Delaware Vestibular Update 2020  
*Insight Based Diagnosis and Care of Balance Disorders*

University of Delaware, STAR Health Sciences Complex Audion  
540 South College Avenue, Newark Delaware

Saturday and Sunday May 2-3, 2020

Sponsored By:  
Department of Physical Therapy  
University of Delaware  
and  
Department of Otolaryngology  
Christiana Care Health Systems

Course Directors:  
Grace Keenan-Ademski, PT, DPT  
Board Certified Geriatric and Neurologic Clinical Specialist  
Certified Vestibular Therapist  
University of Delaware Department of Physical Therapy  
and  
Michael Teixido, MD  
Neurotology  
Christiana Care Health Systems

Faculty:

Grace Keenan-Ademski, PT, DPT  
Board Certified Geriatric and Neurologic Clinical Specialist  
Certified Vestibular Therapist  
Assistant Professor of Practice  
Department of Physical Therapy  
University of Delaware

Michael Teixido MD  
Neurotology  
Adjunct Assistant Professor Otolaryngology  
Christiana Care Health Systems  
University of Pennsylvania  
Thomas Jefferson University
Conference Description:
Balance disorders are so prevalent that competent vestibular diagnosis and treatment plays a central role in effective wellness based health care delivery. This course is designed for Physical Therapists, Occupational Therapists, Audiologists, Nurse Practitioners, Physician Assistants, Otolaryngologists and Physicians who have care responsibility for patients with vestibular and balance disorders. This 1-1/2 day program consists of lectures by experienced clinicians with excellent teaching ability and practice sessions which provide personal experience with clinical examination, vHIT, and treatment of all variants of canalithiasis and cupulolithiasis. Because of their high prevalence there is significant emphasis on BPPV and on vestibular migraine in this course.

An important part of effective treatment of vestibular disorders is the ability to fully enroll patients in their treatment. This requires learning ways to explain balance disorders to patients in lay terms. Each presenter in this conference will offer lay-accessible analogies that can positively impact patient interactions and outcomes.

While this is an intermediate level course, the team of presenters work from foundational principles that make all material accessible to novices in balance therapy, but will also present advanced concepts for experienced clinicians in some areas.

Conference Objectives:
At the completion of this course the attendee should be able to:

1- Describe the normal anatomy and physiology balance and of the vestibular system in lay terms.
2- Recognize the most prevalent vestibular disorders affecting adults and children.
3- Recognize the importance of history and physical examination in diagnosis of vestibular disorders.
4- Understand the difference between neuromuscular, musculoskeletal, cardiovascular and vestibular causes of balance disorders.
5- Recognize the benefits and limitations of vestibular physical therapy in the treatment of balance disorders.
6- Recognize all variants of BPPV and understand treatment options for each.
7- Understand the contributions vestibular testing may make in evaluating and guiding treatment in vestibular disorders.
Continuing Education Credits:
Twelve Physical Therapy CEUs are offered for this course
Twelve American Academy of Audiology CEUs are offered for this course

About the Audion at University of Delaware’s STAR Health Sciences Campus:
The Audion represents the newest concept in presentation spaces and is a central feature of the Health Sciences Campus. It is a beautiful oval high tech space that is flexible and adaptable to program needs. The centerpieces of the Audion are two, 16-foot-wide LED walls that provide visual content to any event. The venue’s open floor plan allows for a variety of ways to arrange seating, along with additional audiovisual resources that make it a premier event facility. In this conference laboratory stations will be located within the presentation space providing a unique educational environment and experience.

