Great Plains Center for Agricultural Health

2025-2026 Annual Report

September 30, 2026

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The Great Plains Center for Agricultural Health is located within the Department of Occupational and Environmental Health at the University of Iowa, College of Public Health, at 145 N Riverside Drive in Iowa City, IA, 52246.

2026 GPCAH Annual Report

Table of Contents

Section 1: Center Summary 2

Section 2: Key Personnel 4

Section 3: Program Highlights and Impact 5

- Evaluation and Planning Core 5
- Outreach Core 10
- Research Core:
  - Pilot Grants Program 17
  - Advancing Whole-Body Vibration (WBV) Exposure Control in Agriculture 19
  - Community Campaign to Reduce Farm-Vehicle Roadway Crashes 21
  - Design and Evaluation of a Control Technology for Dust and Bioaerosol in Swine Buildings 23
  - Farm Safety for Rural Families Coping with Dementia 25
- Outputs Summary across Center Activities 27

GREAT PLAINS
Center for Agricultural Health

SECTION 1: CENTER SUMMARY

The Great Plains Center for Agricultural Health (GPCAH) is a nationally recognized public health resource that conducts research and provides education and outreach to improve the health and safety of farmers throughout nine states in the Midwestern US: **Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio,** and **Wisconsin**. The Center was founded in 1990 and continues to bring together multidisciplinary expertise with an established record of developing and implementing programs of research, intervention, translation, education, and outreach to protect agricultural workers and their families. This Center addresses the health and safety needs of agricultural workers in America's most agriculturally intensive region, which has a significant burden of severe agricultural injuries and illnesses compared to other regions and industries.

The research questions currently being investigated in our Center are formulated to: *reduce the burden of back pain* from a lifetime of tractor use, *reduce injuries from farm vehicles* on roadways, *improve the respiratory health of livestock producers* and the animals they raise, and *prevent traumatic injuries among older farmers* exhibiting cognitive decline. Research is developing innovative technologies needed to close gaps in knowledge (whole-body vibration) and equipment (air quality systems) and develops innovative partnerships to bring new collaborators with unique skills to contribute to agricultural injury reduction. The lessons learned from our research initiatives are translated into outreach materials by being incorporated into national educational curricula, disseminated through partners, and incorporated into multimedia discussions (social media, print media-*Safety Watch*, and *FarmSafe* podcasts) to aid in the dissemination and uptake of these best practices. The Center has established systems to foster communication, identify and build strategic partnerships, and assess the needs of the agricultural community. Our evaluators work within all projects and Cores to maximize our ability to assess the Center's contributions to improved health and safety outcomes for our region's farmers.

OVERALL CENTER GOALS

Goal 1: Coordinate activities across all Center Cores (Evaluation and Planning, Outreach, Research) to maximize our ability to improve the safety and health among agricultural communities. To maximize the significance, innovation, and impact of Center activities, the Center conducts ongoing feedback, problem solving, and networking opportunities to strengthen efforts of Center investigators and to maximize Center collaboration.

Goal 2: Conduct basic and applied research targeting critical hazards to protect agricultural workers throughout the region, including vulnerable workers. We have four funded research projects to address the burden of injuries in the region and to address NIOSH priorities. We also coordinate a pilot/feasibility program explicitly oriented to building research capacity across our region, and we coordinate an emerging issues program to address priority issues that arise over the multiple years of this project.

Goal 3: Generate, evaluate, and disseminate guidance to speed the adoption of evidence-based best practices to protect farmers/farm workers. New knowledge developed in Goal 2 is translated, evaluated, and disseminated through partners.

RELEVANCE

Agricultural workers experience high rates of occupational injury – including fatal injury – and illness when compared to other employed groups. As the region's most well-established agricultural health and safety resource in the nation's most agriculturally intensive region, the Center is highly relevant to agricultural workers, physicians, public health practitioners, and researchers committed to protecting the health and safety of agricultural workers. We describe the relevance for each project and activity in Section 3 of our annual report.

SECTION 2: KEY PERSONNEL

Center Director:	Nathan Fethke, PhD, CPE nathan-fethke@uiowa.edu 319-467-4563
Deputy Director:	Kathryn Dalton, PhD, VMD, MPH kathryn-dalton@uiowa.edu 319-467-4433
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Outreach and Evaluation Coordinator:	Marsha Cheyney, MPH marsha-cheyney@uiowa.edu
Research Project Leaders:	
Pilot/Feasibility Projects Program:	Nathan Fethke, PhD nathan-fethke@uiowa.edu
Whole-Body Vibration Control:	Nathan Fethke, PhD nathan-fethke@uiowa.edu
Community Roadway Campaign	Cara Hamann, PhD cara-hamann@uiowa.edu Laura Schwab-Reese, PhD (Purdue University) lschwabr@purdue.edu
Control Technology in Swine Buildings	Matt Nonnenmann, PhD (University of Nebraska) mnonnenmann@unmc.edu Thomas Peters, PhD thomas-m-peters@uiowa.edu
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SECTION 3: PROGRAM HIGHLIGHTS AND IMPACT

Evaluation and Planning Core
(N. Fethke)

The *Evaluation & Planning (E&P) Core* provides strategic leadership to help the Great Plains Center for Agricultural Health (GPCAH) achieve its mission – namely, to prevent agricultural injury and illness and to improve safety and health among agricultural communities – by advancing knowledge through scientific research and by preventing agricultural injury and illness through education, outreach, and intervention programs. This *E&P Core* provides administrative structure and programmatic and financial infrastructure needed to meet our aims, specifically to:

(1) Provide strategic leadership and effective administration,

(2) Foster communication and collaboration between the Center and its many stakeholders,

(3) Conduct systematic evaluation of all Center activities, and

(4) Identify, prioritize, and address emerging issues that arise over the upcoming project period.

The *E&P Core* facilitates communication with leaders and practitioners in agricultural safety and health by promoting information exchanges at regional and national meetings and with other stakeholder groups to develop new partnerships to make progress toward our common mission of protecting people. To identify hazard priorities, we perform injury surveillance, conduct needs assessments and routinely solicit feedback from stakeholders on emerging trends. Our Evaluation Team develops innovative tools to track progress, report and measure outputs, and map all Center contributions to improvements in farmer health and safety in our region's intensive row crop and livestock production operations. The Evaluation Team leads structured reviews of the strategic plan and the communication plan and leads the Center administration evaluation process to provide feedback on the effectiveness of this Core. Below are the key *E&P Core* activities accomplished over the past year.

Surveillance Activities and Impact

In November 2025, we completed our analysis of the Iowa Trauma Registry data to summarize trends of farm-related injuries. The report and associated posters are available on our Injury Trends for Great Plains Farm Workers web page. This analysis identified 3753 farm-related injury cases in the Iowa Trauma Registry from 2017 through 2023. The most common injury mechanisms were fall, contact with machinery, natural sources (mostly animal contact), and transportation. The only age-dependent trend identified was with fall injuries, where the number of injuries increased along with increased farmer ages. Fracture was the most common (71%) injury diagnosis with falls, and 40% of falls resulted in severe outcomes. While Powered Take-Off systems (PTOs) accounted for less than 4% of traumatic injuries associated with contacting equipment, records indicated that over half of the machine-caused injuries were not coded with a specific machine source, indicating there is an unclear profile of agricultural machinery in the trauma registry. Around 81 farmers per year were injured by animals, with cows (65% of these cases) and horses (19%) the most frequent animals associated with the injury outcome. Further, while transportation accounted for another quarter of these injuries, two-thirds of these incidents happened off the road.

These findings were shared with the Outreach Core and were incorporated into the *FarmSafe* Podcast (Season 5, Episode 4; January 2026). These results were also incorporated into January 2026 Ag Health

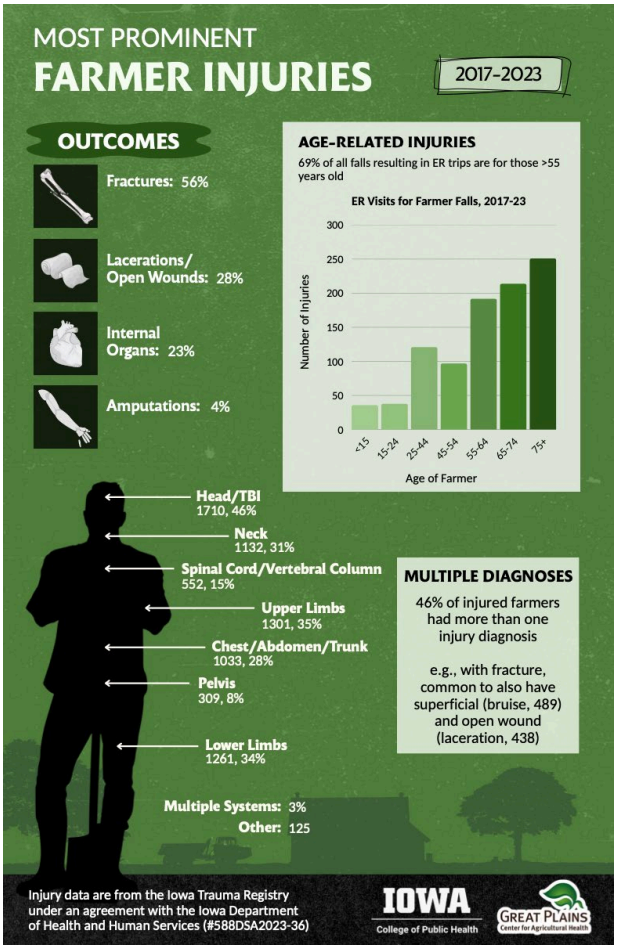

Figure 1: Trauma Registry surveillance analysis

Academy's programming, which developed a three-part series on machine safety in response to machine interaction injuries.

We developed a set of two posters to convey findings to farmers and their advocates, with sets for 11x17 and 8.5x11 inch printing (Figure 1). These findings have been shared with regional advisory committee members and were distributed in the 2026 Farm Progress Show.

Regional Needs Assessments

We closed the 2024-2025 needs assessment survey with 247 responses at farm shows and 68 responses from ag students. Content analysis identified 13 health and safety themes, where the top concerns from farmers were changed from the previous (2017-2018) survey. The top five concerns accounted for 67% of all farmer concerns in the region, which were focused on (1) equipment and tools (including tractors, power tools and implements), (2) chronic diseases, (3) general safety (injury prevention, burns, electrical, safety equipment), (4) confined spaces (grain bin engulfment, respiratory hazards, manure pits), and (5) chemical hazards (pesticides, safe handling, health effects). We saw a slight change from previous needs assessments in farmers' preferred sources of agricultural safety and health information, where 14% identified extension agents as the preferred source, followed by medical providers (12%), the internet (12%), and FFA/4G (10%). Traditionally, farmers in our region have relied most frequently on medical providers as the preferred source for this information.

