

## **YPSW 2018 ANNUAL MEETING TECHNICAL PROGRAM**

### **Incorporating Occupational Health and Safety into the Design of Workplaces and Processes**

Bay Club Hotel and Marina – San Diego, California

January 18-19, 2018

#### **Welcome & Announcements**

President Robert Lieckfield opened the meeting technical program by welcoming those present and introducing the AIHA Yuma Pacific Southwest Section (YPSW) Executive Committee. He then announced that the annual pie auction to raise donations for two scholarship funds would be held at the Friday evening banquet. Bob then turned the technical program over to President-Elect Frank Renshaw.

#### **Program Introduction – Frank Renshaw**

Frank Renshaw introduced the program theme, “Incorporating OHS into the Design of Workplaces and Processes” and called attention to the Section’s founding members as well as three sustaining members, Howard Ayer, John Pendergrass, and Howard Kusnetz who passed away in 2017. Frank underscored the importance of OHS by Design by recounting two case studies from the early 1900s, the match industry’s phossy jaw epidemic and the Triangle Shirtwaist Factory fire. In both cases the incorporation of OHS features at the design and redesign stage ultimately led to elimination of hazards and minimization of residual risks through design. Frank noted the relevance of the Prevention through Design (PtD) principle to the program theme and strategic importance of implementing PtD according to the cascading framework of Principle, Policy, Standards, Work Processes & Procedures, and Tools & Practices. He concluded by announcing the speakers and topics for the two day event and the tour at Scripps Institute of Oceanography’s Birch Aquarium and Research Pier.

#### **National Prevention through Design (PtD) Initiative – Jonathan Bach**

Jonathan Bach is the NIOSH Coordinator for the PtD Initiative. His presentation traced the history of the national initiative, the underlying principle of anticipating and designing out hazards, use of the hierarchy of controls, and the importance of integrating OHS into the design process. He spoke of the burden of injuries, illnesses, and fatalities imposed on the workforce by lack of safe designs. He described the four activity areas of the PtD, research, education, practice, and policy, and provided examples and an update on progress to date for each area. Mr. Bach characterized the adoption of PtD as a 5-step culture change process: 1) Create Awareness, 2) Gain Commitment, 3) Plan for Change, 4) Implement Change, and 5) Monitor Performance. He provided evidence of international adoption of PtD in countries such as the UK, Singapore, Australia, and South Africa. He concluded by showing examples of PtD successes in the areas of constructability, highway paving, mining machinery noise reduction, and the application of ergonomics across a range of workplaces including the use of mechanical lifting devices in healthcare settings. He included in his presentation a wealth of resources including NIOSH publications, consensus standards, and academic textbooks that have incorporated instruction and case studies on PtD.

#### **Excellence by Design – Integrating EHSS into Project Design Review – Jonathan Gast**

Jonathan Gast is the Director of Environment, Health, Safety, and Security (EHSS) for Amgen. His presentation focused on how Amgen has integrated EHSS into its Project Design Review Process. A

key component of this process is the company's dEHSig Tool, a computerized decisional aid and document management tool which includes a 3000+ question knowledge base. Mr. Gast described the various phases of Amgen's engineering project delivery process, the integration of EHSS into the design review component of the process, and the key roles of the EHS reviewer, project management, architect/ engineer, and senior management in the work process. He provided real-world examples of design excellence involving room occupancy and flammable storage in laboratories and design features for accessibility in emergency generator facilities. He concluded by showing how the dEHSig Tool drives accountability and traceability through the recording and tracking of EHSS requirements, decisions, and resolutions for large and small projects across the corporation.

### **Inherently Safer Chemical Processes – Dennis Hendershot**

Dennis Hendershot is an independent process safety consultant with broad experience in chemical engineering and process safety within the former Rohm and Haas Company followed by consulting positions with Chilworth Technology and AIChE's Center for Chemical Process Safety. Mr. Hendershot introduced the concept of inherently safer design (ISD) and the control hierarchy of: inherent, passive, active, and procedural as applied to chemical processes. He discussed the ISD approach as a tool for minimizing risk by first reducing the consequences of incidents and second reducing incident frequency. Dennis described the four basic strategies of ISD – substitution, minimization, moderation, and simplification, and their applicability throughout the life cycle of processes. He shared examples of the use of ISD for classical chemical processes such as nitration reactions and monomer synthesis, and concluded by discussing how to inspire and train people to practice inherently safer thinking.

