



23rd ANNUAL HUMAN FACTORS AND ERGONOMICS SYMPOSIUM

Symposium Agenda

7:30 Check in Begins, Breakfast served

8:00 Welcome – Niki Howard, PSHFES President

8:15 Human Factors & Ergonomics Society (HFES) President's Address – Susan Kotowski

8:30 **Navigating the Intersection of Safety and Innovation: Overcoming Challenges to Implementing Safety Technologies**

Sarah Ballini-Ross

In an era where rapid technological advances hold the promise of unprecedented safety measures, organizations face complex challenges in adopting these innovations successfully. This presentation delves into the intricate landscape of integrating cutting-edge safety technology in various work environments. From securing stakeholder alignment and leadership buy-in, to addressing workforce apprehensions and selecting tailored solutions, this presentation offers actionable insights for successfully negotiating the crossroads of safety and innovation.

9:15 **Nextg Presentations: Student presentations**

10:00 **Break, Coffee/Tea Service**

10:20 **The Washington State Legislature Did What?**

Rick Goggins, CPE, Washington State Department of Labor and Industries

In the most recent session of the Washington State Legislature, they passed two bills that will have an impact on ergonomics. One bill sets criteria around productivity quotas in warehouses. Another bill removes restrictions on ergonomics rulemaking by Labor & Industries, and details the necessary steps to begin writing new ergonomics rules for the first time in 20 years. In this session we'll explore the requirements in the bills and discuss their potential impact in affected industries.

11:05 **Accessible Air Travel for Passengers with Restricted Mobility (PRM)**

Carrie Lin, M.D., M.S., CPE, Boeing Company

This presentation will provide an overview of the current state of accessible air travel for disabled passengers with mobility issues. The discussions will include regulatory requirements, disabled passengers' needs in air travel, demographics of PRM, industrial efforts and human centered design approaches. Challenges and opportunities when applying human engineering approaches to design accessible air travel experience will also be discussed.

11:45 Lunch, Service 11:45-12:45

12:30 Exhibitor Presentations

12:50 Emerging Sensor, Computer Vision, and Artificial Intelligence Techniques for Assessing Force Exertions

Dr. Denny Yu, PhD, Purdue University

Overexertion in manual material handling (MMH) tasks is one of the leading causes of occupational injuries. The load weight often provides key information for manual injury risk assessments in MMH; however, load weight remains one of the most difficult for ergonomics practitioners to measure in the field as it varies greatly across different objects and is unknown in many circumstances. This talk will provide a brief background on existing techniques as well as emerging capabilities of glove sensors, computer vision, and machine learning algorithms for discovering key features that predict worker force exertions and estimating load weight objectively and automatically.

1:35 Community-Based Research: Designing Neurodiverse Communication Technology

Dr. Annuska Zolyomi, University of Washington

In this talk, Dr. Zolyomi will share her research insights from conducting interviews and co-design sessions with neurodiverse people, meaning those who are autistic and non-autistic. Her work examines conversational dynamics of verbal and non-verbal autistic children and adults. I will share design concepts that re-imagine ways that technology can be more supportive in neurodiverse communication and collaboration.

2:20 HFE Professional of the Year Award

2:35 Closing Remarks

Speaker Biographies



Sarah Ballini-Ross
Consultant

Sarah Ballini-Ross is a dynamic and seasoned professional in the realm of safety, public health, and innovation. Holding a degree in Public Health from Oregon State University, Sarah has honed her problem-solving prowess, innovation skillset, and interpersonal abilities, making her a trusted strategic consultant and subject matter expert in safety technology, health prevention, and health policy issues

Sarah's journey includes a successful tenure as the Safety Advancement and Innovation Project Coordinator for a workers' compensation insurance company, where, for over five years, she led innovative safety initiatives, utilized emerging technologies, and devised effective strategies to reduce workplace injuries and propel businesses into the future. Her ability to strategically approach complex issues, develop effective solutions, and implement them successfully establishes her as a highly skilled and reputable expert in her field. She offers implementation support and technical assistance to a diverse array of clients, including businesses, municipalities, universities, and policymakers.



Rick Goggins, CPE
Washington State Department of Labor and Industries

Rick has been working as an ergonomist for the Washington State Department of Labor and Industries for the past 28 years. Prior to that, he worked with Hughes Space and Communications' Safety, Health and Environmental Affairs group in El Segundo, California. He has a master's degree in ergonomics from the Institute of Safety and Systems Management at the University of Southern California, and a bachelor's degree in biology from Columbia University. Rick is a Certified Professional Ergonomist.



Carrie Lin, M.D., M.S., CPE
The Boeing Company

Ms. Lin is an Associate Technical Fellow of Human Engineering in the Boeing Commercial Airplane Division, Everett, Washington. She is also a board-certified Psychiatrist (physician specialized in physical medicine and rehabilitation) in Taiwan.



Denny Yu, PhD
Purdue University

Dr Yu is currently an Associate Professor of Industrial Engineering at Purdue University. He is also an Adjunct Associate Professor of Surgery at Indiana University School of Medicine and was a Summer Faculty Fellow at the Air Force Research Laboratory's 711th Human Performance Wing. He is a Certified Professional Ergonomist (CPE) and serves on the Board of Directors for the Board of Certification of Professional Ergonomics (BCPE) and the IISE Work Systems Board. Research from Dr Yu's group has been recognized by NIOSH Bullard-Sherwood Award (honorable mention), American Society of Safety Engineers Safety Research Fellow, the Foundation for Professional Ergonomics Dieter W. Jahns Student Practitioner Award, the RSJ/KROS Distinguished Interdisciplinary Research Award (RO-MAN 2021), and the 2021 Human Factors Prize (by the Human Factors and Ergonomics Society).



Annuska Zolyomi, PhD
University of Washington

Dr. Annuska Zolyomi is an Assistant Professor at the University of Washington Bothell in the Computing & Software Systems division. Dr. Zolyomi runs the IDEA Lab exploring Interaction Design for Education and Accessibility. Her work is at the intersection of human-computer interaction, user-centered design, and accessible technology. She employs participatory design methods to explore how technology can enhance communication, foster social connections, and empower disabled and neurodivergent individuals. Dr. Zolyomi has a Ph.D. in Information Science, an M.S. in Human-Centered Design & Engineering, and a B.S. in Industrial Engineering, all from the University of Washington, Seattle, WA.