

# from **Research** to **Reality**

Winter 2008

Liberty Mutual Research Institute for Safety

## Workplace Safety Index

Looking Back:  
Origins of a  
National Metric

The Most Disabling  
Workplace Injuries  
Cost Industry  
an Estimated  
\$48.3 Billion

Providing Direction in  
Occupational Safety



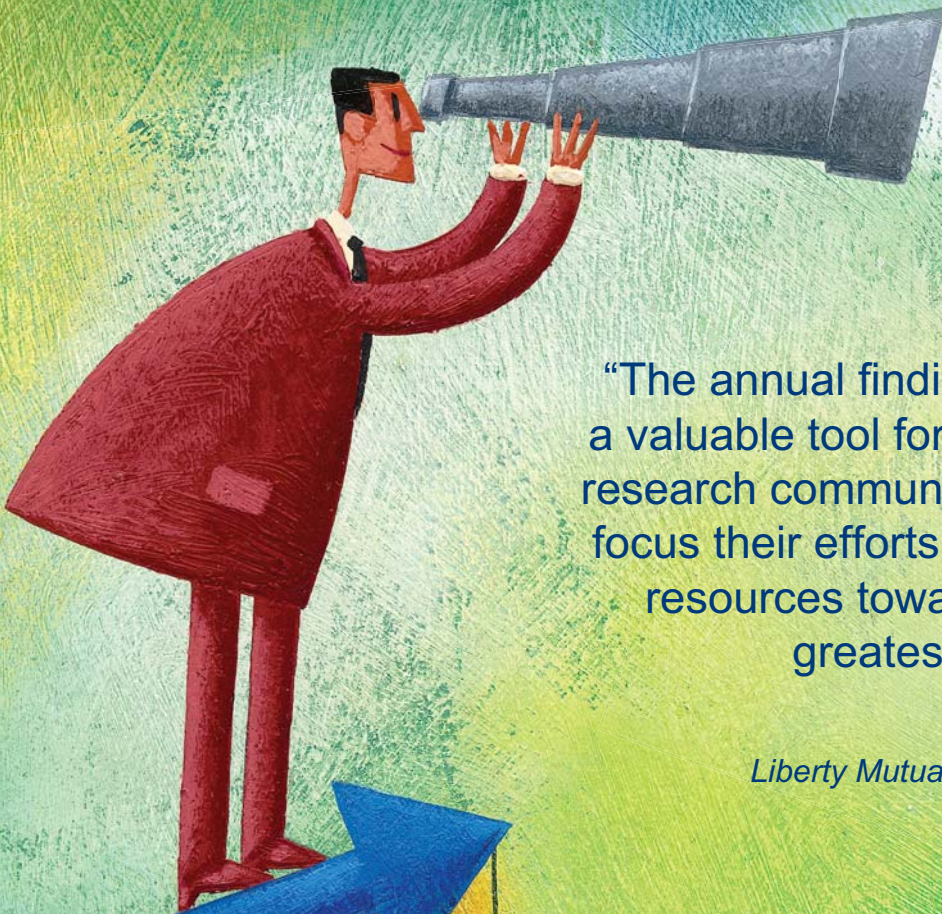
Vol. 11 No. 1

# Workplace Safety Index

## Looking Back: Origins of a National Metric

In July of 2000, the Liberty Mutual Research Institute for Safety began an initiative to develop a reliable, annual ranking of the 10 leading causes of disabling workplace injuries and their direct costs to industry. Under the leadership of former Director Tom B. Leamon, Ph.D., a core group of four scientists was assigned to the project.

Five months later, the inaugural Liberty Mutual Workplace Safety Index was issued. Since that first year, the Index has been released annually providing the latest available data to help businesses, researchers, and safety professionals identify ways to reduce disabling workplace injuries and their associated costs.



“The annual findings have become a valuable tool for the business and research communities, helping them focus their efforts and allocate their resources toward the areas of greatest need.”

*Y. Ian Noy, Ph.D., Director  
Liberty Mutual Research Institute for Safety*

*From Research to Reality*

## A Concept Emerges

According to Director of Research Operations Theodore Courtney, M.S., C.S.P., the Workplace Safety Index concept emerged from the Institute's early work on injury costs, specifically, low back pain and upper extremity musculoskeletal injuries. "We saw a huge demand from the scientific and business communities for these earlier cost papers and recognized a gap in the information available to researchers and practitioners. There was no summary-level statistic to illustrate the cost burden of U.S. occupational injuries," says Courtney, who was the program manager for the inaugural Workplace Safety Index.

"While the challenges in front of us were considerable, we were confident that we could develop an estimate of the overall workplace injury cost burden," he explains. At the time, the team noted that most occupational injury reports focused on either the nature of injury or body parts injured. While very informative, these reports dealt with injury characteristics after the fact – the *what* of the injury. To better address prevention, the team determined that the Index should focus on the *how* of the injury (the event that caused it) and the associated costs.

