



**International Society for
Occupational Ergonomics & Safety**



SOCIETY FOR INDUSTRIAL AND SYSTEMS ENGINEERING



**The XXXVIth Annual Occupational
Ergonomics and Safety Conference
&
13th Annual World Conference for the Society
for Industrial and Systems Engineering**

CONFERENCE PROGRAM

August 5-6, 2024

Denver, CO / Hybrid

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2024 ISOES/SISE CONFERENCE PROGRAM



International Society for
Occupational Ergonomics & Safety



SOCIETY FOR INDUSTRIAL AND SYSTEMS ENGINEERING

Zoom link for online participants:

<https://us06web.zoom.us/j/85678365542?pwd=JxXcBg6NQyBLdklauSYHdym6PajQwC.1>

Meeting ID: 856 7836 5542

Passcode: 362024

All times are US Mountain Daylight Savings Time (MDT) / GMT-6

MONDAY, AUGUST 5

Welcome Session	9:00	9:15
Keynote Address: Dr. Greg Worrell (HELP CONSULTANTS, LLC)	9:15	10:00
Break	10:00	10:15
<i>Session I: Occupational Health & Safety 1</i>	10:15	11:45
Lunch Break – Lunch Provided	11:45	1:00
<i>Session II: Safety/Ergo Modeling & Design</i>	1:00	2:10
Break	2:10	2:30
<i>Session III: Ergonomics & Human Factors</i>	2:30	3:50
Break	3:50	4:00
ISOES - General Body Meeting	4:00	5:00
Break	5:00	6:00
Dinner – In Conference Room	6:00	6:30
Dinner Address: Tom West (MākuSafe)	6:30	7:30

TUESDAY, AUGUST 6


ISOES EXECUTIVE COMMITTEE MEETING	8:30	9:00
<i>Session IV: Occupational Health & Safety 2</i>	9:00	10:20
Break	10:20	10:40
<i>Session V: Biomechanics & MSKs</i>	10:40	11:40
Lunch Break – Lunch Provided	11:40	1:00
<i>Session VI: Ergonomics, Human Factors, and Modeling & Design</i>	1:00	2:25
Break	2:25	2:40
<i>Session VII: SISE</i>	2:40	4:00
Conference Closing - Adjournment	4:00	4:00


Monday, August 5, 2024
Join Zoom Meeting

<https://us06web.zoom.us/j/85678365542?pwd=JxXcBg6NQyBLdklauSYHdym6PajQwC.1>

Meeting ID: 856 7836 5542

Passcode: 362024

Welcome Session	Richard Wyatt, Ph.D., PE, CPE, CSP, CQE Aon Casualty Risk Control	9:00 am to 9:15 am
	<p>Short Bio: Richard Wyatt is a Senior Consultant within Aon’s Casualty Risk Control Practice. Richard’s current responsibilities include developing and executing client-driven solutions that reduce risk and elevate workplace productivity through proven risk control, ergonomics, lean and six sigma tools and techniques. He provides scientific validation on musculoskeletal claims with questionable work-relatedness and testifies in workers compensation cases. Richard also advises clients in cumulative trauma prevention techniques and engineering interventions to control losses and improve employee productivity.</p> <p>Richard holds a Professional Engineering (PE) license in Alabama and North Carolina. He is a Certified Professional Ergonomist (CPE), a Certified Safety Professional (CSP), and Certified Quality Engineer (CQE). He has conducted ergonomic training for a variety of customers in retail, manufacturing, leisure, food, and hospitality-related industries. He has trained ergonomic and continuous-improvement teams in ergonomic principles and created detailed physical job demand data for use in pre-hire and return-to-work applications. Richard also has spoken at 31 national and regional Safety, Ergonomic and Industrial Engineering conferences, and has 24 peer-reviewed journal papers and articles.</p>	

Keynote Address	Dr. Greg Worrell, CPE HELP CONSULTANTS, LLC (Health, Ergonomics, Loss-prevention & Productivity)	9:15 am to 10:00 am
	<p>Short Bio: Dr. Worrell is a Certified Professional Ergonomist and has over 30 years full-time experience in ergonomics. Greg received his doctorate with honors in physiological kinesiology (exercise/work physiology) from the University of Northern Colorado. He has also completed extensive post-doctoral work in ergonomics and industrial engineering.</p> <p>Dr. Worrell started his professional career as a college instructor up to an assistant professor (5.5 years full-time, 3.5 years part-time, and volunteered 6 years as an affiliate assistant professor). He also taught undergraduate nurses and nursing students an ergonomic course at the Denver School of Nursing. He served as a guest lecturer in graduate ergonomics at Colorado State University, but he is equally at ease with teaching ergonomics to blue-collar employees in industry. Dr. Worrell has developed a variety of ergonomics classes for production employees, union officials and representatives, management, supervisors, health care providers, engineers, safety and ergonomics staff. Greg served for 10 years as the corporate ergonomics director for a Fortune 50 Corporation and 11 years as a full-time contract ergonomist for the US Postal Service.</p> <p>Dr. Worrell now consults full-time in a variety of industries including: hospitals, nursing homes, postal and mailing distribution operations, offices, meat packing, poultry and turkey processing, prepared meats, food processing, grocery products, agriculture/animal products, chemical packaging, metal fabrication, electronics manufacturing, small farm and ranches, etc. He helped ergonomic teams develop hundreds of ergonomic solutions, including workstation layouts, tools, equipment and patents.</p> <p>Dr. Worrell is a professionally published author, national conference speaker and has written and produced 10 ergonomics training DVDs. Greg served on the organizing committee of the Applied Ergonomics Conference from its inception in 1998 until 2004. He was also the only ergonomist on the Colorado Governor’s task force - which wrote the Medical Treatment Guidelines Related to Cumulative Trauma of the Upper Extremity. He is a career member of the American College of Sports Medicine.</p>	

