

Farm Families ALIVE & WELL



News from The Great Plains Center for Agricultural Health

Midwest Rural Agricultural Safety & Health Conference

Vol. 21, Issue 4 - September 2015

by Gayle Olson, I-CASH Assistant to the Director



Working Together for a Safer Tomorrow is the theme of the 14th Annual Midwest Rural Agricultural Safety and Health (MRASH)

Conference. It will be held at Hotel Winneshiek in Decorah, Iowa on November 17-18, and will open with a case study on avian influenza, emphasizing what can be learned about the interaction of public health and agricultural safety/health from recent events. The afternoon of the first day will include breakout sessions and a poster reception showcasing the latest research and outreach in many areas of agricultural safety and health. The poster session will be held at Luther College in cooperation with their nursing program.

The second day of the conference will highlight farmers' perspectives on safety and health. The conference will close with a 25th anniversary celebration of Iowa's Center for Agricultural Safety and Health (I-CASH) and the Great Plains Center for Agricultural Health (GPCAH). Following the celebration, two optional training opportunities will be available, a one-hour workshop on zoonotic diseases and a three-hour train the trainer session on grain safety for young workers. Site visits to Northeast Iowa agricultural innovations will also be available in the afternoon. The intended audience includes farmers, health care professionals, safety and health professionals, educators, ag organization and agribusiness representatives, employers and advocates of migrant farm workers, media and policy makers. Participants may register for one or both days with reduced rates for active farmers and students. Conference details will be updated at www.i-cash.org/mrash as they are confirmed.

Director's Message

by Renée Anthony, PhD, CIH, CSP

As you may have heard, Dr. Fred Gerr stepped down from the Director's position for the GPCAH in July, and I was appointed to fill his shoes. I am pleased to announce that Dr. Gerr is *not* leaving the University of Iowa. He will continue involvement in the Center as Deputy Director and continue contributing to multiple research and outreach projects within the Center.

Many of you may know of my research and outreach activities in the GPCAH, but formal introductions are probably in order. I am a faculty member in the College of Public Health at the University of Iowa, having arrived during the record-cold of January 2009. My professional career began decades ago in engineering, where serendipity led me to meet an industrial hygienist during required respirator fit-testing prior to on-site work at a petrochemical refinery. It was then that I learned about occupational health, and I found that the field of industrial hygiene (IH) would allow me to combine engineering solutions with the protection of workers. I went to graduate school and became certified in industrial hygiene shortly thereafter. I have been active in IH since 1990, with nearly 10 years as a corporate industrial hygienist and then safety manager in the forest products industry. In these roles, I provided comprehensive health and safety services globally for two multinational companies -- field monitoring, exposure assessments, machine guarding surveys, and training, just to name a few activities. In my role at the University of Iowa, I teach fundamental occupational health and occupational safety classes, bringing in case studies from these experiences.



Renée Anthony PhD,
CIH, CSP

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it's a lifestyle.

National Farm Safety
& Health Week
September 20-26, 2015

The National Education Center for Agricultural Safety (NECAS) will be sponsoring webinars in observance of National Farm Safety & Health Week, September 20 – 26. The theme this year is *Ag Safety is not just a slogan, it's a lifestyle*. The webinars will be offered each day of the week at noon on the NECAS website at www.necasag.org. Topics include rural roadway safety, confined spaces, children's safety, health, and tractor safety. In addition, an "AgChat" will be held on Tuesday, September 22nd from 7-9 p.m. (CST). The website will also provide resources and public service announcements related to this year's theme. For more information contact Gloria Reiter at 888/844-6322, ext. 371, (reiterg@nicc.edu) or Dan Neenan at (888) 844-6322, ext. 248 (neenand@nicc.edu).



I-CASH is accepting nominations for its Agricultural Safety & Health Hall of Fame Award. This annual award recognizes individuals or organizations in the public or private sector in Iowa who have made substantial, long-term contributions to the health and safety of Iowa's agricultural community. Nomination form and instructions are available at i-cash.org.

