# PURDUE EXTENSION SHOWCASE



## OCTOBER 2024

Bringing World-Class Education to Rural and Urban Communities



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### **Foreword**

Purdue Extension's annual report showcases the accomplishments, outcomes and activities that highlight the impact of Purdue Extension across Indiana.

Extension specialists and educators provide educational programs and research-based knowledge to help families, individuals, and communities prosper and thrive. Here are some of their key efforts:

- Parents Forever enhances parental knowledge, skills and confidence to navigate divorce or custody changes, benefiting the children's well-being.
- Pond management workshops equip professionals and the public with the knowledge and skills to maintain healthy ponds, contributing to the vitality and sustainability of Indiana's 40,000 ponds.
- ServSafe trainings have certified 1,000 restaurant and food service workers in food safety, ensuring compliance with state food safety laws.
- "Pláticas Familiares" (family chats) have been hosted to help Hispanic families learn about and access available programs and support, fostering greater community engagement.
- The Remote Work Certificate program increased productivity and improved communication, time management, and work-life balance, aiding the retention of virtual workers across Indiana.
- More than 400 youth in the Indiana 4-H Camp Counselor Training program demonstrated leadership and teamwork skills, enhancing communication, interpersonal abilities and collaboration across differences. These skills are now being applied in communities across Indiana.
- Purdue Extension-Wayne County is spearheading efforts to address homelessness in a rural region by engaging state agencies for financial support, connecting homeless individuals to housing, and strengthening county-state collaborations.
- Captain Cash engaged 5,534 third-graders in more than 100 schools and community organizations, teaching them about earning, saving, spending and borrowing.
- 25 coalitions received more than \$3.8 million for community-based health programs, with Purdue Extension playing a pivotal role in promoting health for all.
- More than 160 local township team members gained insights into conflict levels and strategies for de-escalation in public settings, developing leadership skills for effective public service in Indiana's counties.

Our work addresses the evolving needs of residents in every Indiana county, across the nation, and around the world. We hope you find this compilation both interesting and useful as you engage with stakeholders about potential collaborations.

Angela R. Abbott

Angela Abbott, Interim Director of Purdue Extension, Purdue University

## **Acknowledgments**

Servie Engel

This report highlights our Extension work in a variety of subjects that directly support our land-grant mission to build a sustainable future for our local communities, our state and beyond. Some examples of Extension programming and impacts from 2024 include:

- Private woodland owners increased their knowledge of managing woodlands and plan to use information to make decisions and take action for improving their 1,500 acres valued at \$7.3 million.
- "Purdue on the Farm" revived Extension's on-farm visits with a new approach. Educators visited corn and soybean farms, met with farmers, scouted fields, conducted tests and documented observations. Emergent issues were shared with researchers for attention and follow-up. The greatest benefit was improved connection with farmers.
- Purdue Research and Extension's involvement with the Midwest Poultry Federation resulted in participants adopting
  practices that resulted in financial improvements of \$20,000 in poultry production, enhancing the supply of young
  hens and fryers.
- Purdue Extension Master Gardeners, with the Nutrition Education Program, coordinated volunteers growing produce, and 287 food pantries and distribution sites received 239,252 pounds of donated produce over nine states, serving 114.476 low-income individuals.
- America Grazing Conference participants reported financial improvements up to \$100/acre due to adopting recommended practices. Indiana Grazing School participants plan to adopt practices to optimize pasture growth and extend the grazing season. These practices boost grazing operation production across the Midwest.
- Field day participants at Purdue Agricultural Centers adopted new recommended practices for cover crops, notill, and sulfur and fungicide applications, showing a commitment to sustainable agriculture and optimizing crop performance and yield for feeding Indiana, the U.S. and the world.

I thank Angela Abbott, interim director of Purdue Extension, for her leadership, and all faculty, researchers, specialists, educators, staff and volunteers who deliver unbiased, research-based information and resources to help us deliver on our land-grant mission.

Bernie Engel, Glenn W. Sample Dean of Agriculture, Purdue University

## **Equal Access/Equal Opportunity**

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## Climate Change, Natural Resources, Environment & Sustainable Energy

### Private Woodland Owners Make Decisions and Take Actions to Improve Acreage Value



Indiana has 20% forest lands, most privately owned. Forests are important habitats for wildlife and provide environmental and social benefits. Forests support businesses and

industries, particularly in rural areas. The forest products industry depends on landowners. Yet fewer than 20% of landowners have management plans. Without plans, sound advice, and professional assistance, poor decision-making can result in forest quality and sustainability degradation.

Purdue Extension offers Forest Management for the Private Woodland Owner, in-person and virtually. The in-person program has eight 2.75-hour evening sessions and two Saturday three-hour field day tours. Purdue Extension and local forestry and natural resource professionals provide presentations and direct activities. Participants receive a tree measuring stick and a flash drive containing more than 100 publications and resources. After COVID-19, it was adapted to an online, asynchronous program with live online question-and-answer sessions. Last year, 24 owners participated in person and 27 online, representing 1,500 acres of Indiana woodlands valued at \$7.3 million.

Participant forest management knowledge improved after the program. More than 90% found it useful for making decisions, and 80% plan to take actions in the next year. A participant said, "This course provided exactly the information I needed to understand the DNR forester's report on my classified forest and to act on it. It will also help form a land management plan of my own (beyond what the forester provided), find programs to help manage and expand the forest, and earn a little money from the property in future years."

As a result, 51 private woodland owners increased their knowledge of managing woodlands and plan to use information learned to make decisions and take action for improving their 1,500 acres valued at \$7.3 million. This benefits the productivity, health, and sustainability of Indiana's woodlands.

### Furniture Production Addresses Workforce Development and Rebuilds Lives in Indiana



Most U.S. school furniture is made overseas and from nonrenewable materials (steel, plastic, and composite). Increasingly, the product sustainability, the circular economy,

and the benefits of natural materials are being shown to be important in learning environments.

To create a new market for low-value hardwoods, urban woods, and plantation resources by designing and producing innovative products, including wooden school furniture, Purdue's Wood Research Lab has tested all strength and environmental attributes. At the same time, Purdue Extension is focusing on workforce development for Indiana's wood products industry. An approach is to provide potential employment and entrepreneurial opportunities to residents with troubled pasts, underprivileged workers, and those needing a second chance in life by partnering with Purposeful Design https://pdindy.com, the Forest Service, Indiana Hardwood Lumbermen's Association, Urban Forest Products and other industry players to train workers in furniture production and qualify for future work. Five training sessions were conducted on material properties, sustainability, manufacturing, and product development. A purposeful design production facility is under construction for future school furniture production.

Training participants (51) stated that the training sessions were excellent (92%) and that the content was practical to their needs and interests (83%). Attendees reported increased knowledge about topics from before to after training. Nine of 10 would recommend the program to others. The majority indicated the training would help them make future decisions (87%) and they could take actions based on acquired knowledge (73%). Participants reported increased interest in sustainability, material identification, product design, and troubleshooting production issues.

Purdue's Wood Research Lab develops and tests wooden school furniture, and the Wood Products Extension team prepares training materials (videos, demonstrations, and handouts) and tools (manufacturing jigs) for school furniture production to teach workers how to build furniture. These efforts improve forest health by removing low-value timber and create needed employment training and opportunities in urban/rural areas, impacting Indiana's forests, furniture production, and workforce development.

## Helping Professionals and the Public Gain Skills for Healthy Pond Management



Indiana has more than 40,000 ponds, most privately owned. Homeowners are constructing ponds for recreational use, or purchasing properties with existing ponds. Pond owners dream of fun-filled days spent

fishing or swimming, but the reality often becomes weed-choked water or fish populations of 2-inch bluegill. Many attempt to manage ponds with ill-advised techniques and waste money and time on improper or unwarranted chemicals, or stock ponds with the wrong kind/size of fish. As a result, local Purdue Extension offices are swamped with calls from frustrated owners looking for help with their ponds.

Purdue Extension with other pond experts implemented train-the-trainer and public pond management workshops. Train-the-trainer programs were in Warrick and Cass counties; pond programs were in Cass, Crawford, Fayette, Morgan, Ripley and Warrick counties. Topics were plant and fish management and pond ecosystems. Q&A time ended each session. The train-the-trainer programs drew 25 Purdue Extension educators and Soil and Water Conservation District and Natural Resources Conservation Service staff; 96 public participants attended pond programs.

A total of 48 attendees completed evaluations reporting increased knowledge of weed and fish population management, factors to improve fish health and size, ways to improve pond habitat, and how aeration protects ponds. Participants reported knowledge gains about natural resources and environment data services, tools, and resources. As a result of what they learned, most (85%) would change how they managed plants in ponds. All better understood how harvesting more fish improves fisheries. Many expressed the Q&A time was much appreciated. Extension educators felt better equipped to answer basic questions but now had resources to help answer harder questions.

Purdue Extension's Pond Management Workshop helps professionals and the public gain knowledge of and skills for keeping ponds healthy, contributing to the vitality and sustainability of Indiana's 40,000 ponds.

## **Workforce Development**

## **ServSafe Training Helps Many Comply with New Food Safety State Laws**



Foodborne illness is a common, costly yet preventable public health problem. CDC estimates one in six Americans get sick from contaminated foods or beverages and that 3,000 die each year. The USDA

estimates foodborne illnesses cost \$15.6 billion each year. Reducing foodborne illness by 10% could keep 5 million Americans from getting sick each year.

Purdue Extension collaborates with the National Restaurant Association to offer ServSafe Manager food safety training and ServSafe Food Handler training for home-based vendors, volunteers, and food service workers. The results:

- 49 counties had 201 training sessions for 853 hours of instruction for 1,144 participants.
- 892 adults self-reported demographics as White (87%) Hispanic (6%) Black (3%) American Indian or Asian (less than 1%) and female (66%). American Indian tribes were Cherokee and Pueblo of Laguna.
- 96 youth self-reported being White (83%) American Indian (3%) Hispanic (3%) Black (2%) Asian (1%) and female (63%). Food handlers were home-based vendors (60%) or considering becoming home-based businesses (31%).
- 490 (74%) passed the manager exam. Managers learned monitoring time and temperature, food safety management systems, flow of food: holding and serving, and flow of food: preparation, cooking, cooling.
- Managers intend to adopt practices: assess areas for activities that risk microbial contamination (71%), use proper time and temperature controls (66%), and take steps to reduce

cross-contamination risks (59%); 54% already do recommended handwashing.

- Of the 72 managers (23%) on three-month follow-up, 92% were still in food service.
- Managers remembered: personal hygiene, cleaning/sanitizing, monitoring time and temperature, and flow of food: preparation, cooking, cooling. Participants applied: reducing crosscontamination risks, recommended handwashing, and using proper time and temperature controls.
- 236 (44%) passed the handler exam. Handlers learned: controlling time and temperature, how food becomes unsafe, preventing cross-contamination, and cleaning/sanitizing. Two-thirds intend to adopt practices: use proper time and temperature controls (69%) and assess areas for activities that risk microbial contamination (68%).

ServSafe Manager and Food Handler training contribute to knowledge and certification for 1,000 restaurant/food service workers and business/home vendor compliance with state food safety laws. Manager participants remembered information and applied recommended practices at work. These efforts help Indiana residents get/keep jobs in restaurants/food service and contribute to safe food preparation, storage, serving, and consumption.

### Remote Work Certificate Participants Gained Skills for a Virtual Career



The future of the office has arrived: it's hybrid. A 2022 Gallup survey reported 8 of 10 people work in remote/hybrid positions, and hybrid employees report coming into the office 2.6 days per week.

Purdue's Center for Regional Development Research & Policy Insights' "Impact of Remote Work" suggests better broadband can lead to more remote workers, increased self-employment, and benefits for women and high-skilled workers. With about 20% of Indiana workers working a remote or hybrid job, this is a sizable segment of our labor force whose work styles have changed in the last five years.

The Remote Work Certificate (RWC) started by Utah State University Extension equips workers with tools and skills to transition from onsite work to a virtual career. RWC started in Indiana in 2019, just before the COVID-19 pandemic. Extension educators were trained and served as coaches to guide participants. RWC is one month long. Nine modules are delivered online; four interactive

workshops equip workers with tools/skills to work from home as remote workers, freelancers, or entrepreneurs. Topics are workday, communication, critical thinking, workflow, productivity and time management, teamwork, compliance and online security, and virtual careers. Two grants helped offset program costs, providing training at discounted rates or free.

Of the 49 participants who enrolled, 38 completed RWC. Females comprised 81%; participants were White (72%), Black or African-American (17%), and Asian (3%). Participants took RWC for professional development (39%), intended to seek full-time remote work (33%), desired to convert their current job to a remote position (11%), and intended to seek part-time remote work or wanted to be a mentor/partner in remote work activities (16%).

At a one-year follow-up, nine participants were: looking for professional development (6), seeking remote work (2), and working as entrepreneurs (1). One remote work seeker found a job that increased their salary by 171% and saved \$90/month in lower fuel expenses. Respondents reported benefits: increased productivity, improved communication with their team/colleagues, time management skills, and work-life balance. Respondents shared: "The course gave me insights on remote work, as well as how to optimize both hybrid work and in-person work and teams." "The class was amazing. I learned a lot of new information."

Purdue Extension's Remote Work Certificate participants increased productivity and improved communication, time management and work-life balance, helping to support and retain virtual workers across Indiana.

# **Earning Credits Toward Certification While Learning to Safely Apply Pesticides to Field Crops**



A private pesticide applicator is anyone who applies pesticides to property they own, rent, or otherwise control for producing an agricultural commodity. Any private applicator

wishing to buy and use restricted-use pesticides must be certified by passing the core exam, and then keeping the permit current by earning credits every five years.

Purdue Extension held 51 workforce development programs on 33 dates and in 32 Indiana counties, or virtually. Programs had a variety of titles, including Crop Management Workshop, Agronomic Update, Ag Day, Virtual Private Applicators Recertification Program, Survey participants reported attending to earn professional credits: Private Applicator Recertification Program (79%), and Commercial Applicator Continuing Certification Hours (12%). Most participants (90%) indicated they learned something they didn't know before. Half (46%) plan to adopt practices for their farms/operations. A third plan to adopt recommended fertilizer and/or pesticide practices (35%) or are already doing the recommended field crop practices (30%). Participants expressed program feedback: appreciation for practical and useful information, positive feedback on presentations and speakers, emphasis on education and continuous learning, positive comments on meeting logistics and environment, recognition of information quality and relevance, and acknowledgment of convenience and accessibility.

Purdue Extension's Pesticide Programs helped 1,345 producers and employees learn how to safely apply pesticides to field crops and earn professional credits for private applicator recertification (79%) and commercial applicator continuing certification hours (12%). As a result, Indiana's natural resources, soils, water, and environment are being protected via safe pesticide application.

## Indiana 4-H Programs Help High School Youth Identify Future Career Options

Indiana 4-H includes opportunities to explore future endeavors. During school and after graduation, youth successes in college and career opportunities are greatly impacted by knowledge and skills in professionalism and decision-making. Indiana 4-H provided 10 college and career readiness programs at eight counties, one

region, and Purdue University; 447 youth completed college and career readiness surveys about professionalism and college and career decision-making.