### **Occupational Health and Safety in the Design and Construction of Projects – John Gambatese**

John Gambatese is a Professor in the School of Civil and Construction Engineering at Oregon State University. He led off his presentation with a focus on ethics and the obligation of engineers to "...hold paramount the safety, health, and welfare of the public." He referenced studies which documented that design was related to 22% of injuries and 42-63% of fatalities. He endorsed the hierarchy of controls and related the increasing reliability of control measures as one moves up the hierarchy from PPE to hazard elimination. He referred to the sustainability of sound designs and the adoption by the USGBC of PtD by giving LEED pilot credits for PtD features documented in safety design and safety construction reviews. He cited many benefits of PtD implementation including: fewer construction site injuries, increased productivity and quality, reduced construction costs, fewer delays, and increased designer-constructor collaboration. He also emphasized that designing for hazard elimination encourages innovation. Inhibitors of PtD implementation include: no or minimal designer education and training in safety, difficulty in foreseeing risks at the design stage, contractual separation of design and construction, fear of increased liability, and competing priorities. Enablers of PtD are: owner commitment, a positive safety culture, design engineer experience and training, integrated project delivery methods, and design/construction visualization tools. He outlined a 5-step process for implementing PtD and gave several examples from embedding of PtD in procurement to construction methods and practices.

### **Assessing and Controlling Risks from Dermal Exposures – Jennifer Sahmel**

Jennifer Sahmel is a Principal Health Scientist with Insight Exposure and Risk Sciences. Jennifer called attention to the fact that recordable skin diseases outpace respiratory illnesses by a factor of

almost 2-to-1. According to NIOSH, “Standardized methods are currently lacking for measuring and assessing skin exposures.” She referred to the AIHA “Exposure Assessment Strategy” publication as a good resource and noted that dermal exposures should be evaluated in the same manner as inhalation exposures. She outlined currently available dermal exposure assessment methods and demonstrated their use with three workshop scenarios involving: 1) shell core molding using a phenol-containing resin, 2) molding of component parts from the aerospace industry using MDA-containing composites, and 3) potential contact with benzene in a maintenance operation at a petrochemical plant. Jennifer discussed the strengths and weaknesses of qualitative vs. quantitative dermal exposure assessments and illustrated the kinds of data that make the biggest difference in accurately predicting dermal risk. She concluded her presentation by showing examples of dermal exposure controls including isolation, substitution, housekeeping and personal protective equipment.

### **AIHA National Update – Larry Sloan**

Larry Sloan, CEO of AIHA National, updated the audience on local section dynamics, collaborations and partnerships, grassroots awareness of the profession, and the AIH Foundation. He discussed the six strategic priorities of the Association for 2016-2018: 1) Drive AIHA’s content focus and dissemination, 2) customize benefits to maximize value to members, 3) pioneer a coalition to advance IH science and practice, 4) partner to generate and disseminate content, 5) provide diverse support to local sections, and 6) align support for all stages of career development. Ahead in 2018, AIHA is committed to exploring the merits of launching a new Virtual Section. A new on-line community platform, “Catalyst”, has already been launched. Content priorities include: 1) occupational exposure banding, 2) IH business case development, 3) sensor technologies, 4) big data management, 5) changing workforce/workplace, 6) global IH/OH standard of care, and 7) emergency preparedness and response. This year’s AIHce will be held in Philadelphia on May 21-23. Collaborations include IOHA with AIHA hosting the 2018 Conference in Washington, D.C., an MOU with ASSE involving AIHA local sections partnering with ASSE chapters around the country, numerous active projects with NIOSH, and an expanded AIHA presence in India. Grassroots awareness initiatives include #IAMIH, IH Heroes, the AIH Foundation, and a Future Leaders Institute to be held in Washington, D.C. Sep. 21-23, 2018. Larry concluded by discussing proposed by-laws amendments which involve simplification of member classes and modification of the AIHA officer nomination process.

### **ACGIH Update – Audrey Lawrence**

Audrey Lawrence is Director of Safety, Health and Wellness for the San Francisco International Airport and serves as a Director of ACGIH. Audrey recapped current activities of ACGIH committees including a Zika Virus webinar in May sponsored by the Chemical Substances Committee and an Audible Sound webinar in October sponsored by the Physical Agents Committee. The BEI Committee will offer a certificate in biological exposure monitoring in September, and the Ventilation Committee conducts their 5-day ventilation course three times per year. The Board’s focus is working collaboratively with sister organizations and ensuring the continued existence of the TLVs, BEIs, and Ventilation Guidelines. Audrey recapped the ACGIH Board and Awards nomination process, the Foundation’s fund raising activities, and the value and benefits of membership in ACGIH.

