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2018 National Occupational Injury Research Symposium: Advancing Worker Safety in the 21st Century through Research and Practice

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Abstract

About NOIRS 2018—The National Occupational Injury Research Symposium (NOIRS) is the only regularly held research forum in the United States dedicated to occupational injury research and prevention. The 7th NOIRS, sponsored by the National Institute for Occupational Safety and Health (NIOSH) and several partners, was held October 16–18, 2018 in Morgantown, West Virginia. The symposium theme was “Advancing Worker Safety in the 21st Century through Research and Practice.”

Article Selection—This special issue of the *Journal of Safety Research* highlights exemplary research presented at the symposium, making it available to those who did not attend. The articles included in this issue address leading causes of occupational injury, cross-cutting issues such as organization-based prevention, and emerging issues associated with advancements in technology. The articles draw from public health, the social sciences, and engineering disciplines.

Concluding Remarks—Research presented at NOIRS over the years has expanded beyond describing occupational injuries and developing and evaluating intervention approaches, to studying how to ensure that research is put into practice. While there has been progress in advancing the prevention of occupational injuries, there is more to be done, and attention is needed to projected transformations in workplaces, work and the workforce. NIOSH looks forward to

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working with partners to co-sponsor the 8th NOIRS, tentatively planned for the fall of 2021, to present state-of-the art research to advance worker safety.

Keywords

injury prevention; occupational; conference

About NOIRS

The National Occupational Injury Research Symposium (NOIRS), held October 16–18, 2018 in Morgantown, West Virginia, was the 7th in a series that was initiated in 1997. NOIRS is the only regularly held research forum in the United States dedicated to occupational injury and prevention research. We are appreciative of the *Journal of Safety Research* partnering on this and previous special issues that highlight some of the high-quality research presented at NOIRS, making the research available to a larger audience than symposium attendees.

NOIRS 2018 was conducted in partnership between the National Institute for Occupational Safety and Health (NIOSH), National Safety Council, American Society of Safety Professionals, Society for the Advancement of Violence and Injury Research, Board of Certified Safety Professionals, and West Virginia University (School of Public Health, Safety and Health Extension, and Benjamin M. Statler College of Engineering and Mineral Resources). This collaboration fostered broad expertise in developing the scientific program, perspectives and inclusion of safety practitioners who are the ultimate consumers of this research, inclusion of students who are the future for research and practice, and resources to provide a dynamic forum that encouraged networking among symposium attendees (Photo).

More than 330 persons attended NOIRS 2018. Most were scientists who work at NIOSH, universities, other federal and state government agencies, and research organizations. There was a small contingent of researchers from outside the United States. Safety practitioners and students also attended the symposium. One of the symposium highlights was a dynamic closing plenary that included a panel from different backgrounds who provided their unique perspectives looking to the future on opportunities and challenges for worker safety:

- industry (Michael Formaini, CSP, Vice President Health Safety & Environmental & Quality for Matrix North American Construction),
- labor (Rebecca Reindel, MPH, Senior Safety and Health Specialist, AFL-CIO)
- a federal regulatory agency (Andrew Levinson, MPH, Deputy Director, OSHA Directorate of Standards and Guidance),
- an occupational safety training program (Mark Fullen, EdD, Professor and Director, West Virginia University Safety and Health Extension),
- a state public health agency (Robert Harrison, MD, MPH, Senior Scientist, California Department of Public Health), and
- a student (Kayla Faust, PhD Candidate, The University of Iowa College of Public Health).

Article Selection

In selecting articles to feature in this special issue, we sought to include presentations that reflected the two organizing principles for the symposium: 1) the theme, and 2) the National Occupational Research Agenda (NORA) for Traumatic Injury Prevention (NORA Traumatic Injury Prevention Council, 2018). We also wanted to include research from different disciplines, including public health, social and behavioral sciences, and engineering.

Theme- The NOIRS 2018 theme was “Advancing Worker Safety in the 21st Century through Research and Practice.” This special issue includes three short commentaries that embody this theme. The commentaries by Joel Haight, PhD, PE, and Carole Franklin et al. address rapidly advancing technologies associated with the 4th industrial revolution, which is transforming how work is conducted (Schwab, 2016; NIOSH 2020). The commentary by Cunningham et al. addresses translation research, which rigorously studies how research effectively moves into practice.

NORA for Traumatic Injury Prevention- this research agenda was published just prior to NOIRS 2018. NORA is a public/private partnership comprising ten industry sectors and seven health and safety cross-sectors. NORA agendas are intended to stimulate innovative research and improved workplace practices through 2026. While NIOSH is the steward for NORA, the intent is for the agenda to guide all those interested in improving worker safety through research and the translation of research to practice. NORA agendas are specific to the United States but have relevance to other developed nations. The agenda for the Traumatic Injury Prevention Cross-Sector includes eight objectives.

Several articles in this special issue address major objectives in the Traumatic Injury Prevention Agenda. Four of these objectives address the leading causes of occupational injuries: motor vehicle crashes, falls, violence, and machines and evolving technologies. The article by Guan et al. has implications for motor vehicle safety of emergency medical services workers. Articles in this issue by Hemler et al. and Robson et al. address occupational falls, with the Hemler et al. article addressing falls on the same level, and the Robson et al. article addressing falls from height. Articles by Murray et al. and Brown et al. address violence. The commentaries by Haight and Franklin et al. address machines and emerging technologies.

