A Commentary on Fall-from-Elevation Research

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Falls from elevation are a leading cause of work-related fatal incidents. A total of 609 fatal occupational falls from elevation were recorded in the United States in 2008, as reported by the Census of Fatal Occupational Injuries [BLS 2010a]. Most of the incidents occurred in the construction and service sectors; about 21% of the incidents involved falls from roofs, 20% from ladders, and 15% from non-moving vehicles. In addition, there were an estimated 67,510 nonfatal fall-from-elevation injuries in private industry in 2008 [BLS 2010b]. Of the incidents, the highest frequency of falls occurred in the construction specialty trade (11,110), followed by the administrative and support services (4,290) and the truck transportation group (3,790).

The National Institute for Occupational Safety and Health (NIOSH) has made fall-from-elevation research a priority, and over a period that now extends over several decades, has devoted dedicated laboratories, specialized expertise, cutting-edge equipment and focused resource allocation to the advancement of knowledge related to the causes and amelioration of fall-related occupational injury. A research program and various individual projects have been developed, with oversight, expert opinion and approval from stakeholders and peers. Projects in diverse areas of fall causation, risk exposure and technology-based hazard have competed for funding, been successfully conducted, and have had findings and recommendations widely disseminated. NIOSH strives to advance knowledge and international leadership in this area through the seamless development of a research program that calls for, and utilizes, the best in American and international research and engineering efforts, sincere solicitation of input from affected populations, thought-leaders, academics and peers, and international collaboration to address the diverse and various causes of injury from this source.

Any successful research program must allow for the simple fact that tools and methods of performing work change over time. NIOSH is focused on historical exposures and established risks for fall-related injury, but is additionally focused on emerging technology and work methods, because emerging technology allows for the simultaneous development of safe-by-design structural intervention and prevention methods, and because emerging technology and work methods rapidly become established technology and methods, in the quickly changing work environment of the modern world.

Because NIOSH effectiveness is maximized through targeted research on leading and emerging causes of injury, NIOSH has carefully assessed and determined research priorities, in order to maximize program relevance and impact.

NIOSH priorities have been collaborative and carefully established through consultation with experts, oversight groups, and peers; these priorities have been clearly and widely disseminated in NIOSH source documents and on its website. NIOSH efforts will be focused on reducing fall incidents in the construction, services, transportation, wholesale and retail trade, and in the public safety industries. Factors contributing to fall incidents addressed by NIOSH include personal parameters, task-related elements, and environmental issues.

Studies of the factors and their interactions provide a scientific basis for bettering fall-prevention strategies.

The collection of 23 fall-from-elevation manuscripts that follow address fall risk and prevention in various industries, and were selected for presentation in accord with the above-mentioned NIOSH priority goals. They were presented in the **Fall from Elevation** section of the **2010 International Conference on Fall Prevention and Protection** held in Morgantown, West Virginia, USA, May 19-20, 2010. The authors came from academia, military, government agencies, private industries, and consultant firms, and from five different countries. The presentations were organized into four categories: Human Performance, Structure Performance, Ladders and Stairs, and Hazard Recognition. Subject matter related to human performance included postural control at elevation and fall-control technologies during construction work, truck egress safety, and factors affecting human hand and arm capacities in hanging onto an object in recovering from a fall. The structure performance papers dealt with the use of scaffolds, aerial lifts, roof-railing systems, wood joists, and skylights, with a focus on protecting or resisting human falls. The ladder and stair papers covered human-system interactions; recommendations were made to increase the stability of stepladders and extension ladders, to prevent falls on the stair, to ascend and descend fixed ladders safely, and to properly label non-self-supporting ladders. Additional papers reported risk factors and hazard recognition associated with residential construction workers, ironworkers, and commercial building workers in different countries.

These papers not only remind us the challenges we are facing but also the opportunities for us to collaborate in addressing global concerns on human suffering and the burden to the community due to workplace falls from elevation. NIOSH wishes to extend its sincere thanks to all authors for sharing their knowledge and experience with conference attendees and the global safety research community as a whole.

References

BLS [2010a]. Fatal occupational injuries by industry and event or exposure, all United States, 2008 [www.bls.gov/iif/oshwc/cfoi/cftb0232.pdf]. Date accessed: September 14, 2010.