Recommended Accommodations:
Courtyard by Marriott Newark-University of Delaware
This hotel is run by the University Hospitality Program
400 David Hollowell Dr, Newark, DE 19716
(302) 737-0900
Distance to venue: 2.2 miles

Embassy Suites by Hilton Newark Wilmington South
654 S College Ave, Newark, DE 19713
(302) 368-8000
Distance to venue: 1.3 miles

Parking:
Ample free parking is available at the Star Campus.
540 South College Avenue, Newark Delaware 19713

Air Travel:
Newark Delaware is 33 miles (40 minutes) from Philadelphia International Airport (PHL)
Newark Delaware is 68 miles (1hr 21 minutes) from Baltimore-Washington International Airport (BWI)
# Program Schedule: Delaware Vestibular Conference 2020

**May 2-3, 2020**

**University of Delaware STAR Campus**

**540 South College Avenue, Newark Delaware**

### Saturday May 2:

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<th>Time</th>
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<th>Presenter(s)</th>
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<td>7:30-8:00</td>
<td>Sign In/ Breakfast</td>
<td>M. Teixido/G. Keenan-Ademski</td>
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<tr>
<td>8:00-8:10</td>
<td>Welcome</td>
<td>M. Teixido/G. Keenan-Ademski</td>
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<tr>
<td>8:10-8:55</td>
<td>Anatomy and Physiology of Vestibular System</td>
<td>H. Rizk</td>
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<td>8:55-9:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>9:00-9:45</td>
<td>Vestibular Potpourri: Disorders You Need to Know About</td>
<td>H. Rizk</td>
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<tr>
<td>9:45-9:55</td>
<td>Questions/Discussion</td>
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<tr>
<td>9:55-10:00</td>
<td>Explanation of lab stations</td>
<td>G. Keenan-Ademski</td>
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<tr>
<td>10:00-10:15</td>
<td>Break</td>
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<tr>
<td>10:15-10:30</td>
<td>Lab rotation 1(see your program book for Lab Group and Station Order)</td>
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<tr>
<td>10:30-10:45</td>
<td>Lab rotation 2</td>
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<tr>
<td>10:45-11:00</td>
<td>Lab rotation 3</td>
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<td>11:00-11:15</td>
<td>Lab rotation 4</td>
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<tr>
<td>11:15-12:00</td>
<td>Crystal Clear BPPV Part 1</td>
<td>M. Teixido</td>
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<td>12:00-1:00</td>
<td>Lunch</td>
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<tr>
<td>1:00-1:45</td>
<td>Crystal Clear BPPV Part 2</td>
<td>M. Teixido</td>
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<tr>
<td>1:45-2:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>2:00-2:15</td>
<td>Lab rotation 5(see your program book for Lab Group and Station Order)</td>
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<tr>
<td>2:15-2:30</td>
<td>Lab rotation 6</td>
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<td>2:30-2:45</td>
<td>Lab rotation 7</td>
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<td>2:45-3:00</td>
<td>Lab rotation 8</td>
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<tr>
<td>3:00-3:15</td>
<td>Break</td>
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<tr>
<td>3:15-4:45</td>
<td>Differentiating Vestibular Migraine from other Vestibular Disorders</td>
<td>M. Teixido</td>
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<tr>
<td>4:45-5:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>5:00</td>
<td>Adjourn</td>
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**May 2-3, 2020**

**University of Delaware STAR Campus**

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**Sunday May 3:**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>7:30- 8:00</td>
<td>Breakfast</td>
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<tr>
<td>8:00- 8:50</td>
<td>Tips and Pitfalls in Contemporary Vestibular Testing</td>
<td>L. Doolittle/M. Gilbane</td>
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<tr>
<td>8:45- 9:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>9:00- 9:50</td>
<td>Pediatric Vestibular Disorders</td>
<td>W. Parkes/ A. Lau</td>
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<tr>
<td>9:50- 10:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>10:00- 10:15</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:15- 11:45</td>
<td>Physical Therapy Management of Vestibular Disorders</td>
<td>G. Keenan-Ademski</td>
</tr>
<tr>
<td>11:45- 12:00</td>
<td>Questions/Discussion</td>
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<tr>
<td>12:00- 12:45</td>
<td>Case Presentations with Discussion</td>
<td>All Faculty</td>
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<tr>
<td>12:45</td>
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</tbody>
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Saturday May 2 Faculty Introduction:

