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Program

June 19–21, 2017
Tampa, Florida
MASTERPIECE

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WELCOME TO ERGOX 2017 AND TO THE TAMPA BAY AREA!

ErgoX is designed to showcase and apply the latest ergonomics science to workplace health, safety, wellness, and injury-prevention issues across a variety of domains and settings.

This year’s keynote speaker is Dr. Alan Hedge, who will share his vision for how technology and ergonomics can combine to improve injury prediction. We hope that his presentation “Prescient Ergonomics — A Strategy for Resurrection?” will inspire you to develop a proactive approach to workplace ergonomics. Following that, we have an incredible lineup of presenters covering a broad range of contemporary ergonomics topics.

Many thanks to our Platinum Sponsor, Liberty Mutual Insurance, whose commitment to work safety has been unparalleled in the insurance industry. In addition, we thank Herman Miller for sponsoring our Networking Ribbons, which can be found in the registration area. And, of course, we deeply appreciate the contributions of our advisory board members and HFES.

We hope you enjoy this unique and interactive experience, which promotes both learning and sharing ergonomics knowledge in a stimulating environment. Thank you for attending ErgoX 2017!

Tweet at #ErgoX2017!

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**SCHEDULE OF EVENTS**

**MONDAY, JUNE 19**

8:00 a.m.–6:00 p.m.
Registration Services
Florida Ballroom Foyer

9:00–5:00 p.m.
Workshop
Meeting Room 2

**Tuesday, June 20**

7:30 a.m.–5:30 p.m.
Registration Services
Florida Ballroom Foyer

8:00–8:30 a.m.
Refreshment Break
Florida Ballroom Foyer

8:30–10:00 a.m.
Keynote Address
Florida Salon IV

**Prescient Ergonomics — A Strategy for Resurrection?**

*Alan Hedge, PhD, CPE, C.ErgHF*

Many U.S. companies and organizations see ergonomics as a reactive and costly endeavor. Ergonomics assessments and interventions typically happen only after worker injuries have occurred. This unpredictably haphazard “firefighting” approach is expensive, and because usually workers have already been injured, the success of any intervention is more challenging. Currently, workplace injuries that arise from inadequate ergonomics design costs companies over $15 billion per week. Unfortunately, with some 100 million workers, there are fewer than 1,000 certified professional ergonomists to meet the demand, and the discipline is not growing.

Prescience by definition is “the fact of knowing something before it takes place.” Prescient ergonomics is a new strategy that amplifies the capabilities of the ergonomist by using ergonomics expert system software for periodic ergonomics wellness checkups that screen for early detection of injury and other ergonomics risks, which then allows for early interventions, either training or products or both. Knowing what the injury risks are and who is at risk allows for targeted interventions that prevent injuries and save money. Knowing what other ergonomics risks are present in the design of the tools, workplace, techniques, and so on allows interventions that will improve productivity and reduce costs by ameliorating these risks. Prediction and prevention always beats reaction!

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**Ergo Tools and Tips for the EHS Professional**

*Susan Kotowski, PhD, CPE, and Sheree Gibson, PE, CPE*

Many health and safety professionals find themselves having to do ergonomics assessments in a variety of situations but without a background in how to accurately do so. In this workshop the presenters will describe objective assessment techniques for an assortment of industrial situations and will focus on whole-body and upper- and lower-extremity evaluation. They will also discuss ergonomics issues specific to laboratories, offices, health-care settings, and other nontraditional working environments. Participants will learn about the background for each assessment, but the majority of the workshop will address hands-on application of the techniques using photos, videos, or mocked-up tasks. Participants are encouraged to submit ergonomics issues from their own workplaces for evaluation prior to start of the workshop.

**Susan Kotowski** is an assistant professor and director of the Gait and Movement Analysis Lab in the College of Allied Health Sciences at the University of Cincinnati. She holds a PhD in occupational safety and ergonomics and has more than 11 years of experience in teaching and ergonomics assessment. She is an active member of the American Industrial Hygiene Association (AIHA) Ergonomics Committee and the HFES Occupational Ergonomics Technical Group.

