

## Researchers launch new website to map pesticide drift

by Jenn Patterson, MLitt, GPCAH Communications Coordinator

***Interactive maps offer information about reported pesticide drift cases in Iowa, presented to illustrate hazards and to provide guidance to reduce future drift cases.***

In recent years, Iowa farmers and rural residents have raised concerns about pesticide sprays drifting off of intended fields. Since 2016, farm organizations and rural citizens have contacted researchers in the Great Plains Center for Agricultural Health (GPCAH) for information on the scope of “pesticide drift” throughout the Midwest. While damage to farm crops and landscaping becomes easy to identify in some drift cases, Iowans have also questioned the effect to people and livestock from these pesticide drift events.



In response, GPCAH analyzed 450 drift case reports collected by the Iowa Department of Agriculture and Land Stewardship’s Pesticide Bureau from 2010-2015. Results from this analysis have been incorporated into an online Pesticide Drift Story Map. The goal of the Story Map is to identify and communicate important risk factors associated with pesticide drift events to both pesticide applicators and the general public. For example, the maps explain how both wind and relative humidity factor into drift cases, how drifts changed across agricultural seasons, and what types of damage occurred from drifting pesticides in Iowa. Twenty-six case reports involved dicamba drift, even though the case files ended before the 2016 introduction of dicamba-resistant soybeans.

“These story maps provide information directly to farming and rural communities. Our hope is to see fewer drift cases over time by sharing what was learned from cases in the past,” says Jenna Gibbs, a scientist who worked on the project. Gibbs said these maps are interesting because they provide both a local and a statewide picture of the issue, with cases reported in nearly every county of Iowa.

“About half the drift cases involved pesticide spraying when the wind was more than 10 mph, and most pesticide labels say that 10 mph is too windy to spray safely. I also think a lot of people associate drift with crop dusters—but that wasn’t true. Less than a third of the drift incidents involved aerial applications, and two-thirds of drift cases were from ground sprayers,” said Gibbs.

Jessica Ricchio, a University of Iowa graduate student who worked on the project, read through the case reports to compile the data used to generate these maps. “It was quite challenging,” admits Ricchio. “Some of these case reports included narratives and details from farmers and applicators that were more than 40 pages long.” From these narrative reports, Ricchio extracted information on 69 metrics to generate the snapshot of pesticide drift in Iowa. Although the project team realizes that not all drift cases may have been reported to Iowa’s Pesticide Bureau, the maps generated from the available narrative reports provides a useful picture of what has been happening in Iowa.

The team encourages the use of the story maps as a way to become familiar with the hazards and drift prevention guidance provided in the story map to develop plans to minimize drift in 2019. The maps are accessible at [bit.ly/pestdrift](http://bit.ly/pestdrift). If you are interested in using the maps for outreach or as educational tools, please contact [jenna-gibbs@uiowa.edu](mailto:jenna-gibbs@uiowa.edu).

## Director's Message: Persistent Hazards AND Emerging Issues

by Renée Anthony PhD, CIH, CSP

In addition to conducting traditional research investigations, the Great Plains Center for Agricultural Health (GPCAH) develops outreach materials designed for everyone's use to protect our region's farmers from **persistent hazards** that may cause injury. We schedule relevant and impactful messaging to correspond with production or seasonal risks. Although we didn't predict January's polar vortex, we were well prepared with a winter social media campaign focused on injury prevention from cold weather risks. Additionally, at February's Western Farm Show in Kansas City, we talked to farmers about hypothermia and frostbite prevention *and* ways to prevent falls when walking on ice or working outside. Many farmers at the show said that the winter of 2019 was so bad that it pushed them to finally purchase ice cleats to deal with the icy conditions. However, many also confessed that they made this purchase *after* a fall. Honestly, this is the same reason that I now have three pairs of my own ice cleats at home, with two sets firmly installed on boots until the spring thaw and one pair ready as backup. Proactive tools for adopting safe behaviors *before* you have a "motivating injury" are available on our [Resources](#) webpage.



Renée Anthony PhD,  
CIH, CSP

The GPCAH also tracks and responds to the region's *new and emerging* hazards that may cause injury or illness. We encourage you -- farmers and their safety and health advocates -- to let us know when you are concerned about something potentially hazardous. We may have information at the ready, or -- if it is something no one knows anything about -- we can track down ways to help.

For example, we have helped farmers address the emerging issue of manure gas exposure risk in livestock operations. After helping pumpers and farmers identify best practices and useful monitors, we are currently wrapping up manure gas education efforts for this winter. Displays and demonstrations are available at extension offices and agribusinesses that will provide farmers a chance to learn about these monitors and bump test their own.