Youth (99%) reported

it is important to: arrive to work on time, do their job well, and be trusted by an employer. A third reported they have applied for a job (32%), or have a job (34%), and three-quarters (72%) do not have a résumé. When choosing a career, youth indicated it is important to: be passionate about the work they do, go to college to have the type of career they want, have a career where they can make a difference in the lives of others, and live where they want when choosing a career. For identifying strengths, exploring careers, and thinking about future education needs, youth indicated that 4-H helped them to: think about the amount of education they might need in the future (96%), identify things they are good at (95%), and explore future career options (93%).

Youth identified careers after high school that might be a good fit for them (89%) and have a better idea of what they might do (88%). In the year after high school, youth are thinking about getting a job (91%), attending a four-year college (89%), attending community college (60%) or vocational/technical college (57%), or joining the military (39%). For decision-making, youth had an idea of what they would like to major in (53%). At 4-H, they learned about scholarships (96%), college applications (78%), and how to pay for college (93%).

As a result of Indiana 4-H programs, more than 450 youth have identified careers after high school that might be a good fit for them. This gives Indiana a bright future with youth who have skills and vision for their lives, jobs, and careers.

## Positive Youth Development & 4-H Opportunities

# Military Teen Adventure Camps Develop Leadership, Self-Confidence and Teamwork

In U.S. military deployments since 2001, more than 2.5 million soldiers have deployed overseas; 60% were married, 44% had children, and 25% had adolescents. Over 2 million children and half a million teens experienced overseas deployment of a parent. Children of soldiers are especially susceptible to emotional and psychological effects when parents spend time overseas.

Using funding from departments of defense and agriculture, Purdue Extension coordinates Military Teen Adventure Camps (MTAC) for 13-18-yearolds of active duty, Guard, Reserve, and



retired personnel. The high-energy, adventure,

and experience camps were in Arizona, Colorado, Georgia, Kentucky, Vermont, Virginia, and Washington. Eighteen overnight camps hosted 571 campers. Activities included archery, arts and crafts, birds of prey, campfires, canoeing, first aid, fishing, forest foraging, herpetology, ropes, hiking, horse training, horseback riding, kayaking, mountain biking, outdoor living skills, river rafting, rock climbing, shooting sports, paddleboarding, swimming, team challenges, tent camping, wilderness survival, and woodworking.

#### Campers shared:

- "I learned to take chances and never give up."
- "It is important to live in the moment and make memories. By doing this, you will be able to carry those memories with you wherever you go."
- "My favorite part of camp was getting to know many different people from different places, becoming friends with many of the different campers, and them actually talking to me because no one knew each other."
- "This camp gave me a chance to connect with my dad, who often has busy and long workdays. This camp is helping me deal with the fact that he is about to go back to long workdays."

#### Camper parents or volunteers stated:

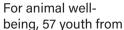
- "I have volunteered at a lot of camps, and this is the most organized. The kids seem to have a lot of choice and fun."
- "Thank you so much for organizing an amazing camp for the youth."
- "This camp is phenomenal. The team leads ensure everyone feels included, everyone is actively engaged. The pace of activities is just right. Not rushed, but a lot of things packed into each day. Food and drinks are plentiful and good. Teamwork mindset is on full display."
- "We are all incredibly grateful to you and everyone else for making camp such a wonderful experience."

Purdue Extension coordinated 18 Military Teen Adventure Camps for 571 teens in U.S. military families to develop leadership, self-confidence, and teamwork skills while engaging with the outdoors.

## **Indiana 4-H Youth Demonstrate Proper and Safe Care of Animals**

Many 4-H activities and opportunities involve animals. Knowledge and skill are needed for proper and safe care of animals as companions or for food production.

Indiana 4-H provided 11 county-based programs in animal science, life skills and professional development, animal well-being and food safety. Learning experiences for youth were provided as animal science experiences, vet or animal science camps, SPARK clubs and livestock ambassadors.





7 programs indicated they: learned how to identify if an animal was healthy (100%), practice safe animal handling (98%), learned about housing/shelter for their animal (97%), and learned how to handle animals safely (95%). For animal science life skills and professional development, 106 youth from 10 programs indicated they: shared what they have learned about raising animals with others (93%), would look for ways to help if they learn about someone mistreating animals (96%), and learned how to solve problems when raising their animals (91%). Many reported that they learned how to show off their animal's best qualities (81%) and how to judge or evaluate an animal (77%). For aspirations toward animal science, youth indicated they would like careers: caring for animals (87%), raising animals (86%), and in animal science (78%). For food safety and food production animals, there were 78 youth in 6 programs who reported they: know what people are looking for when they buy animal products (96%), learned how their actions affect the safety of the food produced by their animals (89%), and know why it is important to track where animals are raised (83%).

Through Indiana 4-H's animal science programs, youth learn and practice safe animal care and handling. These youth and the skills they learn contribute to keeping domestic pets and livestock safe and in good care.

## Learning How Science Can Be Used to Help Solve Everyday Problems



The Program for International Student Assessment showed that 2012 math literacy data of 15-yearold students in 21 countries have higher averages than U.S. students. National Inventors Hall of

Fame reported science, technology, engineering and math (STEM) education emphasizes preparing future generations to be successful in their careers. Skills gained from STEM education extend beyond being successful in STEM fields by preparing children who move into any industry to have valuable skill sets to be successful.

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Indiana 4-H led 22 science and engineering programs for youth. Fluid Power was statewide, and several were county-based (Ag Tech SPARK Club, Astronomy Night, Afterschool STEM, Engineering Solutions to Food Systems Challenges, Deep Sea Diving Camp, Robotics SPARK Club, 4-H Shoot for the Stars, STEAM Break, Drone SPARK Club, Clover Gaming, Wetlands Day, Science Sensation).

A total of 735 youth completed post-surveys on science thinking, skills, and attitudes, and engineering skills and attitudes:

- 702 youth in grades 4-12 reported they like science (93%) and engineering (87%). Youth were interested in learning about: animal science (68%), engineering (64%), robotics (60%), environmental science (52%), and plant science (43%). Youth would like a job that uses science (68%) or engineering (65%).
- Youth indicated they like: trying new things to see how they will work (81%), asking questions about how things work (74%), coming up with ideas for how to build new things (73%), looking at how things are the same or different (71%). Most reported that at 4-H they learned new things about science (85%) and talked about how science can be used to help solve everyday problems (80%). Three-quarters (75%) shared a science-related project with others.

As a result of Indiana 4-H, 208 8th-12th graders know how to: communicate experiment results to others (93%), plan an experiment (92%), ask a hypothesis that can be tested (90%), and analyze data to conclude hypotheses (89%).

Indiana 4-H science and engineering programs help youth learn how science knowledge and skills can be used to help solve everyday problems. These STEM skills help youth learn in school, tackle postsecondary endeavors and set sights on jobs/careers.

# **Camp Counselors Demonstrate Leadership and Teamwork Across Differences**

Social and emotional competencies are important for positive youth development. CDC data show poor mental health can result in negative outcomes for adolescent health and development. It can lead to risky sexual behavior, illicit substance use, pregnancy, truancy/school dropout, and other concerns. High schoolers (37%) experience persistent feelings of sadness or hopelessness. High school students engage

in transportation risk behaviors, including not always wearing a seat belt (43%) and texting/emailing while driving (39%).

Indiana 4-H delivered 14 Camp Counselor Training programs



addressing social and emotional development, leading a team and teamwork (communication, interpersonal, and diversity). Six programs were in counties and eight were in collaborative regions/areas.

As a result, 410 youth reported they could lead a team, indicating they make sure that everyone in the group feels important (94%), are good at planning how to do something (92%), try to change something when they see something that is wrong (91%), feel they can stand up for what they think is right, even if their friends disagree (89%), try to get their friends to work on something with them (83%), and are pretty good at organizing a team of kids to do a project (83%).

- 406 youth reported on professional communication skills, indicating they can resolve differences with others in a positive way (90%), ensure that others understand the message that they project (88%), communicate their skills and qualifications (88%), tailor their message depending on the situation (85%), and are aware of their body language and non-verbal communication (82%).
- 405 youth indicated they can work with others to create goals (95%), think about the expectations of others when they contribute to a team (92%), resolve conflicts in positive ways (91%), and work with others when goals are uncertain (84%).
- 403 youth reported they respect the differences and strengths of individuals on the team (95%), encourage other team members to give their best effort (93%), think they have something to contribute to the team (92%), think everyone on the team is important (92%), and work to build a team that includes people with different points of view (91%).

More than 400 youth in Indiana 4-H Camp Counselor Training programs demonstrated leadership and teamwork capabilities for communication, interpersonal skills, and collaboration across differences. Indiana will be a better place as youth apply these leadership and teamwork skills in and for our communities.

## Big Data, Internet of Things, Broadband Access, Digital Literacy, Inclusion & Innovation

### **UAV Program Prepares Participants** to Pass Federal Remote Pilot Knowledge Test



Federal Aviation Administration (FAA) CFR 14 Part 107 regulations address UAV (uncrewed aerial vehicles) use in controlled airspace, weather conditions, performance and weight standards,

and public usage. FAA reports 865,000 UAVs registered (314,000 commercial, 538,000 hobbyist) with 280,000 certified UAV pilots, but does not account for unregistered UAVs. Growing concerns about UAV use for delivery, scouting, mapping, and inspections will require more training opportunities.

Purdue Extension's UAV Program teaches legal issues and safe practices for flying drones. Instruction, demonstrations, and practice flights prepare participants to take the FAA Part 107 Remote Pilot Test if they choose. Training modules include sectional charts, meteorology and aeronautical decision-making, manual and planned flights, and application, data management, and troubleshooting. Topics are camera settings, sensors, artificial intelligence, FAA part 107 remote pilot test preparation, flight plans, recordkeeping, free and planned flight instructions, third-party applications/ processing software, data management, image quality, troubleshooting, and emergency preparation.

36 UAV programs were delivered for 200 hours of instruction in 15 counties, with 180 participants, including 95 who self-reported demographics: White (84%) Black (1%) Asian (1%) American Indian (1%) and male (66%).

Participants completed post- (157) and follow-up (68) surveys. Participants reported their roles as Extension/ academic, agriculture, and agribusiness. Half (49%) indicated they farm/manage/advise from 50 to more than 25,000 acres.

- 95% reported increased awareness of legal issues, safety protocols, and troubleshooting techniques, and understanding of applications.
- 93% felt confident to take the FAA Part 107 Remote Pilot test. They learned about certification/licenses (93%), training needed for their career interests (71%), information relating to their job/work/career

- (67%), and careers they are interested in pursuing (50%). Most (90%) would like to obtain a certificate.
- Participants (88%) planned to implement UAV/ drone technology for agriculture and farming, research and education, environmental/wildlife management, public safety/law enforcement, and marketing/promotion.

In follow-up surveys, participants were comfortable using UAV technology (82%), had taken and passed the test (65%) and conducted safe flights (63%). Participants shared program information with peers/colleagues (84%) and sought additional professional development (63%).

Most (78%) adopted recommended practices including safety and safe practices, procedures and flights, plans, flight checks, tracking, and weather. Participant applications related to agronomics video production and monitoring for wildlife/natural resources/environment/wetlands.

Purdue Extension's UAV Program prepares participants to take and pass the FAA Part 107 Remote Pilot knowledge test, contributing to safe and legal UAV/drone flights in communities and for applications in agriculture, agronomics, monitoring, and marketing.

## 4-H Teens Taught Innovative Ag Technologies and Transformed Their Leadership and Futures



A United Nations study found that 10% of the world's population goes hungry; with growth, that percentage is expected to rise to 8.6 billion people by 2030. By 2050, demand for food will surge

70%. To cope, USDA is directing resources, programs, and research toward increasing agricultural production by 40% while cutting environmental impact in half by 2050. Preparing youth to fill future innovative agriculture technology positions is essential to achieve this.

Indiana 4-H was one of five states awarded a 4-H Ag Innovators grant sponsored by Bayer and the National 4-H Council, and 21 4-H teens were selected. One-fourth lived in/near areas designated "distressed" by the Distressed Community Index.

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The 21 teens led Ag Innovator for 1,964 youth at schools, camps, 4-H clubs, churches, and other locations. In the program, youth participated in an Aerial Ag Challenge to plot a course on a map with line-following robots (provided by National 4-H and Bayer) to "spray" agricultural fields where needed without spraying the community.

Also, the three teen leaders planned an international event with the Purdue International Programs in Agriculture's Farmer-to-Farmer program. An Agriculture and Natural Resources (ANR) educator (with FAA Part 107 Remote Pilot Certificate) was trained to deliver Ag Innovator and received maps, line-following robots, and a drone. The ANR educator traveled to Trinidad and Tobago and taught 175 youth, visited multiple sites, discussed how drones are used in agriculture, demonstrated a Tello drone, engaged youth in the challenge, and invited youth to fly a drone. Returning to Indiana, the ANR educator shared Trinidad and Tobago youth feedback: they loved the Aerial Ag Challenge, were excited to fly drones and learned about new agriculture technology.

- 1,964 Indiana and 175 Trinidad and Tobago youth learned innovative agriculture practices, drone technologies, technologies to solve large, real-world problems, including climate change, and producing more food with less environmental impact.
- 513 Indiana youth completed the evaluation, and 10% self-identified as being in a minority group.
   Over 70% reported learning something new, and 50% expressed interest in continued learning.

Teens reported huge growth in speaking and leadership skills; knowledge of, and interest in, agriculture innovations and technology; and changes to their career paths. One teen shared: "Thanks to the Aerial Ag Challenge I have a deeper understanding of how new technology is being used to help advance ag practices, increase crop yields, and maintain good stewardship of our environment. I plan to pursue a career in engineering, and I see many opportunities for engineering innovation with cutting-edge agricultural practices like the ones I learned about in the Aerial Ag Challenge. Thank you to Bayer and the National 4-H Council for providing opportunities to learn and teach others about precision ag!"

Indiana 4-H is engaging teens with innovative agriculture technologies and experiences and helping them teach it to others, culminating in a transformation in their leadership and future, and extending across Indiana and to Trinidad and Tobago.

## Human, Family & Community Health

## **Building Community Support for Homeless Outreach Brings in Local Funding**



The U.S. Department of Housing and Urban Development (HUD) requires local Continuum of Care coordinated entry systems to manage the assessment and connection of households

experiencing homelessness to services and housing resources provided by the community. The Point-in-Time (PIT) count is of sheltered and unsheltered people experiencing homelessness on a single night in January. Counts are planned, coordinated, and carried out locally. HUD uses information from the PIT counts to determine how funding is allocated.

In the past, Wayne County, a rural location in Indiana, had one individual conducting PIT counts, and just 20 people were counted as homeless. Agencies in Wayne County have expressed concern that homelessness appears to be increasing, yet some local leaders doubt homelessness is a problem. The region has not seen an increase in local resources. Many agencies lack capacity to pursue needed state/federal-level funding.