**Sheree Gibson** is president of Ergonomics Applications, an industrial ergonomics consulting firm. She has been practicing ergonomics and engineering for the past 38 years. Sheree has degrees in both mechanical engineering and industrial ergonomics. She is past chair of the AIHA Ergonomics Committee.
He has received numerous honors and awards, including the 2013 International Ergonomics Association/Liberty Mutual Medal in Occupational Safety and Ergonomics.

Stephen D. Hudock is manager of the Musculoskeletal Health Cross-Sector Program, a component of the National Occupational Research Agenda facilitated through the National Institute for Occupational Safety and Health (NIOSH), a center of the Centers for Disease Control and Prevention. Hudock serves as the lead research safety engineer of the Human Factors and Ergonomics Research Team within NIOSH. He has been with NIOSH for 27 years, always in positions related to the prevention of work-related musculoskeletal disorders (MSDs). Current areas of interest include the development of wearable sensor technology to assess risk of MSDs and the industrial use of exoskeletons to augment worker performance in a safe manner.

Christopher Reid is a human factors/ergonomics (HF/E) engineer, Boeing technical lead engineer, and project investigator for Boeing’s Environment Health & Safety (EHS) Engineering Organization in Charleston, SC. He is a graduate of the University of Central Florida, having earned a BS in electrical engineering technology and an MS and PhD in industrial engineering with a focus in engineering management and human factors engineering and ergonomics, respectively. Reid utilizes systems interaction, systems safety, and ergonomics approaches to develop and integrate methods, tools, and technologies that provide solutions for new and existing aircraft and spacecraft manufacturing work environments. Examples of these include product engineering design criteria, human modeling, wearable sensor technologies, automation, hand tools, and exoskeletons. Prior to joining EHS Engineering, Reid was the lead HF/E engineer for Boeing Research & Technology, where he founded and developed a laboratory for dedicated HF/E applied research inside Boeing, a first of its kind within the company. Before joining Boeing, Reid worked for Lockheed Martin on astronaut spacesuit assessment and design and workplace environment requirements as the HF/E discipline lead for the Anthropometry & Biomechanics Facility at NASA Johnson Space Center. He was also a human factors engineer for the U.S. Army in Natick, Massachusetts, working on personal protective equipment for U.S. warfighters. Outside of work, Reid is program chair for the HFES Occupational Ergonomics Technical Group and an associate editor for Theoretical Issues in Ergonomics Science.

Alan Hedge is president of Human-Use Inc. and has more than 30 years of ergonomics design and usability consulting experience. He directs the Cornell Human Factors and Ergonomics Research Group (CHFERG), is a tenured professor in the Department of Design and Environmental Analysis at Cornell, and is also a research professor in the Syracuse University Department of Mechanical and Aerospace Engineering. Hedge is widely quoted in news stories on a broad range of workplace safety and health issues, including The New York Times, Boston Globe, U.S. News & World Report, CNN, and TIME magazine. His research and teaching activities have focused on issues of design and workplace ergonomics as these affect the health, comfort, and productivity of workers.

10:00–10:15 a.m.
Refreshment Break
Florida Ballroom Foyer

10:15–11:15 a.m.
Session I
Florida Salon IV

Panel: Brave New World – The Promise of Wearable Sensor Technology in Ergonomics
Presented by Sean Gallagher, PhD, CPE, FAIHA
Panelists: Stephen D. Hudock, PhD, Christopher Reid, PhD, and Mark C. Schall, Jr., PhD, AEP

Wearable sensor technology is on the rise for both personal use and business applications. In ergonomics, wearable sensors are already being used in both research and workplace assessment activities. The day is fast approaching when wearable sensors may allow real-time exposure monitoring of ergonomics hazards experienced by workers in the workplace. This panel will provide an overview of wearable sensor technology from a variety of perspectives, including business, government, and academia.

