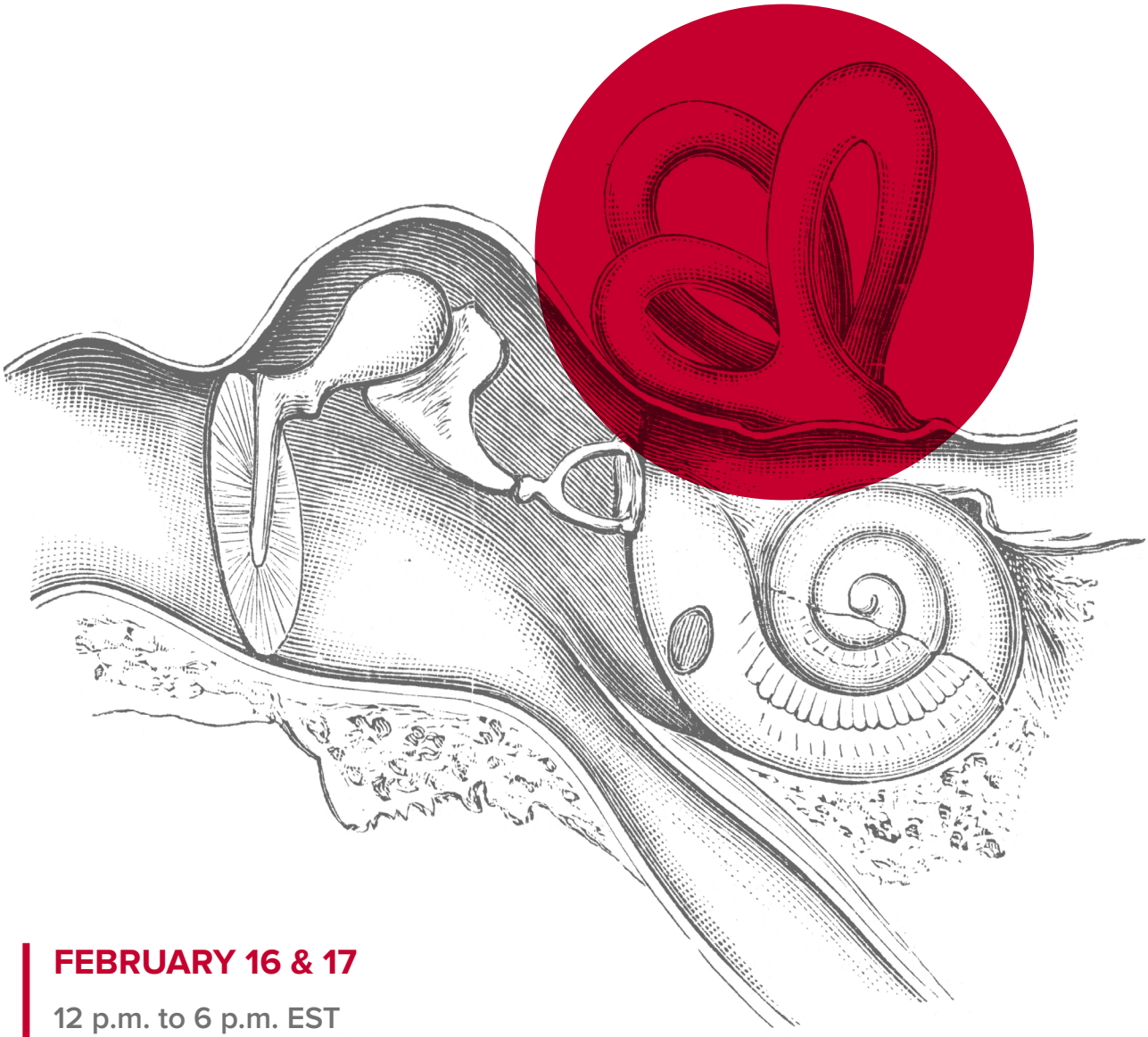
Department of Otolaryngology – Head and Neck Surgery