The GPCAH also completed a needs assessment survey of our region's Extension agents. The current 421 "farmer concerns" provided by the 148 respondents identified an overwhelming concern (46%) related to farmer health care, including specific topics of cancer, cardiovascular disease, and vision. The next three highest concerns related to equipment/tools (11%), farm management and human resource issues (hiring, training, and working hours; 10%), followed by chemical safety (9%). These concerns aligned with direct responses from farmers. Results from these two surveys will be used by the Outreach Core and E&P Core to set inform research, emerging issues, and outreach priorities for the duration of the project period.

Social Media: Activities and Impact

Over the past year, our Facebook content reached 4,420 people, generated 19,400 views, and received 453 likes, comments, and shares. One interesting takeaway is that nearly two-thirds of our views came from people who did not follow our page, which means our content is reaching new audiences and has strong sharing potential.

In past years, our most popular text posts were event-related, so our year-long effort to making more visual posts has proven successful. Videos, reels, photos, safety tips, checklists, and real-life stories all performed

well. Going forward, we plan to continue creating easy-to-digest safety content that is visual, useful, and relatable across our platforms (YouTube, Facebook, and Instagram).

Using new assessment tools on Meta Business Suite, we can see what people engaged with most: our most popular posts were about grain bin safety, confined spaces, fire prevention, and other serious farm safety hazards. Content tied to events like National Farm Safety and Health Week also performed especially well. These topics are grabbing attention because they are timely, practical, and focused on protecting farmers from real-world risks. Understanding which posts are most popular has helped shape our social media communications moving forward.

Table 1. Most successful social media content and communication strategies

Most Popular Content	Communication Strategies
Grain bin and confined space safety	Keep focusing on high-risk safety topics
Seasonal safety campaigns	Align content with timely farm safety issues
Videos, reels, and photos	Prioritize visual content
Tips and checklists	Share practical advice people can use right away
Real-life stories and lessons learned	Use storytelling to make more memorable posts

Emerging Issues

In our Year 4 project period, emerging issues activities included the completion of respiratory protection train-the-trainer activities and funding for short-term, pilot scale projects.

Respiratory Protection Fit Testing – Train the Trainer: A key Emerging Issue activity in this project period was a final phase of work to help expand the respirator fit testing capacity needs critical to help farmers and pesticide applicators in our region. Training sessions were conducted in September 2024 (Year 2), and four participants enrolled to receive fit test kits (qualitative) and agreed to respond to a survey in June 2025 (Year 3) so we could identify the impact of training and their self-efficacy after receiving training and equipment. While no one identified problems with the kit or its use, only one person used the fit test kit to evaluate respirator (FFR/N95) fit while testing three people (Extension agent, farmer, health care provider); the aggregate of extension agents who received fit testing kits had projected testing 60 farmers after receiving the kits. While those who were trained reported they were comfortable/somewhat comfortable with explaining fit testing needs, conducting fit tests, and walking through the process, one was "not comfortable at all" helping to select respirator types. Because of this, we developed in year 4 a new, fillable poster for use in future course offerings (and available on the web at https://gpcah.public-health.uiowa.edu/ppe-resources/) to walk through how to select respirators for farming tasks. This was used by our Outreach Core team during the September 2025 Gear Up for Ag Health and Safety™ (Gear Up for Ag™) training at a local community college, which helped reinforce selection guidance. We incorporated this shortcoming into June and July 2026 Ag Health Academy sessions to close the gap in knowledge about respirator selection. The education team involved in train-the-trainer activities prepared two peer-reviewed manuscripts to share results of conducting 8 workshops over five years, reaching 175 participants.

Emerging Issues Research Projects: In November 2025, Emerging Issues funds were awarded to support two short-term research projects that could leverage GPCAH resources to build capacity regionally if future federal NIOSH funding was not reinstated. Progress on these projects is tracked through the GPCAH Pilot/Feasibility Projects Program, and these new investigators have been invited to attend the monthly internal advisory committee meetings to network with GPCAH investigators to provide connections to networks needed to make rapid progress.

1. **Determining the overall respiratory health impacts from implementing far-UVC as a respiratory disease intervention in agricultural environment** (Jin Pan, Assistant Professor, Occupational and Environmental Health, University of Iowa) – The overall goal of this Emerging Issues project is to test whether far-UVC can help reduce the spread of disease in simulated agricultural settings. Far-ultraviolet C light (far-UVC; wavelength 200–230 nm) is an emerging technology for disinfection and disease control. Compared with traditional UV light, far-UVC generally causes little harm to the skin and eyes, which suggests that it may have potential for controlling infections in occupied space, such as agricultural environments. We first built a chamber to test the technology under controlled laboratory conditions. In these tests, far-UVC inactivated two different types of viruses on plastic surfaces within 2 to 8 minutes. We then added components of swine manure to the virus suspensions to better simulate an agricultural environment. Viruses were inactivated more quickly in the presence of manure components. We also examined how seasonal changes in relative humidity affect far-UVC disinfection performance. Lastly, we explored the underlying mechanisms of far-UVC disinfection. All experiments for this project have been completed, and a manuscript is being prepared.

Figure 2: Dr. Pan's setup includes a glove chamber in which the relative humidity (RH) can be regulated. The far-UVC lamp was mounted inside the chamber on a 3D-printed stand that allows RH-controlled air to pass through while blocking all other light.

2. **A Community Engaged Approach to Evaluating Tick Exposure and Tick-borne Disease Risk and Prevention in Iowa Farmers: An Emerging Threat** (Kathryn Dalton, Assistant Professor, Occupational and Environmental Health, University of Iowa) – This project aims to identify occupational risk factors for tick exposure and tick-borne diseases among Iowa farmers while also evaluating farmers' knowledge, attitudes, and practices related to perceived risk and prevention strategies. During the award period, we successfully completed survey data collection, closing the survey in fall 2026 with over 450 responses from farmers across Iowa and the Midwest. Preliminary findings indicate that tick encounters are extremely common, with 90% of farmers reporting finding a tick on themselves in the past year, 60% reporting a tick bite, and 15% reporting a previous tick-borne disease diagnosis. Higher tick exposure was associated with longer work hours and older age, while tick bites were more common among cattle and organic producers. In addition to research activities, we conducted extensive community outreach and education through events including the Practical Farmers of Iowa Field Days, the University of Iowa Science Café, and the Farm Progress Show (shown in Figure 3). These engagements have helped raise awareness of tick-borne disease prevention while ensuring our research remains responsive to farmer concerns. In the coming months, we will continue data analysis and dissemination efforts by presenting preliminary findings at the Midwest Rural Agricultural Safety and Health Conference and the Practical Farmers of Iowa Annual Conference. Overall, the project is generating important knowledge to inform targeted, community-driven strategies to reduce tick-borne disease risk among agricultural workers.

   Dr. Dalton's research on ticks and tick-borne disease was highlighted in the April 29, 2026, two-part episode of the GPCAH *FarmSafe* podcast (Season 5, Episode 8 [S5E8] and Season 5, Episode 9 [S5E9]). Dr. Dalton has also appeared on television news broadcasts to provide her expert perspective on the increase in tick-related health concerns in our region.

Figure 3: Dr. Dalton doing community outreach at Farm Progress Show

Outreach Core
(E. Ritchie)

The **long-term goal** of our *Outreach Core* is to reduce injury and illness among agricultural workers throughout our region by providing a multi-tiered approach to disseminating health and safety information in a way that maximizes adoption by agricultural workers. Our **objective** is to increase the speed and uptake of agricultural safety and health programs, practices, and policies among intermediary organizations that engage with the agricultural workforce. Our efforts to achieve this rely on (1) expanding our educational programs, (2) translating and disseminating research into effective prevention messages, and (3) creating mechanisms that facilitate communication between the Center, intermediaries, and end users. Our **primary target audiences** are healthcare providers (including those serving migrant and seasonal farmworkers), employers (including supervisors of young agricultural workers), and media communicators who can influence perceptions and behaviors through their portrayal of the agricultural industry. These activities position the GPCAH as a regional and national resource to reduce injury and illness and promote well-being among workers in the agricultural community.

To achieve this **mission** of the GPCAH, the *Outreach Core* has three main **aims**:

(1) Build capacity and expertise among practitioners to protect vulnerable workers by expanding the adoption of agricultural safety and health educational materials throughout the region and nationally.

(2) Translate agricultural safety and health research findings using a multimedia approach to encourage adoption of evidence-based practices among stakeholders and target audiences.

(3) Build new and nurture existing stakeholder partnerships with intermediary organizations to foster bidirectional communication channels

Highlights of high-impact activities during this fourth year of our project are summarized below.

Training

Ag Health 101 provides *introductory* information on both farming and health protective practices. For those new to either farming or health and safety, this program is the best place to start. The course can be accessed by anyone at https://gpcah.public-health.uiowa.edu/ag-health-101/. Through August 2026, the public has completed **377 units**, with final quiz results communicated to participants. We have found that many are repeating the quizzes, 206 of 579 quizzes completed identified as repeats. The units with the highest number of completions are *Introduction to Ag Health 101* (Unit 1), *Heat Illness Prevention* (Unit 2), and *Tractor Safety* (Unit 10). In the first year of the program, five people completed the full course of 10 units. Only two of these five have applied for CE certification from the University of Iowa Carver College of Medicine. In the second year of the program, 20 people have completed the full course of 10 units, bring the total over both years to 25 people.

Intermediate Ag Health is the second tier of self-paced educational components. The interactive modules provide detailed information on 11 topics relevant to farming health and safety, mostly developed through the center's previous project cycle (2016-22). During the 2025-2026 project period, courses have been completed 124 times, totaling 1674 completed modules during this funding cycle (September 2022 – September 2026) and 3059 completed courses since the first module was deployed in the last project cycle.

Figure 4 tracks the use of these modules over time. The first module was deployed in 2016, and the following are the most widely used courses: *Occupational Lung Diseases* (published 12/17, completed 495 times), *Occupational Skin Disorders* (9/18, 454), and *Physical Agents* (2/16, 392). These modules have been incorporated into *Core Course* curriculum offerings with our partner institutions as asynchronous materials used around the country. Course completion has dropped in the second half of this project period, but several topics held strong, including *Overview*, *Livestock Handling*, Biological Risk Management, *Occupational Lung Diseases,* and *Transportation* modules.

