AgHealth News

From the Western Center for Agricultural Health and Safety

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FROM THE DIRECTOR

Using new media to improve agricultural health and safety

Marc Schenker, M.D., MPH

The world of media and communication is changing rapidly and it is time to take advantage of exciting developments to improve health and safety in agriculture.

I recently received an e-mail informing me that a lecture I gave in a course on immigration and health was being distributed by UCTV. The lecture, "Farmworker: Migration and Health," will be aired on television by UCTV (www.uctv.tv/search-details.asp?showID=14228). In addition, it can be watched online two weeks after the initial airing, and will also be released to other media sources, such as YouTube. UCTV presents educational and enrichment programming from the campuses of the University of California. Its programs can be seen in 18 million households via the cable and Dish networks. It is also available on the Internet (www.uctv.tv) and is released as video-on-demand programs on YouTube (http://www.youtube.com/uctv).

You may be aware of YouTube, even if you haven't gone to the site, but did you know the depth and breadth of academic content on YouTube? It is loaded with fascinating and useful videos on all manner of academic and practical topics. For example, a search of the words "farm work" brings up 1,910 videos, "farm workers" another 560 videos, "farm safety" finds 210 videos and "tractor safety" brings up 85 on YouTube. No longer is YouTube the sole domain of paparazzi videos. There is a lot of useful, and free, content for agricultural health and safety and other professional education and outreach.

Do you know about iTunes U? This new option of the iTunes store provides educational and public service podcasts for 53 universities in the United States. UC Davis has just joined as the second campus of the University of California (www.apple.com/education/itunesu/). That's right, iTunes is now an outlet for university videos. You can get lectures, outreach videos and other content directly from many

(*see* **New Media** *on page 4*)

One death is too many: Plan for heat waves

Train and provide for farm workers

As a result of the heat wave that affected the state in 2005, California became the first state to develop a safety and health regulation to address heat illness to protect outdoor workers. According to William Krycia, regional Cal/OSHA manager, the state's Division of Occupational Health and Safety requires employers to provide water, shade, training of employees and supervisors; and written procedures about heat prevention and treatment. "It is critical that procedures for recognizing heat-stress and obtaining prompt medical attention are developed before any incident occurs," stresses Krycia. "Everyone should know the basic first aid steps in dealing with a heat illness out in the field."

(*see* **Heat Wave** *page 3*)

Green Acres, Blue Skies: *three-day conference aims to reduce air emissions from agricultural activities*

By Alex Perrone,
WCAHS summer research assistant

The UC Davis Agricultural Air Quality Research Center held a three-day conference aimed at stakeholders with the purpose of creating a cleaner and more sustainable agricultural industry in California. This first annual conference, titled *Green Acres, Blue Skies,* was held June 2-4 at the UC Davis' Beuhler Alumni and Visitors Center.

The program was organized by Frank Mitloehner, associate professor of animal science and director of the Agricultural Air Quality Center; and conference co-chair Peter Green, associate research engineer in the UC Davis Department of Civil and Environmental Engineering. The advisory committee included WCAHS Director Marc Schenker and Associate Director Kent Pinkerton.

Dr. Mitloehner spoke of his involvement in establishing the conference, saying, "Some time ago, the Air Quality Research Center Director Tony Wexler asked me to lead the effort to chair a sub center, named the Agricultural Air Quality Center (AAQC), here at UC Davis. We established this center thinking that we could serve as a bridge between the university and agricultural producers, environmental groups and regulatory agencies. To formalize this effort, we established the *Green Acres Blue Skies* annual conference."

The aim of the conference is to find practicable methods and management practices to reduce emissions into the air from agricultural activities. The meeting was divided up into three parts, based on broad categories of agriculture: Dairy on Monday, row and field crops on Tuesday, and orchards and vineyards on Wednesday. Stakeholders in agriculture, agricultural industry leaders, environmental groups, policy-makers, academia and the community were encouraged to engage in creating a cleaner and greener agricultural industry in California. Speakers helped outline not only current implementation of sustainable and cleaner agricultural practices, but also revealed current research and possible solutions to emissions concerns.