VESTIBULAR-ORIENTED RESEARCH MEETING



FEBRUARY 16 & 17

12 p.m. to 6 p.m. EST
Virtual Event

CLICK HERE TO VISIT THE MEETING WEBSITE

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FOR DETAILS CONTACT

Niki.Corrigan@osumc.edu
or Keith.Meier@osumc.edu

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

DAY 1 AGENDA

TUESDAY, FEBRUARY 16

Noon — **Introduction and Welcome**

12:20 p.m. — **Podium Session 1A** – *Helen Cohen, EdD, OTR, Moderator*

Abstract 1
An experimental and computational study of recovery nystagmus
Jacob Pogson, Maud, PhD

Abstract 2
The gait disorientation test: a novel screening test for vestibular dysfunction
Colin Grove, DPT, NCS

Abstract 3
Are differing symptoms sets site specific in the vestibular patient?
Art Mallinson, PhD

Abstract 4
Visual and vestibular deficits are associated with lower functional mobility and higher symptom burden in adults with persistent symptoms after a mild traumatic brain injury
Linda D'Silva, PT, PhD

1:40 p.m. — **Keynote Address I**
Quick clinical update on the treatment of vestibular disorders and ataxia
Michael Strupp, MD, FRCP, FAAN, FANA, FEAN

2:10 p.m. — **Break**

2:25 p.m. — **Podium Session 1B** – *David Zee, MD, Moderator*

Abstract 5
Restoring vestibular afferent dynamics improves accuracy of prosthesis-evoked vestibulo-ocular reflex (VOR) responses
Pum Wiboonsaksakul, BS

Abstract 6
New findings on vestibular impairment in healthy community volunteers and virologically-controlled HIV+ female subjects
Helen Cohen, EdD, OTR

Abstract 7
Identification of a genetic variant underlying familial cases of recurrent benign paroxysmal positional vertigo
Yesha Lundberg, PhD

Abstract 8
Deficits in standing balance control in mTBI subjects with chronic valance complaints
Robert Peterka, PhD

3:45 p.m. — **Keynote Address II**
Visual control of postural balance
Adolfo Bronstein, MD, PhD

4:15 p.m. — **Break**

4:30 p.m. — **Poster Lightning Round**

5 p.m. — **Poster Session**

6 p.m. — **Mentoring Session**

7 p.m. — **Adjourn**

DAY 2 AGENDA

WEDNESDAY, FEBRUARY 17

11 a.m.	**Mentoring Session**
Noon	**Brief Welcome**
12:10 p.m.	**Podium Session 2A** – *Laurence Harris, PhD, Moderator*
	Abstract 9 **Noisy galvanic vestibular stimulation improves visual perceptual thresholds** *Torin Clark, PhD*
	Abstract 10 **The effects of training on visual-vestibular heading perception and balance in older and younger adults** *Grace Gabriel, MA*
	Abstract 11 **The vestibular system in everyday life: lessons from physiology, modelling and clinic** *Jean Laurens, PhD*
	Abstract 12 **Auditory contributions to spatial encoding while walking in a virtual environment** *Corey Shayman, BS*
1:30 p.m.	**Keynote Address III** **An internal model of gravity and its role in action, perception and spatial orientation** *Dora Angelaki, PhD*
2 p.m.	**Break**
2:15 p.m.	**Podium Session 2B** – *Rick Rabbitt, PhD, Moderator*
	Abstract 13 **Causal roles for human dorsal parietal and medial prefrontal cortex in perception of the subjective visual vertical** *Paul Taylor, PhD*
	Abstract 14 **Spatial updating of stimulus location of high uncertainty during dynamic orienting behavior** *Jesse Heckman, MSc*
	Abstract 15 **Individual differences in spatial acuity and the ability to balance without gravitational cues** *Vivekanand Vimal, PhD*
	Abstract 16 **Predictive processing by Purkinje cells in the anterior vermis during active versus passive self-motion** *Omid Zobeiri, MSc*
3:35 p.m.	**Keynote Address IV** **Zonal patterning of the vestibular organs and their functions** *Doris Wu, PhD*
4:05 p.m.	**Break**