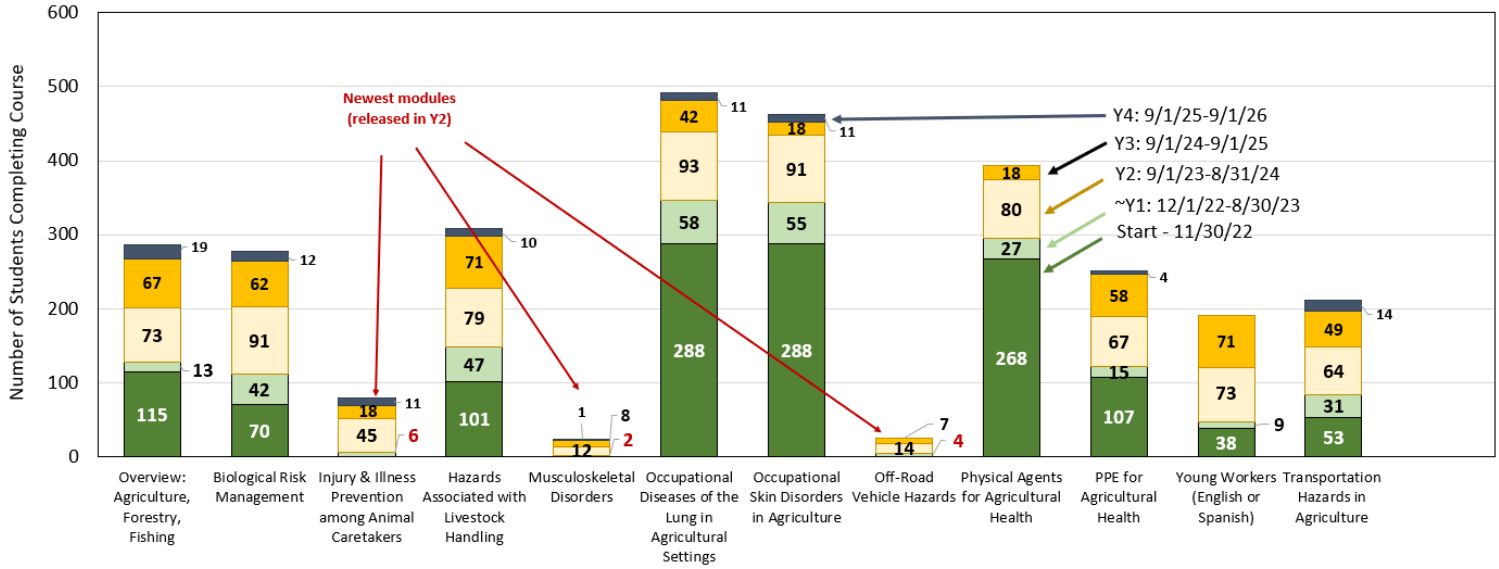

Figure 4: Use of online modules by topic, stacked bars over time. The dark blue sections were from project period 4, specifically Sept. 2025 through July 2026.

Ag Health Academy is the advanced educational training level of our ag curriculum (https://gpcah.public-health.uiowa.edu/ag-academy-home/), which was introduced in April 2025 but paused due to federal funding uncertainties and termination of public health collaborators across the region. We reframed the program delivery: specifically, we recorded technical content but held sessions synchronously so we could have live interactive sessions after the "lecture" portion of the lesson. In this project period, we had three episodes on machine safety (January-March), transitioned to two episodes on PPE selection for pesticides (April-May), then two episodes for respirator selection for ag exposures (June-July), followed by an update on gas monitors (August), with a pause in September. We had six attendees in 2025 sessions and up to six in 2026 sessions, a slow roll out, which was expected. We are exploring options for increasing membership for the remaining project period.

Translation

The GPCAH Outreach Core translates research findings into multimedia formats to encourage the adoption of evidence-based best practices. Our key contributions to our translation objectives during this project period include the development and distribution of our podcasts, monthly newspaper column, field events, and a new interactive tool for PPE education.

After beta testing the system with our Regional Advisors, we finalized and rolled out the new Resource Library (working title was *Knowledge Repository*). In the first three months, the resource library page was viewed 167 times.

FarmSafe Podcast: This project period, we developed and aired 15 episodes of Season 5 of the *FarmSafe Podcast,* with new episodes dropping in bundles in January, April, and July 2026. Libby Ritchie (né Presnall),

research assistant and outreach staff for the GPCAH (and current Outreach Director), continued as the host for Season 5. Our assessment of the new "bundle" dropping approach for Season 4 identified a new peak in monthly listeners (163 downloads; averaging 32.6/episode) following the first five episodes dropped January 29, 2025. In April, 148 downloads associated with 5 more episodes dropping in July. We continue to promote episodes outside of the drop windows when national safety and health activities match *FarmSafe Podcast* content. For example, in October 2025 (between seasons) we had 121 downloads, indicating the promotion of episodes outside of drop periods yields episode interactions.

During season 5, topics included injury prevention, heart disease and stroke risk among rural populations, tractor safety, youth safety in agriculture, prevention and detection of tick-borne disease, cancer risk in agricultural communities, using UAVs for air quality monitoring, mental health among farmers, and preparing and responding to rural flooding. The final season included discussions from GPCAH investigators and students within the Department of Occupational and Environmental Health about their current research projects. We continued with the change from biweekly drops to coordinating three bundled drops in Season 5 – January 28, April 29, and July 29. Season 5 produced 15 episodes with a total run time of 4 hours 2 minutes. This season's episodes averaged approximately 16 minutes. Topics covered during all five seasons are identified in Figure 8.

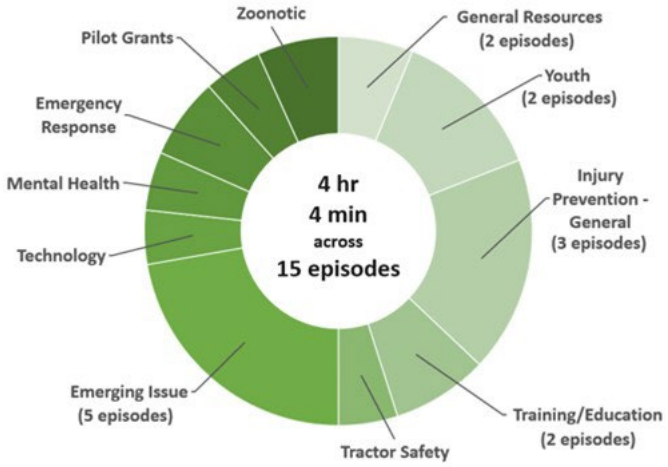

Figure 5: *FarmSafe Podcast* topics presented in Season 5.

Across all 92 episodes (starting with the first on Aug 20, 2021, through July 29, 2026), listeners have downloaded **4,983 episodes**. During this project period, listeners frequently visited our episode library: 76% of downloads this project period were from episodes released in *previous* seasons. Of our **1,337 episode downloads** this project period's season, **327** were downloads of our new (15) Season 5 episodes, and **1,010** from Seasons 1, 2, 3 and 4, indicating continued usefulness of episodes across our content library. Unlike the previous four seasons, our traditionally top-rated season premiere was edged out for the highest number of downloads by ***The 40 Percent Problem: Heart Health in Rural America*** (S5E5, Jan 2026). In this episode, Tim Nikolai, Senior Rural Health Director for the American Heart Association's Midwest Region, explores why people living in rural communities face significantly higher risks of heart disease and stroke, and discusses practical solutions to help close that gap

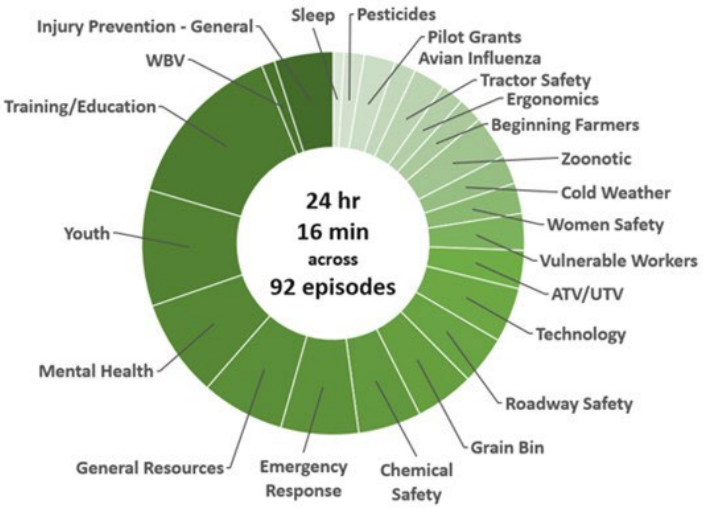

Figure 6: *FarmSafe Podcast* topics presented in all five seasons.

and improve heart health outcomes. We purposefully posted this episode during *February Heart Health Month*, *2026,* and promoted it on social media by tagging the American Heart Association and using #stroke,#heartdisease,#ruralhealth, and #rural.

Of the remaining new Season 5 episodes, the most listened-to episodes were: *Herd Health and Alpha-Gal: Managing Ticks on Midwest Farms* (S5E10), *Ticks on the Rise, Part 1: Why Farmers Should Pay Attention* (S5E8), and *How Farmers Get Hurt: Insights from Iowa's Trauma Registry* (S5E4).

Over all five seasons, the top *FarmSafe* episodes across our library are:

- *Cold Weather Training Tips* (S1E12) with **363 total downloads**, including **70 gained in the past year**.
- *Sleep* (S1E6), with **200 total downloads**, including **17 gained this year**.
- *Women in Agriculture and Safety Issues* (S2E2), with **138 total downloads**.
- *Back Pain and Whole-Body Vibration* (S1E7), with **96 total downloads**.

Our original trailer (S1) has 315 downloads, the most downloaded episode, likely a function of podcasting promotion algorithms beyond our control.

In Season 4, we dropped episodes in three bundles (January, April, July). A bulk-episode drop approach was successful in increasing engagement for Season 4. Thus, we continued to follow this strategy for Season 5 and saw an additional increase in downloads, reaching **1,337 downloads** (September 2025 – September 2026), up from **925 downloads in Season 4**.

This also exceeded the 1,000 downloads recorded in Season 1 (August 2021–July 2022), with downloads counted through September 2022. These results suggest that our bulk-release strategy is at least as effective as the previous biweekly release schedule, while offering the added benefit of allowing us to develop and publish themed bundles of related episodes that have been produced over several months.