## The Evolution of the Index

The goal was to combine cost data from Liberty Mutual's workers compensation claims with frequency data from the U.S. Department of Labor's Bureau of Labor Statistics (BLS) annual survey of U.S. occupational injuries.

"The problem," explains Helen Marucci-Wellman, M.S., research scientist and principal investigator of the Workplace Safety Index team, "was that the two sets of injury narratives did not necessarily use the same terminology to describe the same events. We needed to develop common definitions and a common language." For example, the term "overexertion" had to reflect the experiences of people whose injuries occurred as a result of lifting, pushing, pulling, or carrying an object. "This type of consistency had to be present for all of the causes studied," explains Marucci-Wellman. "Only by comparing apples to apples could we ensure sound data linkage and the most accurate rankings possible."

The research team also made a key methodological decision to focus the Index on the most disabling in-

juries, defined as those resulting in six or more days away from work. "To maintain the strength of the data, it made sense to align our cost data with BLS frequency data for injuries involving six or more days away from work. This methodology allowed us to provide a solid estimate of actual workers compensation dollars paid out," explains Marucci-Wellman.

Finally, to broaden the study's findings, the team compared the relative proportions of each injury cause to national estimates of the cost of workers compensation benefits from the National Academy of Social Insurance (NASI), which includes cost data from a broad range of insurers. By including NASI data, the Workplace Safety Index could cover groups missed by the BLS survey and be more representative of the national experience of disabling occupational injuries.

"We faced many other obstacles and challenges in developing the inaugural Workplace Safety Index. But, our primary goal was to work with the strengths of the various data sources to produce the best achievable estimates," notes Marucci-Wellman.

## The Workplace Safety Index is Unveiled

The first Workplace Safety Index, released at the end of 2000, garnered a positive response in both the occupational safety community as a whole and within Liberty Mutual. Industry executives began to take notice of the national cost burden of injuries and gained a better understanding of what drives the costs. In the scientific community, the Index began to play a role in helping researchers better focus their resources and efforts. In addition, Liberty Mutual's Loss Prevention field organization immediately began using the Index with corporate safety professionals to help reduce workplace injuries.

Over the years, mainstream and business media, such as *USA Today*, *US News and World Report*, the *Wall Street Journal*, and the *Boston Herald*, have published the Index findings, as have business and safety-oriented publications, such as *Chief Financial Officer*, *Risk and Insurance*, and *Occupational Hazards*. "This level of visibility has helped the Workplace Safety Index work its way into the fabric of the health and safety discussion in the U.S.," says Institute Director Y. Ian Noy, Ph.D. "The annual findings have become a valuable tool for the business and research communities, helping them focus their efforts and allocate their resources toward the areas of greatest need."

# The Most Disabling Workplace Injuries Cost Industry an Estimated \$48.3 Billion

Between 1998 and 2005, the real (inflation-adjusted) cost of the most disabling workplace injuries increased nearly four percent, despite a concurrent 21 percent decrease in the frequency of occupational injuries.\* These findings, and many others, are presented in the 2007 Liberty Mutual Workplace Safety Index.

Produced annually, the Workplace Safety Index identifies the leading causes of the most disabling U.S. workplace injuries based on data reported from 1998 (the baseline year for Workplace Safety Index data) through the most recent year for which data are available – in this case 2005. The 2007 Index also captures cost trends for the overall and leading causes of the most disabling injuries from 1998 through 2005, with “most disabling” defined as those injuries that cause an employee to miss six or more days from work.

According to the 2007 Index, the estimated direct U.S. workers compensation costs for the most disabling workplace injuries and illnesses in 2005 were \$48.3 billion. After adjusting for inflation, the overall cost figures represent a 3.9 percent increase compared to the baseline year (1998).

To develop the 2007 Workplace Safety Index, researchers applied Liberty Mutual 2005 workers compensation claims costs to the workplace injury frequencies reported by the U.S. Department of Labor’s Bureau of Labor Statistics that year. The relative proportions of each injury type were then applied to the national estimates of the cost of workers compensation benefits from the National Academy of Social Insurance, which includes information from a broad range of insurance providers.

## 2005 Top Ten Injury Causes

The top 10 causes of the most disabling work-related injuries remained essentially the same as in prior years. *Overexertion* maintained its first place ranking. This event category, which includes injuries related to lifting, pushing, pulling, holding, carrying, or throwing, has historically accounted for more than one-quarter of the overall national burden each year. In 2005, these injuries cost businesses \$12.7 billion in direct costs.