DAY 2 AGENDA

4:20 p.m. **Podium Session 2C** – *Ruth Anne Eatock, PhD, Moderator*

Abstract 17
Preferential representation of otolithic versus semi-circular canal input in the rat hippocampus
Paul Smith, MApplStat(Hons), PhD, DSc

Abstract 18
Computational model of potassium transport in the vestibular system
Robert Raphael, PhD

Abstract 19
Computational model of ephaptic and potassium mechanisms of non-quantal transmission at the vestibular hair cell-calyx synapse
Aravind Chenrayan Govindaraju, MS

Abstract 20
RotaRod testing on FAM136a and DTNA transgenic mice in light and dark conditions shows implications for contributing to loss of vestibular function in Meniere's Disease patients
Anna Lysakowski, PhD

5:40 p.m. **Keynote Address V**
"When I'm 64": A glimpse into the ageing vestibular system
Alan Brichta, PhD

6:10 p.m. **Closing Words**

KEYNOTE SPEAKERS

DORA ANGELAKI, PHD

Dora Angelaki is a professor at the Center for Neural Science and the Tandon School of Engineering at New York University. She holds a diploma and Ph.D. degrees in electrical and biomedical engineering from the National Technical University of Athens, Greece, and the University of Minnesota.

Her general area of interest is computational, cognitive and systems neuroscience. Within this broad field, she specializes in the neural mechanisms of spatial perception and navigation using rodents, humans and non-human primates as a model. She is interested in neural coding and how complex, cognitive behavior is produced by neuronal populations. She has received many honors and awards, including the inaugural Pradel Research Award in Neuroscience from the National Academy of Sciences (2012), the Grass Lectureship from the Society of Neuroscience (2011), the Hallpike-Nylen medal from the Bárány Society (2006) and the Presidential Early Career Award for Scientists and Engineers (1996). In 2014, she was elected to the American Academy of Arts and Sciences and National Academy of Sciences.

Dr. Angelaki's research focuses on understanding how multisensory information flows between subcortical and cortical brain areas, as well as the spatial navigation, decision-making and episodic memory circuits, and how internal states modulate this information flow. Her lab uses innovative approaches to explore and understand neural dynamics and network coding of multisensory and multimodal information at multiple stages of processing under diverse naturalistic and perceptual contexts related to navigation, planning and perceptual decisions. Her lab is interested in the neural implementation of canonical neural computations and how they go astray to result in sensory, motor, memory and cognitive deficits in diseases like autism and schizophrenia. The goal of the lab is to use this knowledge to understand computational principles of disease, to inspire artificial systems and to aid the development of prosthetics and other tools for understanding and treating deficits of sensory coding, spatial orientation, cognition and action.

ALAN BRITCHA, PHD

Alan Brichta, PhD is a neurobiologist with research interests in the anatomy and physiology of peripheral and central vestibular system. In particular, his studies have focused on vestibular hair cells and their associated primary afferents and has recently developed an isolated preparation of the mouse inner ear to study these unusual cellular components. This approach allows stable, high-resolution, intracellular recordings whilst the tissue undergoes near 'natural' (mechanical), rather than artificial (electrical) stimulation. Results from these studies are helping us understand the cellular mechanisms underlying normal and abnormal function associated with the peripheral vestibular apparatus.

In addition, Dr. Brichta is studying vestibular nucleus neurons in the brainstem that are the major recipients of transmitted vestibular organ output. These regions are thought to be highly modifiable and may prove to be ideal targets for rational therapeutic strategies aimed at treating balance disorders. Dr. Brichta was awarded a prestigious five year Garnett Passe and Rodney Williams Memorial Foundation Senior/Principal Research Fellowship.

