



Conference provides showcase for innovative work being done in ag health and safety

Cropping systems, environmental conditions and cultural diversity among people working in agriculture present many challenges to professionals working to resolve health and safety problems in Western states agriculture. Research, outreach and information are all crucial elements in helping to prevent accidents and reducing health problems associated with agricultural work.

A conference titled "Health and Safety in Western Agriculture: A Practical Approach" held at the Capitol Plaza Holiday Inn in Sacramento on Nov. 5-7 showcased work being done in the Western Region, identified by NIOSH (National Institute for Occupational Safety and Health) as encompassing the states of California, Nevada, Arizona and Hawaii. Conference participants included representatives from regulatory agencies, health care providers, colleges and universities, community organizations and agricultural industries. Discussions and presentations included field studies, safety evaluations, methods of intervention, intercultural communications and outreach as they apply to different crops, workers, geography and cultures of areas in the region.

"The three main purposes of this conference were to 1) bring a 'toolbag' of approaches to the agricultural health and safety



Keynote speaker Albert Medvitz, Ed.D. (above), a sheep rancher and grower of small grains and oilcrops in Rio Vista, opened the second day of the conference with his discussion titled "21st Century Farming on a Small Planet."

community in the Western Region; 2) showcase work being done in these states; and 3) provide an opportunity for networking," said Stephen McCurdy, M.D., M.P.H.,

research coordinator for the UC Agricultural Health and Safety Center at Davis. With Pathana Rattanasamay, M.S.W., executive director of Mutual Assistance Association Center, McCurdy discussed "The Health and Safety Toolbox: Surveys and Evaluations," explaining that epidemiological studies, evaluations and surveys are essential tools for learning about and analyzing health and safety problems. These tools can be used in characterizing regional illness and injury similarities and differences, as well as providing a means for measuring the degree of success of intervention programs.

Keynote speaker Paul Gunderson,

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Microbial food safety of fresh fruits & vegetables presents new challenges

Americans enjoy a great variety of fresh produce on a year-round basis, and to satisfy consumer demand, many fresh fruits and vegetables may be shipped from anywhere in the world. In addition, the industry has added numerous market-driven, value-added fresh fruits and vegetables that pose new questions about the safety of these products.

Trevor V. Suslow, Ph.D., a postharvest extension specialist

with the UC Davis Department of Vegetable Crops, discussed his work in assuring microbial safety of foods at the Center's noon seminar in September. He explained, "Infectious disease in agriculture and in the public are an increasing health issue. My charter is to develop programs around postharvest quality and microbial food safety of edible, perishable, horticultural commodities that go all the way from production on the farm through

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Ph.D., director emeritus of the Marshfield Medical Research Foundation of Marshfield Clinic in Marshfield, Wisc., presented his view of agricultural health and



Photos by Marc Schenker

William Krycia, M.P.H., C.I.H., Region II manager for Cal OSHA (seated), and **Ronald Shanoian,** safety manager for J.G. Boswell Co., participated in a panel discussion titled "Injury Perception vs. Reality: What's Working and What's Not"

safety issues in the new millennium, describing factors he believes will affect agriculture in the 21st century. His concerns include the "rural demographic transition, the technological transformation of the North American agricultural worksite, the information revolution under way across the agricultural enterprises and the biotechnology revolution that is paced to affect both animal and plant agriculture."

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Following a full morning schedule of intense discussions about agricultural health and safety, singing toxicologist Carl Winter, Ph.D., director of the FoodSafe program at UC Davis, delivered lighthearted musical renditions of popular songs as lunchtime entertainment. In tongue-in-cheek fashion, the messages brought out in Winter's songs deal with food safety issues. For example, to the tune of the Bee Gees' 1977 hit "Stayin' Alive" Winter sang, "Well you can tell by the way I choose my food I'm a worried guy, in a cautious mood. Food safety scares, they're everywhere. And they're telling me I should beware. There's pesticides, Mad Cow Disease. Sure don't put my mind at ease. Biotech, and MSG. Messin' with my sanity...." Winter changed the title of Ricky Martin's popular hit "Livin' La Vida Loca," to "Beware of La Vaca Loca" (Beware of the Crazy Cow), and sang, "It



George Henning, M.D., D.V.M., (above) president of the North American Agri-Medicine Consortium, explored the pros and cons of starting a California state consortium on agri-medicine with **Scottie Ford, M.A.** and **John Tacoslosky, M.A.,** during Tuesday's box lunch discussion.

might be superstition. Maybe nothing at all. From what happened in Great Britain, Mad cows could make me fall...." Winters has produced a CD of his songs and offers downloadable songs and



Richard Molinar, M.S. (above), UC Cooperative Extension farm advisor in Fresno County, and **Michael Yang** (below), UC Cooperative Extension field assistant, discussed the challenges they face working with farm workers of various cultural backgrounds. Language and educational limitations often create difficult barriers for them.



lyrics on his Web site at <http://foodsafe.ucdavis.edu/music.html>.