This issue of *Alive and Well* discusses the emerging issue of pesticide drifts, where we developed an interactive online tool from case reports across Iowa. The [Pesticide Story Mapping Project](#) includes information about why pesticide application safety is necessary, practices to minimize drift, and quick-guides to health hazards and personal protective equipment to use when handling a specific pesticide.

The current issue of mental resiliency or farmer stress is also concerning given commodity pricing, international tariffs, and financial insecurity of today's farmers. In response, we have funded several promising pilot/community grants in 2018-19, including the project led by Amanda Holmstrom, also discussed in this issue. Now that it is time for us to begin accepting [new pilot/community grant applications](#), we are excited to share our focus on emerging issues topics such as sleep deprivation and safe transport/handling of commodities.

If you have questions or concerns about safety and health hazards, either **persistent** hazards or new, **emerging** ones, and you do not find information on our [Resources](#) page, send us a note at [cph-greatplainscenter@uiowa.edu](mailto:cph-greatplainscenter@uiowa.edu) and let us know what we can do to help protect our Midwestern farmers.

*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](mailto:renee-anthony@uiowa.edu)).*

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**GREAT PLAINS**  
Center for Agricultural Health

# GPCAH testing local hydrogen sulfide monitors

by Amber Hartis, Graduate Student, Industrial Hygiene, University of Iowa College of Public Health

Agriculture is host to many hazardous gases. Manure gas, a potentially fatal mixture of hydrogen sulfide, methane, ammonia and carbon dioxide, is commonly found within the manure pits or storage areas of beef, pork, and dairy livestock buildings. In March, GPCAH personnel provided an informational display on how to bump test hydrogen sulfide gas monitors at a local agribusiness, cooperative, and extension office. Two free one-hour trainings on methane hazards, hydrogen sulfide hazards, monitor use, and bump testing of monitors were offered at three display locations in eastern Iowa. Livestock producers were encouraged to bring their own monitors for bump testing, to verify that the monitor is responding correctly before using it in a potentially hazardous environment.

For more information on manure gas safety visit <https://gpcah.public-health.uiowa.edu/outreach-2/topics/manure-gas-safety-2-0/>



The GPCAH provided an informational display and training on hydrogen sulfide gas at Eldon C. Stutsman, Inc. in Hills, IA.

## Agricultural Safety and Health: The Core Course

June 10-14, 2019

University of Iowa College of Public Health, 145 N. Riverside Drive, Iowa City, IA

The course, offered by the Great Plains Center for Agricultural Health, has been the national model of effective agricultural safety and health education for over a decade, providing a strong foundation in the principles of occupational safety and health in agricultural settings.

### Hands-on Agricultural Safety and Health Activities

Safety and Rescue Demonstrations

Networking Reception/Research Poster Session

Classroom Instruction

Panel Discussions and Case Studies

Farm Tours

Registration  
Now Open



Networking Reception – Monday, June 10, 2019 – 4:00-6:00 pm

Ideal for health care providers, safety managers, veterinarians, and anyone interested in the specific health and safety needs of rural and agricultural populations.

**A limited number of course registration fee waivers are available.** Continuing education credit is available for physicians, nurses, EMS personnel, and veterinarians.



Course details: [www.public-health.uiowa.edu/gpcah/education/ag-safety-and-health-course](http://www.public-health.uiowa.edu/gpcah/education/ag-safety-and-health-course)

Registration: <https://centerforconferences.uiowa.edu/agricultural-safety-and-health-core-course-0>

**Great Plains Center for Agricultural Health Investigator Profile:  
Amanda Holmstrom, PhD, Michigan State University**

***Growing Resiliency in Tough Times (GRITT): A Text-Messaging Mental Health Intervention for Farmers***

by Jenn Patterson, MLitt, GPCAH Communications Coordinator

As an associate professor in the Department of Communication at Michigan State University, Amanda Holmstrom does more than teach in a classroom. With an extensive background in research focusing on the communication of social support, she is passionate about making a difference in the lives of farmers who may be living with stress.

“Farmers are under a huge amount of stress from a variety of factors, especially financial ones, and this impacts their physical and mental health as well as their relationships with family and friends,” said Holmstrom. “My pilot grant work is important because I want to use the research we are doing at Michigan State University about how to thrive in the face of distress for people who are struggling.”

Using funds from a Great Plains Center for Agricultural Health (GPCAH) pilot grant, Amanda and her team are testing a text messaging-based mental health intervention that may help farmers overcome multiple barriers to accessing information about stress and coping strategies. They are also exploring the best ways for farmers to use their smartphones as a portal for health-based information and support. Amanda and her team are planning to extend the project beyond Michigan state lines if it is successful. Michigan State University Extension’s highly regarded stress workshops are often inaccessible to farmers due to time and travel constraints. “By using smartphones and text messaging to deliver information and resources about stress and coping to Michigan farmers, we can reach them where they are at any time of day,” she said.

