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Western Center for Agricultural Health and Safety • University of California, Davis

## The Cost of Occupational Health and Safety

*Summary of the article titled, "Economic burden of occupational injury and illness in the U.S.," published in December 2011*

In the first comprehensive review of its kind since 1992, UC Davis Professor and WCAHS researcher J. Paul Leigh, Ph.D., has estimated the national annual price tag of occupational injuries and illnesses at \$250 billion – much higher than generally assumed.

That figure is \$31 billion more than the direct and indirect costs of all cancer, \$76 billion more than diabetes and \$187 billion more than strokes.

"It's unfortunate that occupational health doesn't

get the attention it deserves," said Leigh. "The costs are enormous and continue to grow. And the potential for health risks are high, given that most people between the ages 22 to 65 spend 40 percent of their waking hours at work."

Published in the December issue of the *Milbank Quarterly: A Multidisciplinary Journal of Population Health and Health Policy*, the study is based on Leigh's extensive evaluation of more than 40 datasets from sources that track work-related injuries and illnesses as well as their direct medical and indirect productivity costs.

In generating the estimate, Leigh gathered 2007 data on occupational injuries and illnesses and their costs for U.S. civilian workers,

including agricultural and self-employed workers.

Leigh noted in the study that workers' compensation premiums do not currently account for these high figures. In fact, less than 25 percent of

the costs of workplace injuries and illnesses are covered by workers' compensation. As a result, many occupational health issues go unresolved,

*Continued on page 2*



J. Paul Leigh

## Congratulations to the 2012 WCAHS Seed Grant recipients

Each year WCAHS provides start-up funds for innovative and pilot projects related to agricultural health and safety issues not currently included in the center's activities. As in the past, short-term research and outreach projects focusing on agricultural health and safety needs is primary, but funding should also serve as a principal vehicle to (1) assist new faculty and graduate students in beginning their studies in agricultural health and safety-related areas; (2) attract



Qazaleh Bahramain

more established scientists to apply their existing research programs to the field of agricultural health sciences; and (3) develop new research areas within WCAHS.

An important program goal is to foster the next generation of agricultural health and safety researchers. Funding priority was

***"If premiums were more experience-based, organizations would be much more motivated to invest in prevention campaigns or eliminate hazards because they would see the benefits of those changes in reduced premiums."***

**Seed Grants** *continued on page 3*

and the bulk of the costs are absorbed by employer-provided medical insurance, Medicare and Medicaid, raising health-care costs for everyone.

“If premiums were more experience-based, organizations would be much more motivated to invest in prevention campaigns or eliminate hazards because they would see the benefits of those changes in reduced premiums,” said Leigh, who is also

affiliated with the UC Davis Center for Healthcare Policy and Research.

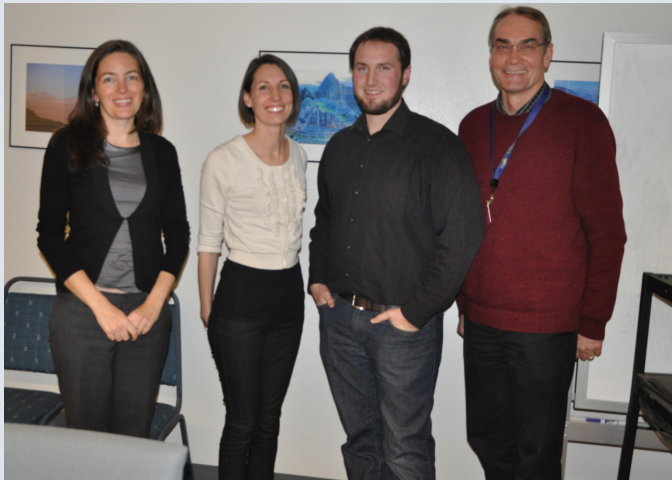
Funded by the National Institute for Occupational Safety and Health (NIOSH), the study also highlights how greater attention to workplace safety and health could have broad economic benefits.