Habib Rizk MD

Habib G. Rizk, M.D., grew up in Lebanon. He graduated in 2007 from the French Faculty of Medicine-Saint Joseph University in Beirut, Lebanon and pursued an Otolaryngology – Head & Neck surgery residency at Hôtel-Dieu de France Hospital in Beirut. Following the completion of his residency in 2012, Dr. Rizk came to Wilmington, Delaware and completed a one-year otologic medicine and surgery fellowship under the mentorship of Dr. Michael Teixido. He then joined the Medical University of South Carolina for a two-year neurotology fellowship from July 2013 through June 2015. Upon conclusion of his fellowship, Dr. Rizk joined the Medical University of South Carolina Department of Otolaryngology – Head & Neck Surgery as the director of the vestibular program, and established the only multidisciplinary program in the state of South Carolina to evaluate and manage patients with various causes of dizziness. Dr. Rizk is on the board of directors of the American Balance Society, a member of the Equilibrium Committee of the American Academy of Otolaryngology – Head & Neck Surgery, as well as a representative of the Academy in a joint task force with the American Academy of Neurology to investigate quality improvement measures in Neurotology. He is the Section editor for Otology and Vestibular Disorders in *Ear and Hearing*.

Saturday May 2: 8:10-8:55

Anatomy and Physiology of the Vestibular System (45 minutes)

**Program Description:** Balance involves central integration of inputs from vision, the labyrinths and the periphery. A clear understanding of anatomy and physiology are important to understanding the generation of symptoms from these four individual components of the network. This understanding will inform the clinician faced with interpretation of the patient history in a way that leads to creation of a diagnostic hypothesis that can be challenged by physical examination and testing. Elements of a 10-minute clinical examination will be reviewed.

**Outcome Objectives:**

1. Understand site of lesion and pathophysiology of peripheral vestibular disorders.
2. Differentiate peripheral and central vestibular disorders and learn to identify non-vestibular causes of dizziness and imbalance.
3. Learn to establish a multidisciplinary treatment plan for various diagnoses.
Saturday May 2: 9:00- 9:45

Habib Rizk MD

Vestibular Potpourri: Disorders You Need to Know About (45 minutes)

Program Description: No vestibular clinician can see patients without awareness of outlying conditions that cause dizziness, imbalance and vertigo that are the source of specific patient complaints and that have specific treatments outside of our typical care pathways in the otology and physical therapy clinics. This talk will review defining features of neuromuscular and musculoskeletal unsteadiness, orthostasis, superior canal dehiscence and persistent postural-perceptual dizziness.

Outcome Objectives:

1. Recognize symptoms of unsteadiness that occur outside the labyrinth because of problems with neuromuscular control, musculoskeletal instability, abnormal central processing and central hypoperfusion.
2. Become familiar with superior canal dehiscence syndrome.
3. Become familiar with symptoms of persistent postural-perceptual dizziness and distinguish them from physiologic low grade balance symptoms.

Saturday May 2 Faculty Introduction:

Michael Teixido MD

Michael Teixido is an otologist/ neurotologist with a special interest in medical and surgical conditions that affect hearing and balance. He actively pursues his goals to advance the study and understanding of problems involving hearing, balance and general otolaryngology through his participation in many national professional organizations and through frequent lectures to his professional colleagues. In collaboration with the Delaware Biotechnical Institute Dr. Teixido has created unique 3D materials for teaching anatomy, surgery, and pathophysiology. Dr Teixido has taken a leadership role in Otolaryngology in education on migraine, and in BPPV, and has established teaching tools and foundations to improve patient care. He is the director of the Delaware Otologic Medicine and Surgery Fellowship, and co-director of the Pediatric Cochlear Implant and Auditory Rehabilitation Program of the Nemours duPont Hospital for Children. An Adjunct Assistant Professor, he teaches residents in otolaryngology regularly at Thomas Jefferson, University of Pennsylvania, Philadelphia College of Osteopathic Medicine and at Rowen University.