Deadline is October 1st.



Research on crashes involving farm equipment is currently being conducted at the GPCAH. The preliminary findings are providing updated information on current trends and intervention approaches across nine Midwestern states. Focus areas include identifying roadway and weather conditions when crashes occur; the locations of the crashes and types of vehicles involved; the manner in which the crashes occur; the characteristics of drivers/operators and passengers; and lighting and marking policies for farm equipment. For more information, or to download fact sheets visit www.public-health.uiowa.edu/gpcab/center-projects/farm-equipment-crash-study.

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GREAT PLAINS
Center for Agricultural Health

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<http://cph.uiowa.edu/gpcah>

Find us on Facebook at www.facebook.com/GPCAH

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Save the Date

*Agricultural Medicine: Occupational
and Environmental Health for
Rural Health Professionals*

June 13-17, 2016

Iowa City, IA

<http://cph.uiowa.edu/gpcah/training>



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I also have a research portfolio that includes exposure assessment methods, applicable to both general industry and agriculture. I have studied how workers are exposed to aerosols and methods to improve how we measure these exposures. While dedicated to the scientific rigor of research, I appreciate bringing the "practical" side into these research projects to make sure findings are useful to improve the health of workers. Over the last four years, I have been directing a research team within the GPCAH, where we have been investigating ways to improve the air quality in indoor livestock buildings. Our current research updates can be found on the "Center Projects" page of the GPCAH website, but we have some breaking-news from this project in the Research to Practice article on page 4.

As the GPCAH enters its remarkable 25th year of NIOSH-funding, we look forward to preparing applications to NIOSH this fall to propose new, innovative research and outreach ideas to improve the health and safety of Midwestern farmers. Please contact me or others on the GPCAH team with ideas or suggestions.

Dr. Renée Anthony directs the GPCAH, housed in the Department of Occupational and Environmental Health of the College of Public Health. She can be reached at 319/335-4429 (renee-anthony@uiowa.edu).

Great Plains on the Go

by Marsha Cheyney, MPH
GPCAH Evaluation and Outreach Coordinator

The *GPCAH on the Go* outreach program continued to emphasize direct and personal contact with agricultural producers again this summer through several activities. In June, outreach staff assisted with Progressive Ag Safety Days at the National Educational Center for Agricultural Safety. During July and August, youth education programs were presented at several county fairs and summer camps. Throughout the summer, over 600 youth received education on noise-induced hearing loss prevention through a multi-media curriculum and were given hearing protection for their personal use.

Additionally, a multi-faceted campaign, including a panel display, brochures, and individual education, was presented at regional farm shows to promote hearing protection and other personal protective equipment (PPE) use among agricultural workers. By early October, GPCAH outreach staff will have traveled to over a dozen farm shows and county fairs in six Midwestern states to present hearing protection, heat illness, and safe play on the farm demonstrations. Approximately 700 farmers will receive a PPE kit (containing ear muffs, several types of ear plugs, and a pair of



safety glasses) as they work with the GPCAH to help increase PPE use on farms. *GPCAH on the Go* will be at Husker Harvest Days (September 15-17) and the Ozark Fall Farmfest (October 2-4). Check the GPCAH website at <http://cph.uiowa.edu/gpcab/outreach> for upcoming events.

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unit from dust, fresh air intake to the combustion device was from outside the farrowing building, and combustion gases were exhausted from the unit to outside the building. We identified that CO₂ was reduced by 800 ppm with the new heaters. Another 200 ppm difference in CO₂ between seasons was attributed to colder outdoor temperature and larger in-room animal population in the winter with the older unvented heaters. Other vented gas-fired heaters are available, and we recommend substituting un-vented heaters with vented units that have stainless steel internal components, which should improve the lifespan of the heater when used in livestock environments containing ammonia.