Over the last four years, community development efforts have focused on homelessness. Purdue Extension-Wayne County reached out to the coordinated entry specialist and together started a series of community activities to build capacity for increased data collection and outreach to the homeless. They gathered a team of consultants from the community to work with the Continuum of Care to develop a strategic plan to address homelessness. Purdue Extension-Community Development generated regional data reports about demographic, education, social and economic data, and local conditions and trends. Regional reports were shared with more than 20 individuals representing 15 local organizations and

agencies. Volunteers were recruited to conduct the annual PIT counts.

Wayne County created and hosted its first summer count, SHORE (Summer Housing Outreach and Resource Event), including street outreach and an event at a local church. Volunteers assisted with acquiring donations and funding: 14 agencies provided information and resources and 25 volunteers helped with the event and conducted street outreach. Some 87 participants were reached through street outreach or the event. Local partners provided lunch for participants and volunteers.

Agencies hosted tables at the winter and summer counts to provide participants with direct connections to services, including health screenings, resources, housing applications, and insurance signups. Participants received backpacks of hygiene supplies, snacks, socks and resource lists. One clinic reported they provided 18 health screenings and seven first-time COVID-19 vaccinations.

A separate Wayne County housing workgroup was started and conducted interviews, collecting housing system data. Results were used to develop a pathways map reflecting the trajectory of individuals through the housing system.

Continuum of Care saw increased numbers of volunteers each year for the PIT counting events, doubling the numbers from 2022 to 2023. In the past year, 173 participants received homelessness education, information, and resources via the winter and summer counting events. During the latest SHORE event, 87 participants were reached: 30 were homeless by HUD standards, 13 were couch surfing, 10 were facing eviction, nine were in shelters and five were in buildings not fit for habitation. During the last winter, 86 participants were considered homeless by HUD standards for the official PIT count. More participants were interviewed but could not be included since "couch surfing" is not considered "homeless" by HUD definition.

In 2023, Wayne County connected with 86 participants during the winter PIT count, doubling the 42 in 2022. This increase is partially due to increased volunteer support — and likely to a local increase in homelessness. There were 20 volunteers to help with that January PIT count, compared to the single entry system coordinator just four years ago. As a result of the recent SHORE event, 11 agencies indicated they were able to connect several individuals to services. Two participants seeking resources were able to enter substance use treatment that day.

Wayne County funded housing studies in the past but has not looked at affordable housing. A Wayne County Economic Development Corp. (EDC) member who participated in the housing workgroup pushed to add that as an element of the next study. The EDC conducted

a separate housing study that included affordable housing for the first time.

The housing workgroup got the attention of Indiana Department of Health's housing specialist, and that led to the funding for a consultant to develop a strategic plan for the region. This strategic planning process has just been completed.

Purdue Extension-Wayne County and the coordinated entry specialist are now in leadership positions with the Continuum of Care. Meetings are organized to create more space for sharing information and resources. For one meeting, a site visit was set up at a local shelter planning to extend its services into Wayne County.

Purdue Extension-Wayne County is building community awareness, engagement, activity, and focus on homelessness across a rural region, engaging state agency partners for financial support, and connecting those experiencing homelessness to services and housing resources. These efforts contribute to improved county and state connections and support for the homeless in Indiana.

## **Building Community Through** "Pláticas Familiares"



The Hispanic/Latinx population has been present in Daviess County, Indiana, for three decades. The 2020 census shows Hispanics make up 6% of the county's population, a 60% growth since 2010.

The Hispanic population comes from several countries: Mexico, El Salvador, Guatemala, Honduras, Puerto Rico, and Cuba. Given the Christian culture prevalent among the Hispanic community, many are actively involved in their respective churches. Yet outside the faith-based involvement, their lack of community involvement is noticed. Although Purdue Extension strives to better serve this audience through programming, details are lacking about information or services needed.

Purdue Extension-Daviess County hosted monthly "Pláticas Familiares" (Family Chats) with these goals: establishing connections, building rapport and trust, creating a dialogue safe space, creating social connections among the county's Hispanic community, and identifying needs to expand access to information and services. During meetings, topics were presented based on participant input and inquiry: special education, support and resources for kids with medical needs, natural disaster preparedness, how to avoid scams, dealing with depression, and Purdue University's 21st

Century Scholars program. Purdue Extension led the sessions and invited five guest speakers in person or virtually. Over the academic year, nearly 50 Hispanic individuals (44 adults, five youth) attended one or several monthly meetings.

As a result of the monthly sessions, participants expressed wanting to be more united as a community and to be more involved in what is happening in the community. In addition, parents reported they felt more empowered for self-advocacy. As a parent shared: "I wished I had known my rights when my older kid was in school and needed extra services. I felt that I was not heard. Now I know how to better advocate for my younger daughter." Others recognized the value of the meetings: "I always have felt that I was alone dealing with my daughter with Down syndrome. Now I know there are other Hispanic families that understand my situation." Others expressed appreciation for what was being done to create that much-needed sense of community: "I personally want to thank you for what you do for the community."

Purdue Extension hosted "Pláticas Familiares" meetings for Hispanic families to learn about and gain access to available programs/support to help them be more engaged in the community. These efforts can help residents and communities across Indiana.

### Purdue Extension Helped Local Township Teams Explore and Develop Leadership Skills for Effective Public Service



Township officials provide leadership and public service on the local level in Indiana. Across 1,002 townships, these officials provide many community services, township assistance, and often

fire protection. Because of the nature of these services, township offices work closely with diverse residents in their communities. They need conflict management strategies, cultural competency, and public engagement skills to be effective leaders.

The Indiana Township Association provides professional development for local officials at an annual conference. The past year's theme focused on building leadership knowledge and skills as a township team so no matter with whom the public interacts in township offices, they have a respectful and helpful experience. Purdue Extension worked with the association to provide customized training via mini-lectures and activities on leadership skills for public servants. Participants

explored the characteristics, skills and ethics of effective leadership in public service and developed skills: conflict management, cultural awareness and public engagement. More than 160 elected officials and staff participated, representing rural, suburban, and urban townships. Many attended as a township team, allowing them to participate together.

Participants learned principles of public service and considered how leadership skills/qualities help support these principles. They gained knowledge about levels of conflict and brainstormed strategies for de-escalating conflict in teams and public settings. They explored how culture (values, beliefs, customs, behaviors) impacts how they work in teams and with stakeholders. They learned something new (93%) and planned to incorporate something learned into their work (78%). In their teams, all worked to name shared values for their offices. Township teams brainstormed ways their office could engage in meaningful and inclusive ways with the public. Several townships shared they would offer focus groups, surveys, and public forums to engage the public. Participants stated that the workshop "really gave us some time to brainstorm some ideas to grow in leadership and engaging in the community" and "ideaand thought-provoking conversations help[ed] identify what could be done better."

Purdue Extension engaged with more than 160 local township team members to develop leadership skills for effective public service in Indiana's counties. Local leaders gained an understanding of levels of conflict and brainstormed strategies for de-escalating conflict in team and public settings. They explored how culture (values, beliefs, customs, and behaviors) impacts how they work in teams and with stakeholders.

## Captain Cash Helped Third-Graders Learn About Financial Literacy – Earning, Saving, Spending and Borrowing



A University of Otago, New Zealand, study found that children are exposed to about 554 product brands per 10-hour day, or nearly a brand a minute. To counteract this conditioning to spend, personal

finance lessons are essential. Learning basic monetary concepts (how to save and spend appropriately) may help them as adults avoid overspending and save for large purchases.

Purdue Extension educators from 62 Indiana counties presented Captain Cash, a four-session financial literacy

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Third-graders completed 5,534 pre-surveys and 4,853 post-surveys. Comparisons of pre/post percentages showed increases in financial literacy, including:

- Earning, and the correlation between education and earnings. (People who learn more usually earn more — 49%/84%.)
- Saving. (Which is the safest place to keep your money? A bank — 61%/80%; piggy bank — 21%/11%).
- Borrowing. (Borrowed money must be paid back — 78%/93%. If I borrow money, the bank expects me to pay back what I borrowed plus interest — 49%/79%).

Where students obtain their financial education can determine future financial management. Parents' financial approach is likely to be followed by their children. Students selected one or more responses about how they learn about money: parents (83%), teacher (67%), grandparents or relatives (48%), books (39%), and friends (23%).

Teachers (56) completed a post-survey, indicating students talked with parents/guardians about money management since their participation in Captain Cash (56%) and noticed increases in students saving money (39%). A teacher said, "Students were very engaged in these activities. I think this helped them to be more aware of needs versus wants, and what it takes for their parents to provide the necessities for the children."

Purdue Extension's Captain Cash engaged 5,534 thirdgraders in more than 100 schools, boys and girls clubs, and other community organizations, helping them learn about earning, saving, spending, and borrowing. Captain Cash helps youth and their families focus on financial understanding that is applied immediately and for financial planning for future endeavors, including education opportunities.

### Youth in Indiana 4-H Civic Engagement Expressed Feeling a Responsibility to Help Their Communities

Many 4-H activities support youth involvement in civic engagement. Youth opportunities and experiences are important for development of civic engagement and

community awareness skills, contributing to future involvement and impact in our communities.

Indiana 4-H provided 11 county-based and statewide civic engagement programs, including Statehouse/government days, junior leader activities, ambassador or leadership opportunities, Community Service SPARK Club, and more. And 263 youth submitted responses to the civic engagement survey about future intentions for civic engagement, community service and volunteering, interactions and contributions, and community awareness.

For future intentions for civic engagement, youth reported: they like helping people in their community (99%), and are interested in community service projects: organizing a drive for clothing, toys, books, or food (97%), walking dogs at an animal shelter (93%), serving meals at a homeless shelter (92%), visiting people in a nursing home (90%), and teaching younger kids (90%). For community service and volunteering, nearly all (93%) reported they did community service projects. Three-quarters (74%) helped plan a community service project, and half (48%) helped lead a community service project.

For interactions with local, state, and national government, nearly all (88%) reported they met community leaders because of 4-H and encouraged others to volunteer in the community. For community awareness, most (82%) had talked about needs in their community at 4-H. For helping to address problems in the community, most (86%) reported that when they learn about a problem in the community, they look for ways to help. Nearly all (94%) feel a responsibility to help their community. Most (88%) reported that 4-H inspired them to volunteer in their community.

Indiana 4-H opportunities inspire youth to take part in community service, interact with the government, learn about the needs of the community and look for ways to help. As a result, youth expressed feeling a responsibility to help their community. Indiana will benefit from having youth who care about, and feel responsible for, helping their communities.



## Parents Forever Program Had a Positive Impact on Knowledge, Skills and Confidence to Navigate Changes Through Divorce or Custody



Life changes are normal, but sudden or unexpected changes can affect the wellbeing of children.
Separation or divorce can impact the security, emotional support and love needed by children.

The American Academy of Child and Adolescent Psychiatry reported research that shows children do better when parents can minimize conflict and cooperate on behalf of the kids.

In Indiana, it is up to individual judges whether to require, recommend or mandate co-parenting education for separated/divorced parents. Several judges in 13 Indiana counties now mandate Parents Forever, offered by Purdue Extension. Originally developed by the University of Minnesota Extension, Parents Forever is for families experiencing divorce, separation, or a change in child custody. Purdue Extension provides the four-hour program in person to community residents, court-ordered parents and other caregivers. It is also available as an online course. Last year, 10 Extension educators delivered 31 Parents Forever in-person, reaching 831 adults and more than 1,120 children. There were 137 online participants; 694 parents completed evaluations for the in-person programs.

After the program, parents reported they were very likely to help their children adjust to the divorce or custody modification based on the children's ages and stages (82%), use strategies learned in class to keep children "out of the middle" of conflict interactions with the other parent (81%), adjust their parenting to better meet the needs of their children (80%), and develop a detailed child-focused parenting plan (73%).

Parents rated their understanding before and after the program. Understanding increases to a "high level of knowledge and confidence" were reported for strategies to help their children adjust to divorce/custody based on their child's age and stage (26%), creating a child-focused parenting plan (26%), handling conflict with their co-parent (25%), strengthening our support network (25%), and having a relationship with the other parent that works best for their children (24%).

Parents are not always receptive to attending coparenting education, so it is encouraging when participants share positive comments. One parent said, "I thought this was going to be a waste of time, but it was a very informative class." Another, referring to watching the film "Split: Divorce Through Kids' Eyes," said, "Hearing children talk about their experiences through divorce — hard to hear. What a mess this all is for them. I need to ensure I never show my anger for my ex in front of my daughter."

Purdue Extension's Parents Forever had a positive impact on parents' knowledge, skills and confidence to navigate changes with divorce/custody, ultimately setting the stage to positively impact their children's well-being. Communities will benefit when parents and children are safe and supported during changes occurring from divorce/separation.

## **Enhancing Local Coalition Efforts to Support a Culture of Health**



In America's 2022 health rankings, Indiana ranked 35th in overall health outcomes. Of concern are drug use, mental health, tobacco use, infant mortality, obesity, diabetes, and physical inactivity.

To address health concerns on a community level, organizations can come together in local community health coalitions to address community health needs. Coalitions can conserve and use resources efficiently and be a powerful vehicle for impacting health through policy, systems, and environmental changes.

Purdue Extension provides skill training to Extension educators, community wellness coordinators (CWCs) and community members to elevate local coalition work. Some 81 educators and CWCs were involved with coalitions in 75 Indiana counties and actively engaged or provided primary leadership/co-leadership.

Indiana's coalitions focused on wellness, substance use, mental health, wellness, chronic disease prevention, local foods, and tobacco. Community sectors involved were education, social services, health systems, business, and government. A small number included engaging youth. Coalition activities included fairs, training, screenings, town halls and walks/runs or challenge events. Events focused on food (community garden cleanup, local food, food distribution), mental health (awareness campaign, reducing stigma), and substance use prevention. At least 229 volunteers were involved.

Complementing local coalition work, Purdue Extension leverages national and state programs to foster interdisciplinary work and partnerships. One is Well Connected Communities (WCC), a nationwide effort to cultivate wellness led by the National Cooperative Extension System in partnership with the National 4-H

Council and support from the Robert Wood Johnson Foundation. Purdue Extension is one of 13 pilot states for Wave One (2017-19) and Wave Two (2019-2021) focused on Fayette, Greene, and Scott counties. Purdue Extension received the grant for Wave Three (2021-2023) with a primary focus on Greene County's Youth Health Council and County Alliance. WCC helps build diverse, multigenerational, cross-sector coalitions that recognize and address systemic health inequities. The WCC Greene County team has developed a curriculum to encourage other counties and states to implement youth-led councils.

And 75 Indiana counties reported 176 active coalitions: 31% have health interventions with evaluations in place, 29% are actively conducting interventions, and 26% are engaging key partners. Purdue Extension enhanced the work of the local coalitions: building new or improved networks or relationships, increasing community awareness for an issue, facilitating the group to work together toward a common goal, bringing new and diverse faces to the coalition, and increasing member knowledge and skills. Participation by Purdue Extension created 435 new partnerships or collaborations, averaging three per coalition.

Local coalitions enhanced Purdue Extension's effectiveness by increasing new partners for programs and helping broaden the network of community partners. Some 3,068 groups/agencies were active across the 176 coalitions, with 511 new, and 264 introduced to the coalition by Purdue Extension.

