

# How do **concussions** AFFECT THE **BRAIN?**

*Challenges and  
opportunities  
with traumatic  
brain injuries*

**VIRTUAL  
OPTIONS  
AVAILABLE**



*A place where  
questions of science  
and society intersect*

**AGNES W.H. TAN  
SCIENCE SYMPOSIUM**



**VITERBO**UNIVERSITY

**Friday, Sept. 15 • 9 a.m.–2:30 p.m.**

**VITERBO UNIVERSITY – LA CROSSE, WIS.**

## **PARTICIPANT PACKET**

### **WELCOME**

We welcome you to our annual Agnes W.H. Tan Science Symposium hosted by Viterbo University. We are excited to see people both in person and virtually to learn more about the biochemistry underlying traumatic brain injuries, such as those caused by sports accidents or war trauma. Experts in the field will present the latest research on concussions and their long-term effects on the brain.

On behalf of Viterbo University and the symposium committee, we're grateful you're taking the time to learn with us.

Sincerely,

Michael Alfieri - Dean  
College of Engineering, Letters, and Sciences

Jamie O'Neill - STEM Event Planner and Outreach Coordinator  
School of Natural Sciences, Mathematics, and Engineering

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**VITERBO**  
UNIVERSITY

# SPEAKERS - MORNING

## KEYNOTE SPEAKER

### The Inconvenient Truth of CTE

Ann McKee, MD, is William Fairfield Warren distinguished professor of neurology and pathology at Boston University and director of neuropathology for VA Boston. Dr. McKee is a neurologist and neuropathologist whose career focuses on Alzheimer's disease and chronic traumatic encephalopathy (CTE). Her groundbreaking work on the long-term effects of repetitive head impacts, concussion, and blast injury in contact sports athletes and military veterans revolutionized scientific thought regarding head trauma; she demonstrated that repetitive head impacts, concussion, and blast injury in contact sports athletes and military veterans revolutionized scientific thought regarding head trauma; she demonstrated that repetitive head trauma can trigger CTE, a devastating neurodegenerative disease. Dr. McKee directs the BU Alzheimer's Disease Research Center and CTE Center. She created the UNITE brain bank, the world's largest repository of brains from individuals exposed to traumatic brain injuries (over 1350). She is a member of the National Academy of Medicine. McKee was named Bostonian of the Year 2017 by the Boston Globe, one of the 100 Most Influential People in the World and one of the 50 Most Influential People in Healthcare by Time magazine.



**Ann McKee, MD**

9:05 a.m.  
Viterbo University- Fine Arts Center  
Main Theatre

## PANEL SPEAKERS

### TBI RECOVERY: HISTORY, STUDIES, AND STRATEGIES



**10:10 - 11:05 a.m. - Main Theatre**

**Andrew Jagim**  
PhD, CSCS\*D, CISSN

Director, Sports Medicine Research,  
Mayo Clinic Health System

**Sheldon Wagner**  
MS, ATC, CSCS, ITAT

Assoc. Teaching Professor, Exercise  
and Sport Science, UW-La Crosse



Having worked both in medical and academic settings, Wagner will explain how our understanding of TBI recovery has evolved over the last 20 years including the surprising places people can go for care. Jagim will present on nutritional strategies for brain health and recovery following concussions and reveal changes in blood biomarkers found in his studies of football players.



# SPEAKERS - AFTERNOON BREAKOUT SESSIONS



## Assessment and Treatment of Dizziness: The Primary Symptom Predicting Prolonged Recovery from Concussion

### BREAKOUT SESSION

FSPA Lobby  
Viterbo University  
Fine Arts Center  
12:20-1:15 p.m.



**Mary Kerrigan, DPT, NCS, CWS**  
Neuro-Vestibular Physical Therapist  
Gundersen Health System

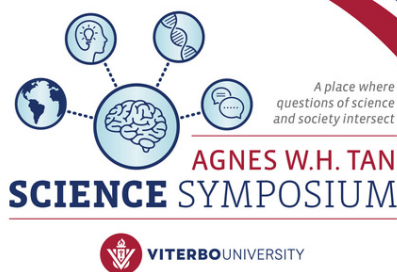


## The Cellular Biomechanics of TBIs

Viterbo University Fine Arts Center  
Room 221  
12:20-1:15 p.m.

**Christian Franck, PhD**

Professor of Mechanical Engineering University of Wisconsin-Madison



## I'm Ready to Play Today! Returning to Play After Sports Related Concussion

### BREAKOUT SESSION

FSPA Lobby  
Viterbo University  
Fine Arts Center  
1:25-2:20 p.m.