¹See www.public-health.uiowa.edu/gpcab/center-projects/intervention-to-reduce-exposures-in-cafos/ for more details on this larger project.

²Donham K, Haglind P, Peterson Y, et al. (1989) Environmental and health studies of farm workers in Swedish swine confinement buildings. *Brit. J. Industr. Med.* 46:31-37.

calendar

September 15-17
Husker Harvest Days
Wood River, NE
www.huskerharvestdays.com

September 20-26
National Farm Safety and Health Week
www.necasag.org

October 2-4
Ozark Fall Farmfest
Springfield, MO
www.ozarkempirefair.com

October 9
Rural Behavioral Health Practice Conference: Innovation in Rural Behavioral Health
Group webcast sites or individual webcast
www.mnpsych.org/3786-2

October 31-November 4
American Public Health Association Annual Meeting
Chicago, IL
www.apha.org

November 9-11
Midwest Stream Farmworker Health Forum
Albuquerque, NM
www.ncfh.org

November 17-18
Midwest Rural Agricultural Safety and Health Conference (MRASH)
Decorah, IA
www.i-cash.org

November 19
National Rural Health Day
<http://celebratepowerofrural.org>

January 5-7, 2016
Dakota Farm Show
Vermillion, SD
dakotafarmshow.com

January 6-7
Northern Illinois Farm Show
DeKalb, IL
www.ideagroup.com/illinois

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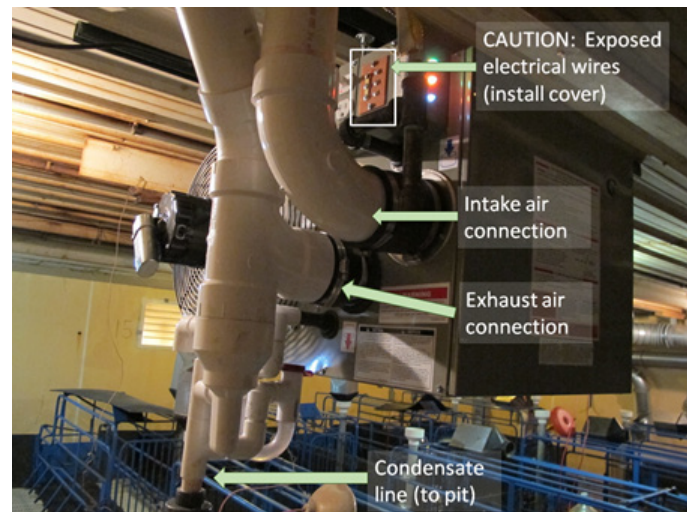
Research to Practice

Heaters in Agricultural Buildings

by Renée Anthony, PhD, CIH, CSP

One of the GPCAH research projects is investigating methods to improve air quality in swine farrowing buildings¹. This research team developed models to estimate room concentrations of multiple indoor contaminants [ammonia, dust, hydrogen sulfide, carbon monoxide, and carbon dioxide (CO₂)] and conducted field monitoring to evaluate the effectiveness of using ventilation and engineering controls. In both modeling and field work, we identified that CO₂ concentrations exceeded recommended workplace limits for swine workers² (1540 ppm) over the entire winter season and also exceeded one-half the OSHA permissible exposure limit (PEL=5000 ppm), which is based on exposure to a single contaminant (unlike what exists in swine buildings). Sources of CO₂ in livestock production include both animal respiration (exhaled breath) and combustion products from heaters.

Since controlling animal breathing is infeasible, we evaluated whether the unvented heaters commonly used throughout the Midwest (e.g., LB White heaters) were a significant contribution to high CO₂ levels measured in livestock buildings. In fall 2014, we installed new gas-fired heaters in our test barn and measured concentrations throughout the following winter, comparing them to that of the previous winter with traditional unvented heaters. We deployed the Effinity93 (60K BTU, approximately \$500 more than equivalent LB White unit). To protect the



Rear view of installed Effinity93 vented heater.

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