Sean Gallagher has been a researcher in ergonomics for more than 30 years. During this time he has worked for the U.S. Bureau of Mines, NIOSH, and Auburn University. He is the Hal N. and Peggy S. Pennington Professor of Industrial and Systems Engineering at Auburn University. Gallagher is a Certified Professional Ergonomist and a Fellow of the American Industrial Hygiene Association.

He has received numerous honors and awards, including the 2013 International Ergonomics Association/Liberty Mutual Medal in Occupational Safety and Ergonomics.

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Mark C. Schall, Jr. is an assistant professor of industrial and systems engineering at Auburn University. In December 2014, he earned his PhD in industrial engineering from the University of Iowa, where he was a graduate fellow of the Heartland Education and Research Center and the Healthier Workforce Center for Excellence. His primary research interests are in applying direct measurement technologies to assess exposure to physical risk factors associated with musculoskeletal disorders and developing ergonomics interventions that reduce the incidence of adverse health conditions among working people. Schall has conducted research in a variety of domains, including agriculture, manufacturing, health care, transportation, and national defense.

11:15 a.m.–12:00 p.m.
Session 2
Florida Salon IV

Return on Investment: From Money Pit to Strategic Initiative
David Alexander, MSIE

At times, ROI seems to be the unicorn of applied ergonomics: often spoken of but rarely discovered. This presentation begins with the basics of ROI and related financial calculations, including when and how to use these tools. With that as a foundation, the session transitions to techniques and tools that make ROI more effective to use with exemplary results. Going further, it shifts to justification of green field projects and design efforts and how to create the appropriate benefits package for them. The pinnacle of value is a business strategy that uses ergonomics – that is, people – as a strategic initiative that provides the best way to ensure high return and sustainability.

David Alexander is the founder of the Applied Ergonomics Conference as well as the Ergonomics Design Competition for Student Teams. His expertise has developed from years in private industry with Eastman Kodak and with Auburn Engineers as a consultant for private industry and government. He is well known for his work with ROI, analysis tool development, engineering, and program management. He holds two patents and has seven published books.

12:00–1:30 p.m.
Lunch (provided)
Florida Salon I-III

1:30–2:30 p.m.
Session 3
Florida Salon IV

Panel: The Current and Future State of the Workplace... Setting the Workplace Research Agenda
Scott Openshaw, PhD

Have you ever used crowdsourcing to set a research agenda? Join the other ErgoX participants for a one-hour interactive session to discuss the current and future states of the workplace and help create, prioritize, and share the next research agenda for workplace ergonomics. Scott Openshaw will lead the group interaction, along with four other moderators, and will ask participants to create and discuss the top research priorities for workplace ergonomics. Insight for the research agenda will be viewed through the lenses of (a) research and science, (b) government standards, (c) practitioners, and (d) industry. By the end of the session, participants will have created a prioritized list of research topics that can drive the ergonomics agenda for the workplace and share that list through social media to stimulate key research concepts over the next few years.

Scott Openshaw brings a global perspective to his role as human factors and ergonomics manager for Herman Miller. During his long career, the fluent Spanish speaker conducted ergonomics training and studies around the world. These experiences enrich his understanding of the human experience, as well as his work for Herman Miller. Scott works with the Insight and Exploration team to conduct ergonomics-related research. He also serves as a knowledge expert for the team that supports Thrive, Herman Miller’s portfolio of ergonomics solutions. In previous roles with Boston design firms Continuum and Radius, Scott tested medical products for human factors, usability, and safety. Prior to his work in Boston, Scott spent nearly 10 years working in ergonomics and human factors in the furniture industry. Scott did his undergraduate work at Brigham Young University, where he received a degree in zoology: human biology. He earned his master’s degree in biomedical engineering from Iowa State University and a PhD in industrial engineering from the University of Iowa. A Certified Professional Ergonomist, Scott is a member of the Human Factors and Ergonomics Society and chairs the HFES-100 Furniture Integration subcommittee. He also represents Herman Miller on the Office Ergonomics Research Committee.
2:30–3:15 p.m.  
Session 4  
Florida Salon IV