BLS [2010b]. Number of nonfatal occupational injuries and illnesses involving days away from work by industry and selected events or exposures leading to injury or illness, 2008 [www.bls.gov/iif/oshwc/osh/case/ostb2086.pdf]. Date accessed: September 14, 2010.

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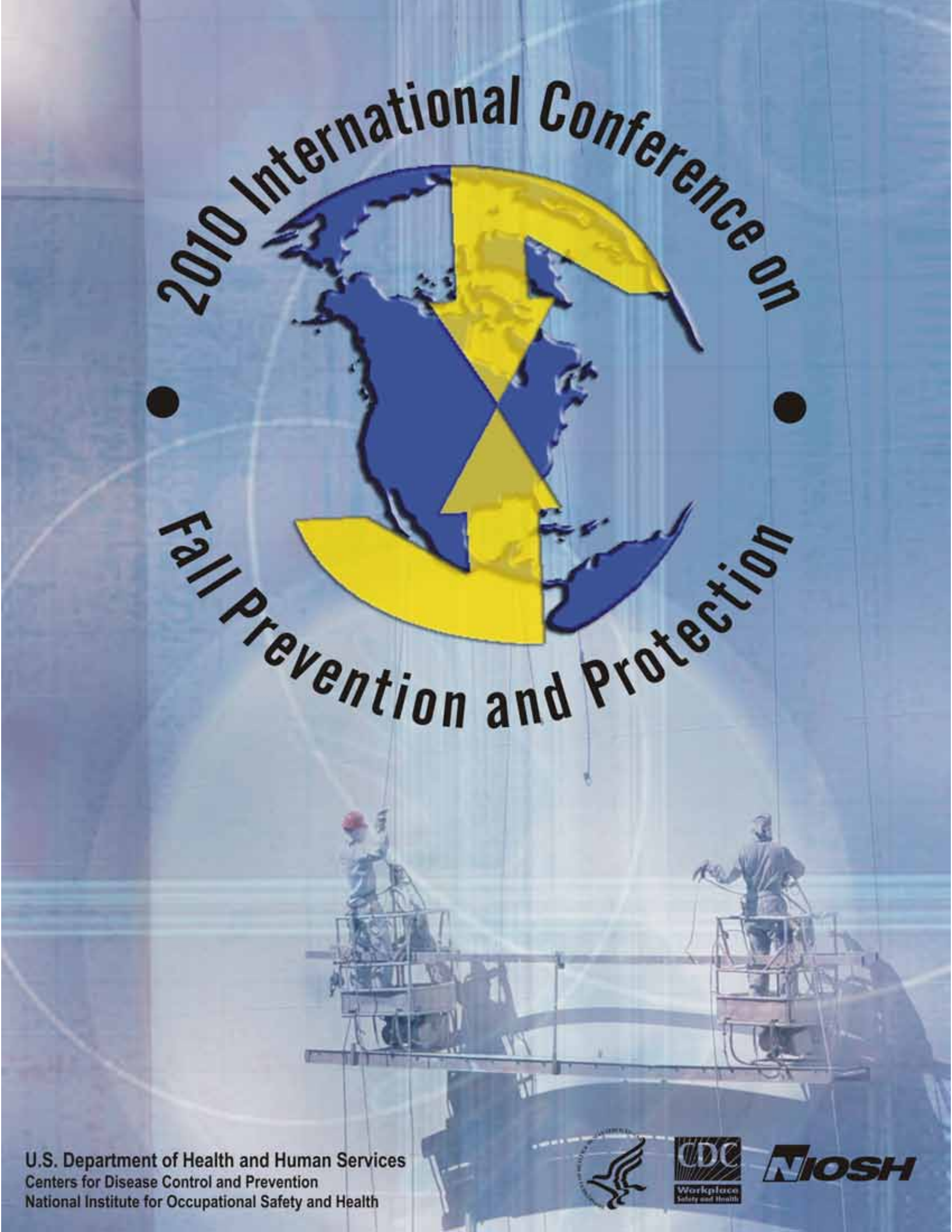

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Proceedings of International Conference on Fall Prevention and Protection

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DHHS (NIOSH) Publication No. 2012-103

November 2011

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