Also consistent with past years, *fall on same level* ranked second as a leading cause of disabling injury. In 2005, this category claimed direct costs of \$6.6

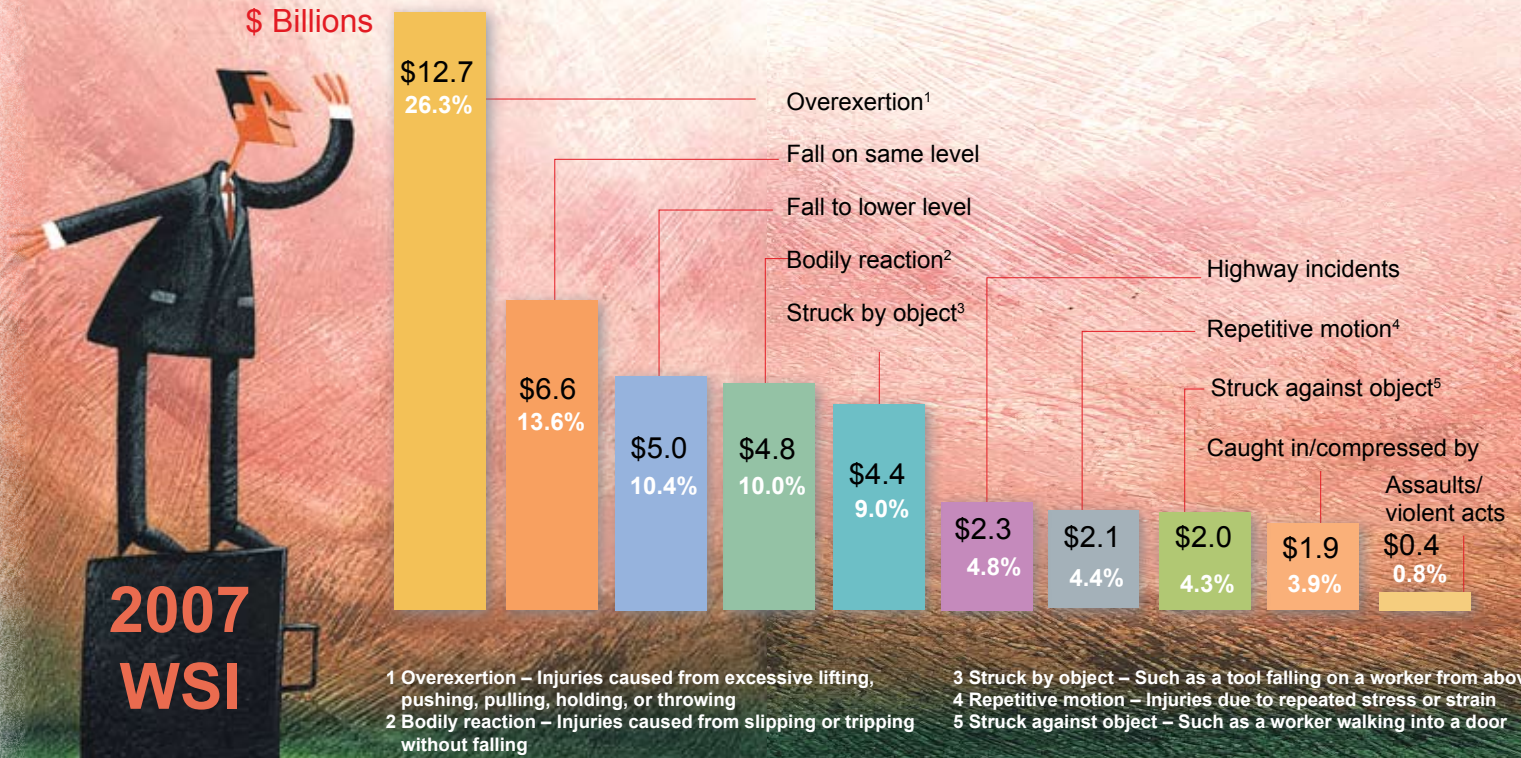
billion and accounted for 13.6 percent of the total burden of injury. However, for the first time in the history of the Workplace Safety Index, *fall to lower level* moved ahead of *bodily reaction* into the third-place ranking. With \$5 billion in direct costs, this category accounted for 10.4 percent of total costs, slightly higher than its next-place contender. Notably, *fall on same level* and *fall to lower level* combined, accounted for nearly a quarter of the total cost of all disabling injuries in 2005. This demonstrates that *falls*, as a single event category, are comparable to *overexertion* in terms of the impact on the overall cost burden.

*Bodily reaction*, which includes injuries resulting from an incident of free bodily motion (such as bending, climbing, reaching, standing, sitting, or slipping or tripping without falling), ranked fourth in 2005 with \$4.8 billion in costs and 10 percent of the total injury burden. *Struck by object* took the fifth place ranking, accounting for 9 percent of the total injury cost burden at \$4.4 billion.

The remaining five injury events each accounted for less than 5 percent of the direct cost of disabling injuries in 2005. These included *highway incidents*, representing 4.8 percent of the total injury burden at \$2.3 billion; *repetitive motion*, with related injuries accounting for 4.4 percent of the burden at \$2.1 billion; *struck against object*, which accounted for 4.3 percent at \$2 billion; *caught in/compressed by* (injuries resulting from workers being caught in or compressed by equipment or objects), which accounted for 3.9 percent of the total

\* Frequency as reported by the U.S. Department of Labor, Bureau of Labor Statistics.

# The Top 10 Causes of the Most Disabling Workplace Injuries in 2005



Note: The “most disabling work-related injuries and illnesses” consist of those causing an employee to lose six or more workdays. The above chart does not reflect the category “all other” which accounts for 12.5% of the total costs (\$6 billion).