Saturday May 2: 11:15-12:00 (part 1)
1:00- 1:45 (part2)
**Crystal Clear BPPV Parts 1 and 2 (45/45 minutes)**

**Program Description:** The keys to mastering BPPV diagnosis and treatment are: 1- the ability to visualize the anatomy of the membranous labyrinth relative to the head and, 2-confident interpretation of eye movements. A 3D virtual model has been created from a human membranous labyrinth to demonstrate BPPV using real anatomy, and the keys to interpreting eye movements are presented with well-produced videos. The model and videos are used to walk through all common diagnostic and treatment maneuvers used in BPPV for posterior, lateral and superior canalithiasis and cupulolithiasis variants. This talk will clarify your understanding of BPPV and improve your ability to manage it. Attendees will receive access to a BPPV virtual model for use on their computer that will allow careful study of BPPV, and will have access to all 25+ videos presented.

**Outcome Objectives:**

1. Understand the anatomy of the vestibular labyrinth and its relationship to the head.
2. Decipher eye movements created by otolith movement anywhere in the labyrinth using Ewald’s Laws.
3. Clearly understand otolith movements associated with diagnostic and therapeutic maneuvers for all forms of BPPV.

**Saturday May 2: 3:15- 4:45**

**Michael Teixido MD**

**Differentiating Vestibular Migraine from other Vestibular Disorders (90 minutes)**

**Program Description:** Vestibular migraine (VM) patients present a diagnostic and therapeutic challenge to the practitioner as disease manifestations may overlap with many other common vestibular disorders. In this talk we will review the pathophysiology of migraine to understand how vestibular symptoms in the brain and in the periphery can be generated by migraine mechanisms, and how other common vestibular disorders such as Meniere’s disease and BPPV can occur in relation to migraine. Participants will be able to differentiate vestibular neuronitis from VM and identify when concurrent treatment is needed for the central (migraine) and inner ear component of complex disease.

**Outcome Objectives:**

1. Become familiar with the currently accepted pathophysiologic model for migraine.
2. Distinguish migraine symptoms from migraine headache.
3. Understand the physiologic basis for co-occurrence of migraine and Meniere’s disease, and migraine and BPPV.
Sunday May 3 Faculty Introduction:

Lauren Doolittle, AuD, CCC/A and Max Gilbane AuD, F/AAA, C/ABA

Dr. Doolittle received her Bachelor of Arts (B.A.) in Communication Disorders from The State University of New York at New Paltz. Her Doctorate in Audiology (Au.D.) was earned at the University at Buffalo. Her experience includes collaboration with ENT’s and audiologists as a member of cochlear implant and Baha team, hearing aid dispensing, comprehensive audioligic evaluation and vestibular and electrophysiologic evaluation and interpretation. She is a lead member of the ENT & Allergy of Delaware Vestibular Team.

Dr. Gilbane earned his Bachelor of Arts in Neuroscience from Oberlin College, and his Doctorate in Audiology from the Vanderbilt University School of Medicine. He has experience in private practice, major university hospitals, and the VA. Most recently, he completed a year-long clinical rotation at the Jefferson Balance and Hearing Center in Philadelphia. He is a fellow of the American Academy of Audiology and a member of the American Auditory Society. He is also board certified by the American Board of Audiology and licensed by the state of Delaware. He is a lead member of the ENT & Allergy of Delaware Vestibular Team.

Sunday May 3: 8:00- 8:50

Tips and Pitfalls in Contemporary Vestibular Testing (50 minutes)

Program: Comprehensive vestibular evaluation and treatment is supported by objective evaluation of vestibular function in the laboratory. Specific patterns of laboratory results can reveal the site of dysfunction, the character of dysfunction and the state of recovery and thereby support diagnosis and help to guide treatment. Establishing a vestibular laboratory is complex, however, and significant effort is required to obtain consistent and clinically useful results. Recognition of common errors encountered in caloric, position, cVEMP and vHIT evaluation will be reviewed. A template for vestibular data presentation will be reviewed.