Indiana's coalitions were heavily involved with Policy, Systems, and Environmental (PSE) work:

- 10 health policies were enacted (smoke-free environments, the creation of a food commission, and increased fresh produce at pantries and food distributions).
- 64 health-related systems were built (designing and funding Food as Medicine programs, providing access to Naloxone boxes, addressing youth vaping, increasing wrap-around services for incarcerated individuals, creating safety net programs for student-athletes at risk of sudden cardiac death).
- 48 environmental strategies were established (lengthening a trail by 2.3 miles, creating a bike library, creating a service/food hub for wrap-around services, increasing awareness of businesses selling vapes to underage buyers, enhancing community gardens, and creating smoke-free parks/recreational areas).

Coalition successes included 1) a Youth Mental Health Coalition created a "Hope Squad" to increase mental health resources for Latinx youth, 2) the Taking Action Against Substance Use program promoted awareness, 3) enhancements to food access and food distributions, and 4) law enforcement and social services quarterly meetings on mental health and substance use.

As a result of Purdue Extension, 25 coalitions received more than \$3.8 million for community-based health programs. Purdue Extension's involvement in Indiana's coalitions enhanced local efforts to support community-level cultures of health for all.

## Food Production, Security & Safety

## Safe Produce Indiana: Produce Growers Increased Their Knowledge of Postharvest Handling and Sanitation

Foodborne illness is a common, costly yet preventable public health problem. CDC estimates that one in six Americans get sick from contaminated foods/beverages, and 3,000 die each year. Many foodborne illness outbreaks are attributed to produce. The USDA estimates that foodborne illnesses cost \$15.6 billion annually.

Purdue Extension offers Produce Safety Alliance (PSA) Grower Training to Indiana produce growers to address good agricultural practices (GAPs) to prevent foodborne illness outbreaks. The PSA Grower Training is a national curriculum, developed by Cornell University and recognized by the FDA, addressing the Food Safety

Modernization Act (FSMA) Produce Safety Rule, GAPs, and co-management of natural resources and food safety. The training is one way to satisfy the Produce Safety Rule requirement: "At



least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration." Ten trainings (80 hours of instruction) were conducted, and 150 produce farm owners, farmers market masters, and farmworkers received certificates from the Association of Food and Drug Officials.

Participants (126) completed evaluations. Most (96%) indicated the training increased their knowledge of postharvest handling and sanitation requirements in the FSMA Produce Safety Rule, and they are confident in implementing practices addressing food safety risks in postharvest handling and sanitation.

Purdue Extension's Produce Safety Alliance Grower Training helps produce growers increase their knowledge of postharvest handling and sanitation and earn food safety certificates to meet the Food Safety Modernization Act. This focus on safe food production benefits all communities by contributing to a safe food supply.

### Field Day Participants Adopted New Recommended Practices for Various Applications



There are 56,800 Indiana farming operations; 97% are family-owned. Of Indiana's 23.3 million acres, 84% are farms, forests, and woodland. Corn (\$3.16 billion) and soybeans (\$2.84 billion) account for

the largest sales of Indiana's commodities. Successful and sustainable production requires attention to soil health, water availability and access, weeds, insects, invasive species, and diseases, and seasonal and weather variability. It is prudent for Indiana to protect its resources and support the productivity of land, farms, and operations.

In conjunction with the Purdue Agricultural Centers (PACs) across Indiana, Extension provided seven field days held at five PACs. Participants could earn professional credits for the Private Applicator Recertification Program (PARP), Continuing Certification Hours (CCH), and Certified Crop Advisor (CCA). A total of 869 participants attended field days and 478 completed the post-survey (55%).

Over 350 participants reported earning credits: PARP 51%, CCH 19%, and CCA/CEUs 6%. Most (87%) learned something they didn't know before. Agriculture program participants indicated they plan to adopt recommended field crop practices for their farm/operation (42%) plan to adopt fertilizer and/or pesticide practices (34%), plan to adopt recommended field crop management practices (26%), or are already doing recommended practices (24%). Horticulture program participants plan to adopt recommended practices/technologies for horticulture and the environment (67%), conservation of resources (33%), and reducing negative environmental impact from horticultural operations (39%).

Three-quarters (76%) of field day participants had attended in the past. Nearly half (44%) reported they had adopted a new, recommended practice for their farm or operation. Past participants reported new practices they adopted: cover crops, no-till practices, sulfur application and fungicide application. These practices reflect a focus on sustainable agriculture, precision farming and advancements in pest and disease management. Adopting cover crops and changes in tillage practices align with trends in conservation and soil health, while the use of specific inputs, such as sulfur and fungicides, indicates a commitment to optimizing crop performance and yield. When asked about financial improvements observed as a result of adopting recommended practices, two-thirds (60%) indicated improvements as increased dollar return per acre. Nearly half (44%) reported reduced costs per acre.

Purdue Agricultural Centers' field days participants reported adopting new recommended practices for cover crops, no-till, and sulfur and fungicide applications, showing a commitment to sustainable agriculture and optimizing crop performance and yield for feeding Indiana, the U.S., and the world.

## Integrated Research and Extension Efforts at Poultry Convention Lead to Financial Improvements



Poultry producers across the Midwest need continuing education about poultry production (turkey, broiler, pullet/ layer hen, and feed milling and nutrition).

At the 2.5-day

Midwest Poultry Federation's "PEAK" (Progress, Experience, Advancement, Knowledge) Convention, 18.5 hours of educational content were offered to poultry producers. Purdue Extension partnered with the federation to present and arrange all the education programs. After the trade show, a survey was sent to attendees for feedback. Convention participants represented allied industries/suppliers (49%), producers (40%), or others, including academia and government (12%). Half (50%) attended the turkey and pullet/layer hen education programs.

Participants learned something about poultry they didn't know before (40%). More than 50% of participants in the pullet/layer and turkey sessions reported they intend to modify or change practices implemented at the farm as a result of new information gained. Just 21% indicated they had attended the event in the past and as a result of what they learned, had implemented or modified practices. Estimating the impact of those adopted practices, some

Purdue research and Extension's involvement with the PEAK convention resulted in past convention participants reporting adopting practices that resulted in financial improvements of \$20,000 in poultry production. These results improve poultry production for Midwest producers who supply poultry products across our country and world.

### Heart of America Grazing and Indiana Grazing School Participants Reduce Costs and Increase Dollar Returns



Cattle and small ruminant production are a major component of livestock agriculture along the Ohio River, including Indiana, Illinois, Ohio, Kentucky, and Missouri.

Increasing production effectiveness while improving on-farm finances is a constant effort for producers. Systematic grazing represents a cost-effective way to feed ruminants. Healthy forages contribute to a healthy ecosystem, help reduce soil erosion, improve water quality, and provide food and shelter for wildlife. Proper forage production and utilization can reduce input costs for livestock producers while helping to sustain the environment. Proper management can extend forage growing seasons, reducing input costs to producers. The latest technologies and management strategies are needed to ensure the most efficient means of improving forage and livestock systems.

Purdue Extension is involved with two grazing programs. Purdue Extension led as the site host for the two-day Heart of America Grazing Conference. This collaborative event featured university, government, and industry representatives from Ohio, Illinois, Indiana, Kentucky, and Missouri. Topics presented were grazing systems design, fencing and watering system layout/design, bale grazing, soil health, forage-related animal disorders, use of small ruminants in cattle systems, soil testing, pasture evaluations, stocking rates, and traditional vs. biological soil testing. About 160 producers, industry, and agency personnel from numerous states attended.

Purdue Extension's Indiana Grazing School was held in two Indiana locations: Southern Indiana Purdue Agricultural Center and Randolph County. It was a joint effort between Purdue Extension and industry partners (USDA Natural Resource Conservation Service and the North Central Sustainable Agriculture Research and Education Program.) Topics covered in this two-day workshop were soil fertility, water delivery, fencing, grazing system options, animal health, and plant identification. Training included field tours, pasture walks and small-group discussions. Livestock producers had hands-on training for improving grazing systems. Participants connected with others and developed professional contacts. Participants received supplemental materials and resources for their operations. The 55 grazing school participants were livestock producers, veterinarians, individuals seeking more information to begin a livestock production location, and full- and part-time producers. Self-reported demographics were 18 female and 33 male, and Hispanic, Black or African American, and White attendees.

Heart of America Grazing Conference post-surveys (52) showed participants had a deeper understanding of grazing (100%), had situations in which they could use the knowledge gained (100%), and would change their practices based on what they learned from the conference (88%). Compared to just 21% before, twothirds (61%) ranked their after-conference knowledge as high/very high on grazing systems design, fencing and watering system layout/design, bale grazing, soil health, forage-related animal disorders, use of small ruminants in cattle systems, soil testing, pasture evaluations, stocking rates and traditional vs. biological soil testing. Threequarters (70%) plan to make changes to grazing systems design, fencing and watering system layout/design, bale grazing, soil health, forage-related animal disorders, use of small ruminants in cattle systems, soil testing and pasture evaluations, stocking rates, and traditional vs. biological soil testing in their operations. Six-month surveys (22) showed three-quarters (73%) adopted at least one recommended practice for their grazing operation. Most were able to reduce their cost per acre (93%) and increase their dollar returns per acre (86%). Estimated financial improvements per acre were \$0-\$50 per acre (77%) and \$51-\$100 per acre (23%).

Indiana Grazing School participants (39) learned something they did not know before attending (99%), were extremely likely to recommend this event to a friend or colleague (86%), will change their grazing techniques to optimize pasture growth (51%), will consider improving pasture ecology and soil health (46%), will match their forage resources to the livestock stage of production (46%), will consider soil factors when selecting forages for their grazing system (46%), will consider how their animals' movements impact their livestock production system (44%), will change their forage species and control weeds that cause animal disorders (42%), will change their paddock design to optimize animal production (42%), will change when and how they renovate their pasture (42%), and will change their pasture system to extend their grazing season (41%). Participants shared the most impactful thing they learned that they will change in the coming year: extended grazing season, trying different plant species, weed control and more intense grazing, pasture management and livestock movement, fencing, pasture paddock design, watering systems, weed control, and rotational grazing system.

Purdue Extension provided critical training on grazing via two programs. America Grazing Conference participants reported financial improvements up to \$100/acre due to adopting recommended practices. Indiana Grazing School participants learned practices they plan to adopt to optimize pasture growth and extend the grazing season. These practices boost production for grazing operations across the Midwest.

## Producers Increase Yield and Profitability with Help from Purdue Extension's Newsletters, Vegetable Crops Hotline and Pest & Crop



Indiana has 1,429 vegetable farms on 40,148 acres (2017 Census of Agriculture). Vegetables are a diverse group of crops requiring different production practices, and they

face varied disease and insect pest pressures. Vegetable producers need to be kept up to date about pests (insects, nematodes, weeds, vertebrates, plant diseases) numbers and damage, agronomic development of crops, and weather updates. Producers scouting fields need to correctly identify pests, assess potential damage to crops, and implement management tactics if warranted. The better informed these agribusiness personnel are, the greater their ability to make economically and environmentally sound pest management decisions.

The Vegetable Crops Hotline is a newsletter developed by Purdue Extension's Vegetable Team. It provides growers with timely information on disease and insect pest management, production practices, new research updates, and upcoming training opportunities in vegetable production. There are 15 issues per year via email (free) and hard-copy subscriptions (\$15/year) too, ensuring that information reaches grower groups without internet access. Issues are on the Vegetable Crops Hotline website (https://vegcropshotline.org/).

The Pest & Crop newsletter is published by Purdue's Pest Management Program, composed of interdisciplinary specialists from departments of agronomy, botany and plant pathology, and entomology. Pest & Crop (https://extension.entm.purdue.edu/pestcrop/) is shared weekly

during the growing season and as needed otherwise. It gives forecasted and up-to-date information on pests and their damage throughout Indiana. Graphics and videos are presented to help with pest identification, scouting procedures, management guidelines, and control techniques and materials. The newsletter provides crop production information, weather updates, changes in pesticide regulations and/or status, and opportunities for continuing education.

The Vegetable Crops Hotline newsletter has 806 email subscriptions and 31 hard-copy subscriptions. Some articles were reprinted by newsletters of other states, including Illinois Fruit and Vegetable News, Pennsylvania Vegetable Growers News, and the Long Island Grower Agricultural News. In the past year, the website achieved 196,997 page views worldwide; 126,269 in North America; and 18,617 in Indiana. Page views in Indiana increased by 66%. The number of webpage users was 129,814 worldwide, 86,361 in North America, and 5,799 in Indiana. Indiana webpage users increased by 43%. A survey was distributed to Vegetable Crops Hotline clients at the end of the growing season. Respondents indicated they were White (90%), male (68%), and 60 years old or older (54%). Two-thirds (63%) were from 22 Indiana counties, with a quarter (28%) from the Midwest.

Most (78%) reported interacting with the Vegetable Crops Hotline content via the email newsletter; the remaining 22% interacted via both the email newsletter and website. Two-thirds (62%) indicated they first became aware of the Vegetable Crops Hotline in the last five years. A fourth (24%) indicated they have interacted with this resource for 11 or more years. Respondents identified the topics/areas/sections they typically read were hot topics/emerging issues (88%), pest/disease emergence (86%), and research reports (78%). Due to the Vegetable Crops Hotline, respondents reported they changed/adopted recommended practices/technologies for vegetables and the environment (57%), increased yields (47%), increased efficiencies (42%), and increased quality and supply of locally produced vegetables (40%). Respondents shared improvements experienced from the adopted practices: half (55%) increased yields, 40% increased efficiencies, 25% increased economic returns, and 20% reduced inputs.

Pest & Crop had more than 178,000 unique pageviews with a weekly email notification sent to 3,480 pest managers ("subscribers") in Indiana and surrounding states. In an online evaluation, all indicated the newsletter was timely (100%) and reported increased pest understanding while improving in-field pest identification from photos and videos in the articles (95%). Pest & Crop readers based their treatment decisions on information provided in the newsletter (88%), and increased their operation/company profitability (77%). Half indicated they make, or influence, pest management decisions

on at least 5,000 acres. Most consider the newsletter their main source of in-season pest management/crop production information (70%). Nearly all reported they shared information in articles with colleagues and/or clients (91%).

Via Purdue Extension's newsletters, Vegetable Crops Hotline and Pest & Crop, producers make decisions for their produce and crops, resulting in increases in yield and profitability. Purdue Extension's newsletters and websites help make information accessible for produce and crop producers worldwide

# **Crop Management Workshop Participants Adopt New Strategies and Practices for Financial Gains**



Agribusiness applicators, producers, retail managers, and Extension personnel need updated pest and pesticide information. These "pest managers" must know about pest

populations, outbreaks, and management strategies, pesticide label changes, environmental issues affecting pest control, use and application of pesticides, and pesticide safety. Producers rely on agribusiness professionals to identify and inform them of existing/potential pest problems on their farms and to assist with appropriate pesticide management.