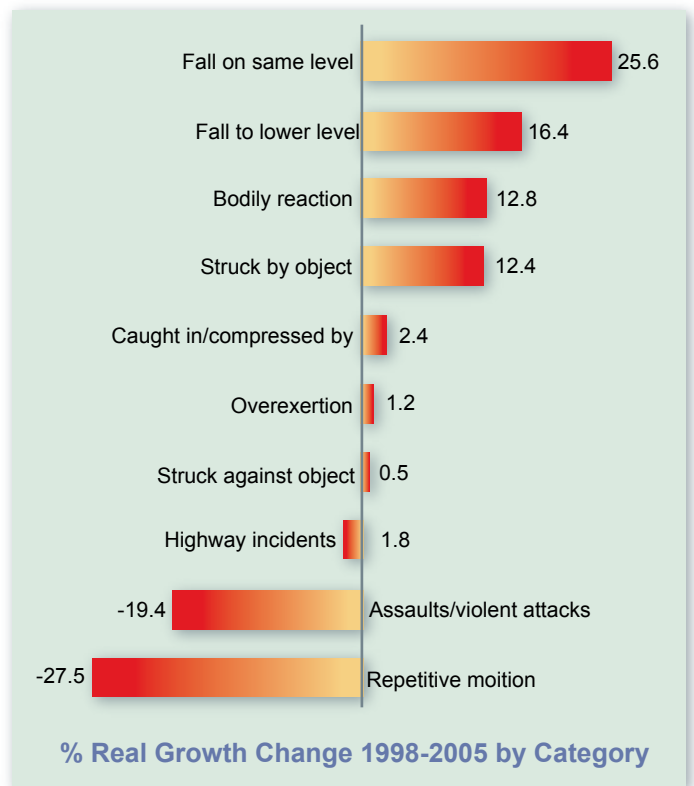
Kino Brod/Images.com

Overall, the top 10 categories produced 87.5% of the entire cost burden of disabling work related injuries in 2005.

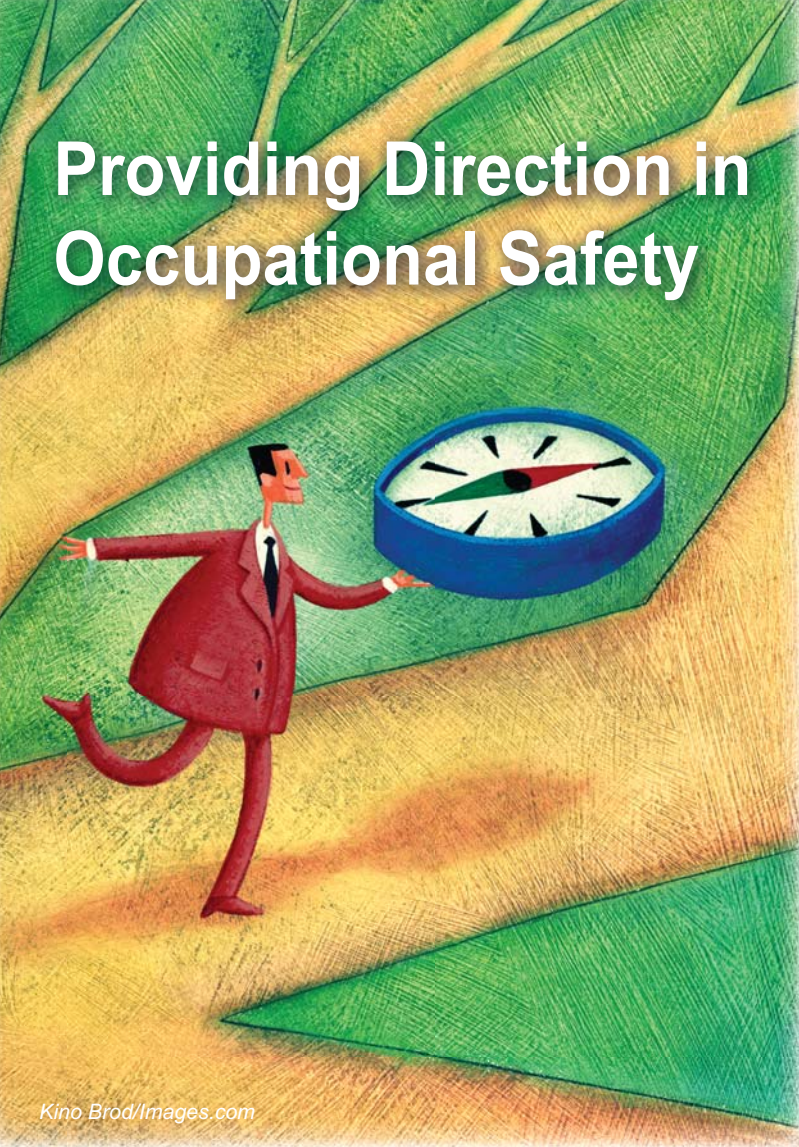
## Real Growth Trends 1998 to 2005

The overall real costs of disabling workplace injuries increased 3.9 percent between 1998 and 2005. During this same period, the cost of injuries from the top five causes of disabling injuries, *overexertion*, *fall on same level*, *fall to lower level*, *bodily reaction*, and *struck by object* grew by 1.2, 25.6, 16.4, 12.8, and 12.4 percent, respectively. (See the chart below for complete top ten growth rates.)