Safey Watch: Additional *Outreach Core* translational activities included sharing messages in *Iowa/Illinois/Missouri Farmer Today*'s *Safety Watch* column. This year, topics included gas monitor use (November 2025), health programs and new rural initiatives by American Heart Association (January 2026), injury trends from Iowa Trauma Registry (March 2026), youth safety (May 2026), creating peer support networks for farmers (July 2026), and simple strategies to improve farm safety in light of *National Farm Safety and Health Week* (September 2026). We also promoted safety tips to our 1600 newsletter recipients in the *Farm Families Alive and Well Newsletter*. (List of articles in Output Summary)

New and Existing Stakeholder Education

State Public Health Veterinarian: During this project period, we established a valuable partnership with Dr. Andrew Hennenfent, Iowa's State Public Health Veterinarian. We first invited Dr. Hennenfent to participate in an Ag Health Academy session on pathogen updates in June 2025, where he introduced new rabies education toolkits developed by the Iowa Department of Health and Human Services.

Following this collaboration, Dr. Hennenfent joined the **GPCAH External Advisory Committee**, and GPCAH staff contributed as advisors and content developers for his new *Ag Safety Communications Toolkit*. Released and shared throughout the region in April 2026, the toolkit was developed through a consensus-based process to provide coordinated health and safety messaging for the spring planting season.

The toolkit incorporates and promotes several GPCAH resources, including anhydrous ammonia safety posters, agrichemical safety handouts, and online resource pages covering rural roadway safety, first aid, and personal protective equipment (PPE). This collaboration has strengthened connections between public health and agricultural safety partners while expanding the reach of GPCAH educational materials.

Agricultural Health & Safety Alliance (AgHSA): Our *Outreach Core* subcontracts with the Ag Health and Safety Alliance (AgHSA) to deliver outreach materials to agricultural students across the region. Recognizing the need to promote safety and health among young agricultural workers, the Outreach Core has expanded a long-standing partnership with AgHSA to offer training to college students enrolled in agricultural programs through the international Gear Up for Ag Health and Safety™ program. The GPCAH Outreach Core partnered with AgHSA to deliver outreach material to 287 college ag students in our region, specifically at Iowa State University (Ames, IA), Morningside Community College (Sioux City IA), Iowa Lakes Community College (Emmetsburg, IA), Dordt University (Sioux Center, IA), Kirkwood Community College (Cedar Rapids, IA), and South Central College (Mankato, Minnesota). In January 2026, a maternity leave for an instructor at the Lennox School District in South Dakota created a unique opportunity to deliver a customized Gear Up for Ag eLearning program to 30 high school students. At Kirkwood College, AgHSA and GPCAH co-presented during breakout sessions to a regular audience of 70 young adults, highlighting a more in-depth collaboration than at other locations.

Beyond the GPCAH region, AgHSA shared information that include our resources with an additional 915 young adults in programs in Mississippi and Arizona, as well as throughout Canada (Alberta, Manitoba, Ontario, Quebec, Saskatchewan, Nova Scotia and PEI), where young adults are involved in agriculture. AgHSA worked with the nursing program at Morningside College and Iowa Lakes Community College to schedule and facilitate Agricultural Safety and Health education to one nursing program at each college during this project year. The newly developed Gear Up for Ag Health and Safety program and the eLearning resource course have been modified for the nursing audience.

The eLearning program complements the Gear Up for Ag™ onsite program or can be used as a standalone training tool. It features videos, infographics, checklists, web links, virtual 360° activities, and fact sheets delivered through interactive activities such as quizzes, matching exercises, card sorting, clickable content, and slide navigation. Many of the eLearning topics include GPCAH resources for ongoing engagement and learning opportunities.

A farm youth-related project secured by AgHSA using emerging issues project funds by the National Children's Center for Rural and Agricultural Health and Safety (NCCRAHS) resulted in a collaboration with academic representatives from GPCAH, NCCRAHS, the Western Center for Agricultural Health and Safety (WCAHS), the NIOSH National Personal Protective Technology Laboratory (NPPTL), and two Pediatric Environmental Health Specialty Units. As part of this collaboration a manuscript focusing on filtering facepiece respirator use among farm youth in the U.S. was published.

Motion graphics, developed by AgHSA with the GPCAH, and several GPCAH infographics and print resources have been incorporated into the AgHSA through both their Gear Up for Ag Health and Safety™ onsite interactive program and their eLearning online platform. These included the following GPCAH materials: Air Quality and Gas Exposures, How Loud is Too Loud, Skin Cancer and You, Traffic Safety, Whole Body Vibration, and Respiratory Protection Selection (with a specific emphasis on choosing the correct cartridge). New GPCAH materials on tractor safety (the new Center of Gravity for Tractors poster), Fall Risks (poster), and the overall Cost of Injury (poster) were integrated into the delivery program. These educational resources were also added to AgHSA's website resources tab. When visiting schools, AgHSA identifies ag educator posters currently on display (from GPCAH 2017, 2023 and 2024 mailings) and incorporates these into the Gear Up for Ag educational topics. Additional new posters were provided for the classrooms, specifically for the respiratory and tractor safety topics.

The AgHSA team participated in the July 2026 Farm Safet Podcast, "When Waters Rise: Flood Preparedness for Rural Communities" (S5E14). Carolyn Sheridan of the Ag Health and Safety Alliance and Ellen Duysen of the Central States Center for Agricultural Safety and Health (CS-CASH) discussed lessons learned from the Midwest floods of 2019 and Iowa's historic flooding in 2024. The conversation highlighted the importance

of emergency planning, personal safety, recovery resources, and community support while sharing GPCAH and CS-CASH resources.

The Respirator Fit Test Guide for Pesticides Handling, published with GPCAH funding in 2024 (see E&P Core), has been adopted by AgHSA and continues to be widely used in training programs and train-the-trainer workshops. These workshops are promoted through AgHSA's partners and at conferences, and both are available on the AgHSA programs website. Each workshop directly references the GPCAH Respirator Fit Test Guide. A manuscript was published in the *Journal of Workplace Safety and Health*, as part of their Professional Practice series, to reach the occupational health nursing community to assist in understanding how to structure community-based respirator fit testing programs for ag workers.

Carolyn Sheridan, RN, BSN, and Executive Director of AgHSA, is part of a weekly Al Travis Radio show, an agricultural news and information program broadcast on 11 radio stations in the GPCAH region. Carolyn has been part of this radio show for 6 years with more than 300 episodes, many of which highlighted GPCAH resources and seasonal safety campaigns. Topics included, but were not limited to pesticides, manure gas, hearing conservation, whole-body vibration, respiratory protection, respirator fit testing, roadway safety, and older farmers. For example, in January, Working in Cold episode and in October Harvest Safety shared GPCAH resources for these topics (watch at https://bit.ly/AlTravis).

***MRASH**:* The annual Midwest Rural Agricultural Safety and Health (MRASH) conference was held in November 2025 (64 attendees from 10 states) and was co-sponsored by the GPCAH and Iowa's Center for Agricultural Safety and Health (I-CASH), with sponsoring support also from CS-CASH (NE Ag Center), National Children's Center (Marshfield), Iowa Department of Health and Human Services, AgriSafe, AgHSA, the Great Lakes Center for Farmworker Health and Wellbeing, Iowa Cancer Consortium, and the North Central Farm and Ranch Stress Assistance Center.

The theme this year was "Cultivating Connections: Health, Safety & Wellness in Agriculture" and featured a "Mental Wellness Workout", which was a series of 5-minute presentations on ways to combat stress that can be taught during outreach events. The conference provided an opportunity for 14 poster presentations and 18 technical presentations. Poster presentations included one from a GPCAH pilot grantee, two by our RAC members, and two from other NIOSH AgFF center personnel. Technical presentations included one from GPCAH personnel, three from RAC members and four from other NIOSH AgFF centers). The keynote (Jeff Bender, UMASH Director) presented information on One Health, and 100% of those completing evaluations said they gained insights on how to effectively use One Health concepts in their work. A revised version of last year's interactive "Messaging in Minutes" session, recrafted as "Cultivating Conversations", had attendees rotate through four of eight stations to spend 20 minutes engaged in understanding how to use different One Health concepts on the farm: 89% reported that they learned techniques to engage rural audiences with health and safety practices in these 20-minute sessions. Feedback from attendees included:

- *"I appreciated the variety of expertise represented in the sessions. This was a great overview of One Health and its applications no matter the attendee's level of experience."* – Student, health educator (re: keynote and subsequent panel)
- *"There was incredible discussion happening in the sessions I attended. I also enjoyed learning about a new (to me) analysis method."* - Researcher/health educator (re: breakout sessions)
- *"Remembering that health messaging should not be added to already stressful topics (like farm succession) and leveraging the animal/human bond in health promotion messaging."* - Student, health educator

- *"It was a rich conference with so many people to connect with."* – Student in health education/outreach and first-time attendee

Pilot/Feasibility Projects Program
(N. Fethke)

The Pilot/Feasibility Projects Program is a vibrant and vital component of the GPCAH. The Program strengthens the Center's impact on agricultural safety and health (ASH) by operating a competitive funding opportunity using two tracks, one designed to support new academic research and the other to support community-based education/outreach/translation projects.

> *Academic-Track Awardee Characteristics.* A key goal of the Program is to support investigators new to the field of agricultural safety and health.
>
> *Community-Track Awardee Characteristics.* A key goal of the Program is to support regional organizations in their efforts to develop, implement, evaluate, and deliver evidence-based ASH services (e.g., educational programming for agricultural workers).

Applicants for community-track pilot funding must first submit a brief Project Concept about six weeks in advance of the deadline for full applications. The Center provides feedback and invites discussion with project leaders to strengthen alignment of the project scope of work with the Center's priorities and expectations for evaluation. All GPCAH pilot/feasibility projects have a maximum budget of $30,000 (direct costs).

Program Highlights

Concerns regarding the continued availability of funding (at the national level) for the NIOSH Centers for Agricultural Safety and Health caused disruptions and modifications of the GPCAH Pilot/Feasibility Projects Program operations during the 2025-2026 project period (Year 4).

- We issued RFPs for both academic-track and community-track pilot projects in March 2025, as originally planned.
- In April 2025, we suspended our Requests for Proposals (RFPs) when NIOSH was targeted for elimination and when all NIOSH Ag Centers were unsure funding would continue.
- Although the GPCAH remained funded for the 2025-2026 project period, the following process changes were made to manage uncertainty regarding our ability to establish subcontracts with external organizations (i.e., other than the University of Iowa):
    - We did not reopen the community-track RFP.
    - We reopened the academic-track RFP, but with a restriction to researchers affiliated with the University of Iowa.
    - We restricted the allowable budget period to coincide with the end of the 2025-2026 project period, due to ongoing uncertainty about 2026-2027 center funding.