Sit V. Stand Is the Wrong Debate — Technology-Induced Inactivity Is the Real Issue, and Technology Will Be the Cure  
Mark E. Benden, PhD, CPE  
The past 30 years have seen rapid advances in technology portability, miniaturization, and computing speed. Those advances have left humans increasingly inactive. Fortunately, as machine learning and artificial intelligence advance, they will solve our sedentary dilemma. This session will review how new technology applied to wearables, room sensors, enabled furnishings, the gamification of movement, virtual reality, and autonomous transportation will affect our physical and mental health at home, school, and work.

Mark E. Benden received his BS in BIEN, MS in industrial engineering, and PhD from Texas A&M and is a Certified Professional Ergonomist. His career includes experience as an officer in the United States Army Reserve, inventor, rehabilitation engineer, ergonomics consultant, plant and corporate ergonomics engineer for Johnson & Johnson, and executive vice president for Neutral Posture. He is an associate professor at the Texas A&M Health Science Center, where he serves as director of the Ergonomics Center and department chair for the EOH Department within the School of Public Health. He is also founder of two faculty-led startups: PositiveMotion LLC and Stand2Learn LLC. Benden has licensed five products to four companies since becoming a faculty member. His 25-year career in occupational safety and ergonomics has produced numerous processes, tools, and devices to ease injury and reduce illness risk. He is the author of numerous articles, books, and book chapters on ergonomics and has been called on to lecture at numerous professional groups throughout the United States, Canada, Europe, the Caribbean, and Central and South America.

3:15–3:45 p.m.  
Refreshment Break  
Florida Ballroom Foyer

3:45–4:15 p.m.  
Session 5  
Florida Salon IV

Before and After: System-Focused Design  
David Linkenauger, MS, AEP  
This session is a follow up to the case study presented during the ErgoX 2015 “Solve the Mystery” expert panel. Learn what it takes to implement system-focused ergonomics improvements in a manufacturing facility. Join David as he discusses implementing an effective ergonomics plan, completing ergonomics evaluations, selling an ergonomics solution to management, and the use of automation as an ergonomics intervention.

David Linkenauger is the site safety coordinator and a process improvement engineer at eCMM Services. David provides safety and engineering support to the Americas Product Completion Center located in Sandston, Virginia. In addition to his experience in the packaging industry, David has experience in both the meat-processing and rubber-processing industries. David has an MS in industrial and systems engineering with a focus on human factors and ergonomics and a BS in industrial and systems engineering, both from Virginia Tech. David has Lean Bronze Certification from the Society of Manufacturing Excellence and has Associate Ergonomics Professional Certification with the Board of Certification in Professional Ergonomics.

4:15–5:30 p.m.  
Spotlight Talks  
Florida Salon IV

1. Job Rotation to Prevent Back Pain: Help or Hindrance?  
Sean Gallagher, PhD, CPE, FAIHA  
Job rotation is a common method employed by industrial occupational safety and health practitioners to reduce the risk of musculoskeletal disorders (MSDs). The efficacy of this technique, however, has been open to question, and methods of quantifying job rotation strategies have been scarce. The current analysis uses the LiFFT low-back risk assessment tool to assess cumulative loading for a job rotation scheme based on fatigue failure principles. Results of this analysis suggest that attempting to “balance” a high-risk, medium-risk, and low-risk lifting job will lead to higher overall risk of back injury for those involved.

Sean Gallagher – See biography on page 4.

*Lora Cavuoto, PhD*

Over $300 million in lost productivity in U.S. workplaces can be tied to fatigue. Fatigue has been linked to impairment of mental or physical capacity or performance as a result of work. This session will focus on the current state of knowledge and practice on fatigue, including the effects of individual risk factors and the roles of workload and timing. In particular, the session will address the influence of obesity on fatigue development and subsequent injury risk. This is of importance because more than two-thirds of the U.S. population is either overweight or obese, and obesity is associated with a 25% increase in the odds of a workplace injury.

