

Ergo Expo 2018, Las Vegas
 Presentation Summaries, Interesting Points and Reflections
 Completed by: Kim Moull

| Presentation Title | Presenter | Key/Interesting Points |
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| Cargill Ergonomics Program Case Studies: From Planning and Implementing to Goals Achieved (WORKSHOP) | David Brodie, MS, CPE Corporate Ergonomist Kaitlyn Boyne, R. Kin, Ergonomist Jainaba Faye, Industrial Engineer Cargill Ltd. | -4 Methods of their ergo program: Preventative, Reactive, Proactive, Advanced -Preventative: Job matching, work practice training, ramp-in, conditioning program -Reactive: Incident investigations, countermeasure process, management review incidents, case management, injury data collection/tracking -Proactive: Continuous improvement mindset, risk management approach, process optimization an design, team approach. -Advanced: Incorporates multiple parties (Eng, Ops, Capital), continuous improvement mindset, hazard identification and analysis, hazard control, engages many teams. -They used to do ARCON pre-placement functional testing but stopped because it was too time consuming. They found that this testing was retaining new hires when they were using it. -Used a prioritization matrix to build a defensible list of projects. |
| Industrial Ergonomics Expert Panel: Developing and Sustaining a World-Class Program | Miguel Gonzalez, MHK, CPE, Senior Program Ergonomist at GM Amy May, MS, CPE, Director of Workplace Safety at The Boeing Company David Brodie, MS, CPE Corporate Ergonomist Maximillian Hekmat CSP, CHMM, REM Chris Shieldsmith MS Corporate Ergonomics Leader Cummins Inc. | Opinions of the panel: -There needs to be standards that don't restrict innovation and creative thinking. Standardize tools and training but allow departments wiggle room to define programs. -Standards must be audited -Develop system that applies regardless of who's leading because if management changes you want the system to remain. -Always try to increase the minimum standard, PDCA. -One company has Engineering owning Ergonomics rather than EHS. -At GM, core pilot team is trained extensively in ergonomics since they are the first line of defense. They need to understand the cumulative impact of elements that they don't get from building the vehicle a few times. -Cummins focuses on risk reduction index rather than injury reduction as a metric. -Companies that focus on risk reduction as opposed to injury reduction have seen the most reduction in injuries. -Always get some sort of sponsor (manager) that will support the main metric of focus. -Leverage quality, production and efficiency for buy-in. -Need early involvement with engineering and design teams. |
| Looking Beyond Physical: Social and Cognitive Ergonomics Office and Mobile Workforce | Scott Openshaw, CPE, PhD Human Factors Manager at Herman Miller | -Stress makes work harder. -Social ergonomics is the study of people and organizations and how to make them more productive, healthy and connected. -4 main components of social ergo: Relationships, proxemics, privacy, territoriality -Relationships: Study that shows good social interaction results in lower reports of physical pain at work. -Proxemics: Personal "bubble". Proxemics vary by individual, and a socially healthy work environment should consider them. -Privacy: Privacy varies by culture/situation. -Territoriality: Can be individual or team based. -Examples of considering social ergonomics: Being at eye level with your audience when you are presenting, allow individuals to work in an environment that works for them (open office vs. private space). -Cognitive ergonomics emphasizes the fit between our brain and our surroundings. -Humans can only process a finite amount of info before feeling stress and making mistakes. -Increased mental load results in increased stress and disengagement. -Cognitive mapping: designing workplace layout it a way that makes sense to our brains (ex. clear pathways between desks) -Environment: People, sounds, lighting, furniture can affect cognitive processing. -Give people variety and choice to how they get to work. More choice = greater satisfaction. |