### **The Opioid Crisis – John Howard**

Dr. Howard is the Director of NIOSH. He opened his presentation by describing the nomenclature and categories of opioid analgesics, their mechanism of action, history, and government reactions in

regulating their use. He profiled the current crisis, the difference in use patterns between the U.S. and other countries, rising morbidity and mortality, and the decline in life expectancy in the U.S. associated with opioid use and misuse. He provided an analysis into how the crisis happened and the economic costs of the crisis. Dr. Howard outlined intervention measures that can be taken to stem the crisis including: supply and demand measures and recommendations of the Presidential Commission on Combating Drug Addiction and the Opioid Crisis. He provided a startling profile of the potency of Fentanyl and described the activities of the U.S. Office of National Drug Control Policy under its High Intensity Drug Trafficking Areas Program. He summarized efforts of the private sector such as CVS's tightening of restrictions on opioid prescriptions, Express Scripts action to limit the number and strength of opioid drugs prescribed, and Florida Blue's decision to stop covering OxyContin at the beginning of 2018. NIOSH is concerned with occupational exposure of responders to Fentanyl and has issued a NIOSH webpage with guidance including: safe operating procedures, training, decontamination, personal protective equipment, and medical countermeasures for Fentanyl. Dr. Howard's presentation includes nearly 30 references on the Opioid Crisis and countermeasures to address its impact on the nation.

### **ABIH Update – David Roskelley**

David Roskelley is founding partner of R&R Environmental, Inc. and Past Chair of ABIH. David introduced the ABIH Board of Directors by photo and reminded all YPSW meeting attendees that self-nomination for Board positions is accepted, and nominations are due by May 31, 2018. He also noted ABIH's Lifetime Achievement Award recipient, Donna Doganiero and Impact Award recipient, Nicole Greeson. David called attention to the lack of growth in the ABIH Diplomate pool and the need for the profession to recruit and encourage new applicants for the CIH certification process. ABIH projects and strategies for 2018 include: 1) IPEP merger under the ABIH umbrella, 2) CYZAP automation project (new applicants), 3) improved credential maintenance, 4) a new product stewardship credential, 5) rebranding of the IH profession and name, 6) joint strategies with AIHA and other OEHS boards, and 7) international strategies (India a primary focus). He announced the Board's plan to update the website for mobile compatibility and announced an annual fee increase in 2018, the first since 2013.

### **AIHA President's Update – Steven Lacey**

Steven Lacey is an Associate Professor and Chair of the Department of Environmental Health Science at the Indiana University School of Public Health and Past Chair of AIHA. He provided the President's update for AIHA's President Deborah Nelson who was in transit to an IH meeting in India. Because of limited time available in the program, Steve focused his update on "Safety Matters", an initiative to promote teen workplace safety training in schools. AIHA partnered with NIOSH to develop "Safety Matters", a program which raises awareness among teens about workplace health and safety, and provides basic skills that contribute to a safe work environment. Steve announced the recent signing of a bill by the Texas Legislature which encourages school districts and educators to include workplace safety training in the curriculum of appropriate courses for students in Grades 7-12. He also announced an effort spearheaded by the AIHA Rocky Mountain Local Section to adopt similar legislation in Colorado. Steve has been invited by the American Chemical Society to participate in the ACS Safety Summit, another opportunity to promote the "Safety Matters" initiative across the chemistry enterprise.

## **Regulatory Update+ - Mark Ames**

Mark Ames is Director of Government Relations for AIHA. He encouraged the audience to get involved in the regulatory process by finding out which government groups are developing regulations and join them. He drew a distinction between regulations and laws, stating that many more regulations go into effect each year than legislation. He predicted there will be lots of consequential regulatory action in 2018 at the Federal level and less action by any one state, but collectively more overall at the state level. An example of recent state activity is a California rule protecting housekeeping workers. At the Federal level, the OSHA Silica Rule has survived a challenge in the US Court of Appeals for Washington, DC. It is an election year with more than 6,600 state and federal seats at stake. AIHA is encouraging its members to speak to their candidates and parties about the importance of worker health and safety, and encourage them to incorporate our priorities into their speeches. AIHA's public policy priorities are: 1) protecting first responders and others from occupational exposure to opioids and their synthetic analogs, 2) teen workplace safety education, 3) Cannabis industry worker health and safety, 4) disasters, and 5) gig, seasonal, and temporary workers. Mark closed by noting the ACTIONS Committee is AIHA's direct successor to AIHA's Government Relations Beta Group. The Committee is open to all AIHA members and is charged with implementing AIHA's current goals and proposing new goals and activities under the Association's Public Policy Priorities.

