THE VESTIBULAR SYSYEM – From Bench to Bedside

Thursday December 9, 2021
9:00am-3:15pm - VIA ZOOM

7th Annual Auditory & Vestibular Translational Research Day

Organized by the Center for Comparative and Evolutionary Biology of Hearing of the University of Maryland

Time	Speaker	Title
Introduction to the day and vestibular pathology in human		
9-9:30am	 **Ronna Hertzano, MD PhD** *Professor, Department of Otolaryngology Head and Neck Surgery* *Professor, Department of Anatomy & Neurobiology* *Affiliate member - Institute for Genome Sciences* *University of Maryland School of Medicine, Baltimore* *Faculty page: Hertzanolab.org*	**Introduction to the Day & Opening remarks**
	 **Catherine Carr, PhD** *Distinguished University Professor, Department of Biology* *University of Maryland, College Park* *Faculty page: http: //terpconnect.umd.edu/~cecarr/*	
9:30-10:30	 **Christopher Zalewski, PhD** *Clinical Research Audiologist, Otolaryngology Branch, Audiology Unit NIDCD, NIH*	**Vestibular Outcome Measures and the Identification of Peripheral Vestibular Disorders** *Learning objectives:* • *Better understand the VOR and the role it plays in vestibular assessment* • *Become better acquainted with the various vestibular assessment measures used in the clinic* • *Better understand the interpretation of vestibular test results from common peripheral vestibular pathologies*
	 **Stephen Cass, MD** *Professor,* *Department of Otolaryngology* *University of Colorado* *Anschutz Medical Campus*	**Overview of Peripheral Vestibular Disorders and Opportunities for Translational Research** *Learning objectives:* • *Describe the top 3 vertigo syndromes arising from the peripheral vestibular system* • *Understand the pathophysiology of BPPV and current treatments* • *Describe the central dogma for Meniere's Disease and vestibular sensitivity to gentamicin toxicity*
10:30-11	Break	
Translational Vestibular Research		
11-11:30	 **Jennifer Stone, PhD** *Research Professor,* *Otolaryngology-Head and Neck Surgery* *Virginia Merrill Bloedel Hearing Research Center* *University of Washington School of Medicine*	**Regeneration in the Vestibular System** *Learning objectives:* • *Understand significance of mature mammals' ability to replace vestibular hair cells in context of adult plasticity* • *Learn differences between type I and II hair cells and become curious about their functional significance* • *Gain more knowledge about the cellular and molecular mechanisms governing hair cell development and regeneration*
11:30-12	 **Tal Teitz, PhD** *Assistant Professor, Department of Pharmacology and Neuroscience, School of Medicine, Creighton University, Omaha*	**Development of new pharmacologic agents for hearing loss and vestibular pathology** *Learning objectives:* • *High-throughput screens of bioactive compounds for protection against cisplatin-induced hair cell death.* • *Animal models for testing compounds against cisplatin- and noise-induced hearing loss.* • *Repurposing FDA-approved drugs for hearing loss and vestibular deficits.*
12-12:30	 **Zubair Ahmed, PhD** *Professor, Department of Otorhinolaryngology Head and Neck Surgery, Molecular Biology and Biochemistry, Ophthalmology and Visual Sciences, University of Maryland School of Medicine, Baltimore*	**Gene Therapy for Vestibular Pathology** *Learning objectives:* • *Phenotyping the vestibular deficits in mouse model* • *Viral vector-based gene delivery to rescue the vestibular function*
12:30-1:30pm	LUNCH BREAK	
Novel device and prostheses		
1:30-2	 **Didier Depireux, PhD** *Chief Science Officer* *Otolithlabs (Washington DC)*	**Novel devices to treat dizziness** *Learning objective:* • *Review societal and human costs of vertigo and dizziness associated with vestibular hypofunction* • *Evaluate effectiveness of bone-conducted masking at mitigating vertigo and gait challenges associated with vestibulogenic vertigo* • *Discuss translational challenges of getting a medical device from concept to something approved by FDA and medical payors*
2-3	 **Charley C. Della Santina, MD, PhD** *Professor of Otolaryngology - Head & Neck Surgery and Biomedical Engineering Johns Hopkins School of Medicine*	**Vestibular Implantation to Treat Chronic Dizziness due to Loss of Inner Ear Balance Sensation** *Learning objective:* • *Understand the clinical presentation, impact and standard of care for bilateral vestibular hypofunction (BVH)* • *Quantify clinical outcomes of vestibular implantation and prosthetic stimulation of the vestibular nerve as a treatment for BVH* • *Discuss key hurdles one should anticipate when contemplating translational research and medical device development*
3-3:15	 **Sandra Gordon-Salant, PhD** *Professor and Director of the Doctoral Program in Clinical Audiology in the Department of Hearing and Speech Sciences* *University of Maryland, College Park* *Faculty page:* *http://www.umdhearinglab.com/*	**Closing Remarks**

Pre-Workshop Lecture – Wednesday, December 1, 4:30-5:30pm

This lecture is designed for graduate students and post-docs that would like to increase their familiarity with the human vestibular system prior to the translational day.

4:30-5:30	 **David J. Eisenman, MD** *Associate Professor* *Department of Otorhinolaryngology Head and Neck Surgery* *University of Maryland School of Medicine, Baltimore*	**Introduction to vestibular system anatomy and physiology** *Learning objectives:* *1. Describe the anatomic subunits of the vestibular labyrinth and their roles* *2. List the three main functional outputs of the vestibular system* *3. Describe the process of vestibular compensation and explain its significance.*

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