Break		10:00 am to 10:15 am
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Session I - Occupational Health & Safety 1		10:15 am to 11:45 am
Session Chairs: Steve Fleming & Jim Borchardt		
#	Title	Authors
1	Human-centered Design and Evaluation Methodologies of Autonomous and Automated Machines and Equipment (AAM&E) in the Industrial Applications	Sang Choi and James Borchardt
2	Low-Speed Automated Vehicles in Mixed Traffic: A Preliminary Model of Risk	William Kessler, Curtis Craig, Bradley Drahos and Nichole Morris
3	Wearable Sensor Technology: Quantifying Ergonomic Risk within the Hemp Industry	Julie Boyd
4	Emissions of Petrochemical Industry and its Effect on Health and Environment	Priyadarshini Dasgupta, Debarshi Roy and Subhajit Chakraborty
5	Welding hazards fatalities in he US: special emphasis on electrocution hazard- a comparative study	Priyadarshini Dasgupta, Gabriel Mejia and Anagha Bhattacharya

Lunch Break	11:45 am to 1:00 pm
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Session II – Safety/Ergo Modeling & Design		1:00 pm to 2:10 pm
Session Chairs: Jim Borchardt & George Page		
#	Title	Authors
1	An Update on Global Comparisons of Design for Construction Safety and Health: United States, United Kingdom, Singapore, and South Korea	Sang Choi, Rory O'Neill, Yang Miang Goh, Jeong Hun Won, James Borchardt, Scott Schneider and Linnea Wikstrom
2	Aboveground Swimming Pool Child Access Prevention Through Product Design	Dennis Brickman, Joseph Mohorovic, Katie Zakutansky, Anne Mathias and Peggy Shibata
3	Industrial Tugger 3-Dimensional Convergence Accident Reconstruction Technology	Dennis Brickman, Daniel Kruger, Shawn Loomis, Katie Zakutansky, Jared McGillicuddy and Brian Thibault
4	Development of accident paths/chains using semi-supervised topic modeling: A novel methodology with application in petrochemical industry	Jhareswar Maiti and Satyajeet Sahoo

Break	2:10 pm to 2:30 pm
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Session III – Ergonomics & Human Factors		2:30 pm to 3:50 pm
Session Chairs: George Page & Gabriel Ibarra-Mejia		
#	Title	Authors
1	The New Minnesota Ergonomics Statute 2024	Lee Huber
2	Bariatrics in the Workspace: Ergonomic Considerations and Adaptations	Joan Geiger
3	Cognitive Distraction in Novice Drivers: Analyzing Physiological and Workload Responses	Renuka Seenivasan, Apurva Misra, Amandeep Singh, Sushil Pokhrel, Apurva Narayan, Shi Cao and Siby Samuel
4	A Pilot Study to Investigate the Effectiveness of Virtual Reality (VR) on Reducing Exam Anxiety	Abigail Mcdowell, Halley Smith and Amro Khasawneh

Break	3:50 pm to 4:00 pm
General Body Meeting – ISOES Members	4:00 pm to 4:50 pm
General Announcements & Closing	4:50 pm to 5:00 pm

Break	5:00 pm to 6:00 pm
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Dinner Session	Please join us for dinner! Staybridge Suites will provide dinner for us in our meeting space.	6:00 pm to 6:30 pm
Dinner Address	Tom West, SPHR, SHRM-SCP, COSS Vice President, MākuSafe	6:30 pm to 7:30 pm



Short Bio: Tom West is Vice President at MākuSafe, as well as being a SHRM & HRCI Senior Certified Human Resources Professional, and a Certified Occupational Safety Specialist. Over the years, Tom has held executive leadership roles with many companies providing learning & development tools, technology, and services. Tom also served as a College Management Professor for nearly 30 years. Tom is an Avetta Fellow and a professional member of the National Speakers Association, in addition to being an active member in the AIHA, National Safety Council, ASSP, and VPPPA.