We received three applications, of which two were funded after applying our standard merit review process. These funded applications are:

Srividya Ramanthan (PhD student, Health Management and Policy, University of Iowa) is examining the early effects of Iowa's 2021 Emergency Medical Services legislation on trauma care outcomes among farm injury patients using the Iowa state trauma registry. [new academic-track pilot project]

Taeuk Kang (PhD student, Epidemiology, University of Iowa) is characterizing the epidemiology and clinical implication of fungal keratitis, a serious eye infection that often causes visual impairment, among Iowa agricultural workers. [new academic-track pilot project]

In addition, pilot grant awardee Taeuk Kang was a featured in the 2026 University of Iowa "Dare to Discover" campaign, which highlights rising scholars across campus.

In addition, the GPCAH *Emerging Issues Program* solicited and received three applications for funding, of which two were funded and administered by the Pilot/Feasibility Projects Program. (See Emerging Issues Section for additional details)

Kathryn Dalton (Assistant Professor, Occupational and Environmental Health, University of Iowa) is identifying occupational risk factors for tick exposure and tick-borne diseases in Iowa farmers, as well as capturing knowledge, attitudes, and practices on perceived risk and prevention strategies. [new emerging research issues project]

Jin Pan (Assistant Professor, Occupational and Environmental Health, University of Iowa) is determining the effectiveness of far ultraviolet C light for controlling the transmission of zoonotic respiratory pathogens in agricultural settings. [new emerging research issues project]

To prepare for selecting pilot projects for our Project Year 5 (2026-2027), we restored our standard operating procedures and solicited applications in March 2026. We received four community-track and 10 academic-track applications, with 11 states represented among applicants' organizations and institutions. Topics proposed among the applications addressed a broad range of high-priority agricultural safety and health topics, including mental health (7 of 14 applications), musculoskeletal health, assistive technology, grain bin safety, infectious diseases, and heat illness, among others. Four applications were identified for funding (all external to the University of Iowa), and we are currently in the process of establishing subcontracts with each.

Advancing Whole-Body Vibration (WBV) Exposure Control in Agriculture *(N. Fethke)*

Mechanized row crop production exposes agricultural workers to whole-body vibration (WBV), a key risk factor for back problems. Suspension systems of the seats in agricultural machines can reduce WBV exposures. However, the performance of seat suspension systems varies (i) between-operators under controlled conditions in the laboratory and (ii) within-operator under variable conditions in the field. Both circumstances limit our understanding of how effective seat suspensions are in reducing WBV exposures. This project offers methodological improvements to the assessment of seat suspension system performance under actual production conditions.

Ultimately, our goal is to instrument numerous machines across several farms and then, for each time that each machine is used over a period of many weeks, to measure vibration both at the seat surface and at the base of the seat suspension system. The resulting data will then be used to (i) estimate the magnitude and precision of several sources of variability in seat suspension performance and (ii) empirically address ambiguities in the ISO's standards for measuring and evaluating WBV exposures.

Because of the large number of machines and the multi-week measurement campaign, using typical ("gold-standard") WBV measuring equipment is cost-prohibitive and logistically infeasible. Therefore, we have developed a low-cost WBV measurement system. Our system includes additional features to help us understand the variability in seat suspension performance, such as GPS (to track machine speed), automatic detection of operator presence to ensure our analyses include only periods when an operator is on the seat, and sensors/algorithms to estimate operator posture (e.g., leaning forward or reclining), which influences seat suspension performance.

Key Achievements in the Past Year

This project brings together researchers from three University of Iowa laboratories to develop better ways to measure whole-body vibration (WBV) exposure among agricultural machine operators. One goal is to create a low-cost, reliable monitoring system that can accurately measure vibration exposure in real-world farming environments and provide new information about how operator posture affects vibration levels.

Aim 1 focused on developing and validating the new instrumentation system. In the past project year, we published two peer-reviewed manuscripts describing experimental results. A manuscript appearing in the *Journal of Occupational Environmental Hygiene* describes the technical details of our new instrumentation system and the accuracy of the system's accelerometers relative to industry-standard reference equipment. A manuscript appearing in the journal *Vibration* describes a machine-learning model for classifying operator posture (e.g., leaning forward, reclining) using data from the instrumentation system's sensors. Specifically, the model leverages data from both the accelerometer and an array of built-in pressure sensors to enable operator posture classification with 89% accuracy. Extension of the model to field-based data can open new pathways to efficiently (and remotely) capture operator posture, which is a key modifier of the potential harm from WBV exposures.

A third manuscript from **Aim 1** published in the past project year, appearing in the journal *Applied Ergonomics*, describes changes in the extent of vibration measured at the seat surface in response to changes in operator posture. Although the relationship between posture and the transmission of vibration through the body has been well-documented, our results show that posture also affects the mechanical response of the seat suspension itself. A fourth manuscript from **Aim 1** published in the past project year, appearing in the journal *Vibration*, uses information about operator posture and self-reported discomfort to adjust measured WBV exposure levels for more optimal interpretation of risk.

In the past project year, work on **Aim 2** focused on deployment and field-based data collection on area farms. Initial deployment and data collection occurred during the 2025 harvest period (roughly, late August to early November). We recruited 14 agricultural machine operators from six farms and installed the new instrumentation system on 12 machines (5 combines, 7 tractors). Our second deployment occurred during the 2026 planting and spraying seasons (roughly, early-April to late June), with additional data collection through early August. For the second deployment, we recruited 16 agricultural machine operators (5 repeated from the first deployment) from 8 farms (3 repeated from the first deployment) and installed systems on 15 machines (11 tractors, 4 high-clearance sprayers). For each machine, data were collected continuously for at least eight weeks.

Although the complete **Aim 2** dataset is not yet finalized, the two deployments yielded more than 1000 data collection days (across all machines) and, of those, nearly 500 data collection days with more than 2100 confirmed hours of whole-body vibration exposure during agricultural production activity (e.g., combining, planting, other fieldwork). Work continues to review and process the data by identifying and correcting hardware issues, refining signal processing and data reduction methods, and evaluating information collected from GPS systems, soil moisture sensors, and operator activity logs. Additional recruitment is underway for the upcoming 2026 harvest to reach the project's target sample size.

Aim 3 will start during the next reporting period. The first phase of field data collection under Aim 2 has provided the foundation needed for this next stage of the project.

Together, the accomplishments from this reporting period represent substantial progress toward developing practical tools that will help researchers and industry better understand and reduce potentially harmful whole-body vibration exposures among operators of agricultural machines.

Figure 7: Research professional Libby Ritchie installing WBV measuring equipment on a tractor *[photo by Tyler Guzowski]*

Community Campaign to Reduce Farm-Vehicle Roadway Crashes *(C. Hamann, L. Schwab-Reese)*

Motor vehicle crashes are a leading cause of injuries and fatalities in the agricultural industry, and drivers of passenger vehicles are most often at fault. This project will use a novel approach to improve rural driver behaviors around farm vehicles on the roadway through a community-level intervention packaged into a toolkit and disseminated through Extension Educators.

The *long-term goal* of this research is to reduce injuries and fatalities associated with farm-vehicle-involved roadway crashes. The *central objectives* of the proposed study are to develop a "We're on This Road Together" Toolkit and training module, then evaluate its reach and implementation. Our team has a unique combination of interdisciplinary expertise in agricultural and road traffic injury prevention and development and evaluation of community-based behavioral interventions. To achieve these objectives, we are addressing two specific aims:

(1) Translate the "We're on This Road Together" community-level rural roadway safety campaign to a Toolkit that can be implemented directly by community groups.

(2) Evaluate the implementation and impact of the "We're on This Road Together" campaign Toolkit.

Key Achievements in the Past Year

Our team wrapped up analysis and reporting on the Iowa pilot phase of the "We're on This Road Together" Toolkit this spring, and our graduate research assistant Rafia Tasnim led the write-up for publication. The manuscript, "We're on This Road Together: Building a Toolkit for a Community-Level Road Safety Campaign," was submitted to *Traffic Injury Prevention* and is currently under peer review. The Iowa pilot ran in three counties, where extension educators held 17 community events and distributed more than 2,000 branded swag items built around the campaign's three core messages: avoid passing, leave more space, and slow down. Post-campaign surveys showed notable gains, including increased road safety awareness in two counties and a jump in drivers reporting they leave three or more car lengths of following distance behind farm equipment in one county (from 4% to over 60%). Rafia also presented a poster on this work at the Society for the Advancement of Violence and Injury Research (SAVIR) conference this year, sharing the toolkit development process and pilot results with the injury prevention research community.

On the Indiana side, the five extension educators who agreed to continue implementation through the 2026 season completed their final round of the campaign and their last implementation survey in May. Community intercept survey collection, however, extended further into the summer than originally planned, with completion rates varying by county. As of early August, Washington County had completed 62 surveys and Boone County 38, both approaching or exceeding our target of at least 50 per county, while Parke and Randolph Counties lagged behind at 12 and 14 completed surveys respectively. Rafia has been in regular contact with educators in the slower counties, particularly Parke and Randolph, to encourage

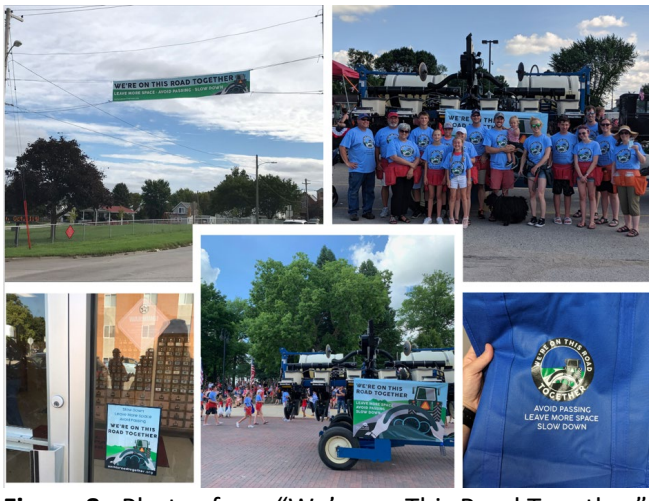

Figure 8: Photos from "We're on This Road Together" community events

continued recruitment and troubleshoot any barriers. Once this final push closes out community survey collection at the end of August, the team will move into analysis of the full Aim 2 dataset, pulling together the educator implementation surveys, community pre/post surveys, and implementation tracking data to look at what drove successful implementation and survey completion across counties. That analysis will continue through the fall. We are planning at least two more manuscripts from this phase: one on educator experiences with the toolkit and one focused on the community survey findings.

