

Proceedings of the 2014 University of California Center for Laboratory Safety Workshop

The goal of the University of California Center for Laboratory Safety (UCCLS) 2014 Workshop was to bring together researchers and Environmental Health & Safety (EH&S) professionals to facilitate multi-disciplinary discussions on laboratory safety in academic institutions. Moreover, the workshop aimed to generate research ideas and proposals on laboratory safety with the long-term goal of developing evidence-based safety programs. The workshop was attended by 82 individuals from 3 national laboratories, and 26 universities and colleges across the country, Mexico and The Netherlands. Forty-nine percent of the attendees were researchers including professors, lab managers and graduate students. EH&S professionals made up 47% and included directors and safety officers. Several presentations on laboratory safety were given including talks by three researchers who had received seed grant funding following the 2012 UCCLS Laboratory Safety Workshop. Work group sessions developed research ideas on three topics to improve the lab safety culture in academic institutions and optimize compliance with lab safety regulations; (1) Impact of Regulations and Policies on Lab Safety; (2) Carrots versus Sticks: Impact on Compliance and Safety; and (3) Impact of Beliefs and Attitudes on Safety. Based on an exit survey, 95% of the participants rated the workshop as overall productive or very productive, and 86% generated potential research ideas on laboratory safety. An added benefit of the workshop was that 76% of the participants changed their perception on laboratory safety and 86% collected ideas for overcoming barriers to improving research safety in their home institution or lab. Following the workshop, a Request for Proposals was sent to all meeting participants to support research projects in laboratory safety.

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WORKSHOP OBJECTIVES

One of the primary aims of the University of California Center for Laboratory

Safety (UCCLS) is to develop and optimize lab safety practices that are grounded on research-based evidence. Furthermore, UCCLS is tasked to make research outcomes broadly and readily accessible to the research, and health and safety communities through peer-reviewed publications and other outreach activities. To this end, UCCLS conducted its second laboratory safety workshop from April 30 to

May 2, 2014. UCCLS workshops have three broad objectives:

- Identify safety challenges associated with chemical and other hazards in research laboratories;
- From those challenges, establish research priorities for the study of laboratory safety;
- Promote collaborations between a diverse group of research scientists, and health and safety professionals to facilitate open dialog regarding laboratory safety.

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Most if not all regulatory safety policies for research laboratories are developed based on risk assessments of known hazards or implemented as a consequence of serious accidents that occurred in academic or industrial laboratories.¹ Implementation and enforcement of safety regulations generally follows a top-down approach mediated by Environment, Health and Safety (EH&S) professionals, under federal and state regulatory agencies'

guidelines and requirements.² It is widely acknowledged that an “us-versus-them” atmosphere has developed between researchers and EH&S professionals in many academic environments hindering the development of a strong safety culture in many institutions.² Further, with ever-changing laboratory research approaches and rapid development of new technologies there is the potential for creating new hazards with difficult to predict risks. Many EH&S professionals lack the expertise to adequately assess risks of cutting-edge science experiments, while the research community is often ignorant of legal safety requirements such as laboratory safety waste disposal and emergency planning. Thus, in their recent publication on promoting a culture of safety in academic chemical research, the National Research Council made several recommendations including to engage researchers in the assessment and prediction of risks associated with their work.² An important goal of UCCLS workshops on laboratory safety is to overcome communication barriers between researchers and EH&S experts to promote an understanding of each other’s expectations toward and roles played in laboratory safety.³

Relative to industrial settings, little research on laboratory safety in academic institutions has been conducted to date. Consequently, little is known about how effective safety measures are in preventing incidents including near misses in academic laboratories. One of the objectives of the 2014 Workshop is to decrease this knowledge gap in workgroups, comprised of researchers and

health & safety experts, who jointly brainstormed and developed research ideas on three topics:

- Impact of Regulations and Policies on Lab Safety.
- Carrots versus Sticks: Impact on Compliance and Safety.
- Impact of Beliefs and Attitudes on Safety.

Research ideas for each topic were advanced in two workgroup sessions on consecutive days of the one-and-a-half day workshop.

ATTENDEES

Workshop participants were invited based on their knowledge and expertise in laboratory safety and/or laboratory research and included 82 individuals, mostly from the United States. Of these, 47% were EH&S professionals while 49% were either directly or indirectly involved with research. Forty percent of the EH&S professionals were directors and 60% were officers or managers (Figure 1). Five of the workshop participants were academic administrators including UCLA’s Chancellor, Administrative Vice Chancellor, Associate Vice Chancellor for Research, and Assistant Vice-Chancellor-EH&S, demonstrating the high value that UCLA placed on the workshop, and signaling the key importance of lab safety to UCLA’s research community. The research community was represented by professors, lab managers or safety coordinators, research scientists, and

students and postdoctoral fellows. Attendees represented 3 national laboratories and 26 universities and colleges across the country, Mexico and The Netherlands. Three workshop participants came from companies including an architectural firm, a software and a consulting company, and one represented the American Society of Safety Engineers (ASSE) foundation with interest in work safety. The diversity of participants made this workshop an enriching and enjoyable experience. Some were surprised to find “that academia suffers from similar challenges as national laboratories”. A researcher learned “that E&HS people are passionate about safety”, while several E&HS specialists stated that she/he gained a “better understanding of the principle investigator’s perspective”.

WORKSHOP AGENDA

The workshop was preceded by a welcome dinner, during which UCLA Chancellor Gene Block reiterated the importance he personally places on laboratory safety at UCLA. Participants enjoyed the opportunity to meet with the Chancellor and get to know each other. We found that this warm-up evening facilitated interactions between the participants during the ensuing two days.

Following opening remarks on Day 1 of the workshop, Nathan Watson, President and CEO of BioRAFT, presented the outcome of an international survey on laboratory safety. The survey had been conducted by Nature Publishing Group (NPG), BioRAFT and UCCLS, and had been pilot tested at the 2012 UCCLS Workshop on Laboratory Safety. The initial analysis of the survey showed that many researchers had experienced accidents throughout their careers, and 30% had witnessed accidents that required professional medical help.⁴

Three researchers presented the outcomes of their research projects, all generated as a result of the 2012 Workshop³; all three were funded by UCCLS seed grants. Dr. Nancy Wayne, Professor of Physiology and Associate Vice Chancellor for Research at UCLA, examined the risks to human

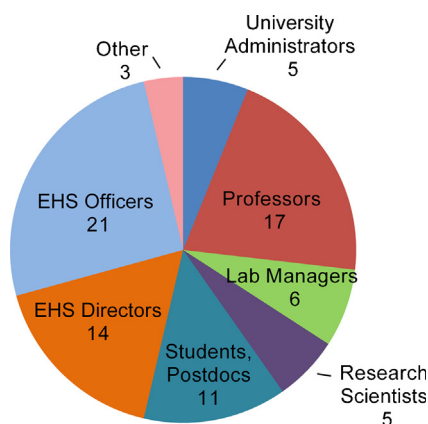


Figure 1. Attendees of the 2014 Workshop for Laboratory Safety (n = 82).

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