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Occupational Injury Risk Assessment: Perspective and Introduction to the First Special Issue[1]

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Since Congress passed the Occupational Safety and Health Act of 1970, occupational injuries have been increasingly recognized as a major source of life long disability and serious economic loss to workers and employers. The Act established the National Institute for Occupational Safety and Health (NIOSH), and charged it with the enormous responsibility of conducting research and prevention efforts to assure every working man and woman safe and healthful working conditions. Since the 1970s, the numbers and rates of work place injuries and deaths have decreased substantially (Stout *et al.* 1996; CDC 1998). Moreover, the recognition of both the tremendous toll and the high prevention potential of occupational injuries has increased. However, we are far from eliminating the hazards and risks of injury from our work places, or from dispelling the perception among many that such risks are acceptable as "part of the job." The economic costs to our society of occupational injuries and illnesses rival those of even cancer and heart disease, yet the scientific investment in causes, treatment, and prevention is comparatively trivial (Leigh *et al.* 1997). Prevention of occupational injuries is not only possible, but is essential to improving the quality of life for millions of American workers. It is also an enormous task and requires a coordinated effort of public and private resources to adequately address the problem. To this end, NIOSH unveiled the National Occupational Research Agenda (NORA) in April 1996. With numerous partners, including those in academia, industry and labor, NIOSH developed NORA to provide a framework to guide occupational safety and health research through the next decade for the entire occupational safety and health community (NIOSH 1996;

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Rosenstock *et al.* 1998). The fiscal restraints on occupational safety and health research accentuate the need for a coordinated and focused research agenda, and for harmonization of public and private research efforts and resources.

Out of a tremendous effort, involving sometimes heated debate and discussion about scientific uncertainty, there evolved a remarkable consensus about the top 21 research priorities. The identification and definition of the priority areas of NORA were developed from the broad input of over 500 organizations and individual comments. The NORA effort to guide and coordinate national research was developed to address the most important needs in occupational safety and health and to target efforts to reduce the devastating and unnecessary loss of life and life quality among our workforce.

So that the implementation of NORA would evolve to identify and facilitate more specific and focused research, separate teams of occupational safety and health professionals from industry, labor, academia, federal and state agencies were formed to address each of the 21 research priorities. The *Risk Assessment Methodology Team* and the *Traumatic Occupational Injury Research Team* are two of the results of the NORA implementation process. In an ongoing effort to develop the research agenda in these two specific areas, both teams have independently identified the need for better methodology in the identification of groups of workers at greatest risk for traumatic injury. The *Traumatic Occupational Injury Research Team* recently published a document describing the research needs and priorities for advancing the knowledge and prevention of traumatic occupational injuries (NIOSH 1998). The document presents a broad research framework for interdisciplinary research and provides a basis for identifying issues and priorities for collaborative research efforts. The Team's purpose was to provide a reference and structure for traumatic occupational injury research which could be used to initiate and facilitate partnerships and collaborative research to further prevention of worker injuries and deaths.

In October 1997, NIOSH, the *Traumatic Occupational Injury Research Team,* and eleven other partnering organizations jointly sponsored The National Occupational Injury Research Symposium (NOIRS) in Morgantown, West Virginia. The NOIRS was the first public forum for the discussion of the feasibility of adapting traditional risk assessment methods for a better understanding of traumatic occupational injury. Of the nearly 200 research presentations given at the NOIRS, one invited session was titled: *Occupational Injury Risk Assessment* and provided the impetus for development of this special topic issue of the *Journal of Human and Ecological Risk Assessment.* Interested readers may find more information through the world wide web about NORA (http://www.cdc.gov/niosh/norahmpg.html) and NOIRS (http://www.hgo.net/~noirs/noirs.html), which includes abstracts of the oral and poster presentations.

This issue of the *Journal of Human and Ecological Risk Assessment* represents continuing efforts to harness the traditional methods of risk assessment to address the unique problems of occupational injury. Contributors to this special issue address a wide range of topics and interpret the notion of risk assessment for occupational traumatic injury from a variety of different viewpoints. The broad collection of scientific studies provide a foundation for future research that holds promise to significantly enhance understanding of the multi-factorial nature of both fatal and non-fatal occupational traumatic injury. The contributions to this special issue

include papers that explore innovative methods for use in injury risk assessment and papers that address risk assessment for specific topics or specific populations. The products exhibited here represent exceptional efforts on the part of the contributors to meet the challenge put forth by the NORA *Risk Assessment Methodology* and *Traumatic Occupational Injury Research Teams*.

The dedication of an entire issue of the *Journal of Human and Ecological Risk Assessment* to the topic of risk assessment for occupational injury underscores the increasing significance of this field of research and provides a foundation for advancing the development and application of risk assessment methodology for the prevention of occupational injuries.

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