Purdue's Pest Management Program coordinates the Crop Management Workshops (CMW), a series of winter meetings held at several Indiana locations. Purdue Extension specialists, representing the departments of Agronomy, Botany and Plant Pathology, Entomology and the Office of the Indiana State Chemist, present information for pest management, pesticide regulations, pesticide safety, and pesticide application equipment and calibration. In post-pandemic times, programs are held at multiple sites for in-person meetings but also include livestreaming. Of the 917 agribusiness personnel attending, 623 did so virtually and 294 were in-person. Participants were applicators, producers, fertilizer plant managers, university personnel, product sales, and company agronomists. In a follow-up survey (550) more than half (58%) reported they make/influence pest management decisions on 5,000 or more acres. All respondents indicated they would share what they learned with coworkers and/or customers (100%), and apply information on pest identification and treatment decisions to next season's crops (99%).

Most (81%) shared that they implemented crop production and integrated pest management strategies

from past CMWs. Half reported financial gain to their operation/company resulting from adopted strategies. Practices adopted and information applied included proper identification of pests and their damage, eliminating needless chemical treatments, using proper timing, most efficacious products and rates when pesticides are justified, pest trends and anticipated problems for the upcoming season, pest resistance management tactics, and selection and use of pesticides.

As a result of attending Purdue Extension's Crop Management Workshops, participants adopted recommended strategies and practices and reported financial gain to their operation/company. Application of these practices improves Midwest crop and food production.

## **Purdue on the Farm: Reinventing Corn and Soybean Farm Visits**



During years of COVID-19 procedures and protocol, Purdue Extension's connections with farmers were limited as virtual experiences replaced in-person activities. Purdue Extension developed

"Purdue on the Farm" to reconnect and increase direct contact between Extension educators and Indiana farmers to build and enhance relationships, understand perceptions and practices, observe, generate data to underpin recommendations and build Extension professional capacity. Purdue on the Farm is a corn and soybean growing-season program based on data collection questionnaires, crop scouting for diseases and pests, demonstrations, and on-farm research. Participants were Indiana farmers, Extension educators, and Extension researchers/specialists.

Data-collection questionnaires were created to coordinate the involvement of Extension personnel with farmers and crop scouting. Educators visited corn and soybean farms, met with farmers and completed data-collection questionnaires for fields in the spring, then scouted fields at early, mid, and late points of the growing season. Extension researchers/specialists were notified of any emergent issues needing action/follow-up. Educators and researchers/specialists were able to engage farmers about on-farm demonstrations and research opportunities.

For soybean, 28 educators partnered with 29 farmers on 26 fields in 19 counties, scouting more than 1,386 acres. Dry soybean field conditions (88%) contributed to a fraction of early season seedling death (.4%) compared to the previous year (9%). Scouted soybean fields

For corn, 19 educators partnered with 23 farmers on 16 fields in 16 counties, scouting more than 1,100 acres. Early season conditions were dry (70%) and warm (33%). Minimal weed pressure was observed. Soil test results showed scouted fields were below critical in phosphorus <20 mg/Kg (23%) and potassium <120 mg/Kg (64%). Midseason ear-leaf tissue samples showed a recovery in phosphorous <.3% P (22%) and potassium <1.5%K (0%) which coincided with less dryness stress (45%). Soil organic matter levels showed minimal nutrient deficiencies. Plant stressors observed during mid- and late-season were drought stress and the diseases tar spot and gray leaf spot. However, of 22 fields reporting crop condition, 100% were classified as good or excellent before harvest.

In end-of-season follow-up surveys, educators reported that the reasons they had scouted soybean and corn fields were to connect with farmers (90%), improve technical knowledge (66%), and improve credibility (55%). Educators reported farmer connections ranged from 1-3 visits (22%), 4-6 visits (56%) and more than

11 visits (22%). Educators reported the greatest benefit of crop scouting was improving their technical knowledge (90%), specifically agronomic (45%), plant disease identification (33%), and weed identification (22%). The second greatest benefit was connecting with farmers (55%).

At the end of the growing season, farmers indicated Purdue Extension provided the right amount of information about their fields (86%), would like to continue with Purdue Extension in both "Purdue on the Farm" field scouting and on-farm research (85%), and had acted on the recommendations they received (79%). Farmers reported an increased dollar return per acre (40%) and reduced costs per acre due to applying the recommended actions (40%).

"Purdue on the Farm" has revived Extension's onfarm visits with corn and soybean farmers with a new approach. Educators visited corn and soybean farms, met with farmers, conducted tests, and documented observations. Emergent issues were shared with researchers/specialists for attention and follow-up. Farmers reported increased dollar return per acre and reduced costs per acre from applying recommended actions. Educators reported their greatest benefits from these activities were improved technical knowledge and connections with the farmers. These connections supported farmers in monitoring crops for healthy production and abundant harvesting for Indiana food/ crop production.

## **Urban Agriculture & Urban Extension**

## Purdue Extension Helps New, Beginning and Small-Scale Production Farmers Adopt Recommended Practices



Indiana farms have decreased significantly, from 70,506 in 1987 to 53,599 in 2022 (U.S. Census of Agriculture). During that time, other than farms of 2,000 acres or more, the

only farms to increase in number were farms with 49 acres or less, which increased from 20,544 in 1987 to 25,190 in 2022. Many Indiana farms had to expand to remain profitable, but expanding is generally not an option for small-scale/beginning farmers. The only farms that increased in number were vegetable, fruit,

some livestock, and organic. In 2022, Indiana had 26,428 producers identified as new/beginning. Small-scale, new, and beginning farmers need information and updates for production and food safety.

Purdue Extension's Small Farm Education Field Day was created to introduce growers to farm solutions to increase productivity. Held at the <u>Purdue Student Farm</u>, the field day consisted of 10 demonstration stations hosted by Purdue research and Extension faculty, specialists, and undergraduate and graduate students. A total of 105 participants attended.

Purdue Extension's Indiana Small Farm Conference provided education and networking opportunities for small-scale and beginning farmers. The event featured nationally recognized keynote speakers, all-day workshops and tours, concurrent sessions on research and practices, a trade show, and a poster session. Conference goals were to educate and increase awareness on many agriculture topics, increase the adoption of best practices, and bring a variety of people together to create space for networking and

collaboration. A total of 313 adults attended; 31 adults self-reported demographics as White (28) and male (12).

During Purdue Extension's Small Farm Equipment event, Extension specialists, researchers, Extension educators and community partners provided a visual demonstration of tools for small vegetable farms. Participants had hands-on opportunities to try the tools. A presentation on routine tool maintenance and a discussion occurred during lunch. There were 14 participants, and 11 reported demographics: White (7), Hispanic (3) and male (7).

As a result of the Small Farm Education Field Day, most learned something they didn't know before (84%), nearly half plan to adopt practices for horticulture and the environment (45%) or practices that increased efficiencies (42%), and a third plan to adopt practices/technologies for conservation of resources (37%) and recommended practices for diversifying farming systems (34%).

Because of the Indiana Small Farm Conference, participants learned about vegetable production (55%), soil health (44%), regenerative agriculture (37%), and urban agriculture (34%). Three-quarters learned about available assistance and/or technical support (75%) Purdue Extension (68%) and USDA/NRCS (64%). For the adoption of best practices, many intend to adopt recommended practices shared related to farming, producing crops, raising livestock, sustainable practices, and technologies (83%). Common themes of farming practices to adopt were: weeds and pest management, crops/plants, permaculture/regenerative/conservation, cover crop, marketing, equipment, crop rotation/ succession, composting, and technology/drones. Threefourths intend to apply one or more ideas learned to their operation/organization this year (74%) and reported learning opportunities for small-scale farmers, producers, and operations/organizations (74%). Half learned about a new enterprise for their operation/organization (48%) and plan to adopt recommended practices for business planning, finances, agritourism, or marketing (42%). A few reported they plan to start a new business within the next year (16%). For networking and connections, nearly all participants developed relationships, interacted or connected with other farmers, producers, participants, and people interested in diversified farming and local food systems (95%). Most had connected with a more experienced farmer, producer, or participant (71%).

Due to the Small Farm Equipment event, new/beginning vegetable farmers increased their understanding of small-farm equipment and confidence in using small-farm equipment. Participants learned about types of hoes, tilthers for bed preparation, tarping, two-wheel tractors, wheeled hoes, and flame weeders. In the future, participants hope to learn about harvest tools, tine weeder, incorporating small garden tractors on farms, and greenhouse tools. Discussion during lunch produced

additional topics of interest: natural mulches, cover crops for small scale, different types of tarps, side-dressing tools, ergonomic/ADA tools, succession plantings, two-wheel tractor attachments, small-scale equipment for wet areas, and raised bed tools.

Farmers — new and beginning, and small-scale production — are filling a niche in agriculture. Because of Purdue research and Extension, farmers are learning about horticulture and agriculture production and making plans to adopt recommended practices. Production from these new and small-scale farmers will help provide local and accessible food across communities.

### Purdue Extension's Growing Together Provided Fresh Produce for Indiana Residents in Need



In 2022, U.S. households (13.1%) and Indiana households (13.9%) were identified as food insecure. Some Indiana residents (11.5%) were considered living in poverty in 2022.

Food insecurity is highly related to health issues such as iron deficiency, low bone marrow content, mental health, diabetes, obesity, and chronic disease.

In partnership with Purdue Extension Master Gardeners and Purdue Extension Nutrition Education Program (NEP) community wellness coordinators, 14 Indiana counties (Brown, Daviess, Elkhart, Franklin, Fulton, Howard, Johnson, Lake, Lawrence, Montgomery, Spencer, St. Joseph, Tipton, Vigo) engaged in food access projects to increase fresh fruit and vegetable availability to food pantries and other agencies serving eligible Supplemental Nutrition Assistance Program (SNAP) clients. The projects were supported by "Growing Together" minigrants funded through the Purdue Extension NEP. Community partners collaborated with Extension staff to create/expand donation gardens in their communities. Collaborative participants included food pantries, Extension Master Gardener volunteers, and patrons of local food pantries.

In total, 226 volunteers (including 66 Purdue Extension Master Gardeners) partnered with Purdue Extension staff to coordinate projects with caring agencies and schools seeking to meet the needs of limited-resource individuals and families. More than 3,635 volunteer hours were committed to planting, maintaining, harvesting, and supporting 16 gardens. Projects grew, donated, and distributed more than 33,808 pounds of produce (101,424 servings of produce) to 48 organizations that served as distribution and education sites. Based on agency service

numbers, the produce was available to 22,520 clients. In addition to the \$18,796 provided to mini-grant awardees, Extension staff were able to acquire more than \$27,535 of in-kind donations of labor and resources in support of the projects. Additionally, 11 of the 16 gardens engaged the produce recipients in planting, growing, and harvesting. This allowed them to learn practical gardening skills to use at home. Nutrition education lessons taught recipients how to prepare the produce.

This project was part of a North Central Extension multistate — Indiana, Illinois, Iowa, Michigan, Montana, Nebraska, South Dakota, Wisconsin, and Wyoming — effort. Cumulatively, 533 Extension Master Gardeners and 3,416 other volunteers collaborated with 252 community partners and agencies and to leverage an additional \$132,724 to support these projects. A total of 287 food pantries and distribution sites received 239,252 pounds of donated produce over the nine states, serving 114,476 low-income individuals.

Purdue Extension Master Gardeners, in collaboration with Purdue Extension's Nutrition Education Program, coordinated volunteers growing 240,000 pounds of produce that were distributed to and via local food pantries for clients in need.

# Beginning Farmer Virtual Program Participants Adopt Recommended Practices for Operational and Financial Success

In Indiana, more than 23,000 farmers self-identified as beginning farmers, having less than 10 years of experience. These farmers are found in rural and urban areas, can be young or old, and often use myriad production systems. Because beginning farmers come from diverse backgrounds and often farm in nontraditional ways, it has been challenging for them to find resources from national, state and local organizations.

The Virtual Beginning Farmer program helps aspiring and beginning farmers refine their goals, inventory their assets and challenges, create action plans, and build networks. The program has eight education sessions plus eight discussion sessions. The program walks participants through creating a mission and vision, identifying assets and challenges (including creating a physical map of their farm), helping them identify potential markets, and assisting them to create action plans to move their operations forward. Discussion sessions were informal interactions where additional resources were shared, guest speakers from agencies serving beginning farmers talked about available programs, questions were asked, and farmers could build networks. There were 50 participants, and 10 completed post-surveys. Distribution of the one-year follow-up

survey was emailed to the 43 participants of the previous year's program; seven follow-up surveys were completed.

Participants indicated knowledge increases for access to resources, farm planning, biophysical assets and building goals. Participants intend to: create a farm plan (90%), create a business plan (80%), and analyze farm finances (70%). Many (70%) developed relationships and connected with other farmers, producers, and participants interested in diversified farming and local food systems. Participants explained the connections made:

- "As a producer, we made connections with others in the course to trade knowledge or inquiries about our product."
- "Became connected via Facebook with other small farms doing things that I want to do."
- "I met people raising vegetables in greenhouses."
- "Mostly local resources such as soil and water conservation and USDA offices."

Over half (60%) were affiliated with minority-led or women-led organizations, farms, operations, or groups, and one-third (40%) were involved with farmers markets.

Previous year participants reported recommended practices adopted for their farm/operation. All respondents (7) indicated they created a farm plan. Since attending, many (71%) had improved/strengthened their existing business/operation. Previous participants reported increased efficiencies (47%) and improved conservation of resources (43%). Three participants increased revenue or decreased expenses due to adopting recommended practices. Estimates of financial results ranged from unknown to up to \$1,000.

Purdue Extension's Beginning Farmers program contributes to the development of farm and business plans for those new to farming, and operation and financial results from adopting recommended practices. By training beginning farmers, those looking for new opportunities gain skills and the farming community grows with new farmers to contribute to future crop and food production.