As has been the case since 1998, more than half of the \$48.3 billion costs of serious workplace injuries stem from the top three injury causes – *overexertion* (26.3%), *fall on same level* (13.6%) and *fall to lower level* (10.4%). *Repetitive motion* and *assaults/violent acts* showed the most significant cost declines from 1998 to 2005, down 27.5 percent and 19.4 percent, respectively.



# Providing Direction in Occupational Safety



Kino Brod/Images.com

Knowledge is power. Whether confronting an adversary, refining a strategy, or reaching a destination, the better informed you are, the greater your chance for success. This fact is especially true for occupational safety researchers and safety professionals, whose success at reducing the burden of workplace injuries is highly dependent on the quality of the information they possess. To support their efforts, the Liberty Mutual Research Institute compiles the annual Workplace Safety Index. With vital information on the leading causes and costs of serious occupational injuries, the Index provides an informational tool to increase awareness and to help safety researchers and professionals prioritize their workplace safety initiatives and resources.

## Getting the Message Out

Widely published in the trade and business press, the Workplace Safety Index has reached the eyes of thousands of business readers over the years. This widespread dissemination of the Index findings has drawn the attention of the business community to the national burden of the most disabling work-related injuries. “When senior management decision-makers learn that disabling work-related injuries cost this country nearly \$50 billion in direct costs – or about a \$1 billion a week – it gets their attention,” states Karl Jacobson, Senior Vice President of Liberty Mutual Group.

Unlike other occupational injury reports, which focus on frequency or loss rates, the Workplace Safety Index identifies the top 10 causes of disabling injuries and their associated direct costs to industry. According to Jacobson, this cause/cost approach allows safety professionals to make a case for prevention in a way that resonates with senior business management.

“Any business that’s trying to improve a process must first make a business case for the process changes. Safety is no exception,” explains Jacobson. “The Workplace Safety Index helps safety managers initiate the necessary dialogue with senior executives,” he adds. Armed with the Index and their company’s worker injury data, corporate safety managers are better positioned to define, prioritize, and address safety concerns from a prevention angle. The Index provides the backdrop for safety managers to benchmark the nation’s top injury causes and costs, and compare them to their own company’s loss performance. “Most business executives are driven by data,” continues Jacobson, “so when they see that overexertion comprises a quarter of the nation’s disabling injury burden, and they realize it’s a major loss source for their company, they may be more inclined to take appropriate preventive action.”

## Charting Research Directions

The Research Institute has traditionally based its research programs on the major causes of disabling occupational injuries. These causes include overexertion, slips, trips, and falls, highway incidents, and repetitive motion. “We have long known that these areas pose a significant burden on industry,” explains Institute Director Y. Ian Noy. “However, the Workplace Safety

Index has allowed us to sharpen our research focus by identifying the loss areas where we can have the most impact with the resources we have.”

Together, injuries caused by overexertion and slips and falls comprise more than half of the U.S. disabling occupational injury burden. Accordingly, these areas remain a high research priority at the Institute, with ongoing projects ranging from laboratory investigations of manual materials handling exposures, to behavioral studies of the impact of individual perceptions on same-level slips and falls (see *From Research to Reality*, Vol. 10, Issues 2 and 3), to field studies of factors contributing to ladder falls. “By studying the underlying mechanisms, conditions, and circumstances that contribute to these leading injury causes, we provide the scientific basis for real-world safety solutions,” explains Noy.

“...the trends suggest that safety research is having an impact, and together, with our business partners, the entire safety community continues to make progress.”

*Y. Ian Noy, Ph.D.*

The Institute also conducts research related to other significant occupational injury causes, including highway incidents, struck by/against, repetitive motion, and bodily reaction. “Though less frequent, these injuries nonetheless contribute to about 50 percent of the total burden and represent a significant source of disability and considerable individual suffering,” notes Noy.

Current injury data reflected in the Index show a downward trend, and Noy is cautiously optimistic that this is a sign of progress. “It is heartening that injury frequencies are going down. That is good news for safety researchers and professionals. We can’t claim credit for the decrease in injury frequency, but the trends suggest that safety research is having an impact, and together, with our business partners, the entire safety community continues to make progress.”

## Beyond the Institute

Barry Bloom, Ph.D., Dean of the Harvard School of Public Health, Boston, MA, puts it simply: “The Index reminds the public health community of the challenges workers and employers face every day in the prevention of occupational injuries.” According to Bloom, one of the Index’s most important contributions is that it has added the “cost dimension” to quantifying the public health burden of work-related injuries in the U.S. “By incorporating costs, the Index integrates measures of injuries beyond simple surveillance statistics – it includes society’s financial burden of workplace injuries.”