Outcome Objectives:

1. To provide an overview of the way different patterns of impairment manifest in test results.
2. To discuss common pitfalls (and solutions to them) in the performance and interpretation of vestibular testing.
3. To illustrate the ongoing process of constructing and reviewing a vestibular testing protocol.
Sunday May 3 Faculty Introduction:

William Parkes MD and Andy Lau AuD

William Parkes, MD is an Attending Physician of Pediatric Otolaryngology at Nemours A.I. duPont Hospital for Children and holds an Assistant Professorship at Thomas Jefferson University. He is the Medical Director of the Pediatric Cochlear Implantation program at Nemours/A.I. duPont Hospital for Children. He completed his residency at Thomas Jefferson University and a Fellowship in Pediatric Otolaryngology at the Hospital for Sick Children in Toronto, Ontario Canada.

Andy Lau, AuD is a Pediatric Audiologist at the Nemours A.I. DuPont Hospital for Children and serves as the lead audiologist of the Pediatric Balance Disorders Program. He is also an adjunct faculty at Salus University where he is a lab instructor of the vestibular courses. Prior to this, Andy held the position of faculty audiologist at the Otorhinolaryngology Department of the University of Oklahoma Health Science Center.

Sunday May 3: 9:00-9:50

Pediatric Vestibular Disorders (50 minutes)

Program Description: The vestibular system plays an important role in the development of normal motor control for postural alignment and balance. Impairment of normal vestibular function in childhood can have a significant effect on later development and can result from both disease and injury common in childhood. Vestibular disorders in children are often overlooked and untreated. In this lecture we will review key features of the most common pediatric vestibular disorders and their best treatments. Tips and pitfalls of vestibular testing in children will be shared.

Outcome Objectives:

1. Recognize the most common vestibular pathologies in children and the importance of multi-disciplinary care in these patients.
2. Distinguish disorders which require medical management in addition to physical therapy.
3. Recognize challenges in vestibular testing and therapy unique to children.
Sunday May 3 Faculty Introduction:

Grace Keenan-Ademski PT, DPT
Board Certified Geriatric and Neurologic Clinical Specialist
Certified Vestibular Therapist

Grace Ademski is a physical therapist and assistant professor of practice at the University of Delaware. She received her Doctor of Physical Therapy degree from the University of Delaware in 2006. Grace is a board certified clinical specialist in the areas of both Geriatric and Neurologic Physical Therapy. She has been a Vestibular therapist for 10 years and teaches the vestibular curriculum to the Doctor of Physical Therapy students at University of Delaware.

Physical Therapy Management of Vestibular Disorders (90 minutes)

Program Description: The unique perspective of the physical therapist can help to enhance treatment of patients with balance disorders beyond their original diagnosis and can enhance care. Successful physical therapy treatment of vestibular disorders requires an awareness of the distinct difference in treatment strategies for different disease states as well of limitations of physical therapy treatment in some disorders. A familiarity with a wide spectrum of disease states is therefore essential. In this lecture a spectrum of musculoskeletal, neuromuscular and vestibular disease states will be discussed. Vestibular disease will be further distinguished as unilateral weakness, bilateral weakness, fluctuating function and otolith disease. This lecture will also touch on the evidence based clinical practice guidelines established for peripheral vestibular hypofunction.

Outcome Objectives:

1. Recognize the importance of diagnosis driven therapy planning in therapy for balance disorders.
2. Understand the ability to enhance care by recognizing treatable conditions that contribute to imbalance beyond the referral diagnosis.
3. Recognize disease states which respond poorly to or which may be aggravated by physical therapy.
4. Recognize the updates from the evidence based clinical practice guideline for peripheral vestibular hypofunction.