The main agricultural issues in California are particulate matter, greenhouse gasses, and volatile organic compounds (VOCs) from vehicles and forests. More specifically, California's agricultural activity generates several greenhouse gasses of concern, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_20), from vehicles and biomass burning. Ammonia, also of concern, is released from animal waste and fertilizer into the air. In addition, agriculture generates particles from agricultural biomass burning, field tilling and animal grazing.

Legislation such as the Global Warming Solutions Act of 2006 (AB 32) implemented statewide programs to cap all greenhouse gas emissions and reduce emissions to 1990 levels. Recent legislation means active work towards meeting the statewide standards is required. The *Green Acres, Blue Skies* conference was therefore an element in working toward this goal. As Dr. Mitloehner said, "This year's first meeting was perceived by the participants as a great success to bring research to practice. We are looking forward to numerous annual meetings that will make this event a 'must go' for all stakeholders who are interested in the interface of agriculture and the environment."

For more information, contact Frank Mitloehner at fmmitloehner@ucdavis.edu.

Doug Flora, Ken Giles and Frank Mitloehner at the Green Acres, Blue Skies conference.

Heat Wave *from page 1*

While progress has been made regarding the availability of resources to educate, train and implement sound heat illness prevention methods, far too many gaps exist. This year's death of pregnant teenage farm worker, Maria Jimenez, who died in 100-degree heat while pruning a vineyard, brings to our attention that more needs to be done. State officials are investigating the second, and possibly third, heat-related farm worker death as the triple-digit heat wave persists over California's Central Valley. No doubt the risk of heat illness death is related directly to peak temperatures, duration of exposure, and the lack of periods of acclimatization.

Despite the dedication of so many growers, employers and supervisors to follow Cal/OSHA guidelines and regulations, using common sense and their own safe farming practices, far too many unsafe practices exist.

Should employers and labor contractors be required to supply their farm workers with personal heat illness prevention kits for work days of expected temperatures over 95 degrees? What might a heat illness kit include: cold packs; Gatorade/Pedialyte/Medi-Lyte packets; water pouches; a "personal" shade system?

On July 9, 2008, the Schwarzenegger administration announced a groundbreaking partnership with California' agricultural community, the Department of Industrial Relations (DIR) and its Division of Occupational Safety and Health (DOSH) to provide health illness prevention training to more than 1,400 licensed farm labor contractors in the state.

From July to August, 2008, seminars in English and Spanish will be held at various locations.

For a full schedule of sessions, visit the DIR Web site at www.dir.ca.gov/healtillness.

California employers are required to take these four steps to prevent heat illness:

1. ***Training***
   Train all employees and supervisors about heat illness prevention.
2. ***Water***
   Provide enough fresh water so that each employee can drink at least one quart per hour, and encourage them to do so.
3. ***Shade***
   Provide access to shade for at least five minutes of rest when an employee believes he or she needs a preventive recovery period. They should not wait until they feel sick to do so.
4. ***Planning***
   Develop and implement written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

Source: www.dir.ca.gov/dosh/HIPnews6-11-08.pdf

Heat-safety tips:

Provision of water: At the beginning of a work shift, employees should have at least one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water should be encouraged.

Shade: Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight.

Written procedures: Include how to respond to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary; how to contact emergency medical services and if necessary for transporting employees to a point where they can be reached by an emergency medical service provider. Also have in the event of an emergency clear and precise directions to the work site for emergency responders.