**Alecia Gende,**  
DO, CAQSM, FACEP, FAAEM  
Assistant Professor of Orthopedics,  
Mayo Clinic Health System

# MORNING SCHEDULE

For direct links to virtual options, please see our Agnes W. H. Tan Science Symposium website and hit the Schedule or Breakout Session tab on the top right side of the screen. On a smartphone, hit the menu tab in the top left and go to Schedule or Breakout Sessions.

| Time                     | Activity   | Speakers  | Locations                                |
|--------------------------|--|---|--|
| 8:30–9 a.m.              | Welcome Table Open   |   | Viterbo Fine Arts Center<br>FSPA Lobby   |
| 9:05–10 a.m.             | Welcome and Keynote :<br>The Inconvenient Truth<br>about CTE | Ann McKee, MD   | Viterbo Fine Arts Center<br>Main Theatre |
| 10:10–11:05 a.m.         | Panel : TBI Recovery:<br>History, Studies, and<br>Strategies | Andrew Jagim, PhD, CSCS*D, CISSN<br>Sheldon Wagner, MS, ATC, CSCS<br>Moderated by Hope Kirwan | Viterbo Fine Arts Center<br>Main Theatre |
| 11:15 a.m.–12:10<br>p.m. | Lunch and Visit Booths                                       |   | Viterbo Fine Arts Center<br>FSPA Lobby   |

## BREAKOUT SESSION #1 - 12:20-1:15PM

| Reference Number | Title   | Presenter(s)                   | Location  |
|------------------|---|--------------------------------|---|
| 1A               | Assessment and Treatment of<br>Dizziness: The Primary Symptom<br>Predicting a Prolonged Recovery from<br>Concussion | Mary Kerrigan<br>DPT, NCS, CWS | Fine Arts Center at<br>Viterbo University<br>FSPA Lobby |
| 1B               | The Cellular Biomechanics of TBIs   | Christian Franck,<br>PhD       | Fine Arts Center at<br>Viterbo University<br>Room 221   |

## BREAKOUT SESSION #2 - 1:25-2:20PM

| Reference Number | Title  | Presenter(s)                                | Location  |
|------------------|--|---|---|
| 2A               | I'm ready to play, today! Returning to<br>play after sports related concussion | Alecia Gende, DO,<br>CAQSM, FACEP,<br>FAAEM | Fine Arts Center at<br>Viterbo University<br>FSPA Lobby |

# ABSTRACTS BREAKOUT SESSION #1

## **Assessment and Treatment of Dizziness: The Primary Symptom of a Prolonged Recovery from Concussion**

Presented by: Mary Kerrigan DPT, NCS, CWS

### **Session Description:**

“Dizziness at the time of injury was associated with a 6.34 times increased risk of a protracted recovery from concussion” was published by Lau and colleagues in 2011. Wang and associates in 2021 did a retrospective review of 103 patients with concussions. Patients were evaluated at an average of 18.8 weeks (SD, 16.4 weeks) after the injury. Benign Paroxysmal Positional Vertigo (BPPV) was diagnosed in one-third of the subjects.

This session will focus on presenting the normal vestibular anatomy, and vestibular impairments after a concussion, presenting the findings of our current research on the prevalence of BPPV after mTBI in the young adult population. Early assessment and treatment of BPPV can decrease the prolonged recovery from mTBI/concussion.

### **Learning Objectives:**

1. Understand the normal anatomy and function of the Vestibular system
2. Understand the impairments of the central and peripheral vestibular system after mTBI/concussion
3. Appreciate the benefits of early evaluation and treatment of BPPV to improve the timely recovery from mTBI/concussion

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## **The Cellular Biomechanics of TBIs**

Presented by Christian Franck

### **Description:**

We will explore the fundamental concepts of primary and secondary injuries associated with traumatic brain injuries (TBI) and concussions, shedding light on the critical beginnings of these injuries. Our discussion will be centered around the intriguing research conducted in our lab, where we employ advanced three-dimensional microscopy techniques to unravel the mysteries of neuron deformation in traumatic brain injuries. The Franck Lab is renowned for its expertise in cellular biomechanics and its pioneering use of cutting-edge experimental mechanics techniques, all conducted at the micro and nanoscale. Throughout this presentation, we will provide you with valuable insights into our research methodologies and the compelling motivations that drive our endeavors. Join us on this journey to uncover the secrets of traumatic brain injuries and gain a deeper understanding of the crucial early stages of these complex injuries.

### **Learning objectives:**

1. Comprehend the distinctions between primary and secondary injury in TBI/concussions
2. Understand advanced microscopy techniques
3. Develop an appreciation for interdisciplinary approaches in research
4. Acquire insight into how cells respond to mechanical forces

# ABSTRACTS BREAKOUT SESSION #2

## **I'm ready to play, today! Returning to play after a sports related concussion**

Presented by: Alecia Gende, DO, CAQSM, FACEP, FAAEM

**Session Description:** Have you ever had or known someone who has had a concussion? Our thoughts and management of sports-related concussions have evolved a lot over the recent years. We will discuss diagnosis and management of sports-related concussions and specifically get into the new developments of returning to play after a concussion. Out with the old “don’t do this” and in with the new “get up and do this!”

### **Learning Objectives:**

1. Discuss mechanism and diagnosis of sports-related concussion
2. Discuss common symptoms of concussions and why they occur
3. Review return to play protocol and updates in sports-related concussion recovery



## BACK BY POPULAR DEMAND

Hope Kirwan from Wisconsin Public Radio will be moderating the morning sessions of the symposium. Kirwan has been Wisconsin Public Radio's La Crosse reporter since 2015. Her stories can be heard almost daily on WPR's newscasts, covering agriculture issues and southwestern Wisconsin.