Four additional objectives are cross-cutting: non-standard work arrangements, occupational safety equity across worker populations, organization-based injury prevention, and rigorous evaluation of occupational injury prevention programs. This special issue includes articles addressing three of these cross-cutting objectives. The occupational safety equity across worker populations objective highlights the importance of research on industries and occupations at high risk for traumatic injury and research by worker demographics. Several articles in this special issue focus on industries and occupations with higher risks for traumatic injury: construction (Schwatka et al., Dale et al, Robson et al.), mining (Yorio et al), public safety (Guan et al., Davis et al., Murray et al), and healthcare (Figueiro and Pedler, Lopez Gomez et al.). The article by Brown et al. focuses on young workers. Several articles address organization-based injury prevention (Schwatka et al., Yorio et al., Davis et

al., Dale et al.). Five articles use rigorous methods to evaluate occupational injury prevention programs or strategies (Schwatka et al., Figueiro and Pedler, Davis et al., Dale et al., Robson et al.).

Multidisciplinary research- The causes and prevention of occupational injuries are complex and interconnected, including physical hazards, sociocultural dynamics, and worker characteristics. Solutions to preventing occupational injuries benefit from multiple perspectives and scientific disciplines. Thus, in selecting research to highlight in this special issue, we sought to include work from multiple disciplines. Most articles use public health and social science approaches. Two articles (Lopez Gomez et al., Gu et al.) explore associations between mental health and occupational injury. Five articles draw from engineering principles and approaches (Haight, Franklin et al., Guan et al., Hemler et al., Figueiro et al.).

Concluding Remarks

Since the first NOIRS in 1997, worker safety has improved in the United States and research presented at NOIRS has become more robust. In 2018, there were about 1,000 fewer traumatic occupational injury deaths than in 1997, and the rate declined from 4.7 to 3.5 deaths per 100,000 fulltime equivalent workers (Bureau of Labor Statistics, 2020). Research presented at NOIRS over the years has expanded beyond describing occupational injuries and developing and evaluating intervention approaches, to studying how to ensure that research is put into practice (Cunningham et al). While there has been progress in advancing the prevention of occupational injuries, there is more to be done. We need to be attentive to dramatic changes associated with the 4th industrial revolution and other changes described in the NIOSH Future of Work Initiative (Schwab, 2016; NIOSH 2020).

NIOSH looks forward to working with partners to co-sponsor the 8th NOIRS, tentatively planned for October 2021. We anticipate that the next NOIRS, in addition to addressing NORA Traumatic Injury Prevention objectives, will address projected transformations identified in the NIOSH Future of Work Initiative (NIOSH 2020). These include changes in the workplace (such as non-standard work arrangements), work (such as increased automation and digitalization), and the workforce (increased diversity).

Author Biographical Sketches

Dawn N. Castillo, MPH: Dawn Castillo is the Director of the Division of Safety Research at the National Institute for Occupational Safety and Health (NIOSH)- the convener for the National Occupational Injury Research Symposium (NOIRS). She received her MPH in epidemiology from UCLA in 1985. She began her NIOSH career in late 1991 as an epidemiologist and moved into research management positions becoming a Division Director in 2011. She is also the manager for the NIOSH Traumatic Injury Prevention Cross-Sector Program and co-chair of the National Occupational Research Agenda Council. She is interested in facilitating and contributing to occupational safety research that melds relevant disciplines such as epidemiology and engineering and addresses occupational safety concerns of the present and future.

Christine R. Schuler, PhD: Christine Schuler is the Associate Director for Science in the Division of Safety Research, NIOSH. In 1999 she received a PhD in epidemiology from the University of North Carolina at Chapel Hill School of Public Health, and in 1992 received a Master of Arts degree in social psychology from Temple University. In 1999 she joined NIOSH as a research epidemiologist in the Division of Respiratory Disease Studies and became part of DSR as ADS in 2014. She is also the coordinator for the Traumatic Injury Prevention Cross-Sector Program. She has broad interest in the process of conducting quality research across disciplines.

Cammie Chaumont Menéndez, PhD: Cammie Chaumont Menéndez is a research epidemiologist within the Analysis and Field Evaluations Branch of the Division of Safety Research at NIOSH. She received her PhD in epidemiology through the NIOSH-funded Education and Research Center at the University of Texas Houston-Health Sciences Center School of Public Health in 2007. She was assigned to the Division of Safety Research as an EIS Officer (Class of 2007) and has since balanced her research projects with participating in the NIOSH Program Portfolio, public health emergency deployments and committees advancing diversity and inclusion. Her interests lie in applying the Total Worker Health approach to occupational safety and evaluating the effectiveness of strategies and technologies designed for injury prevention.

Sydney Webb, PhD: Sydney Webb is a health communication specialist at NIOSH. She earned her PhD in communication studies specializing in health communication and instructional communication from West Virginia University. Prior to joining NIOSH in 2014, she was the director of member communications and engagement for Nurtur Health, a Centene health and wellness company. Her expertise lies in campaign strategy and health literacy. At NIOSH she is responsible for communication planning, development, implementation, and evaluation. She also serves as the Assistant Coordinator for the Traumatic Injury Prevention Cross-Sector Program.

Sergey Sinelnikov, MPH: Sergey Sinelnikov, MPH is a researcher at the National Safety Council (NSC), a mission-based organization, focused on eliminating the leading causes of preventable death and injury. Since joining the NSC in 2001, Mr. Sinelnikov has conducted research involving the evaluation of injury prevention interventions delivered in community, workplace, and transportation settings.

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Photo.
Lunchtime topic tables at 2018 NOIRS.