Design and Evaluation of a Control Technology for Dust and Bioaerosol in Swine Buildings

(M. Nonnenmann, T. Peters)

Swine production workers are exposed to dust and bioaerosols (e.g., zoonotic organisms), and there is a need to develop scalable, cost-effective engineering control that includes recirculating ventilation systems that are effective and scalable for use across a range of swine building designs. This project used a participatory approach with swine industry stakeholders to design, optimize, and field-validate a prototype miniaturized recirculating ventilation system. The long-term goal of this project is to optimize a **recirculating ventilation system (RVS)** to control worker exposure dust and bioaerosols in livestock production buildings.

Our *long-term goal* is to develop an RVS to control dust and bioaerosols in livestock production buildings and translate our findings using the National Institute for Occupational Safety and Health (NIOSH) research to practice (r2p) approach. The primary objectives of this project are to demonstrate the effectiveness of a low-cost (≤$1500), **miniaturized RVS (mRVS)** to control dust and bioaerosols when integrated into swine buildings. We will communicate with stakeholders to identify optimized design and cost parameters, and we will build and evaluate the mRVS technology performance in swine production. Our research team brings together a swine industry Stakeholder Advisory Group (SAG), including swine producers, producer associations, building designers, swine industry educators, and veterinarians, with NIOSH investigators experienced in translating research findings. Our team has experience with RVS design, cost and contaminant simulation, field validation, and evaluation. Our rationale is that effectively translating research findings about mRVS effectiveness, costs, and cost-savings into solutions that address specific barriers identified by stakeholders will lead to adoption and concurrently improve worker and animal health in the swine industry. This project consists of three aims:

(1) Communicate with stakeholders to develop design criteria for the mRVS

(2) Refine and optimize the mRVS to meet design criteria

(3) Conduct field validation of the optimized mRVS

Key Achievements in the Past Year

For Aims 1 and 2, we interviewed 15 producers, swine safety managers, and industry experts about design, cost, and practical use. Their input guided improvements to the system's materials, fan, ultraviolet lights, and washable device for removing larger dust particles. For Aim 3, we tested the system in swine buildings. In 2023, a room housing nursery pigs had 72% lower concentrations of airborne gram-negative bacteria than a comparison room without the system. In 2025, testing with larger pigs found nearly 50% lower concentrations of airborne microorganisms in the room using the system compared to a matched control room. Neither study showed a clear reduction in room dust concentrations.

Aim 3, Study 2 was redesigned and performed again in January–February 2026 at the University of Nebraska–Lincoln Swine Research Unit. Our focus for this round was to assess bioaerosol control in the nursery stage of swine production using the mRVS. We hypothesized that this stage of production was better suited for the mRVS given the amount of time workers spend in this area compared to the finishing stage used in 2025. Also, preventing disease among nursery pigs is critical to swine production as these pigs are more vulnerable to disease than pigs at other stages of production. Therefore, if disease can be prevented in nursery pigs by using the mRVS, adoption of this technology is more likely.

Thus, we tested an improved system in a room housing 166 nursery pigs. About 290 air samples showed 86%–92% lower concentrations of airborne microorganisms in air leaving the system than in air entering it. Staff also reported that the usual drug treatments for diarrhea among the pigs were not needed in the room using the system. These findings show that the low-cost system can reduce airborne microorganisms in the air it treats. Further research is needed to determine whether it improves pig and worker health or reduces the need for medication.

Figure 9: mRVS operating at 650 CFM (*i.e.,* 4.1 ACH), delivering a dose of 33.3 mJ/cm^2 in the nursery stage of swine production.

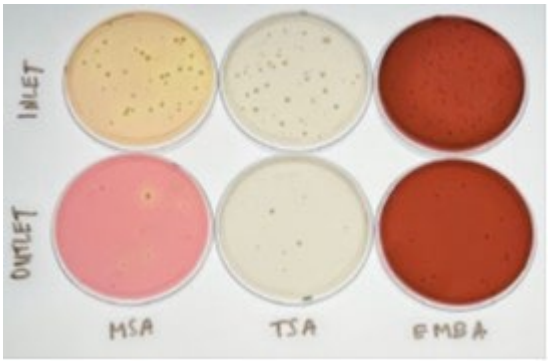

Figure 10: Bioaerosol concentrations were reduced at the outlet of the mRVS across all media types (*i.e.*, MSA, TSA, and EMBA). The observed reductions were statistically significant ($p \leq 0.05$).

Farm Safety for Rural Families Coping with Dementia
(K. Arora, J. Bobitt)

This project's *long-term goal* is to prevent traumatic injuries among older farmers exhibiting cognitive decline and to improve mental health outcomes among agricultural residents/workers balancing competing demands of work and family caregiving. The primary objective of this study is to test a Stage 1 intervention ("Farm Families Coping with Dementia" or FFCD) that provides structured education to family caregivers of farm workers/residents with suspected or diagnosed dementia. Here are our three project goals:

Goal 1: Finalize Farm Families Coping with Dementia (FFCD) toolkit and implementation protocol and train Cooperative Extension Specialists (ES) to deliver program. Conduct formative research and finalize FFCD toolkit (consisting of educational modules identified to support farm families coping with dementia) and implementation protocol in collaboration with advisory team. Train ES on FFCD delivery.

Goal 2: Evaluate FFCD efficacy in improving family caregiver's dementia knowledge, burden, and self-efficacy, and person-living-with-dementia's (PLwD's) farm safety risk. Conduct a two-arm randomized control trial involving an intervention group and a waitlist-control group. Compare participant data between baseline and 3-month follow-up surveys. Interview a sample of family caregivers to explore participant experience in FFCD.

Goal 3: Evaluate implementation outcomes (feasibility, acceptability, and fidelity). Assess feasibility and acceptability from the perspectives of participants and ES through course evaluations and interviews. Assess fidelity by observing program delivery and completing and analyzing a fidelity checklist.

Key Achievements in the Past Year

From July 2025-June 2026, we offered four iterations of Farm Families Coping with Dementia (FFCD) at different times throughout the year and enrolled 44 Agricultural Dementia Caregivers (ADCs). ADCs rated their overall satisfaction with the program as high (4.8/5). Our preliminary findings comparing ADCs' baseline and follow-up surveys (N=24) revealed higher Dementia Knowledge Assessment Score (DKAS), increased self-efficacy for recognizing and addressing safety hazards, and greater decision-making readiness regarding safety of person with dementia.

Our results also showed that a higher proportion of ADCs reported making farm modifications to prevent falls, equipment-related injuries, wandering-related injuries, and livestock-related injuries. The overall number of safety modifications in the farm environment increased from baseline to follow-up as well. ADCs similarly reported a higher likelihood of making home modifications to prevent falls, appliance/equipment-related injuries, as well as wandering-related injuries.

We conducted semi-structured interviews with eight ADCs to explore the program's perceived acceptability, feasibility, and impact (Box 1). ADCs appreciated that FFCD enabled them to consider safety strategies that allowed older F/FR with dementia to maintain an agricultural connection. They noted several strengths of the program, including its virtual format and use of multimedia resources. Participants described the online, group-based format as fostering connection and a sense of shared understanding, helping to reduce feelings of social isolation. They also described implementation of new safety strategies as a result of FFCD participation.

Excerpts from interviews with ADCs participating in the FFCD Preliminary Effectiveness Study are included below:

- *"I'm very glad that someone is recognizing that living in a rural area and perhaps having multiple farm chores, it is a different dynamic than someone who lives in a suburban or urban area." (ID: 2)*
- *"Especially where both of my parents have been active on the farm for so long, I think just finding ways to get them away from their duties without being completely out of the picture was helpful." (ID:1)*
- *"When people were giving examples from their own situations, I noticed that people were reaching out, acknowledging when someone was talking about their situation and they were frustrated, and I think there was a circle of care one can sense from a zoom meeting, a sense of relationship, because we were sharing in universal challenges that we are all dealing with." (ID: 2)*
- *"My parents still have chickens. … It was my mom's, but she's fallen a couple of times. They kind of banned (her) from the chicken house, but we did some improvements in there as far as steps and handrails and different things to make it easier to get in and out of there and facilitating the feeding because they didn't want to get rid of them because it's their job to get the eggs. … They didn't want to get rid of the chickens, so we had to facilitate that. And we did that." (ID: 4)*

Meanwhile, the project team published a paper on agricultural injuries with dementia in *the American Journal of Industrial Medicine*. The results from this study were also presented at the 2025 Gerontological Society of America meetings in Boston, MA. Our work on FFCD has also been accepted at the upcoming 2026 Gerontological Society of America meetings in National Harbor, MD. Additionally, the FFCD team will be leading a roundtable discussion on Aging and Dementia in Farming Communities at the Midwest Rural Agricultural Safety conference in November 2026. This effort engages the Iowa Department of Health and Human Services and University of Minnesota/UMASH. Finally, the PIs were interviewed for an article in the Organic Broadcaster Magazine and the University of Iowa's Injury Prevention Research Center's blog.

Output Summary: October 2025 through September 2026

The table below summarizes the number of outputs over each of our project periods in this cycle. Details on current project year (Year 4) outputs follow.

