

**SUMMARY OF JANUARY 21-23, 2015 ANNUAL Meeting**  
**Yuma Pacific Southwest Section, AIHA**  
**(Prepared by Bob Glenn, Acting Program Chairman)**

President Del Malzhan welcomed attendees to the 40<sup>th</sup> Annual Meeting of the YPSW Section. The conference theme was “*Tools, Technology and Big Data*”. Our program chair, President-Elect Steve Davis, put together a though provoking and leading edge meeting that was thoroughly enjoyed by all attendees. As you all know, Steve was going through a serious illness at the time and was not able to join us in San Diego. We kept Steve and Chris apprised of how well the meeting was progressing and he was thrilled with the news. Steve passed away two days after the close of our meeting on January 25<sup>th</sup> from cancer. As a professional colleague Steve will be missed but we shall long remember his gentle ways, wonderful personality and infectious smile.

***Thursday Morning, January 22***

Our program was kicked off by a well known business futurists and strategist, Dr. Mary O’Hara-Devereaux, of Global Foresight. Mary covered the waterfront of what we might expect and the signals we should be alert to recognize as we move forward. She touched on everything from the U.S. and global economies, to what globally we can expect from Asia to Latin America and places in between, what disruptive technologies and shifts we should be looking for, how health trends and added years of life will affect society, and what skillsets will be needed to perform in the future. Her insightful picture of how the world is changing and how to prepare for it set the table for the rest of our meeting.

Dr. Chuck Geraci closed out the morning session by giving us an insight into what factories tomorrow will look like and what developments we can expect from advanced materials. Chuck described the progress that has been made in material science because of nanotechnology, some of the commercial applications and what we can expect as the technology matures. He reminded all that as industrial hygienists our challenge is to remain current on the issues of potential health hazard, the degree to which these materials are being introduced into commerce, the manner in which they are used and incorporated into products, and the types of risk assessment and management approaches that have been used to support safe and responsible introduction of these new materials.

Chuck closed his presentation by focusing on what manufacturing workplaces of the future might look like. He described efforts by the U.S. government to launch four innovation hubs that are to demonstrate the utility of advanced manufacturing technologies, using advanced materials and processes in the key areas of Digital Manufacturing, Lightweight Materials, Power Electronics, Advanced Composites Manufacturing and Integrated Photonics. As with nanotechnology, Chuck again stressed the need for occupational safety and health practitioners to keep pace with the changes in processes, the continued introduction of new and more active materials, and the changing face of the workplace.

### ***Thursday Afternoon, January 22***

Thursday afternoon the members split into two groups for two exciting tours. Bill Krebs took one group to the San Diego Zoo Safari Park north of San Diego for some close-up interactions with the animals. The second group visited the General Atomics, National Fusion Facility, for a most interesting afternoon becoming acquainted with plasma physics and its potential as an alternate energy source.

### ***Friday Morning, January 23***

The Friday morning session consisted of updates from NIOSH and OSHA, as well as from leaders of our professional societies. Those providing an update of activities were:

William Perry – OSHA Program Update  
Max Kiefer – NIOSH Program Update  
Christine Lorenzo, AIHA Update  
Nancy George – ACGIH Update  
Susan Ripple – ABIH Update  
Aaron Trippler, Regulatory and Legislative Update

Following the updates, Larry Gibbs spoke to the group on *Advancing Safety Culture in Academic Research Labs* addressing how institutions of higher learning are dealing with some recent serious laboratory research accidents throughout the country resulting in serious injury and two fatalities. Larry presented a case study from Stanford that focused on identifying critical variables and attributes related to laboratory safety culture and values in academia, and described a program to advance a culture for the conduct of safe science.

Dan Baxter presented a talk on fire residue contamination describing the analytical challenges encountered in the analysis of complex matrix dust samples. The focus of the talk was on the correct application of microscopy and chemical analysis methods for the determination of fire residue contamination. The talk also introduced the future role of automated Scanning Electron Microscopy for the analysis of fire “ash” and other potential indoor air quality contaminant particles.

### ***Friday Afternoon, January 23***

Fred Boelter arranged and chaired our afternoon session with a theme *Making Sense of Acceptable Risk*.

