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2022 National Occupational Injury Research Symposium (NOIRS): Preventing workplace injuries in a changing world

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ABSTRACT

About NOIRS: The National Occupational Injury Research Symposium (NOIRS) is the only conference solely dedicated to occupational injury research and prevention. The 8th NOIRS, sponsored by the National Institute for Occupational Safety and Health (NIOSH) and several partners, was held on May 10–12, 2022. NOIRS was held entirely virtually in response to concerns of the COVID-19 pandemic and honoring the symposium theme "Preventing Workplace Injuries in a Changing World."

About this Special Issue: The intent of this issue is to highlight the breadth of high-quality presentations at NOIRS, and to make them available to those who did not participate in the conference. This issue includes three short communication articles and nine research articles. Featured research articles in this special issue span a wide variety of methods, data sources, and worker populations. They address leading and emerging causes and contributors to occupational injury in a range of industries and occupations.

Concluding Remarks: We hope that this special issue provides readers with a view into some of the research presented at the 2022 NOIRS. We also hope the articles are useful for research and practice, and thinking toward the future.

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1. About NOIRS

The 2022 National Occupational Injury Research Symposium (NOIRS) was held May 10–12, 2022. NOIRS is a recurring conference, held approximately every three to five years since 1997. It is the only regularly held conference focused solely on occupational injury prevention.

The conference theme was "Preventing Workplace Injuries in a Changing World." As a prime example of the changing world, for the first time ever, NOIRS was held virtually. Initial plans were to hold an in-person conference, but plans switched to a virtual format because of concerns about the safety and health of participants due to the COVID-19 pandemic. A benefit of holding the conference virtually was that some presenters and participants who might not have attended the conference in-person due to expenses and/or inconvenience, could participate.

NOIRS is a collaborative effort. The National Institute for Occupational Safety and Health (NIOSH) has a lead role in organizing and executing the conference. NOIRS is enhanced by the support

and contributions of co-sponsors: National Safety Council (NSC), American Society of Safety Professionals, Board of Certified Safety Professionals (BCSP), BCSP Foundation, and West Virginia University's School of Public Health, Safety and Health Extension, and Benjamin M. Statler College of Engineering and Mineral Resources. Co-sponsors provided input to the scientific program and helped publicize the event. The NSC led the post-conference evaluation and supported this special issue of the *Journal of Safety Research*. Co-sponsors helped shape the conference to appeal to, and foster participation from, different facets of the occupational injury research community -- researchers, safety professionals who are the end-users of research, and students who are preparing for careers as researchers or practitioners.

NOIRS 2022 presentations addressed the leading and emerging causes of injury and reflected a breadth of occupational injury disciplines. The virtual platform provided an opportunity for 365 researchers, safety professionals, university faculty, and students to tune in to 41 sessions and exchange comments and questions using a text chat function. Attendees represented federal and state governments, universities, non-profit organizations, and industry from the United States and other countries, with at least 28 international attendees. Conference registrants were able to view presentations online for two months after the conference. There

were more than 600 on-demand views of presentations after the conference.

Conference organizers provided an online post-conference evaluation to obtain feedback from attendees. We received positive feedback ('mostly' or 'completely' provided a learning experience) on the opening (85.3%) and closing (76.2%) plenary sessions, and scientific presentations (86.6%). We were particularly encouraged to see that more than half of the respondents were attending their first NOIRS. Respondents were less satisfied with the opportunities to interact with conference participants and speakers (62.2 and 47.1%, respectively, selecting 'not at all' or 'somewhat'). When asked how they would make use of what was learned at NOIRS, the most frequent responses were to develop new ideas for conducting research, to develop new ideas for implementing research into practice, and to explore a new area of research. Ultimately, almost all respondents would recommend NOIRS to others (98.2%).

2. About this special issue

The intent of this issue is to highlight the breadth of high-quality presentations at NOIRS, and to make them available to those who did not participate in the conference. In addition to this Special Issue, abstracts for all presentations are available in the NOIRS Program Agenda Book on the NIOSH website (https://www.cdc.gov/niosh/noirs).