*Lora Cavuoto* is an assistant professor in the Industrial and Systems Engineering Department at the University at Buffalo (UB), SUNY. She joined UB in 2012 after receiving her PhD in industrial and systems engineering from Virginia Tech. She earned an MS in occupational ergonomics and safety and a BS in biomedical engineering from the University of Miami. At UB, Cavuoto directs the Ergonomics and Biomechanics Laboratory. Her current research focuses on quantifying physical exposures and physiological responses in the workplace to identify indicators of fatigue development. Her research work also aims to understand and model the effects of health conditions – particularly obesity and aging – on physical capacity; specifically, strength, fatigue, and motor performance. Her work on fatigue and worker safety has recently been funded by the American Society of Safety Engineers Foundation and the National Institute for Occupational Safety and Health.

4. Frugal Ergonomics: It Does Not Have to Cost an Arm and a Leg

*Presented by Susan Kotowski, PhD, CPE*

Everyone runs up against roadblocks to implementing good ergonomics in their workplace. Often, the major roadblock is the cost of any ergonomics intervention. Ergonomics interventions don’t always have to be expensive to be effective. Inexpensive and creative alternatives are out there and can be just as effective in reducing the stressors causing the issue. This talk will provide many examples of frugal or cost-effective ergonomics interventions for a wide variety of circumstances.

Susan Kotowski – See biography on page 3.
Santosh K. Verma is a senior research scientist with the Liberty Mutual Research Institute for Safety’s Center for Injury Epidemiology. His research has focused on investigating the causes and consequences of injuries resulting from slips, trips, and same-level falls, as well as studies on return-to-work outcomes following various medical treatments. Verma holds a doctorate in occupational health with a concentration in occupational injury epidemiology from the Harvard University T. H. Chan School of Public Health. He earned his master’s degree in biostatistics from the University of Massachusetts at Amherst and an MBBS degree from Gandhi Medical College, Bhopal, India. Verma and his colleagues received the National Occupational Research Agenda (NORA) Partnering Award for Worker Health and Safety from the National Institute of Occupational Safety and Health in 2006 and the NORA Innovative Research Award in 2008. Verma also serves on the editorial boards of *Accident Analysis and Prevention* and *Injury Epidemiology*.

Fred Norton is currently Technical Director – Ergonomics, Manufacturing Technology and Fall Prevention for Risk Control Services at Liberty Mutual Insurance. He is responsible for advancing the technical quality of ergonomic consulting services throughout Liberty Mutual through the development of customer and consultant tools, resources and capabilities. He has over 36 years of experience in Safety and Ergonomics. He has a bachelor’s degree in engineering sciences from Dartmouth College and a master’s degree in organizational psychology from Cal State University at Long Beach. He is a Certified Professional Ergonomist and a member of the ASTM F13 – Committee on Pedestrian/Walkway Safety and Footwear.

Bionic Ergonomics: The Role of Exoskeletons in Material Handling

Stephen D. Hudock, PhD, Christopher R. Reid, PhD, and Jason C. Gillette, PhD

This session will address the increase in the use of exoskeletons (or human augmentation devices) in material-handling tasks with a focus on the benefits or disadvantages to the individual wearer of these devices. Safety concerns versus productivity gains are addressed from industry and researcher perspectives.

**Stephen D. Hudock** and **Christopher Reid** – See biographies on page 4.

**Jason C. Gillette** is an associate professor in the Department of Kinesiology at Iowa State University in Ames, Iowa. He is director of graduate education for the Department of Kinesiology and a member of the American Society of Biomechanics. He has been a reviewer for scientific journals such as *Gait & Posture*, *Journal of Applied Biomechanics*, and *Ergonomics*. 