New Media *from page 1*

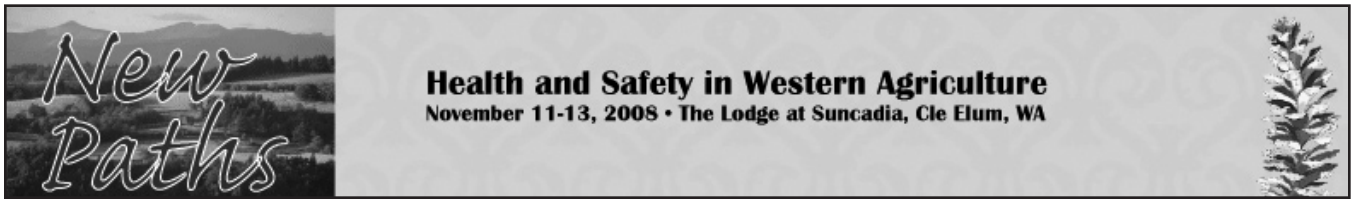
universities via this new iTunes outlet. Of course, the Western Center for Agricultural Health and Safety has been recording and releasing our monthly seminars as podcasts for two years (http://agcenter.ucdavis.edu/). Now, we can have direct access to the iTunes store and the millions of people who access the store for content. Stay tuned!

Another useful tool is the listserver. This easy-to-use Internet utility allows one to ask a question to other Internet users with common interests. The Western Center maintains an agricultural health and safety listserver. If you have questions, send them to http://agcenter.ucdavis.edu/lserver/lserver.php. Of course, you can also go to the Center Web site to read recent Center newsletters, download podcasts, and see a list of upcoming events.

Two other useful Internet tools also have underutilized potential for agricultural health and safety. Blogs are the new source of news for many novice and experienced Internet users. These "town hall" sites allow the transfer of news as well as discussion and commentary by all readers. It's very easy to start your own blog. For those interested, one place to start is Blogspot (www.blogger.com/start). You'll be amazed how easy it is to add text, image and video content. Another useful tool is the "wiki." This is essentially a user-generated encyclopedia, and it can be created for any broad or narrow topic. The grandfather of wikis is Wikipedia (www.wikipedia.org), but the tools allow anyone to create a more narrow wiki. How about an agricultural health and safety wiki?

What other opportunities exist in the world of new media and communications? How about social networking sites? LinkedIn (www.linkedin.com/) is a Web site for professional networking. More than 23 million professionals use LinkedIn to exchange information, ideas and opportunities. As with these other Web tools, LinkedIn is a free service. And LinkedIn is a smallfry compared to the giant social networking programs, Facebook (www.facebook.com) and MySpace (www.myspace.com/). These "social network" programs are now being used by professional groups to link up people with common interests. More than 50 million people had a facebook page as of November 2007, including 85 percent of college students. It may seem like a stretch to take these favorite sites of teenagers and use them for professional networking, but that is exactly what is being advocated and happening. They are very well-developed and effective tools for this purpose. How about a tractor safety network? A network for migrant farm worker health? The possibilities are unlimited.

The Internet has created many new and exciting options for use to improve agricultural health and safety. These tools are free, easy to use and very powerful. It's time for health and safety professionals to take more advantage of this wealth of new opportunities.



New Paths, co-sponsored by the western NIOSH/CDC Centers for Agricultural Disease and Injury Research, Education and Prevention (CA, CO, TX, WA), is being hosted by the Pacific Northwest Ag Center (PNASH). The conference follows the well-attended 2006 WCAHS conference at Asilomar, titled "Health & Safety in Western Agriculture: Research to Practice." It's intended audience includes academic and governmental researchers, students, educators, safety professionals and agricultural industry and community leaders.

Thematic sessions:

- Session I: Engaging populations at risk
- Session II: Pesticides – new finding and technologies
- Session III: Air quality and pulmonary pathways to disease
- Session IV: Ergonomics of industrialized dairy operations

Session III speakers include WCAHS investigators Kent Pinkerton, Marc Schenker and Frank Mitloehner.

Reduced registration fees and scholarships are offered through generous support from NIOSH/CDC. Registration includes all meals and the conference tour. To make hotel reservations, contact Suncadia Resort at 866-904-6301. To secure conference rates make sure to reference "PNASH."