Conference participants enjoyed a wine- and cheese-tasting reception in Old Sacramento at the Discovery Museum, which contains (among other interesting artifacts) California's largest gold collection, a replica mineshaft, agriculture gallery and working 1890s press shop. Tom Grey, the museum curator, gave a demonstration of how an 1890s press shop worked. Dinner followed the reception aboard the Delta King riverboat, which was built in the 1920s and traveled between Sacramento and San Francisco from 1927 to 1940. Dinner guest speaker John H. Anderson, a veterinarian and owner of the 500-acre Hedgerow Farms in

Winters, Calif., presented “Bringing Farm Edges Back to Life.” He described a 15-year project involving farmers in Yolo County and resource agencies that has pioneered methods of re-establishing bio-diverse ditches, levees and riparian corridors, resulting in an increase in wildlife populations and reduction in soil loss and contaminated runoff. “Expanded to larger and well-funded programs, this blueprint for land stewardship can restore biodiversity and ecosystem function to agricultural watersheds, add value to farmland and provide a healthier environment,” said Anderson.

Keynote speaker Albert Medvitz, a sheep rancher and grower of small grains and oilcrops in Rio Vista, opened the second day of the conference with his discussion titled “21st Century Farming on a Small Planet.” He reminded the audience that parts of California are in the

midst of an economic boom, yet many of its people still experience serious poverty. Medvitz explored the problems of social and economic dislocation that plague the migrant labor force and their effect on the future of California’s agricultural economy.

After a number of discussions involving topics such as ergonomics, extension and outreach programs, federal and state policymaking, respiratory disease, agri-medicine and field inspections, the conference closed with a panel discussion titled “Injury Perception vs. Reality: What’s Working and What’s Not.” The panel, which included Len Hintergardt, Gideon Letz, Desmond Jolly, William Krycia, Ronald Shanoian, John Miles and moderator Jennifer Weber, explored efforts that are helping to

reduce farm workplace injuries as well as impediments that are preventing the elimination of certain injuries.

The conference was sponsored by the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC), the UC Davis School of Medicine and the UC Davis College of Agriculture and Environmental Science. Additional support was provided by UC Statewide Integrated Pest Management Project, Uniroyal Chemical Co., California Department of Pesticide Regulation, the California Farm Bureau Federation, Office of Environmental Health Hazard Assessment, and Western Crop Protection Association.

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Center Director Marc Schenker contributes to new book promoting human wellness

Center director Marc Schenker, M.D., M.P.H., has contributed to a new book titled *Promoting Human Wellness: New Frontiers for Research, Practice and Policy*, edited by Margaret Schneider Jamner and Daniel Stokols, and published by the University of California Press. The book includes the revised and updated “best of the Wellness Lectures” from the 1990s as well as new invited chapters on AIDS policy, women’s health, evaluation strategies and more. Schenker contributed Chapter 21, titled “Improving Health and Safety in the Agricultural Workplace.”

Based on award-winning lectures by University of California faculty on nine campuses as part of the Wellness Lectures Program jointly funded by The California Wellness

Foundation, Health Net and the University of California, the volume aims to widen the scope of health care research and policy to promote wellness rather than focus on illness and disease, and to incorporate proactive, interdisciplinary approaches to health care.

Promoting Human Wellness is organized around core themes such as the importance of disease prevention programs that address multiple health risks, the link between poverty and minority status and disease susceptibility, and the challenge of evaluating health benefits and cost-effectiveness. Presented within the framework of social ecology, several of the chapters in this volume address new ideas and approaches in the wellness field that are only now beginning to be understood

such as the social construction of variables including race, class and gender. The 749-page book is divided into four parts as follows:

- Part One. New directions in human wellness promotion
- Part Two. Wellness promotion research: innovative strategies and perspectives
- Part Three. Wellness promotion practice: toward more comprehensive approaches
- Part Four. Wellness promotion policy: toward a more explicit consideration of the political context

For more information, or to order *Promoting Human Wellness*, visit www.ucpress.edu/books/pages/9159.html.

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transportation and distribution.”