## BOOTHS

Fine Arts Center FSPA Lobby

11:15 a.m.-12:10 p.m.

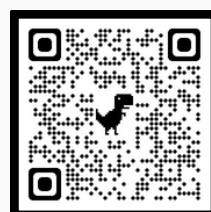
Check out these booths for more information on concussion research and resources.

- Brain Injury Resource Center of Wisconsin
- Iris Counseling and Wellness, LLC
- Todd Wehr Memorial Library at Viterbo University

## QUICK LINKS



Symposium schedule  
with virtual links



Breakout session schedule  
with virtual links



# GETTING HERE OR TUNING IN

## IN PERSON

- When you arrive, check-in at the Fine Arts Center - FSPA Lobby - 929 Jackson St, La Crosse.
- Everything for the conference will be in the Fine Arts Center.
- Bike Parking - Bike racks are located at the east and west sides of the Fine Arts Center.
- Vehicle Parking - Drivers can park in any Viterbo commuter lots on Friday. There also is parking on streets near Viterbo. Please follow the street signs to know if it is 2-hour or all day parking.
- Assessible doors are marked with blue diamonds on the map.
- Print this packet if you need specific pages. During the event, we will have schedules on display on posters and screens. We also will have QR codes for personal viewing.
- For more hospitality tips like family bathrooms, mother's rooms, and more, please see our hospitality page on the symposium website.



## VIRTUAL

We are using two platforms throughout the symposium for a virtual experience.

Morning sessions will be streamed over our Viterbo YouTube page. If you have settings on your computer restricting live streaming, you may want to change that setting the day of the symposium or disconnect from WiFi and retry.

Afternoon sessions will be on Zoom. This will allow for participants to ask questions at the end of each session through the chat function. Please keep your microphone on mute during the presentations.

All links, meeting IDs, and passwords can be seen on our website.

Having troubles? Email [helpdesk@viterbo.edu](mailto:helpdesk@viterbo.edu).

# AGNES W.H. TAN

THE ONE WHO MADE  
THIS SYMPOSIUM  
POSSIBLE

THE AGNES W. H. TAN  
SCIENCE SYMPOSIUM IS  
MADE POSSIBLE BY A  
GENEROUS DONATION  
FROM THE AGNES W. H.  
TAN ESTATE, WHICH  
ALLOWS VITERBO  
UNIVERSITY TO  
PRESENT AN ANNUAL  
SYMPOSIUM FOCUSED  
IN THE FIELD OF  
BIOCHEMISTRY.



Agnes Tan (left) graduated from Viterbo University in 1963, with a Bachelor of Arts in Chemistry and a minor in biology. An international student from Hong Kong, Agnes had become acquainted with the university through the Franciscan Sisters of Perpetual Adoration's mission in Central China. In addition to Agnes, two of her sisters also came to Viterbo to study.

Tan went on to earn a PhD in biochemistry at the University of Minnesota and enjoyed a long career in academic and applied research as an assistant professor of biochemistry at the University of Minnesota and as a research chemist at Veterans Administration Hospital, Minneapolis.

In addition to her successful career, she became a life-long learner who took courses and learned new skills throughout her life. Agnes deeply appreciated the liberal arts education she received at Viterbo and chose to support the institution so that others may be inspired and share in her love of learning.



# ECO-FRIENDLY EFFORTS



## YOU CAN HELP

To best serve you and the environment, here are some of our efforts and suggestions:

- In order to reduce one-time-use materials, we will not have disposable water bottles. Please bring your own water bottle.
- Consider walking or biking to the event.
- Print only the pages that you need from this packet. We will have limited handouts at the event. We will have signs and displays with information.
- Many of the large signs are being repurposed or reused.

## THANK YOU

This event would not be possible without the help of many people. Thank you to everyone who played a role in the symposium from staff, volunteers, speakers, booth organizations, and participants.

**Symposium Committee:** Charlie Lawrence, Cameron Houin, Brittany Massengale Houin, Alyssa Gostonczik, Maya Dougherty-Harris, Jodi Hilleshiem, Jill Miller, Richard Kyte, and Jamie O'Neill

**Set-up Coordinators:** Maggie Hall, Cassandra Larson and Zane Rader

**Viterbo Speakers:** Amanda Tranberg

**Virtual Staff:** Gregg Hilker and Rob Ramseier

**Communication Team:** Deb Kappmeyer, Courtney Steinke, Shannon Simpson, and Anthony Slaby

Our next Agnes W.H. Tan Science Symposium will be in September 2024. The topic will be announced in a few months.

We hope you will join.

## CONNECT WITH US

FB: [@ViterboSTEM](#)

W: [viterbo.edu/agnes-wh-tan-science-symposium](http://viterbo.edu/agnes-wh-tan-science-symposium)

E: [jmoneill@viterbo.edu](mailto:jmoneill@viterbo.edu)