KEYNOTE SPEAKERS, CONTINUED

ADOLFO BRONSTEIN, MD, PHD

Adolfo Bronstein, MD, PhD, is professor of Clinical Neuro-otology at Imperial College London and a consultant neurologist at Charing Cross Hospital and at the National Hospital for Neurology and Neurosurgery, Queen Square, London. He heads the Neuro-otology Unit in the Division of Brain Sciences at Imperial College. Professor Bronstein is permanent honorary chairman of the British Society of Neuro-otology, and ex-president of the Neuroscience section of the Royal Society of Medicine.

Professor Bronstein has written 300 hundred papers on clinical and basic aspects of eye movements, balance and spatial orientation. His book, ''Dizziness, a practical approach to diagnosis and management," has won a ''High Commendation'' at the 2008 BMA Medical Book prize Competition. Professor Bronstein is an enthusiastic teacher of neuro-otology and balance disorders in European and world neurological societies. In 2008 he obtained the Nylen-Hallpike Prize of the Barany Society for outstanding contribution to clinical neuro-otology. His current research interests encompass cortical aspects of vestibular function relevant to spatial orientation and dizziness.

MICHAEL STRUPP, MD, FRCP, FAAN, FANA, FEAN

Michael Strupp, MD, studied medicine at the Technical University of Aachen and in Rochester, NY. Then he worked for three years in basic neurophysiological research, mainly doing patch-clamp recordings (at Baylor College, Houston, in Montpellier and in Munich), before he moved to the Department of Neurology at the University and the German Centre for Vertigo and Balance Disorders at the University of Munich, Germany.

His particular area of interest is the therapy of vestibular, ocular motor and cerebellar disorders. Some of his major achievements are: First, demonstration of the effectiveness of vestibular exercises in acute vestibular neuritis in a controlled clinical trial. Second, the benefit of steroids in acute vestibular neuritis, a placebo-controlled, four-arm trial published in the NEJM. Third, introduction of three new therapeutic principles: aminopyridines, as potassium channel blockers, for the treatment of downbeat, upbeat and central positioning nystagmus as well as episodic ataxia type 2; chlorzoxazone for the therapy of downbeat nystagmus; and, more recently, acetyl-DL-leucine for the treatment of ataxias and Niemann-Pick Type C. Fourth, the development of new light and practical examination glasses for nystagmus: the "M glasses". Currently he is the principal investigator of six ongoing clinical trials. He is very much engaged in the "International Classification of Vestibular Disorders."

He has authored 406 pubmed listed papers and five books on vertigo, dizziness and ocular motor disorders. He is currently Editor-in-Chief of Frontiers in Neuro-otology, Joint Chief Editor of the Journal of Neurology and a Member of the Editorial Board of Neurology. He has received many clinical and scientific awards, including the Hallpike-Nylen Award 2106 and the Investigator Award of the European Academy of Neurology 2019. Finally, he is a very passionate teacher and was awarded 'Best Teacher' by the German Neurological Society.

KEYNOTE SPEAKERS, CONTINUED

DORIS WU, PHD

Doris Wu received her bachelor's degree from the University of Wisconsin at Stevens Point, her master's degree from the Department of Physiology at the University of Southern California, and her Ph.D. from the Department of Anatomy (currently the Department of Neurobiology) at the University of California at Los Angeles (UCLA). She received her postdoctoral training from the Mental Retardation Center (now the Intellectual and Developmental Disabilities Research Center) at UCLA and the Department of Genetics at Harvard Medical School. She joined the NIDCD in 1993 and has published many papers on the molecular mechanisms underlying inner ear development.

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National Eye Institute
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National Institute on Aging
National Institute on Deafness and Other Communication Disorders

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