## **Collaborators**

#### **Climate Change, Natural Resources, Environment & Sustainable Energy**

#### Private Woodland Owners Make Decisions and Take Actions to Improve Acreage Value

- Dave Osborne, county Extension director, 4-H youth development and agriculture and natural resources educator, Ripley County
- Jarred Brooke, Extension wildlife specialist, Forestry and Natural Resources
- Lenny Farlee, sustaining hardwood Extension specialist, Forestry and Natural Resources
- Phil Woolery, agriculture and natural resources educator, Pulaski and Starke counties
- Ron Rathfon, regional Extension forester, Southern Indiana Purdue Agricultural Center,
   Forestry and Natural Resources

#### Furniture Production Addresses Workforce Development and Rebuilds Lives in Indiana

- Eva Haviarova, professor, Forestry and Natural Resources
- Henry Quesada, professor, Forestry and Natural Resources, agriculture and natural resources program leader

#### Helping Professionals and the Public Gain Skills for Healthy Pond Management

- Amanda Mosiman, agriculture and natural resources educator, Warrick County
- Dave Osborne, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Ripley County
- Gail Peitzmeier, county Extension director, 4-H youth development and health and human sciences educator, Crawford County
- Heather Caldwell, former county Extension director, 4-H youth development and agriculture and natural resources, Fayette County
- Jonathan Ferris, county Extension director, agriculture and natural resources educator, Wayne County
- Krista Pullen, community wellness coordinator, expanded food and nutrition program
- Michele Jones, agriculture and natural resources educator, Morgan County
- Molley Hasenour, 4-H youth development and agriculture and natural resources educator, Crawford County

#### **Workforce Development**

#### ServSafe Training Helps Many Comply with New Food Safety State Laws

- Abbi Smith, former health and human sciences educator, Putnam County
- Abigail Creigh, health and human sciences educator, Noble County
- Amanda Bullion, health and human sciences educator, Delaware County
- Amanda Deering, associate professor, Food Science
- Amanda Veenhuizen, former health and human sciences educator, Johnson County
- Atina Rozhon, area Extension director
- Autumn Trice Johnson, former health and human sciences educator, Allen County
- Beth Switzer, former county Extension director, health and human sciences educator, Hendricks County
- Carmen Fortney, county Extension director, health and human sciences educator, Jasper County
- Chelsea Brewer, county Extension director, health and human sciences educator, Dubois County
- Christopher Fogle, county Extension director, health and human sciences educator, Decatur County
- Dana Stanley, health and human sciences educator, Steuben County

- Deidre Wagster, health and human sciences educator, Jennings County
- Elisa Worland, community development and health and human sciences educator, Wayne County
- Emily Christ, health and human sciences educator, Elkhart County
- Emma Finerfrock, health and human sciences educator, Clark County
- Grace Thompson, former health and human sciences educator, Lawrence County
- Jane Horner, former health and human sciences educator, Cass County
- Janel Franks, health and human sciences educator, Blackford County
- Janet Steffens, county Extension director, health and human sciences educator, Floyd County
- Jennifer Stefancik, health and human sciences educator, Daviess County
- Jessica Martini, community wellness coordinator, Jefferson County
- Jessica Riffle, county Extension director, health and human sciences educator, Fulton County
- Jo Gilreath, health and human sciences educator, Warrick County
- Karen Richey, health and human sciences educator, Marshall County
- Linda Curley, health and human sciences educator, Lake County
- Luis Santiago, community outreach and engagement, health and human sciences, 4-H youth development educator, Daviess County
- Meagan Salomon, interim county Extension director, health and human sciences educator, Gibson and Vanderburgh counties
- Mindy Mayes, health and human sciences educator, Wabash County
- Molly Hoag, health and human sciences educator, Wells County
- Molly Marshall, co-county Extension director, health and human sciences educator, Jackson County
- Monica Nagele, county Extension director, health and human sciences educator, Montgomery County
- Rachel Dillhoff, social media coordinator
- Sarah Kramer, former health and human sciences educator, White County
- Shannon Chipman, co-county Extension director, 4-H youth development and health and human sciences educator, Ohio County
- Shannon Shepherd, health and human sciences educator, Kosciusko County
- Sonya Mitchell, health and human sciences educator, Washington County
- Susan Peterson, county Extension director, health and human sciences educator, Hamilton County
- Tara Beckman, county Extension director, health and human sciences and community development educator, Harrison County
- Tari Gary, Extension administrator, Food Science
- Tonya Short, health and human sciences educator, Knox County
- Zoe Robinson, health and human sciences educator, Randolph County

#### Remote Work Certificate Participants Gained Skills for a Virtual Career

- Dallas Evans, community development educator, Marion County
- Lupe Valtierra, community development educator, Lake County
- Mary Komenas, community development educator, LaPorte County
- Melinda Grismer, community and regional development specialist, Purdue Center for Regional Development
- Rita Gillis, former county Extension director, community development educator, Lake County

- Roberto Gallardo, vice president for engagement, Purdue University
- Tanya Hall, regional community development educator

#### **Earning Credits Toward Certification While Learning to Safely Apply Pesticides to Field Crops**

- Adam Shanks, digital agriculture and natural resources curriculum lead, agriculture and natural resources state office
- Adam Tyler, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Fountain County
- Andrea Hatfield, county Extension director, agriculture and natural resources and community development educator, Boone County
- Andrew Westfall, Diagnostic Training and Research Center field operations manager, Agronomy
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Beth Hall, director, Indiana State Climate Office, Agronomy
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Brad Kohlhagen, agriculture and natural resources educator, Adams County
- Bryan Overstreet, conservation agronomist and soil health statewide coordinator, northern Indiana
- Christian Krupke, professor, Entomology, and Dean's Fellow
- Daniel Quinn, assistant professor, corn production, Agronomy
- Danielle Nylund, 4-H youth development educator, Madison County
- Danielle Walker, agriculture and natural resources educator, Washington County
- Darcy Telenko, associate professor, Botany and Plant Pathology
- Dave Osborne, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Ripley County
- Emily Evers, county Extension director, agriculture and natural resources educator, St. Joseph County
- Emily Kresca, agriculture and natural resources educator, Kosciusko County
- Fred Whitford, clinical engagement professor, Purdue pesticide programs, Botany and Plant Pathology
- Hans Schmitz, former lead conservation cropping systems agronomist, Purdue Extension and conservation cropping systems initiative, Agronomy
- Heather Caldwell, former county Extension director, 4-H youth development and agriculture and natural resources, Fayette County
- Heidi Potter, agriculture and natural resources educator, Clark County
- James Camberato, professor emeritus, Agronomy
- Jeff Burbrink, agriculture and natural resources and community development educator, LaGrange County
- Jeff Hermesch, agriculture and natural resources educator, Dearborn County
- Jeff Pell, agriculture and natural resources and community development educator, Putnam County
- Jenna Nees, agriculture and natural resources educator, Putnam County
- Jessica Roberts, agriculture and natural resources and community development educator, Rush County
- John Obermeyer, integrated pest management supervisor, Entomology
- John Scott, former senior digital agriculture Extension coordinator
- Jon Charlesworth, county Extension director, agriculture and natural resources educator, Benton and Warren counties
- Joseph Becovitz, pesticide program specialist, Office of Indiana State Chemist

- Julia Carrell, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Orange County
- Justin Curley, county Extension director, agriculture and natural resources educator, Delaware County
- Lais McCartney, agriculture and natural resources educator, Hancock County
- Lyndon Kelley, Extension irrigation specialist, Michigan State University
- Marcelo Zimmer, weed science program specialist, Botany and Plant Pathology
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Michael Langemeier, professor, Agricultural Economics
- Molley Hasenour, 4-H youth development and agriculture and natural resources educator, Crawford County
- Ophelia Davis, former agriculture and natural resources educator, Lawrence County
- Paul Kelley, pesticide investigator, Office of Indiana State Chemist
- Phil Woolery, agriculture and natural resources educator, Pulaski and Starke counties
- Phillip Cox, agriculture and natural resources educator, Vermillion County
- Richard Beckort, co-county Extension director, agriculture and natural resources educator, Jackson County
- Sabrina Allen, agriculture and natural resources educator, Decatur County
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Sarah Hanson, food systems coordinator, agriculture and natural resources, state office
- Scott Gabbard, Purdue on the Farm senior administrator, agricultural research and graduate education,
   College of Agriculture
- Shaun Casteel, professor, Agronomy
- Tom Springstun, agriculture and natural resources educator, Scott County
- Tricia Herr, agriculture and natural resources educator, Montgomery County
- Valerie Clingerman, county Extension director, agriculture and natural resources educator, Knox County
- Veronica Bullock, county Extension director, agriculture and natural resources educator, Franklin County

#### Indiana 4-H Programs Help High School Youth Identify Future Career Options

- Christie Jacob, 4-H youth development educator, Vigo County
- Dena Held, county Extension director, 4-H youth development educator, Martin County
- Heather VonDielingen, regional 4-H educator, Juntos 4-H, 4-H state office
- Jill Andrew Richards, co-county Extension director, 4-H youth development and agriculture and natural resources educator, Ohio County
- Malea Huffman, county Extension director, 4-H youth development educator, Greene County
- Megan Stone, county Extension director, 4-H youth development educator, Scott County
- Molley Hasenour, 4-H youth development and agriculture and natural resources educator, Crawford County
- Robby Kelly, county Extension director, Elkhart County, 4-H youth development lead educator, interim county Extension director, Marshall County
- Samantha Williams, county Extension director, 4-H youth development educator, Pulaski County
- Tony Carrell, 4-H youth development program specialist, 4-H state office

#### **Positive Youth Development & 4-H Opportunities**

#### Military Teen Adventure Camps Develop Leadership, Self-Confidence and Teamwork

Casey Mull, assistant director, program leader, 4-H youth development, clinical associate professor

#### Indiana 4-H Youth Demonstrate Proper and Safe Care of Animals

- Alicia Criswell, former 4-H youth development educator, Wayne County
- Baylee Dwenger, 4-H youth development and health and human sciences educator, Ripley County
- Britt Copeland, county Extension director, 4-H youth development and agriculture and natural resources educator, Jefferson County
- Danielle Nylund, 4-H youth development educator, Madison County
- Heather Dougherty, county Extension director, 4-H youth development educator, Johnson County
- Jill Andrew Richards, co-county Extension director, 4-H youth development and agriculture and natural resources educator, Ohio County
- Molley Hasenour, 4-H youth development and agriculture and natural resources educator, Crawford County
- Molly Childers, 4-H youth development educator, White County
- Rebecca Wilkins, former county Extension director, former 4-H youth development educator, Harrison County
- Robby Kelly, county Extension director, Elkhart County, 4-H youth development lead educator, interim county Extension director, Marshall County
- Sara Haag, 4-H youth development educator, Marion County

#### Learning How Science Can Be Used to Help Solve Everyday Problems

- Allison Keen, county Extension director, 4-H youth development educator, Jay County
- Ashley Shufflebarger, 4-H youth development educator, Marion County
- Bailey York, health and human sciences educator, Putnam County
- Bill Decker, regional 4-H youth development educator, 4-H project achievement and exploration, 4-H state office
- Brian Howell, 4-H youth development educator, Tipton County
- Christie Jacob, 4-H youth development educator, Vigo County
- Effie Campbell, 4-H youth development educator, DeKalb County
- Jacob Shuman, former 4-H youth development educator, Gibson County
- Jessica Scholer, county Extension director, 4-H youth development educator, Madison County
- Jill Andrew Richards, 4-H youth development and agriculture and natural resources educator, Ohio County
- Kati Sweet, 4-H youth development educator, Hendricks County
- Lauren Fenneman, 4-H youth development educator, Dubois County
- Molley Hasenour, 4-H youth development and agriculture and natural resources educator, Crawford County
- Rachel Haselby, 4-H youth development science Extension specialist, 4-H state office
- Samantha Williams, county Extension director, 4-H youth development educator, Pulaski County
- Sara Haag, 4-H youth development educator, Marion County
- Tami Mosier, county Extension director, 4-H youth development educator, Steuben County

#### **Camp Counselors Demonstrate Leadership and Teamwork Across Differences**

- Britt Copeland, county Extension director, 4-H youth development and agriculture and natural resources educator, Jefferson County
- Brittany Gilger, county Extension director, 4-H youth development educator, LaGrange County

- Heather Dougherty, county Extension director, 4-H youth development educator, Johnson County
- Jill Andrew Richards, co-county Extension director, 4-H youth development and agriculture and natural resources educator, Ohio County
- JP Pietrowski, 4-H youth development educator, Huntington County
- Kathleen Bohde, 4-H youth development educator, Hamilton County
- Kati Sweet, former 4-H youth development educator, Hendricks County
- Kelsey Meyers, county Extension director, 4-H youth development and health and human sciences educator, Henry County
- Lesley Lodmell, county Extension director, 4-H youth development educator, Lawrence County
- Mark Evans, county Extension director, 4-H youth development educator, Putnam County
- Megan Hoffherr, 4-H youth development educator, Vanderburgh County
- Natalie Korniak, county Extension director, 4-H youth development educator, Clay County
- Sthele Greybar, 4-H youth development educator, Elkhart County
- Tami Mosier, county Extension director, 4-H youth development educator, Steuben County

#### Big Data, Internet of Things, Broadband Access, Digital Literacy, Inclusion & Innovation

#### **UAV Program Prepares Participants to Pass Federal Remote Pilot Knowledge Test**

- Abigail Heidenreich, agriculture and natural resources educator, Gibson County
- Adam Shanks, digital agriculture and natural resources curriculum lead, Cooperative Extension Service
- Alex Helms, assistant director, Purdue Agricultural Centers
- Allison Roberts, county Extension director, 4-H youth development educator, Brown County
- Amanda Bradshaw Burks, agriculture and natural resources educator, Vanderburgh County
- Amy Alka, agriculture and natural resources educator, Randolph County
- Ann Kline, agriculture and natural resources educator, Noble County
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Beth Vansickle, agriculture and natural resources educator, Madison County
- Bill Horan, county Extension director, agriculture and natural resources and community development educator,
   Wells County
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Brad Kohlhagen, agriculture and natural resources educator, Adams County
- Britt Copeland, county Extension director, 4-H youth development and agriculture and natural resources educator, Jefferson County
- Christian Krupke, professor, Entomology, and Dean's Fellow
- Cora Reinbolt, county Extension director, agriculture and natural resources and community development educator, Bartholomew County
- Daniel Egel, former clinical engagement professor, Botany and Plant Pathology
- Danielle Nylund, 4-H youth development educator, Madison County
- Darcey Telenko, associate professor, Botany and Plant Pathology
- Dave Osborne, county Extension director, 4-H youth development and agriculture and natural resources educator, Ripley County
- Dennis Nowaskie, senior research operation administrator, Southwest Purdue Agricultural Center

- Ed Farris, county Extension director, agriculture and natural resources, Huntington County
- Elysia Rodgers, county Extension director, agriculture and natural resources, DeKalb County
- Emily Kring, agriculture and natural resources educator, Jay County
- Emily Peterson, agriculture and natural resources educator, Jennings County
- Hans Schmitz, former lead conservation cropping systems agronomist, Purdue Extension and conservation cropping systems initiative, Agronomy
- Heather Caldwell, former county Extension director, 4-H youth development and agriculture and natural resources, Fayette County
- James Camberato, professor emeritus, Agronomy
- James Wolff, county Extension director, agriculture and natural resources educator, Allen County
- Jeff Boyer, superintendent, Davis Purdue Agricultural Center
- Jeff Burbrink, agriculture and natural resources and community development educator, LaGrange County
- Jeff Hermesch, agriculture and natural resources educator, Dearborn County
- Jennifer Logue, county Extension director, 4-H youth development and agriculture and natural resources educator, Union County
- Jessica Roberts, agriculture and natural resources and community development educator, Rush County
- Jill Andrew Richards, co-county Extension director, 4-H youth development and agriculture and natural resources educator, Ohio County
- John Woodmansee, agriculture and natural resources educator, Whitley County
- Jon Leuck, director and project coordinator, Purdue Agricultural Centers
- Jonathan Ferris, county Extension director, agriculture and natural resources educator, Wayne County
- Justin Curley, county Extension director, agriculture and natural resources educator, Delaware County
- Kenneth Eck, agriculture and natural resources educator, Dubois County
- Kyle Weaver, county Extension director, 4-H youth development and agriculture and natural resources educator, Switzerland County
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Nikky Witkowski, agriculture and natural resources educator, Porter County
- Phil Woolery, agriculture and natural resources educator, Pulaski and Starke counties
- Reba Wicker, agriculture and natural resources and community development educator, Steuben County
- Sabrina Allen, agriculture and natural resources educator, Decatur County
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Val Clingerman, county Extension director, agriculture and natural resources educator, Knox County
- Veronica Bullock, county Extension director, agriculture and natural resources educator, Franklin County
- Wenjing Guan, clinical/engagement associate professor, Horticulture and Landscape Architecture