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| Understand and Resolve Your Complex Office Evaluation Requests | Gene Kay, MS, CPE Director of Ergonomics, VelocityEHS | This talk was likely made for H&S professionals who are new to ergonomics. The following points from the presentation stuck out to me: -ISO 9241-5 standard states the top of the monitor should sit slightly below eye level with the monitor angled up. -A split keyboard is ideal for individuals with wider shoulders, who are more susceptible to having their shoulders rotate inward with a conventional keyboard. -"The best posture is the next posture" -Tilting the seat pan angle downward is mainly ideal for pregnant women or people with sciatica. |
| Assessment and Injury Prevention using Wearable Technology | Anthony N. Harris, MD, MBA, MPH Associate Medical Director, WorkCare, Inc. Co-Founder, HFit, LLC | -Dry fit style long-sleeve shirt with built-in EMG sensors. -Muscle readings get sent to a real-time body "map" on your smartphone. -Intended to decrease the amount of time needed for data collection analysis and increase time spent on finding solutions. -Gathers personalized data on individual workers. -Outputs whether muscle engagement, frequency, and duration are at levels of "high risk" based on predetermined thresholds from research. |
| Human and Organizational Performance | Monty Gartin EHS Advisor Cargill | -Emphasized the problems surrounding "human error" -We must consider the numerous factors that come into play when someone makes a mistake (ex. Environment, training, etc.). Note that just because someone makes a mistake, does not mean that letting them go will correct the situation if the problem is more systematic. -Human error should be seen as a consequence, not a cause. -Three types of performance modes: skill based (habit), rule based (instructions), and knowledge based (problem solving). -The knowledge based mode (telling people to "figure it out") has the highest error rate. -It is important to cultivate a company culture where people feel comfortable saying "I don't know" to avoid errors. -Human errors that make small consequences are the same errors that make big consequences. |
| The Underappreciated Relationship between Ergonomics and Obesity | Jeremy Wilzbacher | -Studies show that overweight people are more likely to develop MSDs for a variety of reasons (hormones, inflammation, decreased recovery time due to poor circulation, nervous issues, holding extra weight) -The way a job is designed can also impact a person's weight. It is important to design jobs that are not completely sedentary. Also, people are less likely to be active if they are in pain from their job. Stress from a job can also have negative metabolic impacts. -Large abdominal circumference can impact reach envelope (decreased horizontal reach capabilities). -More stress is placed on the joints of an overweight individual when performing the same tasks as someone who is underweight - yet we use the same guidelines and standards for everyone. -Create movement strategies: walking paths, walking breaks, stretch micro breaks, job rotation, lunch walks, sit-stand desks. |
| Emerging Approaches for Evaluating and Managing Muscle Fatigue | Murray Gibson PE, CPE Founder & Ergonomics Consultant Saturn Ergonomics Consulting | -Developing a tool (formula) that incorporates Jim Potvin's MAE and duty cycle for a more cumulative look at work and recovery. -Free online calculator for this tool is available on his website. |
| Smartphone-Based Ergonomic Risk Assessment | Sang-Hyun Lee Associate Professor University of Michigan | -Technology intended to eliminate drawbacks of manual data collection and analysis (time consuming, limited job coverage, training needed, not consistent) -Cloud-based system. -Use a smart phone to film a process and AI software calculates the joint angles. -Information can automatically be populated into risk assessments such as NIOSH (just have to add weight and worker height). -Looking to develop program to automatically identify loads in the future so you would not have to input them manually. -Looking to develop program to automatically calculate reach dimensions based on the video. |
| Reflections | | |
| <p>-Good opportunities to meet people and network during the networking lunches and tradeshow.</p> <p>-Large tradeshow with many vendors that we commonly use/recommend. A good opportunity to scope out new products for both office and industrial environments.</p> <p>-Great conference if you want to learn about new topics in ergonomics with applied examples. Note that relative to the AHFE conference that I attended in July, which was more academic/research-based, I felt that the Ergo Expo was more informative and useful for me.</p> <p>-Having so many concurrent sessions made it difficult to choose which one to go to. I had to miss out on some talks that I wanted to see because of this.</p> | | |