Table 2: Number of Output Types for each Project Period in this grant funding cycle

OUTPUT TYPE	*Year 1 2022-23*	*Year 2 2023-24*	*Year 3 2024-25*	*Year 4 2025-26*
Publications	11	5	1	9
Abstracts & Presentations	6	10	10	10
Lectures, Seminars, & Workshops	20	11	13	17
Consultations	18	15	17	8
Grant Funding	1	1	0	0
Information to Policy Makers	1	1	1	1
Student Dissertations or Thesis	2	0	1	1
Press Releases, Media Stories	39	40	35	46
FarmSafe Podcasts	17	17	18	15
Total Output Count	**115**	**100**	**96**	

Published Manuscripts (Peer-Reviewed)

1. Arora K, Davis J, Basnet LB, Bobitt J. (2026) **Agricultural injuries with dementia; Double whammy?** *American Journal of Industrial Medicine*, *69*(7), published online April 16. DOI: https://doi.org/10.1002/ajim.70082 PMCID: PMC13241857 [Dementia Project]
2. Fiegel B, Dhabi YK, Rahmatalla S, Thomas G, Guzowski T, Ritchie E, Wilder D, Fethke NB. (2026) **Posture prediction of individuals using agricultural machinery under whole-body vibration in a lab environment**. *Vibration, 9*(2) published online 9 April 2026. DOI: https://doi.org/10.3390/vibration9020025. PMCID: PMC13591456 [WBV Research Project]
3. Fiegel B., Dhabi YK, Thomas G, Rahmatalla S, Ritchie EM, Ramker A, Stroh O, Wilder DG, Fethke NB. (2026) **A customized system for whole-body vibration measurement**. *Journal of Occupational and Environmental Hygiene*, published online May 29. DOI: https://doi.org/10.1080/15459624.2026.2659859 PMCID: PMC13317734 (available on 2027-05-29) [WBV Research Project]
4. Gibbs JL, Vollmer B, Sheridan CE, Pinkerton K, Anthony TR, Holm S, Karr C, Proctor A, Swenson A. (2026). **Filtering facepiece respirator use among farm youth in the U.S.: A review.** *Journal of Occupational and Environmental Hygiene,* 23(3): 178-190. DOI: https://doi.org/10.1080/15459624.2025.2589137 PMCID: PMC13093579 (available on 2027-03-06) [Emerging Issue]
5. Gibbs JL, Sheridan C, Duysen E, Danielson E, Tutor R, Anthony TR. (2026) **Organization of community-based respirator fit testing programs for agricultural workers**. *Journal of Workplace Safety and Health. 74(2): 89-97.* DOI: https://doi.org/10.1177/21650799251388480 PMCID: PMC13045781 (available on 2026-12-11) [Emerging Issue]
6. Rahmatalla S, DeShaw J, Dhabi YK, Fiegel B, Ritchie EM, Guzowski T, Thomas G, Wilder DG, Fethke NB. (2026) **Combined effect of whole-body vibration and posture on vibration discomfort assessment: a posture-corrected framework.** *Vibration*, *9*(3), published online 15 September 2026. DOI: https://doi.org/10.3390/vibration9030059 . PMC in process. Open access. [WBV Research Project]

7. Rahmatalla S, DeShaw J, Dhabi YK, Fiegel B, Ritchie EM, Guzowski T, Thomas G, Wilder DG, Fethke NB. (2027) **Effect of non-neutral seated postures on whole-body vibration measurements.** *Applied Ergonomics*, 138:104868, published online 7 August 2026). DOI: https://doi.org/10.1016/j.apergo.2026.104868. PMCID: PMC13532056. [WBV Research Project]

Other Publications

1. Great Plains Center for Agricultural Health. (2025) *2017-23 Iowa Trauma Registry Analysis and Summary of Farm-related Injuries.* https://gpcah.public-health.uiowa.edu/wp-content/uploads/2025/11/Surveillance-2017-23Nov2025.pdf
2. Moore K, Levin J, Thelin A, Donham K, and Nonnenmann M: (2026) Physical Factors: Noise, Vibration, Heat, and Cold. Edited by Kelley Donham and Dennis Murphy, 377-406. Agricultural Medicine. CRC Press. Sept 17, 2026.

Abstracts/Presentations at Scientific Meetings

1. Anthony TR, Arora K. (2025) Protecting the Health of Farmers. Iowa Ideas 2025 Conference (virtual). October 2, 2025.
2. Cheyney M. (2025) Wearable Gas Monitors: When, Why, How. Midwest Rural and Agricultural Safety and Health Conference, Amana, IA. Nov 13-14, 2025.
3. Patterson J. (2025) Farm Families Coping with Dementia. Midwest Rural and Agricultural Safety and Health Conference, Amana, IA. Nov 13-14, 2025.
4. Nonnenmann MW. (2026) Don't Trust Your Nose. North American Manure Expo. July 28-30, 2026, Wayne, NE.
5. Nonnenmann MW. (2026) Assess Human Impact of Bird Flu (H5N1) Among Dairy Workers. American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting. July 12-15, 2026. Indianapolis, IN.
6. Nonnenmann, MW, Farfalla A, Orji, I, Peters, T, J, Lau. (2026) Evaluation of Low-Cost Miniaturized Recirculating Ventilation System (mRVS) to control Bioaerosol in Swine Production, June 17th, 2026, Saskatoon, SK, Canada
7. Nonnenmann, MW, Farnell, MB., T., Tabler. (2026) Dust Exposure Concentrations during Work-Tasks in Boiler Production, June 18th, 2026, Saskatoon, SK, Canada
8. Nonnenmann, MW. (2026) Current Topics: Hot Work Permits on OSHA Hazard Communication Requirements. Swine Safety Roundtable, Clive, Iowa. March 23rd, 2026.
9. Nonnenmann M. (2026) Evaluation of a low-cost, miniaturized recirculating ventilation system (mRVS) to control bioaerosol in swine production. International Society for Agricultural Safety and Health (ISASH) Conference, Saskatoon, CA. Jun 16-18, 2026.
10. Tasnim R, Rockwell L, Brandspigel S, Hamann C, Rudolphi JM, Peek-Asa C, & Schwab-Reese L. (2026) We're on this road together: Building a toolkit for enhancing rural road safety around farm vehicles [Poster presentation]. Society for Advancement of Violence and Injury Research Annual Conference, Providence, RI, April 13, 2026.

Lectures, Seminars, or Workshops

Lectures, Seminars, or Workshops Delivered in Academic Settings

1. Douphrate D, Rodriguez A, Fischer R, Taylor L, Erickson T, Nonnenmann M and Hagevoort R. (2025) Avian Influenza on Dairy Farms in the U.S. The Human Impact in a Challenging Working Environment. Texas A&M University, School of Public Health. TX, United States. https://www.dshs.texas.gov/sites/default/files/borderhealth/TFBHO-Docs/handouts/tfbho-texas-a-m-h5n1-project-10.08.2025.pdf.

2. Fethke NB. (2025) OEH Seminar Journal Club: Biomechanical Factors during Common Agricultural Activities. Department of Occupational and Environmental Health Seminar, Iowa City, IA, Sept. 9, 2025
3. Nonnenmann MW. (2025) Bioaerosols. ENV 590: Industrial Hygiene Fundamentals, University of Nebraska Medical Center, Sep 2025.
4. Cheyney M. (2026) Three-minute-thesis style presentation about the creation and use of the *Flat Farmers*. 10th Annual Student Occupational Health and Safety Research Conference, University of Iowa, April 24, 2026, Iowa City, IA.
5. Cheyney M. (2026) Tick bite prevention and Whole-Body Vibration hazards presented to 65 college students at Kirkwood Gear Up for Ag. Kirkwood Community College, Sept 17, 2026, Cedar Rapids, IA.

Lectures, Seminars, or Workshops Delivered to the Agricultural Community

1. Anthony TR, Arora K, Brown D, Gassman R. (2025) Protecting the Health of Farmers, presentation for Iowa Ideas 2025. October 2, 2025 (2-3 PM). Recording available at YouTube Link
2. Fethke NB. (2025) Ergonomics in Agriculture. AgriSafe Nurse Scholar Program. November 2025. [Recorded Webinar]
3. Nonnenmann M. (2026) Evaluation of a prototype recirculating ventilation system to reduce dust and bioaerosol in swine production. Pathogens Beyond the Animal: Environmental Drivers of Disease in Livestock Systems, Livestock and Poultry Environmental Learning Community, February 20, 2026. [Webinar]
4. Nonnenmann MW. (2026) Injury Prevention Using the Industrial Hygiene Paradigm. Agricultural Health and Safety Course for Medical and Safety Professionals, University of Nebraska Medical Center, July 7-10, 2026, Omaha, NE.
5. Nonnenmann MW. (2026) General Environmental Hazards in Agriculture. Agricultural Health and Safety Course for Medical and Safety Professionals, University of Nebraska Medical Center, July 7-10, 2026, Omaha, NE.
6. Cheyney M. (2026) Tick bite prevention. Presented to 350 elementary school students and teachers about preventing tick bites and tick-borne diseases. Poweshiek County Ag Safety Day, May 13, 2026, Montezuma, IA.
7. Cheyney M. (2026) GPCAH overview, educational programs, and mental health resources at the *Improving Employee and Family Health Community Forum*, Business Leadership Network, Jun 2, 2026, Washington, IA.
8. Cheyney M and Udoh G. (2026) Tick bite prevention. Presented to 150 elementary and high school leaders about preventing tick bites and tick-borne diseases. National Education Center for Agricultural Safety (NECAS) Ag Safety Day. Jun 4, 2026, Peosta, IA.
9. Cheyney M and Pennington W. (2026) Presented educational curricula and tools (Flat Farmers) to (Extension) County Agricultural Agents. National Association of County Agricultural Agents Annual Meeting. Jun 8-10, 2026, Denver, CO.
10. Cheyney M and Udoh G. (2026) GPCAH agricultural safety and health education curricula presented to FFA advisors and Ag in the Classroom teachers. Iowa Ag Education Summer Conference/Trade Show. Jun 23, 2026, Ankeny, IA.

11. Cheyney M and Udoh G. (2026) PPE selection with Flat Farmers presented to farm families in the Progressive Agriculture Foundation Safety Zone. Minnesota Farmfest, Aug 4-6, 2026, Redwood Falls, MN.
12. Cheyney M and Udoh G. (2026) PPE selection with Flat Farmers presented to farm families in the Progressive Agriculture Foundation Safety Zone. Farm Progress Show, Sep 1-3, 2026, Boone, IA.

New Agricultural Curriculum

1. Ag Health Academy: Machine Safety Basics (R. Anthony). January 14, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
2. Ag Health Academy: Machine Safeguarding (R. Anthony). February 11, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
3. Ag Health Academy: Lockout – Tagout (LOTO) for Machine Safety (R. Anthony). March 11, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
4. Ag Health Academy: PPE Selection for Pesticide Handling: Part 1 (R. Anthony). April 8, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
5. Ag Health Academy: PPE Selection for Pesticide Handling: Part 2 (R. Anthony). May 13, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
6. Ag Health Academy: Respiratory Protection Definitions, Selection and Practice with Grain Handling: Part 1 (R. Anthony). June 10, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
7. Ag Health Academy: Respirator Selection Practice and Practical Tips: Part 2 (R. Anthony). July 15, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.
8. Ag Health Academy: Gas Monitor Updates. (R. Anthony). August 12, 2026. File at https://gpcah.public-health.uiowa.edu/ag-academy-videos/.