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10:15–10:30 a.m.
Refreshment Break
Florida Ballroom Foyer

10:30–11:45 a.m.
Master Class 1
Florida Salon IV

Health-Care Industry Ergonomics: Who Needs Safe Patient Handling and Mobility Initiatives?
Mary W. Matz, MSPH, CPE, CSPHP, and Dee Kumpar, MBA, BSN, RN, CSPHP
You may ask, “Who needs Safe Patient Handling and Mobility (SPHM) programs?” SPHM programs require caregivers to totally change the way they do their work, and many don’t want to do that. Technologies necessary for these programs are expensive and sometimes aren’t used when introduced. Why would an organization want to risk funding such programs? Why is implementing an SPHM program in health-care organizations and facilities critical? You will find out the who, what, why, and how-to during this glance into ergonomics (SPHM) in health care. For example, the “why’s” incorporate ergonomics, biomechanics, and patient safety. The “what’s” relay essential program elements. The “how-to’s” give you answers to what makes a program successful. The “who’s” provide insight into those in the United States and abroad who also think SPHM programs are vital for healthy health-care organizations.

Mary Matz is a Certified Professional Ergonomist and an internationally recognized expert in patient care ergonomics. For more than 15 years, she has researched, developed, implemented, and sustained the Veterans Health Administration’s national Safe Patient Handling and Mobility Program in 153 facilities, bringing national and international recognition to the VHA program. Her expertise and tenacity led to the development of national safe patient handling building design criteria. Matz is a board member of the International Panel on Patient Handling Ergonomics and was chair of the American Nurses Association task force that developed the National Safe Patient Handling Standards. She serves in leadership roles on several other national boards and groups. Matz provides safe patient handling consultation and training related to equipment and building design requirements, in addition to program implementation and maintenance.

Dee Kumpar is a Registered Nurse and director of clinical programs at Hill-Rom. Previous roles include corporate risk management, workers compensation review, learning and development, and surgery. Dee received her MBA from Marylhurst University and her BSN and Lean Healthcare Certification from the University of Michigan. She is a Certified Safe Patient Handling Professional through the Association of Safe Patient Handling Professionals and an active member of the American Nurses Association, the American Society for Healthcare Risk Management, the Association of periOperative Registered Nurses, and Sigma Theta Tau International Honor Society. A national speaker and published author, Dee worked with the American Nurses Association to write the Safe Patient Handling and Mobility Interprofessional National Standards, which was released in June 2013. She is working with the Facility Guidelines Institute to revise recommendations for bariatric care in the health-care setting and is supporting the AORN in review of needs for the perioperative environment. Dee works to engage health-care systems in program development, including strategies to address culture change, ensure a successful program launch, and achieve desired outcomes relative to injury prevention practices and improved patient outcomes.

11:45 a.m.–1:00 p.m.
Lunch (provided)
Il Terrazzo

1:00–2:15 p.m.
Master Class 2
Florida Salon IV

Ergonomics Interventions for Workers in Extreme Environments in the Electric Utility and Construction Sectors
Richard W. Marklin, Jr., PhD, CPE, and Eric H. Bauman, MA
Workers in the electric utility and construction sectors have to work in extreme conditions, from very hot to cold and also very slippery conditions. These conditions – whether on the ground, in an aerial bucket, or on the roof of a house – can increase the risk of acute and cumulative injuries. In the last 20 years, Electric Power Research Institute (EPRI) has sponsored six major ergonomics projects that resulted in effective interventions that reduce the risk of injury in both extreme and less-hostile work environments. This presentation will show a macro view of the EPRI ergonomics research findings.
Patients with digital dementia present with common symptoms associated with dementia and physiologic changes in their brain, such as sensory disassociations that affect the frontal lobe and create developmental disorders characterized by lack of motivation and empathy and difficulty in acquisition of skills associated with traditional forms of learning. Motor skills are compromised from physiologic changes of the motor cortex, sensory cortex, and vestibular system.