As the world around us becomes more and more connected and data-driven, companies have the potential to harness valuable information to benefit their businesses and workers. This session will discuss how wearable safety technology, machine learning, AI and cloud computing are helping safety leaders gain valuable insight into understanding workplace risks, keeping workers safe, and mitigating hazards before incidents and claims occur. Case studies from deployments of wearables in a variety of industrial environments will be examined and examples provided of how the data gathered from wearables has led to; work changes and process improvements, environmental hazards detected, uncovering harmful human motion, and positively impacting safety culture while respecting employee privacy.

Moderator: Richard Wyatt

Tuesday, August 6, 2024

Join Zoom Meeting

<https://us02web.zoom.us/j/81936305510?pwd=JNBp5wTIXO5fbHSUGuHFYsnR2PaIQ-.1>

Meeting ID: 819 3630 5510

Passcode: 202234

Executive Committee Meeting (EC Members login using the EC Zoom Meeting Info)	8:30 am to 9:00 am
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Session IV - Occupational Health & Safety 2		9:00 am to 10:20 am
Session Chairs: Gabriel Ibarra-Mejia & Jim Vachon		
#	Title	Authors
1	Investigating the Influence of Resilience Engineering Indicators on the Safety Environment of an Aluminum Smelter	Ashish Kumar, Rahul Upadhyay, Biswajit Samanta and Ashis Bhattacharjee
2	Limitations of Heat Stress Tools Affecting Roofers' Balance and Fall Risks in US-Mexico Border: A Scoping Review	Gabriel Ibarra-Mejia and Sang D. Choi
3	Whole-body Vibration and Risk of Lumbar Injury- Field studies on Dumper Operators Using Biomechanical Models in Compliance with ISO 2631-5:2018	Amit Sharma and Bibhuti Bhusan Mandal
4	Occupational Whole Body Vibration Exposure of Shovel Operators: A Case Study in Mechanized Coal Mine	Soumyadeep Paty and Kaushik Dey

Break	10:20 am to 10:40 am
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Session V - Biomechanics & MSKs		10:40 am to 11:40 am
Session Chairs: Jim Vachon & Murray Gibson		
#	Title	Authors
1	Ergonomic Evaluation of Assistive Technologies: a case study with a manual vegetable peeler for people with Rheumatoid Arthritis	Felipe Indalêncio Goulart, Eugenio Andrés Díaz Merino, Giselle Schmidt Alves Diaz Merino, Danielle Carneiro de Menezes Sanguinetti, Ana Karina Pessoa da Silva Cabral and Daniela Salgado Amaral
2	Expression of Systemic and Localized MicroRNAs After a Tendon Loading Activity	Daniel Conde, Manuel Gomez, Raul Zubia, Ricardo Rangel and Gabriel Ibarra-Mejia
3	Conservative Statistical Power Analysis (SPA) Algorithm: An Accurate “1-Step” Method with Rules-of-Thumb and Error Analysis Implications	Alvah Bittner

Lunch Break	11:40 am to 1:00 pm
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Session VI – Ergonomics, Human Factors, and Modeling & Design		1:00 pm to 2:25 pm
Session Chairs: Murray Gibson & Anand S. Iyer		
#	Title	Authors
1	Validation and Accuracy of Different Smartphone Measuring Applications for Real-World Settings within the Domain of Human Factors	Tamer Yared, Abdullah Qasem, Rashed Mansour and Soud Alsaleh
2	Evaluating Two Foot Mouse Types in Performing Fitts’ Tasks	Seung-Kweon Hong
3	A Starting Point Language Set to Support Performing Safe Whole-Body Exertions in the Workplace—Part 2—Leverage	George Page, Greg Weames and Steve Fleming
4	Gap Acceptance Behavior of Young Drivers at signalized left turns – A Driving Simulator Study	Sneha Srinivasan, Amandeep Singh, Sushil Pokhrel, Apurva Narayan and Siby Samuel

Break	2:25 pm to 2:40 pm
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Session VII - SISE		2:40 pm to 4:00 pm
Session Chairs: Anand S. Iyer & Richard Wyatt		
#	Title	Authors
1	Examination of Truck and Rail Container Transportation in Japan's Food Logistics	Yutaka Shirai and Hiroyuki Ono
2	SISE 2 - TBD	Author TBD
3	SISE 3 - TBD	Author TBD
4	Lower Extremity Human Activity Peak Force & Acceleration Analysis	Steve Fleming, George Page and Greg Weames

Conference Closing - Adjournment	4:00 pm
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Meet & Greet Reception (Conference Hotel Lobby) For Conference Attendees and Invited Guests	5:00-6:00 pm
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ISOES Booth at the ASSP Expo For FREE admission to the Expo, please contact: Jim Borchardt (constructionergonomicsllc@gmail.com)	Wednesday, Thursday & Friday
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