#### 4-H Teens Taught Innovative Ag Technologies and Transformed Their Leadership and Futures

- Amy Alka, agriculture and natural resources educator, Randolph County
- Bill Decker, regional 4-H youth educator, 4-H project achievement and exploration, 4-H state office
- Carly Holland, county Extension director, health and human sciences educator, Rush County

#### **Human, Family & Community Health**

#### **Building Community Support for Homeless Outreach Brings in Local Funding**

• Elisa Worland, community development and health and human sciences educator, Wayne County

#### **Building Community Through "Pláticas Familiares"**

Luis Santiago, community outreach and engagement, health and human sciences,
 4-H youth development educator, Daviess County

## Purdue Extension Helped Local Township Teams Explore and Develop Leadership Skills for Effective Public Service

- Dallas Evans, community development educator, Marion County
- Kayla Wright, community resilience specialist
- Kris Parker, regional community development educator
- Tamara Ogle, regional community development educator

#### Captain Cash Helped Third-Graders Learn About Financial Literacy - Earning, Saving, Spending and Borrowing

- Abbi Smith, former health and human sciences educator, Putnam County
- Abby Morgan, 4-H youth development educator, Montgomery County
- Abigail Creigh, health and human sciences educator, Noble County
- Allison Hillis, county Extension director, health and human sciences educator, Howard County
- Amanda Bullion, health and human sciences educator, Delaware County
- Amanda Gray, health and human sciences educator, Hancock County
- Amanda Veenhuizen, former health and human sciences educator, Johnson County
- Annetta Jones, county Extension director, health and human sciences educator, Porter County
- Ashlee Merryman, 4-H youth development and health and human sciences educator, Fountain County
- Ashley Piland, health and human sciences educator, Marion County
- Brian Howell, 4-H youth development educator, Tipton County
- Brittney Schori, health and human sciences educator, Whitley County
- Brooke Goble, 4-H youth development and health and human sciences educator, Pike County
- Caren Crum, county Extension director, health and human sciences educator, Clinton and Carroll counties
- Caroline Everidge, health and human sciences educator, Huntington County
- Chelsea Brewer, county Extension director, health and human sciences educator, Dubois County
- Cheryl Casselman, county Extension director, 4-H youth development and health and human sciences educator,
   Sullivan County
- Christiana Owusu-Ankomah, former health and human sciences educator, Shelby County
- Courtney Schmidt, county Extension director, agriculture and natural resources and health and human sciences educator, Miami County
- Dana Stanley, health and human sciences educator, Steuben County
- Danielle Scott, health and human sciences educator, Madison County
- Debora Arseneau, county Extension director, health and human sciences educator, Newton County
- Deidre Wagster, health and human sciences educator, Jennings County
- Diana Stone, health and human sciences educator, Shelby County
- Emily Ade, county Extension director, 4-H youth development educator, Warren County

- · Eric Hillis, county Extension director, health and human sciences educator, Tipton County
- Esmeralda Cruz, former health and human sciences educator, Clinton County
- Gail Peitzmeier, county Extension director, 4-H youth development and health and human sciences educator, Crawford County
- Gail Wright, health and human sciences educator, Vigo County
- Grace Thompson, former health and human sciences educator, Lawrence County
- Harriet Armstrong, former health and human sciences educator, Bartholomew County
- Jamie Lowder, health and human sciences educator, Owen County
- Jane Horner, former health and human sciences educator, Cass County
- Janel Franks, health and human sciences educator, Blackford County
- Jennifer Stefancik, health and human sciences educator, Daviess County
- Jessi Huston, 4-H youth development educator, Wabash County
- Jessica Martini, community wellness coordinator
- Jessica Riffle, county Extension director, health and human sciences educator, Fulton County
- Jo Gilreath, health and human sciences educator, Warrick County
- Joanne Lytton, former county Extension director, 4-H youth development and health and human sciences educator, Carroll County
- JP Pietrowski, 4-H youth development educator, Huntington County
- Julia Miller, county Extension director, 4-H youth development educator, Starke County
- Julie Threadgill, former 4-H youth development and health and human sciences educator, Switzerland County
- Kanza Zafar, former health and human sciences educator, Greene County
- Karina Moore, former health and human sciences educator, Orange County
- Kelsey Meyers, county Extension director, 4-H youth development and health and human sciences educator, Henry County
- Kelsie Muller, Extension specialist, Human Development and Family Science, Health and Human Sciences Extension
- Kristen Lowry, county Extension director, health and human sciences educator, Posey County
- Lauren Fenneman, 4-H youth development educator, Dubois County
- Lori Bouslog, health and human sciences educator, Vermillion County
- Mandy Nielsen, health and human sciences educator, Starke and Pulaski counties
- Marcia Parcell, health and human sciences educator, Dearborn County
- Meagan Salomon, interim county Extension director, health and human sciences educator, Vanderburgh County
- Megan Broughton, county Extension director, health and human sciences educator, Scott County
- Megan Jaspersen, county Extension director, health and human sciences educator, Perry and Spencer counties
- Miles Payne, former 4-H youth development and health and human sciences educator, Ripley County
- Mindy Mayes, health and human sciences educator, Wabash County
- Molly Marshall, co-county Extension director, health and human sciences educator, Jackson County
- Monica Nagele, county Extension director, health and human sciences educator, Montgomery County
- Naomi Bechtold, Extension specialist, financial resource management, Health and Human Sciences Extension
- Ody Ekwonwa, county Extension director, health and human sciences educator, Monroe County

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- Olivia Morgan, co-county Extension director, health and human sciences educator, Clay County
- Pandora Taylor, health and human sciences educator, Boone County
- Rena Sheldon, county Extension director, 4-H youth development educator, Morgan County
- Sarah Kramer, former health and human sciences educator, White County
- Shannon Chipman, co-county Extension director, 4-H Youth Development and health and human sciences educator, Ohio County
- Shannon Shepherd, health and human sciences educator, Kosciusko County
- Stephanie McCurdy, 4-H youth development and health and human sciences educator, Fayette County
- Susan Peterson, county Extension director, health and human sciences educator, Hamilton County
- Tonya Short, health and human sciences educator, Knox County
- Wes Richardson, 4-H youth development educator, Daviess County
- Zoe Robinson, health and human sciences educator, Randolph County

#### Youth in Indiana 4-H Civic Engagement Expressed Feeling a Responsibility to Help Their Communities

- Alicia Criswell, former 4-H youth development educator, Wayne County
- Caren Crum, county Extension director, health and human sciences educator, Clinton and Carroll counties
- Christie Jacob, 4-H youth development educator, Vigo County
- Dena Held, county Extension director, 4-H youth development educator, Martin County
- Elizabeth Simmermeyer, 4-H youth development educator, Franklin County
- Emily Brown, 4-H youth development educator, Vigo County
- Heather Dougherty, county Extension director, 4-H youth development educator, Johnson County
- Kris Goff, county Extension director, 4-H youth development educator, Grant County
- Kyle Weaver, county Extension director, 4-H youth development and agriculture and natural resources educator, Switzerland County
- Rena Sheldon, county Extension director, 4-H youth development educator, Morgan County
- Steve McKinley, staff development specialist

## Parents Forever Program Had a Positive Impact on Knowledge, Skills and Confidence to Navigate Changes Through Divorce or Custody

- Brooke Goble, 4-H youth development and health and human sciences educator, Pike County
- Chelsea Brewer, county Extension director, health and human sciences educator, Dubois County
- Dana Stanley, health and human sciences educator, Steuben County
- Jamie Lowder, health and human sciences educator, Owen County
- Jennifer Stefancik, health and human sciences educator, Daviess County
- Jo Gilreath, health and human sciences educator, Warrick County
- Kelsie Muller, Extension specialist, Human Development and Family Science, Health and Human Sciences Extension
- · Kristen Lowry, county Extension director, health and human sciences educator, Posey County
- Meagan Salomon, interim county Extension director, health and human sciences educator, Vanderburgh County
- Megan Jaspersen, county Extension director, health and human sciences educator, Perry and Spencer counties
- Olivia Morgan, co-county Extension director, health and human sciences educator, Clay County

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#### **Enhancing Local Coalition Efforts to Support a Culture of Health**

- Abbi Smith, former health and human sciences educator, Putnam County
- Abigail Creigh, health and human sciences educator, Noble County
- Amanda Bullion, health and human sciences educator, Delaware County
- Amanda Gray, health and human sciences educator, Hancock County
- Angela Ray, health and human sciences educator, Gibson County
- Annetta Jones, county Extension director, health and human sciences educator, Porter County
- Annie Eakin, community wellness coordinator
- Ashlee Merryman, 4-H youth development and health and human sciences educator, Fountain County
- Ashlee Sudbury, community wellness coordinator, training specialist, Health and Human Sciences Extension
- Autumn Trice Johnson, former health and human sciences educator, Allen County
- Beckie Lies, community wellness coordinator
- Beth Switzer, former county Extension director, health and human sciences educator, Hendricks County
- Betsy Coffing, community wellness coordinator
- Blake Connolly, Nutrition Education Program assistant director, Health and Human Sciences Extension
- Brittney Schori, health and human sciences educator, Whitley County
- Brooke Goble, 4-H youth development and health and human sciences educator, Pike County
- Carmen Fortney, county Extension director, health and human sciences educator, Jasper County
- Caroline Arnett, community wellness coordinator
- Caroline Everidge, health and human sciences educator, Huntington County
- Casey Williams, community wellness coordinator
- Chelsea Brewer, county Extension director, health and human sciences educator, Dubois County
- Christopher Fogle, county Extension director, health and human sciences educator, Decatur County
- Corinne Chatterton, former community wellness coordinator
- Courtney Schmidt, county Extension director, agriculture and natural resources and health and human sciences educator, Miami County
- Cristiana Verissimo, former community wellness coordinator
- Dana Stanley, health and human sciences educator, Steuben County
- Danielle Scott, health and human sciences educator, Madison County
- Debbie Mix, community wellness coordinator
- Deidre Wagster, health and human sciences educator, Jennings County
- Diana Stone, health and human sciences educator, Shelby County
- Donna Vandergraff, Extension specialist, foods and nutrition, Health and Human Sciences Extension
- Elisa Worland, community development and health and human sciences educator, Wayne County
- Elizabeth Evans, 4-H youth development and health and human sciences educator, Parke County
- Emily Christ, health and human sciences educator, Elkhart County
- Emma Finerfrock, health and human sciences educator, Clark County
- · Eric Hillis, county Extension director, health and human sciences educator, Tipton County
- Erin Meyer, community wellness coordinator

- Erin Slevin, community wellness coordinator
- Esmeralda Cruz, former health and human sciences educator, Clinton County
- Gail Peitzmeier, county Extension director, 4-H youth development and health and human sciences educator, Crawford County
- Gail Wright, health and human sciences educator, Vigo County
- Grace Thompson, former health and human sciences educator, Lawrence County
- Hillary Hawkins, county Extension director, health and human sciences educator, White County
- Jane Horner, former health and human sciences educator, Cass County
- Janel Franks, health and human sciences educator, Blackford County
- Janet Steffens, County Extension Director, health and human sciences educator, Floyd County
- Jeff Walker, community wellness coordinator
- Jennifer Stefancik, health and human sciences educator, Daviess County
- Jessica Martini, community wellness coordinator
- Jessica Riffle, county Extension director, health and human sciences educator, Fulton County
- Jo Gilreath, health and human sciences educator, Warrick County
- · Kailey Dockerty, health and human sciences educator, Grant County
- Kanza Zafar, former health and human sciences educator, Greene County
- Karen Richey, health and human sciences educator, Marshall County
- Katelyn Kutemeier, community wellness coordinator
- Katie Davidson, community wellness coordinator
- Kelsey Meyers, county Extension director, 4-H youth development and health and human sciences educator, Henry County
- Kristen Lowry, county Extension director, health and human sciences educator, Posey County
- Lacy Wilson, community wellness coordinator
- Linda Curley, health and human sciences educator, Lake County
- Lindsey Cox, community wellness coordinator
- Lori Bouslog, health and human sciences educator, Vermillion County
- Marcia Parcell, health and human sciences educator, Dearborn County
- Meagan Salomon, interim county Extension director, health and human sciences educator, Vanderburgh County
- Megan Broughton, county Extension director, health and human sciences educator, Scott County
- · Megan Jaspersen, county Extension director, health and human sciences educator, Perry and Spencer counties
- Mindy Mayes, health and human sciences educator, Wabash County
- Molly Childers, 4-H youth development educator, White County
- Molly Hoag, health and human sciences educator, Wells County
- Molly Marshall, co-county Extension director, health and human sciences educator, Jackson County
- Monica Nagele, county Extension director, health and human sciences educator, Montgomery County
- Ody Ekwonwa, county Extension director, health and human sciences educator, Monroe County
- · Olivia Morgan, co-county Extension director, health and human sciences educator, Clay County
- Pandora Taylor, health and human sciences educator, Boone County

- Rebecca Marvel, community wellness coordinator
- Shannon Shepherd, health and human sciences educator, Kosciusko County
- Sonya Mitchell, health and human sciences educator, Washington County
- Tanya Hall, regional community development educator
- Tara Beckman, county Extension director, health and human sciences and community development educator, Harrison County
- Tonya Short, health and human sciences educator, Knox County
- Veronica Jalomo, former community wellness coordinator
- Viviana Guzman, health and human sciences educator, LaGrange County
- Zoe Robinson, health and human sciences educator, Randolph County

#### **Food Production, Security & Safety**

#### Safe Produce Indiana: Produce Growers Increased Their Knowledge of Postharvest Handling and Sanitation

- Amanda Deering, associate professor of produce food safety, Food Science
- Scott Monroe, food safety educator
- Tari Gary, Extension administrator, Food Science

#### Field Day Participants Adopted New Recommended Practices for Various Applications

- Abigail Heidenreich, agriculture and natural resources educator, Gibson County
- Adam Shanks, Digital agriculture and natural resources curriculum lead, Cooperative Extension Service
- Alex Helms, assistant director, Purdue Agricultural Centers
- Allison Roberts, county Extension director, 4-H youth development educator, Brown County
- Amanda Bradshaw Burks, agriculture and natural resources educator, Vanderburgh County
- Amy Alka, agriculture and natural resources educator, Randolph County
- Ann Kline, agriculture and natural resources educator, Noble County
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Beth Vansickle, agriculture and natural resources educator, Madison County
- Bill Horan, county Extension director, agriculture and natural resources and community development educator, Wells County
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Brad Kohlhagen, agriculture and natural resources educator, Adams County
- Britt Copeland, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Jefferson County
- Christian Krupke, professor, Entomology, and Dean's Fellow
- Cora Reinbolt, county Extension director, agriculture and natural resources and community development educator, Bartholomew County
- Daniel Egel, former clinical engagement professor, Botany and Plant Pathology
- Danielle Nylund, 4-H youth development educator, Madison County
- Darcy Telenko, associate professor, Botany and Plant Pathology
- Dave Osborne, county Extension director, 4-H youth development and agriculture and natural resources educator,
   Ripley County