The purpose of this presentation is to introduce the concept of digital dementia and to demonstrate the meaningful methodology of neuroergonomics. Attendees will gain useful strategies of brain-based ergonomics that are relevant to patients’ needs. This presentation will demonstrate brain-based posture analysis and correction techniques as a prevention strategy for the development of tech neck and digital dementia.

Krista Burns, who has a PhD in health administration with an emphasis in global health policy, is a Doctor of Chiropractic and a postural neurologist. She has participated in more than 1,000 hours of advanced education in posture, neurology, and human physiology. She is cofounder of the American Posture Institute and author of the textbook Principles of Posture. Krista has made numerous international presentations and is creator of the Certified Posture Expert and Certified Postural Neurologist online programs. The American Posture Institute is a leading resource in postgraduate online posture education specializing in advanced postural education. Thousands of health-care professionals in more than 30 countries have implemented the American Posture Institute’s posture analysis and postural correction protocols.

Richard W. Marklin, Jr., is a professor in the Department of Mechanical Engineering at Marquette University in Milwaukee, Wisconsin. He received his MS and PhD in physical ergonomics from the Department of Industrial and Systems Engineering at The Ohio State University in 1988 and 1991, respectively. He became a Certified Professional Ergonomist in 1994. Richard has been the principal investigator on ergonomics research projects for the electric power industry for 18 years.

Eric H. Bauman was recently appointed senior technical leader and program manager for Occupational Health and Safety, Electric Power Research Institute (EPRI), where he has been senior technical advisor since 1997. He has over 35 years of experience in the energy industry; environment, health, and safety management; risk assessment and communications; strategic planning; electromagnetic fields issue management; and regulatory affairs. He is a Charter Member of the Society of Risk Analysis. In 1985, Eric was guest scientist at the Research Center Juelich, Germany.
4:00–5:15 p.m.
Master Class 4
Florida Salon IV

The Bad Ergonomics of Order Fulfillment and Stocking in the Retail Industry... And What To Do About It!

James J. Galante, Chairman, EASE Council, Material Handling Industry, and Jeff Hoyle, MS, CPE

Many millions of cases of goods are placed on retail shelves every day. From warehouses and distribution centers where merchandise is collected on pallets and shipped to the back room of stores, where the merchandise is often transferred to carts and then finally from carts to store shelves, this labor-intensive task has changed little over the years. In addition, the shelves have grown in height, goods are more densely displayed, and the cardboard packaging for those goods has become more flimsy. Plus, obesity and aging of the workforce, along with demands on those employers to get the work done quickly, has never been higher. This fast-moving, highly illustrated session deals with ways to implement better manual handling devices throughout the process, which can improve ergonomics, reduce much of this stress on the employee, and increase efficiency and productivity. In addition, innovative use of these devices can be the key to leveraging the core LEAN value of eliminating waste.

James J. Galante is chairman for the EASE Council (Ergonomics Assist and Systems Equipment) of the MHI (Material Handling Industry). He is also director of business development for Southworth Products Corp. Galante has 49 years of experience in the material-handling industry. He has worked with and visited hundreds of facilities to conduct material-handling task evaluations. He was the principal editor of the Ergonomic Guidelines for Manual Material Handling. This major, internationally recognized publication defines the problems and presents the solutions to address the number-one cause of worker injury in the workplace. Galante has trained more than 3,000 sales professionals, written numerous articles, and conducted many symposia, seminars, workshops, and tutorials on the practical application of material-handling devices for the improvements of productivity, safety, and ergonomics in industry.

Jeff Hoyle is a Certified Professional Ergonomist and director of Ergonomics Services for The Ergonomics Center of North Carolina, housed within the Industrial and Systems Engineering Department at North Carolina State University. He received his MS degree in industrial and systems engineering with a focus in ergonomics and biomechanics from The Ohio State University. He specializes in providing ergonomics program development, job analysis and redesign, training, ergonomics team, and guideline development for a variety of companies nationwide.

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