passion since and I feel very lucky to be able to work in a discipline that I love.

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#### **George Samaras, M.S.**

George Samaras is a fifth-year PhD candidate at the Georgia Institute of Technology, at which he also received his bachelor's and master's degrees. His academic interests include dynamics, vibrations, and acoustics, all of which have facilitated his work on cochlear modeling in the lab of Dr. Julien Meaud. The focus of his research is modeling cochlear mechanics and otoacoustic emissions, which provides valuable interpretation of experimental data and physical insight into mechanisms that are difficult to characterize by experiments alone. He is currently using a physiologically based cochlear model to better understand what stimulus frequency otoacoustic emissions can reveal about intracochlear function. The overall goal of his work is to increase fundamental understanding of the mammalian ear, which will facilitate long-term translational improvements in the diagnoses and treatments of ear pathologies.



#### **Urikhan Sanzhaeva, M.Sc.**

My name is Urikhan Sanzhaeva, and I am currently a PhD candidate in Dr. Visvanathan Ramamurthy's lab in the Department of Biochemistry and Molecular Medicine at West Virginia University. My research is focused on investigating the functional role of  $\beta 4B$ -tubulin, as TUBB4B mutations have been linked to Leber Congenital Amaurosis, severe childhood blindness, and sensorineural hearing loss. My long-term career goal is to become an independent researcher in academia, focusing on the biology of sensory systems. This is my first time participating in the Annual MidWinter Meeting of the Association for Research in Otolaryngology.

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#### **Dr. Susanne Sasse**

Postdoctoral researcher at the Department of Otolaryngology, Head and Neck Surgery, Hanover Medical School, Carl-Neuberg-Str. 1, 30625 Hanover, Germany Stages Degree programme Doctor of Veterinary medicine Doctorate 2014, Department of Otolaryngology, Head and Neck Surgery, Hanover Medical School, Germany: Investigations of neural protection of BDNF from the fibroblast cell line NIH3T3 grown on silicone elastomers in vitro and in vivo. Stages of academic career 2006–2009: doctoral student in Department of Otolaryngology, Head and Neck Surgery, Hanover Medical School, 2017–now: Postdoc in research group of Prof. Dr. A. Warnecke (Protection and regeneration of the inner Ear), Department of Otolaryngology, Head and Neck Surgery, Hanover Medical School Research interests and competence Leadership, coordination and implementation of preclinical studies on cell-based therapies and gene therapies in vitro and in vivo in the field of neural protection and regeneration of the inner ear.



#### **Mitsuo Sato, M.D., Ph.D.**

I am an otolaryngologist majoring in neurotology as well as head and neck cancer. Involving in both fields is very challenging but rewarding to me. In particular, I have a huge interest in sensorineural hearing loss because the treatment for it has not been developed for several decades despite an increasing number of patients who suffer from it. I believe the treatment for hearing loss not only improves cognitive ability but also prevents social withdrawal, eventually enhancing the quality of life. Therefore, I have been engaged in inner ear research and attempted to obtain insight into the mechanism of sensorineural hearing loss as much as possible. Recently, I have been working on a project of inner ear regeneration using chickens that are capable of regenerating hair cells and neurons in the inner ear.

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### Shane Seheult, M.Sc.

My name is Shane Seheult (M.Sc) and I am a PhD student in the McMaster Batlab at McMaster University (Hamilton, ON, CAN) studying auditory physiology under the supervision of Paul Faure. My research examines the neural responses and circuitry underlying sound localization and binaural hearing in big brown bats (*Eptesicus fuscus*). Most echolocating bats have small head sizes and deal with very small binaural acoustic cues, hence bats are an interesting animal model for studying binaural processing. Specifically, I am collecting data and modelling the binaural interaction component (BIC) in auditory brainstem response (ABR) recordings in *E. fuscus*. The McMaster Bat Lab has introduced me to several research techniques including ABR recordings, single-unit extracellular recordings, behavioural testing, and histology. Moreover, leading and assisting several research projects has encouraged me to become proficient in coding, both in R and MATLAB. Since learning how to conduct ABR recordings, I have collaborated with colleagues at the University of Toronto, Mississauga to measure hearing thresholds of mice with a novel, spontaneous mutation resulting in the "Abnormal Wobbly Gait" phenotype. This collaboration challenged me to adapt and transfer my ABR recording skills into a new animal model. Beyond my passion for research, I am enthusiastic about teaching and mentorship. I have served as a teaching assistant (TA) in a neurophysiology lab course where students learn to perform extracellular and intracellular recordings in a crayfish (*Faxonius rusticus*) preparation as well as a course on physical acoustics and the anatomy and physiology of hearing and sound perception.