The Index has helped shape the recently formed Occupational Injury Prevention Research Training Program at the Harvard School of Public Health (HSPH). The Training Program is the newest component of the National Institute for Occupational Safety and Health-funded Education and Research Center at the HSPH. “This program has succeeded in attracting a number of students and funded research projects. It is becoming one of our leading programs in occupational safety and health,” notes Bloom.

While important in its own right, the burden described by the Index is “only the tip of the iceberg,” cautions Bloom. The Index does not capture the costs associated with injuries resulting in five or fewer lost workdays, non-recordable injuries and illnesses, lost productivity, or training replacement workers. “These other factors add substantially to the burden; however, measuring them is very difficult,” explains Bloom. “Such challenges are representative of the hard work yet to be done in research and education for the prevention of work-related injuries.”

“The Index reminds the public health community of the challenges workers and employers face every day in the prevention of occupational injuries.”

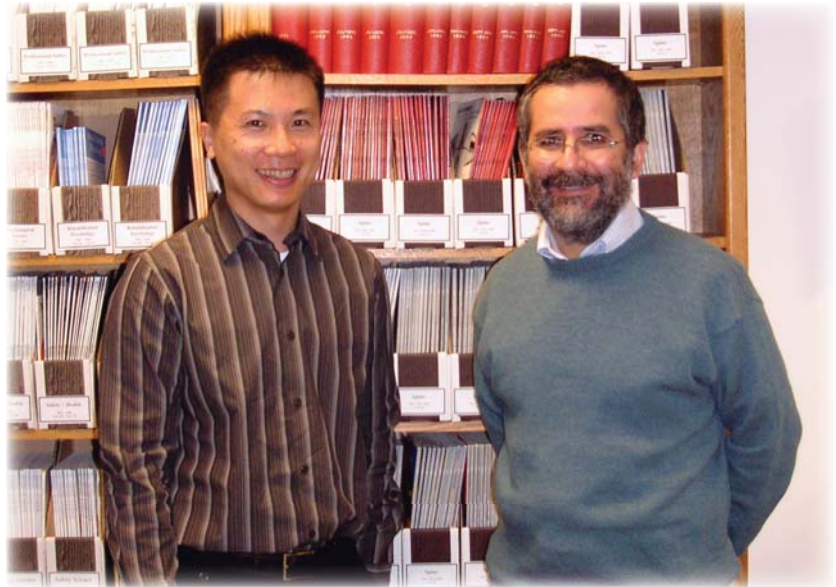
*Barry Bloom, Ph.D.*  
*Dean of the Harvard School of Public Health*

# NEWS

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## Post-Doctoral Fellowship Program:

### Encouraging Research, Broadening Horizons



*Drs. Kezhi Jin and Manuel Cifuentes*

Collaborative partnerships are an important component of scientific activity at the Liberty Mutual Research Institute for Safety. Recently, the Research Institute built upon its existing relationships with the Harvard School of Public Health (HSPH) and the University of Massachusetts Lowell (UML) to formalize its post-doctoral fellowship programs. “The formalized programs help to extend the impact of our collaboration with our university partners in the interest of improving occupational injury research,” says Y. Ian Noy, Ph.D., director of the Research Institute. “Our post-doctoral fellows bring a valuable, extra-institutional perspective to our research programs. At the same time, we contribute to the development of some of the brightest and best new scientists in occupational safety, health, and ergonomics research.”

Post-doctoral fellows complete joint research projects in collaboration with scientists from the Research Institute and their partner institution and must publish that work in appropriate, peer-reviewed scholarly journals. According to Theodore K. Courtney, M.S., C.S.P., director of research operations at the Institute, “There are relatively few recurring, post-doctoral fellowships available to graduates in occupational safety and injury research. Ultimately, we hope to help grow the field and enhance the national and international scientific capacities to deal effectively with the burden of occupational injury.”

Sharing their perspectives on the post-doctoral fellowship programs are current fellows, Drs. Kezhi Jin, Harvard School of Public Health, and Manuel Cifuentes, University of Massachusetts Lowell.



## Kezhi Jin, Ph.D.

"It's been an eye-opening experience, not only for the work, but to come to a different country and experience the culture," says Kezhi Jin. "I've learned a lot about working styles, teamwork, research methodologies, writing papers, and the peer-review process. It's been remarkable to work with the best in the field at Liberty Mutual and Harvard – the caliber of research is excellent." Jin, a native of China, is the first Fellow to participate in the formal HSPH program. His research has focused on acute hand injury in China. In collaboration with David Lombardi, Ph.D., of the Research Institute and Melissa Perry, Ph.D., of the HSPH, Jin designed the multi-site field investigation, coordinated data collection and recruitment, and conducted and published the pilot investigation.

