# NAVIGATING CUTTING-EDGE TECHNOLOGIES IN HEALTH, SPORTS, AND EXERCISE SCIENCE:

# OPPORTUNITIES AND IMPLICATIONS

AMERICAN COLLEGE of SPORTS MEDICINE
LEADING THE WAY

NEACSM
New England Chapter of the American College of Sports Medicine

**NEACSM 2024 VIRTUAL SPRING MEETING**
**FRIDAY, APRIL 5, 2024**
**4 ACSM CECS**

## FORMAT

**Synchronous (live) Sessions - Zoom Webinar**

## DESCRIPTION

The New England Chapter of the American College of Sports Medicine invites you to attend the 2024 Virtual Spring Conference on Friday, April 5, entitled **"Navigating Cutting-Edge Technologies in Health, Sports, and Exercise Science: Opportunities and Implications."** The conference will be available via live virtual format. The content will feature four invited speaker presentations, robust Q&A, plus an audience discussion with the panel of speakers. Join us to explore trends in wearable technology, AI, and data analytics, and their potential impact on the future of healthcare, sports, and exercise science and sports medicine.

Speakers will present on a variety of emerging technologies and their usage in clinics, classrooms, research labs, personal training studios, and on the sports field. Presenters will delve into how these technologies can enhance our work, and their implications for privacy, data security, data veracity, and ethics. Program content is intended for exercise practitioners, researchers, faculty, students, and clinicians.

## OTHER INFORMATION

### Objectives

1. Identify and describe key wearable technologies used in sports science, including fitness trackers, sensors, and physiological monitoring devices.
2. Understand the role of AI in exercise program design and its possible applications to analyze performance data, identify patters, and provide actionable insights for athletes and coaches.
3. Identify implementation challenges in the research laboratory, the clinical setting, the classroom, and the field.
4. Articulate the benefits and drawbacks of integrating emerging technology in the health, sports, exercise and sports medicine fields.
5. Discuss the ethical implications and data privacy challenges associated with collecting and analyzing personal and sensitive athlete/patient/client data through wearable devices and data analytics.

# PROGRAM SCHEDULE - *ZOOM WEBINAR*

All times shown are ET

| | |
|---|---|
| 9:00 a.m. | **Welcome Address**<br>*Marisa Hastie, EdD, ACSM EP-C, FACSM, NEACSM Past-President*<br>*Dean and Associate Professor College of Graduate Health Studies A.T. Still University* |
| 9:05 a.m. | **Speaker Introduction**<br>*James W. Whitworth, PhD NEACSM President-Elect Health Science Specialist, Assistant Professor National Center for PTSD, VA Boston Healthcare System Department of Psychiatry Boston University Chobanian & Avedisian School of Medicine* |
| 9:10 - 9:40 a.m. | **Diversity and inclusivity in wearable technology: Design considerations based on data from LED-based wearable devices**<br>*Elaine Choung-Hee Lee, PhD Associate Professor, Molecular Biology and Applied Genetics Director of Human Performance Laboratory University of Connecticut* |
| 9:40 - 9:50 a.m. | **Q&A** |
| 9:50 a.m. | **Speaker Introduction**<br>*Cassandra Forsythe, PhD, RD, CSCS NEACSM Sponsorship Committee Co-Chair Associate Professor, Exercise Science (PEHP) Central Connecticut State University* |
| 9:55 - 10:25 a.m. | **Measuring HRV using wearables in Exercise Science and Sports Medicine: why, what, where, and when.**<br>*Amy Welch, PhD Professor of Exercise Science and Department Chair of Health and Human Performance Norwich University* |
| 10:25 - 10:35 a.m | **Q&A** |
| 10:35 - 10:50 a.m | **Conference Partner Recognition & Break**<br>*Cassandra Forsythe, PhD, RD, CSCS NEACSM Sponsorship Committee Co-Chair Associate Professor, Exercise Science (PEHP) Central Connecticut State University* |
| 10:50 a.m | **Speaker Introduction**<br>*Marcos A. Amalbert-Birriel, MS NEACSM Student Representative Doctoral Candidate, Graduate Teaching Associate, Graduate Research Assistant School of Public Health and Health Sciences University of Massachusetts Amherst* |
| 10:55 - 11:25 a.m | **Revolutionizing Wellness: Harnessing the Power of AI in the Health and Fitness Space**<br>*Erin Nitschke, EdD, ACE-CPT, NSCA-CPT, NFPT-CPT,ACE Health Coach, Fitness Nutrition Specialist, Therapeutic Exercise Specialist, Pn1 Program Director, Sciences Laramie County Community College* |
| 11:25 - 11:35 a.m | **Q&A** |
| 11:35 a.m | **Speaker Introduction**<br>*Chee-Hoi Leong, PhD NEACSM President Associate Professor and Graduate Program Coordinator Department of Physical Education & Human Performance Central Connecticut State University* |
| 11:40 a.m. - 12:10 p.m | **Sweat Testing Technologies for Personalized Hydration: From Physiology to Application**<br>*Lindsay Baker, PhD, FACSM Gatorade Sports Science Institute (GSSI)* |
| 12:10 - 12:20 p.m | **Q&A** |
| 12:20 - 1:00 p.m | **Panel Discussion with all speakers**<br>*Marisa Hastie, EdD, ACSM EP-C, FACSM, NEACSM Past-President*<br>*Dean and Associate Professor College of Graduate Health Studies A.T. Still University*<br>*Tim Hanway, MS, CSCS, ACSM EP-C NEACSM*<br>*Technology Committee Chair Assistant Professor of Practice Simmons University* |
| 1:00 p.m | **Closing Remarks**<br>*Marisa Hastie, EdD, ACSM EP-C, FACSM, NEACSM Past-President* |