The GPCAH funds pilot projects (up to \$30,000 per project) intended to promote innovative outreach and research efforts to prevent agricultural injury and illness. The pilot program supports both community-based organizations and academic researchers.

To learn more about the pilot grant program and to apply, please visit <https://gpcah.public-health.uiowa.edu/gpcah-pilot-grant-program/>. This year’s Request for Proposals is now open. Projects addressing mental health, sleep deprivation, safe transport and handling of commodities (e.g. grain, hay), and fall prevention are especially encouraged. **The deadline for proposals is July 1, 2019.**

**PILOT GRANTS 2019**

**PROMOTING INNOVATIVE RESEARCH AND RESEARCH EFFORTS TO PREVENT AGRICULTURAL INJURY AND ILLNESS.**

Projects addressing mental health, sleep deprivation, safe transport and handling of commodities (e.g., grain, hay), and slips, trips, and falls prevention are encouraged.

Up to \$30,000 available for 12-18 month projects.

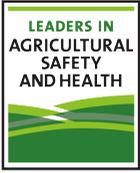
Deadline: July 1, 2019. Awardees will be notified by October 2019.

Learn more and apply • <http://bit.ly/2xGoAcu>.

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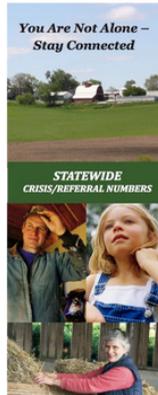
# NEWS AND UPDATES

## Agricultural Safety and Health Education in Missouri



Kelly Cochran, PharmD, BCPS, at the UMKC School of Pharmacy at MU is offering a new course to pharmacy students this spring focused on AgriMedicine. She developed this course after attending the Iowa-based course offered by the Great Plains Center for Agricultural Health. New topics include medication-related farm injury, opioid epidemic/risk mitigation strategies in rural communities, telehealth, and collaboration strategies for rural healthcare professionals. The Great Plains Center is providing lectures and support. Visit <https://gpcah.public-health.uiowa.edu/education/training-opportunities> for course locations.

**Suicide Prevention** was the Winter Seasonal Campaign focus for Iowa's Center for Agricultural Safety and Health (I-CASH). Visit the I-CASH website for resources, suicide prevention and support hotline numbers, and links to prevention training, as well as to hear from suicide prevention specialists and mental health care providers. The Spring Campaign will focus on **Pain Management**. Resources will be distributed through Farm Service Agencies and ISU Extension offices in Iowa this month. Visit [i-cash.org](http://i-cash.org) for more information.



In February, GPCAH partnered with the University of Missouri Extension in the Health & Safety Roundup area at the **Western Farm Show** in Kansas City, MO. The Roundup area was sponsored by the Missouri Farm Bureau. Grain handling, mental health awareness, hearing conservation, cold weather hazards, and tractor/PTO safety were some of the topics covered. Visit <https://gpcah.public-health.uiowa.edu/outreach-2/field-activities> for upcoming outreach activities.

## Upcoming Events

March 25-28

**AgrAbility National Training Workshop**  
Lincoln, NE  
[www.agrability.org/ntw](http://www.agrability.org/ntw)

March 28-29

**Occupational Health Symposium**  
Cedar Rapids, IA  
<https://heartland.public-health.uiowa.edu/event/occupational-health-symposium-2019>

April 23

**Iowa Governor's Conference on Public Health**  
Des Moines, IA  
[www.iowapha.org/IGCPH](http://www.iowapha.org/IGCPH)

May 7-10

**National Rural Health Association Conference**  
Atlanta, GA  
[www.ruralhealthweb.org](http://www.ruralhealthweb.org)

June 10-14

**Agricultural Safety and Health Course**  
Iowa City, IA  
[www.public-health.uiowa.edu/gpcah/education/ag-safety-and-health-course](http://www.public-health.uiowa.edu/gpcah/education/ag-safety-and-health-course)

June 24-27

**ISASH 2019 Annual Conference**  
Des Moines, IA  
<https://isash.org>

July 9-12

**Agricultural Safety and Health Course**  
Omaha, NE  
[www.unmc.edu/publichealth/cscash](http://www.unmc.edu/publichealth/cscash)

SAVE THE DATE

**June 10, 2019**  
**4:00 - 6:00**

## Safety and Health in Rural and Agricultural Communities Networking Reception and Poster Session

This important event showcases research, teaching, and outreach activities focused on agricultural and rural safety and health at the University of Iowa. The reception is held jointly with the week-long Agricultural Safety and Health Core Course in the College of Public Health Building, 145 N. Riverside Dr., Iowa City, IA. Submit your poster or display title by May 23, 2019 and RSVP at <https://gpcah.public-health.uiowa.edu/ag-networking-reception-invitation-and-poster-submission-guidelines>



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