Jin recently completed data collection for the main study and is working on several manuscripts for publication. The study applies a case-crossover methodology to examine the risk factors of severe hand injuries in China. Researchers surveyed approximately 700 participants from three cities in Eastern and Southern China. The study involved 11 hospitals including two major hand injury centers. "This project really helped me to build my research network," explains Jin. "We identified several important trends and modifiable risk factors in the study. The next step is to look at injury costs and possible prevention approaches — I hope to pursue this research in the future."

Jin is scheduled to complete his fellowship in July of 2008. Beyond the fellowship, he plans to return to China and continue research in occupational injury and will teach or possibly consult. "I would encourage others to participate in this program," he says. "It's good for your career, builds your technical skills, and enriches your life experience. I've now earned recognition as an injury epidemiologist. I really want to thank Liberty Mutual and Harvard for the opportunity."

## Manuel Cifuentes, M.D., M.P.H., Sc.D.

Manuel Cifuentes, the inaugural UML fellow, has already completed two investigations: "Geographic Variation in Early Opioid Prescribing in Work-Related Low Back Pain Patients" and "The Impact of Medical Utilization on the Association between Place of Residency (Urban vs. Rural) and Length of Disability After Injury" – which have been submitted for publication. He has also initiated the data management and analyses for another study on opioid use and is working on a proposal for an additional investigation relative to healthcare utilization and outcomes.

"I've been able to work with and learn from a multidisciplinary group of very talented researchers," says Cifuentes. "Liberty Mutual scientists helped me to better value my contributions. The knowledge and concepts I brought to the table turned out to be of great interest in the area of return to work. This helped me to build my confidence. I have a set of skills and a network of scientific contacts that I couldn't have imagined before my fellowship."

Cifuentes is still uncertain about his long-range career plans, but plans to maintain a relationship with the Institute research scientists. "This is a center of excellence which nurtures the safety and occupational health research fields," he says. "I have already recommended this program to several doctoral students because it is a unique opportunity to learn from an excellent and experienced group of scientists and, at the same time, it's a way to challenge yourself with complex and demanding research questions."

*Candidates for the Post-Doctoral Fellowship Programs are being recruited for 2008. Typically, the fellowships last for a period of one to two years and may extend upon mutual agreement. Candidates must possess a doctoral degree in safety or injury research or a related field such as biomechanics, work physiology, or epidemiology, with a specific research interest in occupational injury, return to work, or highway safety. Fellows are expected to have substantial interests in joint research at both institutions and to divide their time in research between the Research Institute, the university partner, and any necessary data collection venues. Research projects are determined at the time of application. For more information, visit the Global Partners section on our website at: [www.libertymutual.com/researchinstitute](http://www.libertymutual.com/researchinstitute).*

## Driver Safety Investigation Earns Top Recognition



Dr. Horrey

Cell phones, GPS systems, and electronic devices are among the various items that may distract drivers and compromise safety. While many studies have revealed an association with driver distraction and driving performance, Institute Research Scientist William J. Horrey, Ph.D., and colleagues set out to take a closer look and examine if drivers are actually aware of their distractions. The resulting manuscript, "Assessing the

Awareness of Performance Decrements in Distracted Drivers," received the Research Institute's Best Paper Award. The internal award program evaluates accepted journal papers for experimental design and scope, and overall quality.

For the study, 40 younger and older drivers completed a series of tasks on a hand-held or hands-free cell phone, while driving an instrumented vehicle around the Research Institute's closed test track. The study implemented distracting tasks to measure the driver's actual performance decrements against the driver's perception. The findings suggest that drivers' perceptions did not correspond to their actual performance while distracted. In some cases, particularly for younger males, the drivers that thought the distracting tasks minimally affected them actually showed the largest

performance decrements. *Accident Analysis and Prevention* will publish the findings of the complete study later this year. Co-authors of the paper include Mary F. Lesch, Ph.D. and Angela Garabet, M.A., Sc.

"It's important to understand drivers' perceptions and their awareness of distraction effects so that appropriate recommendations or interventions can be introduced to improve driver safety," says Horrey. "Given the Research Institute's high publication standards, it is a great honor for us to be recognized for this work."

Two additional papers received honorable mention. Second place honors went to "Relationship Between Early Opioid Prescribing for Acute Occupational Low Back Pain and Disability Duration, Medical Costs, Subsequent Surgery, and Late Opioid Use," written by Barbara S. Webster, B.S.P.T., P.A.-C., Santosh K. Verma, M.B.B.S., M.P.H., and Robert J. Gatchel, Ph.D., A.B.P.P. The paper, published in *Spine* (Vol. 32, pp. 2127–2132), examines the association between early prescription narcotic use for acute low back pain and long-term outcomes, including disability duration, medical costs, late opioid use, and surgery. Third place honors went to Dr. Mary Lesch for her investigation, "A Comparison of Two Training Methods for Improving Warning Symbol Comprehension." The study, accepted by *Applied Ergonomics*, compared the effectiveness of two different types of training in improving warning symbol comprehension by younger and older adults.