# SPEAKER BIOS

UCONN

**Elaine Choung-Hee Lee, PhD,** is faculty member of the Department of Kinesiology at the University of Connecticut with a specialization in molecular biology and applied genetics. She is also the principal investigator of the EC Lee Laboratory that is dedicated to excellence in research, teaching, mentoring, and community service. Her research focuses on understanding mechanisms of stress resiliency and ways to improve stress resistance, adaptation, and healthspan. She takes a unique multidisciplinary approach to asking questions not just about how biology works, but also what can be done to manipulate it in a way that results in functional change for broader populations. With her group of comparative physiologists, she takes advantage of tractable animal models like Caenorhabditis elegans to design powerful experiments that help understand human biology. These information from easily manipulated animal models allow her to design human experiments intelligently and strategically. She also specializes in using powerful genomic technologies to ask questions about what makes elite athletes elite and what makes training programs and supplements effective in a personalized medicine approach.

NORWICH UNIVERSITY

**Amy S. Welch, PhD,** is a professor and chair of the Department of Health and Human Performance at Norwich University. She received her PhD in sport and exercise science from the University of Leeds (UK) in 2007. Her recent research has focused on understanding psychophysiological predictors of performance in student athletes and military cadets, and she has a particular interest in the efficacy of monitoring heart rate variability (HRV) using wearable biometric devices in the field. She also has experience testing simple behavioral strategies that can change HRV and help build resilience in the autonomic nervous system (e.g., biofeedback training, meditation, paced breathing, and physical activity). Dr. Welch currently serves as the Vermont State Rep and State Rep Chair for NEACSM, and is a member of the NEACSM Psychobiology Interest Group.

LARAMIE COUNTY COMMUNITY COLLEGE
Cheyenne | Laramie | Online

**Erin Nitschke, EdD,** ACE-CPT, NFPT-CPT, NSCA-CPT, ACE Health Coach, Fitness Nutrition Specialist, Therapeutic Exercise Specialist, and Pn1 is a health and human performance college professor, fitness writer, mother, and passionate fitness professional. She has been in the health and exercise industry since 2003. Erin believes in the power of a holistic approach to healthy living. She loves encouraging her clients and students to develop body harmony by teaching focused skill development and lifestyle balance. Erin serves as a subject matter expert and content creator for ACE. Erin is also an editorial author for IDEA, NFPT, Fitness Education Online, and Ate.com, where she writes on topics related to personal training, health coaching, behavior change, and career success. She lives in Wyoming and serves as the Program Director of Sciences at Laramie County Community College. Email her at allaboutthatbalance@gmail.com.

GATORADE SPORTS SCIENCE INSTITUTE

**Lindsay Baker, PhD,** is a Director at the Gatorade Sports Science Institute (GSSI) and a PepsiCo R&D Fellow based in Valhalla, NY. Since joining GSSI in 2007, Dr. Baker's primary role has been designing and conducting sports hydration and nutrition studies for the GSSI research program. Some of her recent research includes validation of techniques for assessing sweat composition and hydration in athletes, which contributed to the launch of Gatorade's Gx sweat patch and Smart Gx Bottle. Dr. Baker earned a doctorate in Kinesiology from the Pennsylvania State University. She currently has over 60 publications in the field of sports hydration and nutrition, including invited review papers on the topics of the physiology of sweat gland function and sweat testing best practices. She is a Fellow of the American College of Sports Medicine and is on the Scientific Advisory Board for the Korey Stringer Institute.

# SPRING 2024 SPONSORS

## CONFERENCE PARTNERS

UNIVERSITY OF HARTFORD
EXERCISE SCIENCE PROGRAM

PARVO MEDICS
*Making Metabolic Measurement Easy*

## GENERAL SPONSORSHIP

THE MICHELI CENTER FOR SPORTS INJURY PREVENTION

**Click** on the above logos to visit our sponsors & friends

## CONFERENCE REGISTRATION

Registration opens on Monday, February 19, 2024 and closes on Thursday, April 4, 2024. Group registrations: To register a group, email meeting@acsm.org. Complete group registration information must be received by March 18, 2024 to be processed.

**Register at the NEACSM website:** https://members.acsm.org/ACSM/Events/Event_Display.aspx?EventKey=NE2024S (no registrations by mail or phone)

**REGISTRATION FEES:**

| | |
|---|---|
| Professional | $55 |
| Student | $15 |
| Join or renew: | Students $15; Professionals $35 |
| Add $10 to professionals who are not members | |

**Full payment must accompany the registration.** Cancellation policy: All conference registration cancellations must be requested in writing. A 50% refund may be obtained up to 10 business days prior to the event. Substitutions are allowed. Send cancellation requests to meeting@acsm.org.