## **Implications of the Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act – Marisa Kreider**

Marisa Kreider is a Senior Managing Health Scientist at Cardno ChemRisk. Dr. Kreider opened her presentation by explaining that the Lautenberg Chemical Safety Act (LCSA) is legislation to amend TSCA, the primary chemical management program in the U.S. The update was triggered by criticism that TSCA was outdated, gave EPA little authority to require testing or restrict manufacture/import, incorporated non-risk considerations (e.g. cost, feasibility) in risk decisions, lacked transparency, and was ambiguous and/or conflicted with state-level regulations. Marisa outlined how LCSA has changed TSCA in the following aspects: 1) EPA must provide a definitive determination of risk for chemicals – both new and existing, 2) EPA has the authority to request testing when chemical may present unreasonable risk, 3) focus on susceptible sub-populations and sentinel exposures, 4) emphasis on high throughput and computational testing methods, 5) require companies to substantiate confidential business information claims, and 6) establishes preemption rules. Dr. Kreider defined the four steps of the risk assessment paradigm: hazard identification, dose response, exposure assessment, and risk characterization. She outlined challenges to sound risk assessment such as data gaps and the dangers of relying on modeling and computational techniques. She concluded by pointing out implications of LCSA for industrial hygienists. LCSA may require more stringent risk-based standards than under OSHA. There may be an increased burden on IHS to collect empirical data to support EPA risk assessments. There may also be an increased need to communicate with the workforce about EPA conclusions or newly instituted risk management measures (e.g. PPE).

## **Preventing Occupational Hearing Loss in a Global Manufacturing Network – John Mulhausen**

John Mulhausen is Director of Corporate Safety and Industrial Hygiene at 3M. He opened his presentation by highlighting the business benefits from placing priority on strong health and safety performance. He attributed global safety and health excellence to having in place the right principles, people, and processes. As part of these principles, there is a corporate expectation of developing and maintaining engineering standards and a global safety and health plan (GSHP). Included in 3M's GSHP are essential elements on Medical Surveillance and Noise Control & Hearing Conservation. 3M believes

having great people is a critical asset for EHS excellence and translates this belief into practice by certifying subject matter experts in areas such as air and noise monitoring. Efficient global processes are also viewed as critical for safety and health excellence. 3M has developed global processes for safety, industrial hygiene, process safety, and ergonomics. Standardized, accurate noise exposure assessments and an integrated hearing conservation strategy are also key factors in 3M's efforts to address occupational noise exposure. Global engineering control guidelines, training and knowledge resources, detailed understanding of exposures, annual noise control prioritization and planning, and management of change are key features of the Company's hearing conservation strategy. The effective use of hearing protective devices and lessons learned through quantitative fit testing were also covered during the presentation. John concluded with case studies involving two 3M manufacturing plants. Both facilities were recognized for their success in "Getting the Noise Out" as recipients of Safe in Sound Hearing Conservation Excellence Awards.

### **Safe and Lean – An Ergonomics Strategy in Commercial Vehicle Manufacturing – Thomas Slavin**

Tom Slavin is a consulting industrial hygienist for Cardno Chemrisk and President of Slavin OSH Group. His presentation focused on integrating safety with the manufacturing process, in this case LEAN, which was the manufacturing process used by his former employer, Navistar. Tom described "LEAN" as: Delivering Value Fast, and Eliminating Waste, and the belief that "When you do LEAN right, you get CLEAN and SAFE". He described many of the tools with examples that are used with LEAN manufacturing including: 8 WASTES, 5S, and POKA YOKE (Mistake Proofing). He also discussed the "Visual Management" concept which relies on the power of visualization to easily identify and correct abnormalities associated with disorder, ergonomic issues, and safety hazards. Tom described the concept of Kaizen, meaning improvement, and emphasized the importance of standardization of work as the tool which will ensure improvements are sustained. He concluded by describing how ergonomics was introduced at Navistar. Management chose to introduce ergonomics as an integral part of the company's manufacturing process, and not as a safety program. It was management's conclusion, according to Tom that in order for ergonomics to be successful, it had to be "designed-in safety" and not "designed by safety". This management perspective in Tom's view provides an important lesson for all EHS professionals.