## Huang to Guest Edit *Accident Analysis and Prevention*

Preparations are underway for a special edition of *Accident Analysis and Prevention*, entitled "Safety Climate: New Approaches, Interventions, and Industry-Specific Studies." Institute Research Scientist Yueng-Hsiang (Emily) Huang, Ph.D., will serve as managing guest editor of the special issue. "It's an honor to have the opportunity to edit this special issue for *Accident Analysis and Prevention*, a top tier journal in safety and ergonomics," says Huang. "I'm pleased to see that the importance of safety climate is being recognized in both the scientific and practical fields."

Safety climate is defined as employees' shared perceptions of the safety policies, procedures, and practices, as well as the overall importance of safety at work. "Research has shown that safety climate can help to predict safety behavior, injury perception, and safety-related outcomes in a wide variety of settings in both Western and Eastern cultures," says Huang. "It can be a key factor for improving loss prevention outcomes beyond traditional engineering approaches."

Currently, the journal has announced a call for papers. Topics will include new developments in the conceptualization of safety climate, interventions to improve safety climate, and occupational/industry-focused studies of safety climate. The deadline for paper submission is June 30, 2008. For additional information contact Dr. Huang at [Yueng-hsiang.Huang@LibertyMutual.com](mailto:Yueng-hsiang.Huang@LibertyMutual.com). To submit a paper, go to <http://ees.elsevier.com/aap/> and select "special issue: Safety Climate."

18th Annual Construction Safety and Health Conference and Exposition: February 12 to 14, Rosemont, IL

- Falls from Ladders: Preliminary Results from a Case-crossover Study of Emergency Room Cases – M. Brennan, M.S.

International Occupational Hygiene Association 7th International Scientific Conference: February 18 to 22, Taipei, Taiwan

- Perspectives in Powered Nutrunner Torque Reaction: The Effect of Operator Experience on Hand Reactive Moment and Displacement – J.H. Lin, Ph.D., C.P.E.

7th International Congress on Occupational Stress and Health: March 6 to 8, Washington, DC

- Interventions to Improve Safety Climate and Safety Behaviors and New Developments in the Conceptualization of Safety Climate – Y.H. Huang, Ph.D.
- Effects of a Quasi-experimental Field Office Ergonomics Intervention Study – M.M. Robertson, Ph.D., C.P.E.
- A Systematic Review of Workplace Interventions Employing Return-to-Work Coordinators – W.S. Shaw, Ph.D., P.E.

9th World Conference on Injury Prevention and Safety Promotion: March 15 to 18, Mérida, Mexico

- Weekly Working Hours and Risk of Work-Related Injury: U.S. National Health Interview Survey (1997-2004) – D.A. Lombardi, Ph.D.
- Circumstances of Occupational Same-level Falls and Risk of Wrist, Ankle, and Hip Fracture in Women Over 45 Years of Age – S.K. Verma, M.P.H, M.B.B.S.

9th International Symposium on Human Factors in Organizational Design and Management: March 19 to 21, Sao Paulo, Brazil

- Examining the Macroergonomics Factors Among Teleworkers and Organizational Practices and Policies: Results from an Office Ergonomic Field Intervention Study – M.M. Robertson, Ph.D., C.P.E.

The Ergonomics Society Annual Conference: April 1 to 3, Nottingham, England

- Linear Regression Models of Floor Surface Parameters on Friction at Shoe-Floor Interface – W.R. Chang, Ph.D.
- To Slip or Not to Slip?: A Comparison of Matched Trials – R.W. McGorry, M.S., P.T.

23rd Annual Conference of the Society for Industrial and Organizational Psychology: April 10 to 12, San Francisco, CA

- Industry Type and Perceived Injury Risk: The Moderating Role of Safety Climate – Y.H. Huang, Ph.D.

American Industrial Hygiene Conference and Expo '08: May 31 – June 5, Minneapolis, MN

- Perceived Postural Instability Upon Standing - A Possible Influence on Falls Within the Construction Industry – A.T., DiDomenico, Ph.D., C.P.E.

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# A Message from the Director...

Dear Readers,

This issue of our newsletter is devoted to the Liberty Mutual Workplace Safety Index, which we have published annually since 2000. Over the years, the Index has had important impact not only on the direction of our research, but on how we and others think about the enormous toll of occupational injury. It is a powerful reminder that occupational injury is a major public health concern.

In the years ahead, we will continue to dig deeper into each of the top 10 causes of disabling occupational injury. By exploring the data further and gaining a greater understanding of the underlying trends, we believe the Institute will be able to develop ever more effective research programs. The more we know about the numbers, the better able we are to focus our research efforts on the ultimate goal of helping people live safer, more secure lives.

2008 promises to be an exciting year at the Institute. Already, the research program is well underway, and we anticipate that our recruiting strategy will yield results. We look forward to welcoming the highest number of external collaborators in Institute history, including a Visiting Scholar and five post-doctoral fellows. These highly talented individuals will work closely with our research scientists towards our shared goal of advancing injury- and disability-prevention research.

I hope you enjoy this issue and that the information presented supports your continued efforts to make the world a safer place.



**Y. Ian Noy, Ph.D.**  
**Vice President**  
**and Director**

## from **Research** to **Reality**

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