“In the four decades since the Occupational Safety and Health Act, and the Mine Safety and Health Act were signed, there has been

significant improvement in the prevention of work-related injuries and illnesses,” said NIOSH Director John Howard, M.D. “However, much work lies ahead of us, and a study such as this one is important for highlighting the economic burden of occupational illness. Gaining a better understanding of the burden helps NIOSH and our partners make the case that preventing work-related injuries and illnesses is part of a wise national strategy

for economic recovery and growth. Such data also may inform innovative approaches for building or enhancing corporate safety and health cultures.”

A copy of the study, “Economic Burden of Occupational Injury and Illness in the United States,” can be downloaded at <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0009.2011.00648.x/full>.



Annually, the WCAHS Monthly Seminar presents research by a select number of its graduate students. On Jan. 9, Deborah Bennett, Ph.D. (left), introduced Kelly Trunnelle, Ag & Environmental Chemistry Graduate Group, whose presentation was titled, “Concentrations of the urinary pyrethroid metabolite 3-phenoxybenzoic acid in farm worker families in the MICASA Study.” Chris Carosino, Pharmacology & Toxicology Graduate Group, whose presentation was titled, “The source of the air pollution and asthma problem: Using source oriented toxicity testing to study particle effects,” was introduced by WCAHS Associate Director Kent Pinkerton, Ph.D.

## Ag Health Electronic Resources

### *Health Outreach Partners*

Health Outreach Partners has new Web events now available on-line. Health Outreach Partners’ mission is to build strong, effective, and sustainable grassroots health models by partnering with local community-based organizations across the country in order to improve the quality of life of low-income, vulnerable, and underserved populations. For more information, visit <http://www.outreach-partners.org/home>

### *Farmers on Facebook*

Ned Stoller from Michigan’s AgrAbility has set up a Facebook page for farmers to use as forum. The description is “Farm Easier,” a group for farmers to brag about and steal ideas that help them do their work with less physical pain and struggle. Other people with good ideas to benefit farmers coping with illness or injury can also join the group. The focus of this discussion is farm equipment, tools and modifications to farms.

Please direct any farm clients of yours who are on Facebook to join the group and share their ideas and learn from others. It may also be suitable for fabricators/welders and farm assistive technology specialists to be part of the conversation of this group.

<https://www.facebook.com/groups/150708448363552/>

Ned Stoller

Michigan AgrAbility

Ned Stoller may be contacted at [stollerned@postpro.net](mailto:stollerned@postpro.net)

## WCAHS Outreach – Research to Practice

By Teresa Andrews, M.S.

On Jan. 20, 2012, WCAHS's Outreach and Education Team got together with research project investigators and key staff members to discuss our next steps. Under the new funding cycle, each of the six WCAHS' projects has an outreach and education component. This is following the NIOSH r2p guidelines – bringing the research to practice. Thus the outreach and education team will work closely with investigators to bring their results back to the agricultural community at large to ultimately improve occupational health and safety conditions. In addition to conducting training, presentations and workshops, our plans for this year include:

- The creation of a bilingual educational booklet (fotonovela) to educate residents about: (1) short-term effects of acute particle exposure; (2) cumulative effects of repeated exposure; and (3) allergic sensitization and the influence of agricultural dust. The fotonovela will be distributed mostly in the Mendota-Fresno area.
- Create factsheets and newsletter articles on the cost of agricultural injury.
- Develop and distribute educational materials promoting pesticide exposure awareness and avoidance.

- A Legislative Day at the State Capitol, where investigators will discuss the impact of their findings with diverse stakeholders, including legislators, farmworkers' advocates, farmers, and farmworkers.



Xochitl Castañeda

This year the outreach and education efforts are branching out with the addition of the Health Initiative of the Americas' (HIA) network. HIA – part of the School of Public Health at the UC Berkeley – is a Latino health outreach organization focusing mainly on migrant and immigrant issues.