This issue includes three short communication articles and nine full-length research articles. The short communication articles are based on an opening plenary presentation (Gantt), a closing plenary presentation (Olawoyin and Ogutu), and a session focused on the "changing world" (Lincoln and Elliott). The article by Gantt provides a unique perspective on how occupational injury research might be improved from the perspective of a seasoned occupational safety practitioner who has been an end-user of research and is now entering the research field. The article by Olawoyin and Ogutu provides a view from academia on insufficient racial/ethnic diversity of students and faculty in occupational safety and health programs, and provides recommendations for remedying these inequities. The article by Lincoln and Elliott describes some research presented in a session on robotics in agriculture, and ongoing work to improve knowledge about occupational safety implications of emerging technologies for agriculture.

Featured research articles in this special issue include a variety of methods, data sources, and worker populations. They address leading and emerging causes and contributors to occupational injury in a range of industries and occupations. Many researchers used epidemiologic, engineering, and human factors methods. One article describes an emerging engineering method of computer simulations to assess the ability of youth to operate all-terrain vehicles (Khorsandi et al.). Several sources of data were used such as workers' compensation claims (Socias-Morales et al.; Schofield & Clarke-Sather), OSHA Severe Injury Reports (Gomes et al.), motor-vehicle crash reports (Shipp et al.), and a unique fire service reporting system (Taylor et al.). Articles represented a range of leading causes of injury and potential emerging causes such as motor-vehicle crashes (Shipp et al.; Wingate et al.), violence (Taylor et al.), falls (Hemler & Beschorner), machines (Khorsandi et al.), emerging robotics technologies (Lincoln & Elliott; Sun et al.), and fatigue (Wingate et al.). Featured articles address research across different industry sectors (Gomes et al.; Hemler & Beschorner) and focused on high-risk industries, such as construction (Socias- Morales et al.; Sun et al.), agriculture (Lincoln & Elliott; Schofield & Clarke-Sather; Khorsandi et al.; Shipp

et al.), public safety (Taylor et al.), and oil and gas extraction (Wingate et al.).

3. Concluding remarks

The world has changed considerably since the first NOIRS was held in 1997, and continues to do so at a rapid pace (Tamers et al., 2020). Critical changes are occurring to the workplace: such as how work is organized and work arrangements, and how work is done (including increased use of robotics, artificial intelligence, and sensors); and in the workforce (including increased participation by diverse racial/ethnic groups). These changes have implications for worker safety and need to be addressed by occupational injury researchers and safety professionals.

Occupational injury research and practice must attend to both legacy hazards and emerging issues. The latest occupational injury data from the Bureau of Labor Statistics (BLS) demonstrate upticks in deaths and injuries (BLS 2022a, 2022b). Large numbers of workers continue to be killed and injured by legacy hazards such as motor-vehicle crashes, falls, violence, contact with machines, and struck by/caught in events. There are also emerging issues, such as drug overdoses at work, that will require holistic approaches to worker well-being, such as the Total Worker Health® approach (NIOSH, 2023). And there are growing disparities in occupational injuries among demographic groups, raising the urgency for focused interventions to close these gaps.

We hope that this special issue provides readers with a view into some of the research presented at the 2022 NOIRS. We also hope the articles are useful for research and practice, and thinking toward the future. We look forward to the next NOIRS, and the opportunity to bring together researchers, practitioners and students to share research, network, and bridge research and practice in a changing world.

4. Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

And, thanks to all the presenters, the authors of articles included in this issue, article reviewers, and NOIRS attendees.

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Christine R. Schuler, PhD: Christine Schuler is retired. She was the Associate Director for Science (ADS) in the Division of Safety Research, NIOSH when the 2022 NOIRS was held. 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 was also the coordinator for the Traumatic Injury Prevention Cross-Sector Program. She had broad interest in the process of conducting quality research across disciplines.

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Sergey Sinelnikov, MPH (ORCID: 0000-0001-5088-7146): Sergey Sinelnikov 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. He holds a Master of Public Health degree in Epidemiology from Yale University.