For more information, and to register, visit http://depts.washington.edu/ehce/NWcenter/courses/AGCONF-08.html

Fieldwork begins for California dairy study involving respiratory health

By Alex Perrone

The launch of fieldwork for the Respiratory and Health Exposures on Large Dairies study, conducted by Cal-DEHRI (California Dairy Environmental Health Research Initiative), began on June 23, with preliminary testing near Modesto. WCAHS Principal Investigators Deborah Bennett and Frank Mitloehner will collaborate with investigators from the High Plains Intermountain Center for Agricultural Health and Safety (HICAHS) at Colorado State University. The aims of the study are to asses the exposure of dairy workers to dust and ammonia to define the concentrations of any airborne pollutants highly associated with respiratory problems. Information on the exposure and health effects of dust and ammonia will be valuable in evaluating the effect of modern California dairy practices on employee health.

Investigators will monitor exposures of 200 dairy workers and assess their respiratory health in relation to their exposures to dust particles and ammonia. If workers exposed to the dairy environment on a daily basis show no adverse affects, then researchers will conclude that people living in local communities near the dairies are not at risk of ill effects from dairy emissions. A group of 50 food processing employees from near Monterey make up the control group.

Each dairy in the study has more than 1,000 cows and employs workers, aged 18 to 65, who work shifts of six hours or more. Study staff will use an adapted recreational vehicle as a portable lab to monitor the workers, and plan to visit at least one dairy per week. The first tests will be administered at a 1,300-cow dairy near Modesto and a 1,400-cow dairy near Lodi.

During each visit, workers will be invited to join the study. The tests will be done in three parts: a breathing test, a questionnaire, and a backpack air-sampling setup. During their shift, workers will carry personal sampling equipment, namely, a backpack containing two monitors that collect the dust to which they are exposed. The pulmonary function test, assessed before and after each worker's shift, will be used to gauge respiratory ability. The questionnaires, given before and after each shift, will determine health symptoms such as coughing and wheezing, and other health characteristics of each worker. Small stationary samplers also will be set up at each facility to monitor the air.

According to Diane Mitchell, the study coordinator, "The study team expects to be able to determine whether the dust in the air they [the workers] breathe on the job has any deleterious effect on their respiratory health. They will be compared to 50 control subjects, who are similar in age, ethnicity and social and economic status, but who do not work with the exposure of interest—cows."

Hoping to catch a glance at the larger picture, the California study will be compared to the collaborator's study in Colorado. Management practices vary greatly between California and the more traditional eastern dairies. Unlike the Midwest and Eastern United States, California dairies are larger and open to the environment. Dr. Mitchell says, "This study, along with the collaborators working on a similar project in Colorado, hopes to determine whether the Western style of dairy management is more or less healthy for the workers, and whether there are some styles of management that are more likely to maintain good respiratory health."

Researchers from the Cal-DEHRI study will visit dairies throughout the San Joaquin Valley—San Joaquin, Stanislaus, Merced, Fresno and Tulare counties—this summer, and expect to finish at the control processing plant in October.

For more information, Diane Mitchell can be reached at dcmitchell@ucdavis.edu.

On site with sampling equipment: Cal-DEHRI study coordinator Diane Mitchell, Ph.D., and Johnny Garcia of the Agricultural and Environmental Chemistry graduate program.

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Join our list server!

Have puzzling questions about occupational hazards in agriculture? Wondering about resources for teaching pesticide safety? Interested in Spanish-language resources for agricultural health and safety training? Then subscribe to our list server by visiting our Web site at http://agcenter.ucdavis.edu, and click on "AgHealth E-mail List."

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Calendar

July 29
NORA Symposium 2008: Public Market for Ideas and Partnerships, Denver, CO, www.cdc.gov/niosh/nora/

Oct. 5
First 2008-09 Seminar Series Presentation (title & speaker TBA), 4-5 p.m., 3201 Hart Hall, UC Davis Campus. http://agcenter.ucdavis.edu

Oct. 19–23
6th International Symposium: Public Health and the Agricultural Rural Ecosystem, sponsored by the Canadian Centre for Health and Safety in Agriculture (CCHSA), Saskatoon, Saskatchewan, Canada, www.cchsa-ccssma.usask.ca/

Nov. 11–13
Western States Ag Centers Conference, Washington (see article on page 4)

The WCAHS seminar series is available via video webcast at http://agcenter.ucdavis.edu/seminar/webcast.php