Prior to joining UC Davis five years ago, Suslow worked as a plant pathologist for a fresh fruit and produce company that began encountering microbial food safety issues in some of their production regions. “Traditional production practices for fruits and vegetables are really being scrutinized, and although there may be little or no data to support it, perception of risk



Kathy Kentley Garvey

Trevor V. Suslow, Ph.D., a postharvest extension specialist with the UC Davis Department of Vegetable Crops, discusses his work in assuring microbial safety of foods.

has already caused several changes in the industry,” said Suslow.

With the tremendous growth in convenience foods, such as fresh-cut packaged vegetables and salads, harvesting activities have changed. Workers can now be found coring lettuce, chopping, trimming and packaging vegetable and salad blends in the field. “That has two types of implications,” says Suslow. “One, of course, is the overall sanitation—the things that are being done to minimize the potential for contamination. But also asking the ag workers to behave in a different way than they have traditionally.”

Suslow is concerned about the use of disinfecting compounds in which workers are being exposed, as well as the various types of materials that are being applied to

vegetable products in the field and on the harvesting equipment, since all of the data relating to these practices are being held closely by the companies that are conducting these operations.

“Many of these chemicals are being used by workers, who are inadequately trained. When they’ve worked around them for a period of time, they can get a little cavalier with the use of chemicals in general,” said Suslow. “The industry is looking for ways to get rid of all these microorganisms so they’re starting to use very high levels of disinfectants, such as chlorine, which can contribute to the formation of chlorine gases, and they will often use something like ozone without the attention and care it deserves to protect the workers. There’s been more than one occasion in which the workers have been evacuated because someone added acid too vigorously to chlorinated water and it produced chlorine gas.”

As the industry promotes increased consumption of fresh fruits and vegetables for better health, consumers tend to be eating “riskier foods”—uncooked vegetables and fresh fruits that have been linked more frequently than other produce to illness or outbreaks. In a survey conducted by the FDA of imported produce, investigators found a 16 percent

positive detection of Salmonella or Shigella on, for example, cilantro, the sale of which has increased dramatically over the past several years because of the increased consumption of ethnic foods that include it as an ingredient.

“There are multiple routes for contamination of fruits and vegetable, and there have been few occasions where there has been a direct link between one and another. Very clearly the risk potential is there,” said Suslow. “If you do challenge studies, many organisms that have the capability to multiply like E-coli and Salmonella when introduced on fresh produce—typically wounded or introduced through an opening—will multiply at permissive temperatures very rapidly.”

Another area of potential increase of microbial illnesses Suslow cited is land use and waste management conflicts. “We have not really shown that the application of manure to crops can be directly linked to outbreaks, and we also have a need to manage that waste in our environment, so applying it to soil is a very desirable method of waste management,” he said. Many growers have responded to this concern by eliminating aged manure or composted manure from their programs, but another problem could result from manure

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New book explores cost of occupational injuries and illnesses

Center investigator J. Paul Leigh, Ph.D., has co-authored a new book titled *Costs of Occupational Injuries and Illnesses*, published by the University of Michigan Press, Ann Arbor, (ISBN 0-472-11081-0). Steven Markowitz of City University of New York Medical School; Marianne Fahs, director of the Health Policy Research Center, New School University; Philip Landrigan from Mount Sinai Medical Center in New York; and Leigh present the results of a

major study estimating the significant and overlooked costs of occupational injury and illness—costs as large as those for cancer and more than four times the costs of AIDS. The authors address costs using the human capital method that distributes costs into direct categories such as medical costs and insurance administration expenses, as well as indirect categories such as lost earnings and lost fringe benefits. These costs are estimated to be about \$155 billion.

Poor Health, Diet Fate of State Farm workers

This story first appeared in the *San Francisco Chronicle* on Wed., November 22, 2000

California fruits and vegetables have fueled a revolution in diet and health, but a new report says the farm workers who harvest this bounty suffer from worse nutrition, higher cholesterol and more alarming blood pressure statistics than the general population.

The authors billed the report, which was released Nov. 21, 2000, as the first comprehensive study of farm worker health ever done in California.

"It is a tragedy and more than a little ironic that the labor force that is responsible for producing such a great abundance of healthy food in California should themselves be suffering from the effects of poor nutrition," said the executive summary of the 48-page document.

That study was released in Fresno Nov. 21 by The California Endowment and the California Institute for Rural Studies.

The Endowment, based in Woodland Hills (Los Angeles County), is a \$3.7 billion foundation created in 1996, when the nonprofit HMO Blue Cross transformed itself into the for-profit WellPoint Health Networks. The Endowment sponsored the study by the Institute, a nonprofit group in Davis that studies a range of rural issues.