Consultation or Information Exchange

1. Anthony TR: [2025] Request to use Farm Safety App by email from Michigan Farm Bureau. Sept 10, 2025
2. Anthony TR and Archer M: [2025] Request for follow-up information on lone star tick article in Safety Watch (affected farm family wanting to share information with physician). Sept 16, 2025
3. Fethke N: [2025] Request to use video "Farming Machinery Whole Body Vibration and Back Pain" (Nate Fethke interviewed) in farm safety curriculum developed at the Ohio State University. Oct 24, 2025
4. Cheyney M: [2025] Request to use Flat Farmers in a presentation for the Cub Scouts by the Program Coordinator from the Injury Prevention and Community Outreach at UIHC Stead Family Children's Hospital. Nov 11, 2025
5. Cheyney M: [2025] Request to use Flat Farmers at the UI Center for Advancement Alumni Day by UI CPH Alumni Relations Coordinator. Dec 2, 2025
6. Cheyney M: [2026] ASH grad students request consult on outreach to children + request to use flat farmers and PPE samples to present to young 4-H audience. Mar 19, 2026
7. Cheyney M: [2026] Extension Specialist requested information about mental health and EMS training resources available through GPCAH and other NIOSH Ag Centers. June 2, 2026
8. Cheyney M: [2026] Safety tech from Bayer (Williamsburg, IA) requested information on building hands-on outreach props. Aug 1, 2026

Information Provided to Policy Makers

1. Fethke N, Anthony R: [2026] Washington DC Hill Visits for Ag Centers. February 2026.

Student Thesis/Dissertation

1. Foster E. (2026) Occupational Injury Patterns Among Male Transportation and Material-Moving Workers in Agriculture, Forestry, and Fishing Versus Non-Agriculture Industries. MS Thesis, August 2026. [E&P Surveillance]

Media Stories and Press Releases

Media Stories

1. Lee M and Govindarao S: [2025] Coroner's report on 6 deaths at Colorado dairy points to toxic gas exposure (R. Anthony interviewed). Colorado Sun, Oct 30, 2025. https://coloradosun.com/2025/10/30/coroners-report-on-6-deaths-at-colorado-dairy-points-to-toxic-gas-exposure/
2. Lavin, L: [2025] Plugged in to Public Health: National Injury Prevention Day and pediatric farm safety. (E. Ritchie interviewed). Nov 17, 2025 (Podcast) https://www.public-health.uiowa.edu/news-items/plugged-in-to-public-health-national-injury-prevention-day-and-pediatric-farm-safety/
3. Caracci, S: [2026] Dementia, farm safety and the quiet labor of rural care. (K.Arora and J.Bobitt interviewed). Organic Broadcaster, Spring 2026, 34(*2*), 32-35. Apr 14, 2026. https://issuu.com/marbleseed/docs/organic_broadcaster_spring_2026_volume_34_iss/32
4. Henry J: [2026] Farm Focus: Helping farm families manage dementia care (Arora and Bobbit interviewed). Agrinews-pubs.com, June 12, 2026. https://www.agrinews-pubs.com/sponsored/2026/06/12/helping-farm-families-manage-dementia-care/
5. IPRC Injury Blog: [2026]. Injury risks for older farmers with dementia. (K. Arora interviewed). https://iprc.public-health.uiowa.edu/2026/07/20/injury-risks-for-older-farmers-with-dementia/
6. Vaagen G: [2025] Farm Families Coping with Dementia Workshop in Early 2026. Pacific Northwest Ag Network, Nov 17, 2025. https://pnwag.net/dementia-workshop-2026/
7. Health department shares dementia program for farm families. KTTN News. Dec 17, 2025. https://www.kttn.com/health-department-shares-dementia-program-for-farm-families/
8. Fair C: [2026] Bremer County emergency responders launch $70,000 fundraiser for agricultural rescue trailer (GPCAH website information cited), Wayerly Newspapers, May 20, 2026. https://www.communitynewspapergroup.com/waverly_newspapers/bremer-county-emergency-responders-launch-70-000-fundraiser-for-agricultural-rescue-trailer/article_17994750-0c85-4f82-837a-4be5517237ee.html
9. Bedord L: [2026] Free ag safety resources await at Farm Progress Show (Marsha Cheyney interviewed). Wallaces Farmer, Aug 17, 2026. https://www.farmprogress.com/farm-progress-show/free-ag-safety-resources-await-at-farm-progress-show

Safety Watch News Column in Lee Agrimedia Publications

1. McMichael K: [2025] Tips to cope with stress. Iowa Farmer Today. Oct 14. *LINK*
2. Archer M: [2025] Require gas monitor for safe maintenance. Iowa Farmer Today. Nov 9. *LINK*
3. McMichael K: [2025] Winter preparation saves life and limb. Iowa Farmer Today. Dec 16. *LINK*
4. Archer M: [2026] Health program must be geared to rural areas. Iowa Farmer Today. Jan 18. *LINK*
5. McMichael K: [2026] Youths on the farm need role models, review. Iowa Farmer Today. Feb 16. *LINK*

6. Archer M: [2026] What common injuries bring farmers to the hospital? Iowa Farmer Today. Mar 16. *LINK*
7. McMichael K: [2026] Engulfment on the rise in recent years. Iowa Farmer Today. Apr 11. *LINK*
8. Archer M: [2026] Action Plan gives direction for next decade of youth safety. Iowa Farmer Today. May 10. *LINK*
9. McMichael K: [2026] Be safe during hot and sunny summer days. Iowa Farmer Today. June 14. *LINK*
10. Patterson J: [2026] Peer Support Offers a Way Forward. Iowa Farmer Today. July 10. *LINK*
11. McMichael K: [2026] Safety Watch: Cancer screenings save lives as rates rise. Iowa Farmer Today. Aug 10. *LINK*

Farm Families Alive & Well Newsletter Articles LINK.

1. Patterson J: [2025] FarmSafe Podcast: It's time to binge Season 4, bundles now available. 31(4):6. *LINK*
2. Anthony R: [2025] Director's message. 32(1):2. *LINK*
3. Archer M: [2025] Safety Watch: Require gas monitors for safe maintenance. 32(1):5. *LINK*
4. Patterson J: [2025] New online resource empowers journalists to help save lives on the farm. 32(1):7. *LINK*
5. Patterson J: [2025] Ag Health Academy Returns in January. 32(1):3. *LINK*
6. Patterson J: [2025] Coming January 2026: FarmSafe Podcast Season 5 Bundle! 32(1):8. *LINK*
7. Patterson J: [2025] Do you Need CEUs? We Recommend AG HEALTH 101: A Self-paced Course in Agricultural Health. 32(1):9. *LINK*
8. Patterson J: [2025] PPE Resources for Safer Farming. 32(1):10. *LINK*
9. Patterson J: [2025] First Aid on the Farm. 32(1):11. *LINK*
10. Patterson J: [2025] GPCAH at the Iowa Ideas Conference 2025. 32(1):12. *LINK*
11. Patterson J: [2025] Discover what GPCAH does to keep farmers safe. 32(1):12. *LINK*
12. Archer M: [2026] New initiatives for improving rural health. 32(2):5. *LINK*
13. Patterson J: [2026] GPCAH Pilot Programs announce RFA for academic and community-track awards. 32(2):6. *LINK*
14. Arora K and Patterson J: [2026] New Findings Raise Concern: Dementia Increases Farm Injury Severity. 32(3):1. *LINK*
15. Anthony R: [2026] Director's Message. 32(3):2. *LINK*
16. Patterson J: [2026] Join Iowa Department of Health and Human Services in Promoting Spring Planting Safety Across Iowa – New FREE Toolkit Available. 32(3):4. *LINK*
17. Cheyney M: [2026] From the Field: Farmers Share Their Biggest Concerns. 32(3):7. *LINK*
18. Cheyney M: [2026] GPCAH Brings Tick Bite Prevention to Montezuma Ag Safety Day. 32(3):8. *LINK*
19. Ritchie E: [2026] From Tractors to Ticks: Dive into 5 New FarmSafe Podcast Episodes. 32(3):10. *LINK*
20. Patterson J: [2026] Unlock GPCAH Resources in Just a Few Clicks. 32(3):11. *LINK*
21. Patterson J: [2026] Don't Miss Out: GPCAH Pilot Grant Applications Due June 8. 32(3):12. *LINK*
22. Archer M: [2026] Protecting Kids on the Farm: Updated National Action Plan. 32(3):12. *LINK*
23. Foster E: [2026] Injuries Among Male Transportation Workers in Agriculture and Other Industries. 32(4):4. *LINK*
24. Ritchie E: [2026] Iowa Department of Health and Human Services – Fall Harvest Safety Communication Toolkit. 32(4):5. *LINK*
25. Ritchie E: [2026] What's New in Agricultural Health and Safety: Wrapping Up Season 5 of the FarmSafe Podcast. 32(4):6. *LINK*
26. Ritchie E: [2026] GPCAH Highlights Recent Research Publications. 32(4):7. *LINK*

FarmSafe Podcasts (all available at LINK)

1. Ritchie L: [2026] *A new chapter: Season 5 of the FarmSafe Podcast* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jan 28, 2026.
2. Ritchie L: [2026] *Pediatric Injury Prevention: A Focus on Rural Communities* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jan 28, 2026.
3. Ritchie L: [2026] *The Mechanics of Injury: Understanding Farm Equipment Hazards* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jan 28, 2026.
4. Ritchie L: [2026] *How Farmers Get Hurt: Insights from Iowa's Trauma Registry* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jan 28, 2026.
5. Ritchie L: [2026] *The 40% Problem: Heart Health in Rural America* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jan 28, 2026.
6. Ritchie L: [2026] *The Tipping Point: Understanding Tractor Stability* [Audio podcast episode]. In *FarmSafe*. GPCAH. Apr 29.
7. Ritchie L: [2026] *Protecting Youth in Agriculture: Inside the 2025 National Action Plan* [Audio podcast episode]. In *FarmSafe*. GPCAH. Apr 29, 2026.
8. Ritchie L: [2026] *Ticks on the Rise, Part 1: Why Farmers Should Pay Attention* [Audio podcast episode]. In *FarmSafe*. GPCAH. Apr 29, 2026.
9. Ritchie L: [2026] *Ticks on the Rise, Part 2: Prevention and Detection for Farmers* [Audio podcast episode]. In *FarmSafe*. GPCAH. Apr 29, 2026.
10. Ritchie L: [2026] *Herd Health and Alpha-Gal: Managing Ticks on Midwest Farms* [Audio podcast episode]. In *FarmSafe*. GPCAH. Apr 29, 2026.
11. Ritchie L: [2026] *Understanding Cancer Risk Through the Lens of Agricultural Research* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jul 29, 2026.
12. Ritchie L: [2026] *UAVs and Agricultural Health: A New Tool Takes Flight* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jul 29, 2026.
13. Ritchie L: [2026] *Helping Farmers Help Farmers: Building a Mental Health Network* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jul 29, 2026.
14. Ritchie L: [2026] *When Waters Rise: Flood Preparedness for Rural Communities* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jul 29, 2026.
15. Ritchie L: [2026] *Connecting Research and Rural Communities* [Audio podcast episode]. In *FarmSafe*. GPCAH. Jul 29, 2026.