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#### **Leanne Sijgers, Ph.D.**

Leanne Sijgers is a postdoctoral researcher at the Otorhinolaryngology department of the University Hospital Zurich, Switzerland, working on optimizing signal processing parameters in cochlear implant users based on electrophysiological and psychoacoustic recordings. She also completed her PhD at the University Hospital Zurich under supervision of Prof. Dr. Alexander Huber and co-supervised by PD Dr. Flurin Pfiffner and Prof. Dr. Norbert Dillier. Her doctoral research examined the use of electrophysiological and electrical impedance measurements for preserving residual hearing and improving electrode placement during cochlear implantation surgery. She holds a BSc. in Technical Medicine and an MSc. in Biomedical Engineering from the University of Twente in the Netherlands. During her Master's she performed an internship at Sonova in Stäfa, Switzerland, where she worked on signal processing artifacts during digital-to-analog conversion in hearing devices. She graduated within the research group Biomedical Signals and Systems in 2018, where she performed research on neural dynamics and excitability changes following extracellular electric stimulation of nociceptive nerve fibers.



#### **Eleftheria Slika, M.D.**

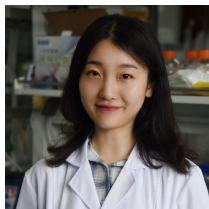
Eleftheria Slika, MD, is a postdoctoral research fellow in the laboratory of Dr. Paul Fuchs within the Otolaryngology-HNS Department of Johns Hopkins School of Medicine. She received her medical degree from the Aristotle University of Thessaloniki, in Greece. Her current research focuses on prevention of noise-induced hearing loss through virally-mediated enhancement of the medial olivocochlear innervation of outer hair cells. In ARO 2024 Midwinter Meeting, she is presenting an update on her research during a podium session. She aspires to become an otolaryngologist and combine clinical practice with medical research. Outside the lab, she enjoys music through playing the piano and attending concerts and musical events.

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### **Yuwei Sun, Ph.D.**

**Dr. Yuwei Sun is a Postdoctoral Research Associate in Professor Zhiyong Liu's laboratory at the Institute of Neuroscience, Chinese Academy of Sciences. She completed her Ph.D. within the same research group. Throughout her doctoral and postdoctoral work, she has been working on investigating the molecular mechanism underlying inner ear neuron and hair cell differentiation. Her previous research focuses on the single cell transcriptomic analysis of the mouse otic tissues at early embryonic ages, unraveling two subtypes of vestibular ganglion neurons at E13.5 and the complexities of early otic neuronal lineage development. In addition, she made contributions to discover a cochlear outer hair cell-specific enhancer through CRISPR/Cas9-mediated DNA chop studies. Currently, she is actively involved in research projects focused on uncovering essential transcription factors that play a crucial role in determining the fate of inner hair cells versus outer hair cells.**

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### **Yota Tobe, M.D., Ph.D. Student**

I am a first-year graduate student at the Department of Otolaryngology, Kyoto University. I am specializing in research on multisensory processing mechanisms of language in patients with hearing loss. Before entering graduate school, I was involved in treatment of patients with profound hearing loss, including cochlear implantation with Dr. Yamazaki, the Principal investigator, as an Otolaryngology Resident for 4 years. Through this experience, I became aware of the problem that some patients do not fully receive the benefits of cochlear implants due to poor speech recognition performance. Dr. Yamazaki has revealed the mechanisms of auditory development by measuring temporal changes in EEG responses to simple sound stimuli in children (H Yamazaki, 2016). Currently, we are obtaining EEG and fNIRS data during audiovisual stimuli in people with various hearing performances, and exploring the relationship between the results of this analysis and verbal listening performance. In the future, we would like to establish an algorithm to predict the effectiveness of cochlear implantation and suggest appropriate communication strategies by performing these tests on patients who are candidates for cochlear implants. We are very excited to participate in the ARO winter meeting 2024. We hope to learn from many sessions related to our research theme, Neuroscience, at this meeting, which will provide us with valuable information for finding new directions for our future research. We also look forward to exchanging ideas with researchers working in the same field.