The study surveyed 971 farm workers, chosen at random to represent the state's estimated 700,000 agricultural laborers. In addition to asking questions about their ailments, health insurance status, income and other demographic facts, the study took blood samples and performed physical exams to obtain objective data about farm worker health.

Among the key findings in the

report, which is posted on the Web at www.calendow.org:

- Nearly 80 percent of the respondents were overweight, with 28 percent of the men and 37 percent of the women being classified as obese.
- Male farm workers had higher serum cholesterol levels on average than the general adult population, while male and female farm workers alike had a higher incidence of high blood pressure, early precursors of heart disease and stroke.
- Respondents, 96 percent of whom were Latino, reported a median income under \$10,000. Nearly 70 percent lacked any form of health insurance. And even among the 16.5 percent



Photo by Bill Gillette; courtesy of California Institute for Rural Studies

whose employers did offer a health benefit, only one out of three took advantage. The rest could not afford the copayments.

"It's a depressing picture, with no easy answers," said David Lighthall, executive director at the California Institute for Rural Studies and one of the report's principal authors.

For instance, Lighthall said, two-thirds of the farm workers were U.S. citizens, green card holders or legal aliens in the process of getting

green cards. As a result of their legal status and low income, they are eligible to apply for MediCal, the state's health insurance of last resort.

However, only 7 percent of the farm workers surveyed took advantage of MediCal, because the rules of the system force them to reapply when they cross county lines, a tough requirement for itinerant workers. "It's almost as if they were trying to prevent people from signing up," Lighthall said.

Bob Krauter, a spokesman for the California Farm Bureau, the main trade association for the state's \$26.8 billion agricultural industry, said his members are struggling with higher fuel prices and falling commodity prices, and simply cannot afford more for worker health care.

"You can't assume that if a farmer provides health insurance, that consumers are going to pay more for their produce," he said.

The California Endowment has asked former California Rep. Esteban Torres to bring together a dozen policymakers to recommend ways to address the farm worker health crisis.

"I look forward to working with the task force that is being created to address the issues raised in the study," said Lt. Gov. Cruz Bustamante, the state's senior Latino elected official.

The full 40-page report, *Suffering In Silence: A Report on the Health of California's Agricultural Workers*, may be obtained by contacting The California Endowment, (818) 703-3311, or the report may be downloaded from www.calendow.org.

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being stored—simply deferring the problem to another one of runoff.

Good agricultural practices are encouraged as guidance to the industry to focus its attention and address potential risk for microbial contamination. But as horticultural operations are forced into closer proximity to animal operations, not only is there the threat of contamination through waste runoff from animal operations, but also the threat of “fugitive dust,” the airborne material that comes from production operations—a problem both for human inhalation and crops.

While most of the outbreaks in the United States have been traced back to animal origins, pathogens found on imported produce have been identified as originating from a human source. In a study of a particular country, researchers found 37-66 percent of the children aged 2–10 years in that country were infected with Salmonella—the highest percentage from

agricultural families. Many of the children appeared healthy but were carrying the pathogen. “So, basically we need an educational and training program for personal hygiene and risk assessment,” said Suslow.

In closing, Suslow showed a short film of a worker operating a machine that peeled cantaloupes for fresh-cut packaging. The worker first picked up the unpeeled cantaloupe (with potentially contaminated skin) with his gloved hand and put the fruit on the peeler. He then picked up the peeled fruit with the same gloved hand and chopped it up for packing. “Unfortunately there is a very possible risk of exterior contamination that can find its way into the edible flesh during distribution and storage,” said Suslow. “We’ve got a lot of work to do in this area.”

Trevor Suslow may be reached at (530) 754-8313, or by e-mail at tvsuslow@ucdavis.edu.

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CALENDAR

Feb. 2, Noon

TB 137, Davis Campus
An Artist’s Approach to Protecting Farm workers from Pesticide Hazards
Javier Juarez, artist and farm worker advocate, Sacramento

March 2, Noon

TB 137, Davis Campus
Salmonella Enteritidis in Poultry and Eggs
David Castellan, D.V.M., M.P.V.M., staff veterinarian, CDFAs Production Food Safety Program, Animal Health & Food Safety Services

April 6, Noon

TB 137, Davis Campus
Etiology and Consequences of Injuries Among Children in Farm Households: Regional Rural Injury Study II
Susan Goodwin Gerberich, Ph.D., professor and director, Regional Injury Prevention Research Center, Center for Violence Prevention and Control, University of Minnesota

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