Jacob Persky presented a talk on the use of large databases in assessing exposures. “Big data” is a trending buzzword, which describes data sets so large or complex that they become difficult to process and extract meaningful insight using traditional data processing applications. The age of “big data” as it applies to industrial hygiene has arrived as evidenced by the exponential growth rate of data that IH’s collect. Direct-read instruments with data-logging capabilities recording values every second, video exposure monitoring, and biometric sensors are all examples of

increasingly sophisticated tools that generate vast amounts of data from which IH's must learn to extract actionable intelligence.

Dr. Paul Hewett gave a presentation on selecting, developing and validating risk models. Modified versions of the standard 1Box and 2Box "well mixed room" models were presented, along with several new models for scenarios that involve the use of local controls (e.g., some form of LEV, with or without recirculation of filtered air). The new steady state equations can be applied to constant emission scenarios, as well as cyclic and irregular emission patterns. A systematic procedure for calibrating models to work environments was also presented.

Dr. Jim Rasmuson spoke on applying various alternative risk acceptability criteria for chemical and physical agents, along with the importance of good risk communication techniques. He used asbestos as an example to apply mathematical models with associated disease incidence targets, relative risk with associated attributable risk fraction, cost-benefit determination, and life expectancy analysis. Such applications for asbestos suggest that treating fiber types with equal disease potency because of the precautionary principle, has exactly the reverse effect, e.g., amphibole asbestos exposure scenarios all yield quite unacceptable risk while chrysotile risk is generally acceptable at current occupational exposure standards; when the exposure risks of all different fiber types are "averaged," amphibole asbestos exposure risk of mesothelioma can be underestimated by up to more than a factor of ten. The models also demonstrated that the current occupational exposure standard for asbestos is inadequate to address challenges of exposures to naturally occurring amphibole asbestos and elongated mineral fibers that are present in mining, construction of dams, buildings, and roads.

Dan Hernandez presented an interesting talk of a project involving natural occurrences of asbestos at the Calaveras Dam construction in Northern California. The Calaveras Dam Replacement Project is a major construction project involving up to 400 workers using heavy earth moving equipment, blasting, drilling, rock crushing, and other techniques designed to move 11 million yards of earth. Much of this material is composed of serpentinite, blueschist, and other rocks that contain chrysotile, and a variety of amphibole mineral fibers including glaucophane, actinolite, tremolite, and other fibrous amphiboles. To date, over 2,000 personal, work area, and emission inventory related samples have been collected and analyzed by NIOSH 7400, NIOSH 7402, and CARB-AHERA methodology.

Dan's presentation provided an overall summary of the extensive exposure monitoring data for the project and discussed emission factor development and use of refined dispersion modeling to evaluate potential off site impacts at sensitive receptor locations. Also presented was a discussion of the model calibration using empirical data and the use of this predictive tool for planning control strategies designed to minimize off site risks.

Dr. Michael Larranaga presented a talk on communication of probability and risk concepts to various audiences. Inevitably, humans become attached and socially engaged to those that are similar to them through a phenomenon called preferential attachment. Preferential attachment exists in natural systems and is a form of self-organization, in which humans organize near those that speak similar social and professional languages and have similar cultural and professional norms. Industrial hygienists and members of a professional trade, tend to enjoy one another's

company socially and to communicate amongst ourselves professionally in an effort to improve workplace safety and health. A communication gap often arises when we, as industrial hygienists, interact and communicate with those outside of our professional norms. Hygienists can improve our communication to those that we are trying to affect by understanding that we need to speak a language that is easier to understand by those who we are trying to affect (workers) and those we are trying to convince of the importance of worker safety and health (workers, executives, and government). In order to affect change and reduce worker and organizational risk, we must communicate in a way that is understood by all stakeholders.

The meeting concluded with installation of new officers, recognition of outgoing board members and presentation of the Clayton Award. ***[Anna, please provide info on incoming and outgoing directors.]*** This year's George & Florence Clayton Award was presented to Hank Muranko. As part of his acceptance, Hank mentioned that he is indebted to his IH colleagues he has worked with over the years, especially those members of YPSW, and recognized his wife, Mary Ann. Due to a waterline break servicing the Bay Club Hotel and Marina the banquet was moved to the San Diego Yacht Club where refreshments were served and a good time was had by all after which the meeting moved to Anna's hospitality suite for some attitude adjusters.