HIA has an extensive network that includes several nonprofit agencies, and the consulates of seven Latin-American countries: Mexico, Colombia, Ecuador, El Salvador, Guatemala and Peru. Xochitl Castañeda, Ph.D., who has directed HIA since 2000, has joined WCAHS Outreach efforts, and will be in charge of compiling a resource guide for farmworkers.

## Seed Grants *continued from page 1*



Kathleen Navarro

given to those projects that demonstrated potential in either the education/translation or intervention/prevention areas.

The overarching goal of the Seed Grant Program is to encourage the development of creative research, prevention/intervention, translational, and outreach projects while nurturing researchers – particularly beginning researchers – interested in agricultural health.

The 2012 Seed Grant Program awardee notifications were sent on Dec. 21, 2011, for the nine-month projects that were slated to begin after Jan. 1. A well-qualified review committee included representatives from not only California, but Arizona and Nevada, as well. Their results were unanimous and the following three Seed Grants were awarded:

1. "Smart Textiles: Materials for Reduction of Heat Stress," Qazaleh Bahramain, Graduate Student Researcher

(GSR), working with Professor Gang Sun, Ph.D., Department of Textiles and Clothing, UC Davis.

2. "Farm Workers Exposed to Agriculture Dust and the Risk of Smoking-Related Disease," Benjamin B. Davis, Ph.D., Center for Health & the Environment, UC Davis
3. "Improving Exposure Assessment Methods for Fumigant Pesticides: A Methyl Iodide Case Study," Kathleen Navarro, Graduate Student Researcher, working with Professor John Balmes, Ph.D., UC Berkeley

Additional Seed Grant funding went to 1.) Martha C. Stiles, Director and Principal Investigator of the California AgrAbility Program in the Department of Biological and Agricultural Engineering, UC Davis for her work creating bilingual material for on-site/in the field workshops for the self-management and prevention of arthritis in farming populations. 2.) Professor Phil Martin, Agricultural and Resource Economics, UC Davis toward his annual conference in Washington DC which brings policy makers together with researchers to discuss potential immigration reform and includes farm worker health and safety.



On Monday, Dec. 5, UC Davis Professor of Biological and Agricultural Engineering, WCAHS Principal Investigator and AERC Principal Fadi Fathallah, Ph.D., presented “Recent Agricultural Ergonomic Research at UC Davis” at the Ag Center’s Monthly Seminar Series.

## Join the AgHealth e-mail listserver

The Western Center for Agricultural Health and Safety’s AgHealth e-mail discussion group is open to anyone interested in agricultural health and safety. We welcome and encourage participation by posting comments or questions about agricultural health and safety. Subscribe at the WCAHS homepage: <http://agcenter.ucdavis.edu>, click on “AgHealth email List.”



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## Calendar of Events

Friday, March 2, 8 a.m. to 5 p.m.

### COEH Lela Morris Annual Symposium 2012

#### “Natural and Man-made Disasters: The Public Health Response”

Elihu Harris State Building, 1515 Clay Street, Oakland, CA 94612

Monday, March 5 (Rescheduled from Feb. 6)

**Shirley Gee, M.S.**, senior research associate in the UC Davis Department of Entomology, will present “**Advances in Immunoassays for Pesticide Detection**” during the WCAHS Seminar Series, 4–5 p.m., at CHE on Old Davis Road.

Monday, April 2

**Frank Mitloehner, Ph.D.**, Associate Professor & Air Quality Specialist in Cooperative Extension, Dept. of Animal Science, UC Davis, will present “**Occupational Risks in Large-Scale livestock and Poultry Operations**” during the WCAHS Seminar Series, 4–5 p.m., at CHE on Old Davis Road.

**The 2010 WCAHS seminar series is available via video webcast at [http://agcenter.ucdavis.edu/seminar/webcast\\_2009.php](http://agcenter.ucdavis.edu/seminar/webcast_2009.php)**



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