### **Monica Trevino, Au.D., Ph.D.**

Monica Trevino is currently a postdoctoral fellow in Dr. Mishra's lab at the University of Texas at Austin. Previously, she obtained her Au.D. and Ph.D. in Hearing Science from the University of Texas at Dallas. Her current research focuses on the peripheral auditory system, clinical diagnostics and the effect of peripheral damage on auditory perception.

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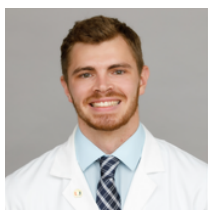
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#### **Rebecca Whiley, B.S.**

Rebecca Whiley is a PhD candidate in the Department of Biology at York University under the supervision of Dr. Christopher Bergevin. After receiving her Bachelor of Science in Animal Behaviour from the University of Western Ontario, she combined her passions for neuroscience and working with animals by entering the field of auditory neuroscience. She studies the generation of otoacoustic emissions (OAEs), working with lizards as her research models. In particular, she is interested in the relationships between OAEs and other objective measures of hearing, like auditory evoked potentials. She focusses on making comparisons within individual ears to obtain a reference for interpreting characteristics of the auditory system derived from OAEs. Her ongoing research aims to extend extant computational models of OAE generation and enhance the diagnostic utility of OAEs in clinical settings.



#### **Matthew Wiefels, B.S.**

Matthew Wiefels is a medical student at the University of Miami Miller School of Medicine and is currently on a research year supported by the NIH/NIDCD R25 Miami Otolaryngology Surgeon Scientist Training Program. He graduated summa cum laude from the University of Miami with a bachelor's degree in biochemistry and was elected to Phi Beta Kappa as an undergraduate sophomore. Through his laboratory and clinical experiences in college and medical school, Matthew developed an interest in otolaryngology and research. In medical school, he engaged in both clinical and basic science research and took elective courses in otolaryngology and head and neck anatomy. For his R25 fellowship grant, under the guidance of Dr. Christine Dinh, Matthew is investigating the off-label efficacy of specific drugs for improving outcomes of patients diagnosed with vestibular schwannomas. His research focuses on evaluating existing drugs that may enhance radiation toxicity in these tumors, particularly in those that exhibit resistance to radiation therapy.

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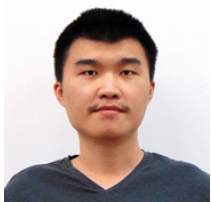
### Caryl Young, B.S.

Caryl is a third-year Ph.D student in the Graduate School of Biomedical Science and Engineering at the University of Maine. The multi-intuitional nature of the program allows Caryl to do her research in the Munnamalai Lab, at the Jackson Laboratory in Bar Harbor. She received her bachelors degree in Biomedical Engineering from the University of Maine in 2019. After graduation she joined the Munnamalai first as a research assistant, and then as a graduate student. Using transgenic mouse models and immunohistochemistry, her current research is focused on the role of sensory progenitors in patterning the cochlea during development.



### Zhang Xiaoman, M.D.

Zhang Xiaoman is a PhD student at Shanghai Jiao Tong University School of Medicine majoring in Otolaryngology. Under the supervision of Prof. Yin Shankai, Xiaoman mainly focuses on the pathogenesis and pathophysiological process of sleep apnea in adults and children, and have published multiple related research articles. Xiaoman intends to be an ENT doctor after obtaining her PhD degree.



### Chenou Zhang, Ph.D.

I have a background (Ph. D.) in computational biophysics, specifically in molecular dynamics. My previous work focused on understanding the mechanism of ion transporting in cation-proton antiporters using MD simulations. Recently, I've been collaborating with the experimental groups of Dr. Joseph Santos-Sacchi and Dr. Dhasakumar Navaratnam (both at Yale University) on the molecular mechanism of the electromotor protein prestin, which is directly involved in sound amplification in the outer hair cells of the inner ear. I'm driving the computational aspects of the project.