- Dennis Nowaskie, senior research operation administrator, Southwest Purdue Agricultural Center
- Ed Farris, county Extension director, agriculture and natural resources, Huntington County
- Elysia Rodgers, county Extension director, agriculture and natural resources, DeKalb County
- Emily Kring, agriculture and natural resources educator, Jay County
- Emily Peterson, agriculture and natural resources educator, Jennings County
- Hans Schmitz, former lead conservation cropping systems agronomist, Purdue Extension and conservation cropping systems initiative, Agronomy
- Heather Caldwell, former county Extension director, 4-H youth development and agriculture and natural resources, Fayette County
- James Camberato, professor emeritus, Agronomy
- James Wolff, county Extension director, agriculture and natural resources educator, Allen County
- Jeff Boyer, superintendent, Davis Purdue Agricultural Center
- Jeff Burbrink, agriculture and natural resources and community development educator, LaGrange County
- Jeff Hermesch, agriculture and natural resources educator, Dearborn County
- Jennifer Logue, county Extension director, 4-H youth development and agriculture and natural resources educator, Union County
- Jessica Roberts, agriculture and natural resources and community development educator, Rush County
- Jill Andrew Richards, co-county Extension director, 4-H youth development and agriculture and natural resources educator, Ohio County
- John Woodmansee, agriculture and natural resources educator, Whitley County
- Jon Leuck, director and project coordinator, Purdue Agricultural Centers
- Jonathan Ferris, county Extension director, agriculture and natural resources educator, Wayne County
- Justin Curley, county Extension director, agriculture and natural resources educator, Delaware County
- Kenneth Eck, agriculture and natural resources educator, Dubois County
- Kyle Weaver, county Extension director, 4-H youth development and agriculture and natural resources educator, Switzerland County
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Nikky Witkowski, agriculture and natural resources educator, Porter County
- Phil Woolery, agriculture and natural resources educator Pulaski and Starke counties
- Reba Wicker, agriculture and natural resources and community development educator, Steuben County
- Sabrina Allen agriculture and natural resources educator, Jackson County
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Val Clingerman, county Extension director, agriculture and natural resources educator, Knox County
- Veronica Bullock, county Extension director, agriculture and natural resources educator, Franklin County
- Wenjing Guan, clinical/engagement associate professor, Horticulture and Landscape Architecture

#### Integrated Research and Extension Efforts at Poultry Convention Lead to Financial Improvements

- Darrin Karcher, associate professor, Animal Sciences
- Marisa Erasmus, associate professor, Animal Sciences

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#### Heart of America Grazing and Indiana Grazing School Participants Reduce Costs and Increase Dollar Returns

- Amy Alka, agriculture and natural resources educator, Randolph County
- Anna Morrow, Midwest Cover Crops Council senior program manager, Agronomy
- Bethany Funnell, clinical associate professor, College of Veterinary Medicine
- Danielle Walker, agriculture and natural resources educator, Washington County
- Elysia Rodgers, county Extension director, agriculture and natural resources, DeKalb County
- Grant Burcham, veterinary diagnostician, courtesy assistant professor, Comparative Pathobiology
- John Scott, former senior digital agriculture Extension coordinator
- Jason Tower, senior research operation administrator, Southern Indiana Purdue Agricultural Center
- Keith Johnson, professor, Agronomy
- Kenneth Eck, agriculture and natural resources educator, Dubois County
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Nick Minton, beef systems specialist, Animal Sciences
- Yichao Rui, assistant professor in Agroecology, Agronomy

## Producers Increase Yield and Profitability with Help from Purdue Extension's Newsletters, Vegetable Crops Hotline and Pest & Crop

- Amanda Deering, associate professor, Food Science
- Amy Thompson, Beginning Farmers, agriculture and natural resources state office
- Ariana Torres Bravo, associate professor, agricultural economics and Horticulture and Landscape Architecture
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Austin Pearson, service and outreach climatologist, Agronomy
- Barbara Joyner, senior administrative assistant, Purdue Agricultural Centers
- Beth Hall, director, Indiana State Climate Office, Agronomy
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Bryan Young, professor, Botany and Plant Pathology
- Cheri Janssen, curriculum development specialist, Botany and Plant Pathology
- Chris Adair, senior Student Farm manager, Horticulture and Landscape Architecture
- Christian Krupke, professor, Entomology, and Dean's Fellow
- Daniel Egel, former clinical engagement professor, Botany and Plant Pathology
- Daniel Quinn, assistant professor, corn production, Agronomy
- Darcy Telenko, associate professor, Botany and Plant Pathology
- Dennis Buckmaster, professor, Agricultural and Biological Engineering
- Elizabeth Maynard, clinical engagement professor, Horticulture and Landscape Architecture
- Hans Schmitz, former lead conservation cropping systems agronomist, Purdue Extension and conservation cropping systems initiative, Agronomy
- Ian Kaplan, professor, Entomology
- James Camberato, professor emeritus, Agronomy
- Jeff Burbrink, agriculture and natural resources and community development educator, LaGrange County
- John Bonkowski, Extension administrator, lead, Botany and Plant Pathology

- John Obermeyer, integrated pest management supervisor, Entomology
- · Keith Johnson, professor, Agronomy
- Lais McCartney, agriculture and natural resources educator, Hancock County
- Laura Ingwell, assistant professor, Entomology
- Marcelo Zimmer, weed science program specialist, Botany and Plant Pathology
- Marguerite Bolt, industrial hemp statewide Extension specialist, Agronomy
- Maria Marshall, professor, Agricultural Economics
- Miranda Purcell, Extension specialist, Horticulture and Landscape Architecture
- Moriah Bilenky, assistant professor of sustainable horticulture, Horticulture and Landscape Architecture
- Nathan Shoaf, senior urban agriculture coordinator, agriculture and natural resources state office
- Petrus Langenhoven, clinical assistant professor, Horticulture and Landscape Architecture
- Renee Wiatt, family business management specialist, Agricultural Economics
- Robert Nielsen, professor emeritus, Agronomy
- Scott Monroe, food safety educator
- Shaun Casteel, professor, Agronomy
- Stephen Meyers, assistant professor, Horticulture and Landscape Architecture
- Tammy Luck, senior administrative assistant, Extension, Entomology
- Tari Gary, Extension administrator, Food Science
- Wenjing Guan, clinical/engagement associate professor, Horticulture and Landscape Architecture

#### **Crop Management Workshop Participants Adopt New Strategies and Practices for Financial Gains**

- Beth Vansickle, agriculture and natural resources educator, Madison County
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Daniel Quinn, assistant professor, corn production, Agronomy
- Darcy Telenko, associate professor, Botany and Plant Pathology
- Fred Whitford, clinical engagement professor, Purdue pesticide programs, Botany and Plant Pathology
- James Camberato, professor emeritus, Agronomy
- John Obermeyer, integrated pest management supervisor, Entomology
- Jon Charlesworth, county Extension director, agriculture and natural resources educator, Benton and Warren counties
- Marcelo Zimmer, weed science program specialist, Botany and Plant Pathology
- Paul Kelley, pesticide investigator, Office of Indiana State Chemist
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Shaun Casteel, professor, Agronomy

#### **Purdue on the Farm: Reinventing Corn and Soybean Farm Visits**

- Adam Shanks, digital agriculture and natural resources curriculum lead, Cooperative Extension Service
- Andrew Westfall, diagnostic training and research center field operations manager, Agronomy
- Bill Johnson, professor of weed science, Botany and Plant Pathology
- Brad Kohlhagen, agriculture and natural resources educator, Adams County
- Bryan Overstreet, conservation agronomist and soil health statewide coordinator, Northern Indiana

- Christian Krupke, professor, Entomology, and Dean's Fellow
- Daniel Quinn, assistant professor, corn production, Agronomy
- Danielle Nylund, 4-H youth development educator, Madison County
- Darcy Telenko, associate professor, Botany and Plant Pathology
- Ed Farris, county Extension director, agriculture and natural resources educator, Huntington County
- Hans Schmitz, former lead conservation cropping systems agronomist, Purdue Extension and conservation cropping
- Heidi Potter, agriculture and natural resources educator, Clark County
- James Camberato, professor emeritus, Agronomy
- Jessica Roberts, agriculture and natural resources and community development educator, Rush County
- John Obermeyer, integrated pest management supervisor, Entomology
- John Woodmansee, agriculture and natural resources educator, Whitley County
- Joseph Rorick, soil health statewide coordinator, agronomist, Agronomy
- Kurt Lanzone, county Extension director, agriculture and natural resources educator, Parke County
- Marcelo Zimmer, weed science program specialist, Botany and Plant Pathology
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Mathias Ingle, agriculture and natural resources educator, Howard County
- Michael Langemeier, professor, Agricultural Economics
- Michele Jones, agriculture and natural resources educator, Morgan County
- Nikky Witkowski, agriculture and natural resources educator, Porter County
- Phil Woolery, agriculture and natural resources educator Pulaski and Starke counties
- Sabrina Allen, agriculture and natural resources educator, Decatur County
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Scott Gabbard, Purdue on the Farm senior administrator, agricultural research and graduate education,
   College of Agriculture
- Shaun Casteel, professor, Agronomy
- Tricia Herr, agriculture and natural resources educator, Montgomery County
- · Veronica Bullock, county Extension director, agriculture and natural resources educator, Franklin County

#### **Urban Agriculture & Urban Extension**

#### Purdue Extension Helps New, Beginning and Small-Scale Production Farmers Adopt Recommended Practices

#### Small Farm Education Field Day

- Amanda Deering, associate professor, Food Science
- Amy Thompson, Beginning Farmers, agriculture and natural resources state office
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Chris Adair, senior Student Farm manager, Horticulture and Landscape Architecture
- Laura Ingwell, assistant professor, Entomology
- Miranda Purcell, Extension specialist, Horticulture and Landscape Architecture
- Nathan Shoaf, urban agriculture, agriculture and natural resources state office
- Petrus Langenhoven, clinical assistant professor, Horticulture and Landscape Architecture

- Scott Monroe, Food Safety educator
- Stephen Meyers, assistant professor, Horticulture and Landscape Architecture
- Wenjing Guan, clinical/engagement associate professor, Horticulture and Landscape Architecture

#### Indiana Small Farm Conference

- Amy Thompson, Beginning Farmers, agriculture and natural resources state office
- Andrew Westfall, diagnostic training and research center field operations manager, Agronomy
- Ankita Raturi, assistant professor, Agricultural and Biological Engineering
- Ariana Torres Bravo, associate professor, Agricultural Economics and Horticulture and Landscape Architecture
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Chris Adair, senior Student Farm manager, Horticulture and Landscape Architecture
- Courtney Schmidt, county Extension director, agriculture and natural resources and health and human sciences educator, Miami County
- Daniel Egel, former clinical engagement professor, Botany and Plant Pathology
- Dennis Buckmaster, professor, Agricultural and Biological Engineering
- Elizabeth Long, assistant professor, Entomology
- Elizabeth Maynard, clinical engagement professor, Horticulture and Landscape Architecture
- Emily Evers, county Extension director, agriculture and natural resources educator, St. Joseph County
- James Wolff, county Extension director, agriculture and natural resources educator, Allen County
- Jeff Hermesch, agriculture and natural resources educator, Dearborn County
- Jeff Pell, agriculture and natural resources and community development educator, Putnam County
- Karen Mitchell, consumer horticulture Extension specialist, Horticulture and Landscape Architecture
- Lais McCartney, agriculture and natural resources educator, Hancock County
- Laura Ingwell, assistant professor, Entomology
- Mathias Ingle, agriculture and natural resources educator, Howard County
- Miranda Purcell, Extension specialist, Horticulture and Landscape Architecture
- Nathan Shoaf, urban agriculture, agriculture and natural resources state office
- Petrus Langenhoven, clinical assistant professor, Horticulture and Landscape Architecture
- Phillip Cox, agriculture and natural resources educator, Vermillion County
- Rebecca Koetz, agriculture and natural resources educator, Lake County
- Richard Beckort, co-county Extension director, agriculture and natural resources educator, Jackson County
- Sarah Hanson, food systems coordinator, agriculture and natural resources state office
- Scott Monroe, food safety educator
- Wenjing Guan, clinical/engagement associate professor, Horticulture and Landscape Architecture

#### New and beginning vegetable farmers express interest in learning about small farm equipment

- Amanda Deering, associate professor, Food Science
- Ashley Adair, Extension organic agriculture specialist, Horticulture and Landscape Architecture
- Elizabeth Maynard, Clinical Engagement Professor, Horticulture and Landscape Architecture
- Emily Evers, county Extension director, agriculture and natural resources educator, St. Joseph County

- Nikky Witkowski, agriculture and natural resources educator, Porter County
- Phil Woolery, agriculture and natural resources educator Pulaski and Starke counties
- Rebecca Koetz, agriculture and natural resources educator, Lake County
- Scott Monroe, food safety educator
- Stephen Meyers, assistant professor, Horticulture and Landscape Architecture

#### Purdue Extension's Growing Together Provided Fresh Produce for Indiana Residents in Need

- Allison Roberts, county Extension director, 4-H youth development educator, Brown County
- Allison Finzel, former community wellness coordinator
- Amber Zimmer, community wellness coordinator
- Annie Eakin, community wellness coordinator
- Ashlee Sudbury, community wellness coordinator, training specialist, Health and Human Sciences Extension
- Beckie Lies, community wellness coordinator
- Blake Connolly, Growing Together team lead, Nutrition Education Program assistant director, Health and Human Sciences Extension
- Christina Verrissmo, former community wellness coordinator
- Emily Evers, county Extension director, agriculture and natural resources educator, St. Joseph County
- · Eric Hillis, county Extension director, health and human sciences educator, Tipton County
- Erin Meyer, community wellness coordinator
- Erin Sherrow-Hayse, community wellness coordinator
- Erin Slevin, community wellness coordinator
- Jeff Burbrink, agriculture and natural resources educator, LaGrange County
- John Orick, Purdue Master Gardener state program coordinator, Horticulture and Landscape Architecture
- Karen Mitchell, consumer horticulture Extension specialist, Horticulture and Landscape Architecture
- Lindsey Caterina, community wellness coordinator
- Mathias Ingle, agriculture and natural resources educator, Howard County
- Melinda Duckett, community wellness coordinator
- Nicholas Held, agriculture and natural resources educator, Spencer County
- Rebecca Koetz, agriculture and natural resources educator, Lake County
- Rebecca Marvel, community wellness coordinator
- Sarah Hanson, food systems coordinator, agriculture and natural resources state office
- Sarah Brackney, agriculture and natural resources educator, Daviess County
- Tabatha Flinn, agriculture and natural resources educator, Vigo County
- Tricia Herr, agriculture and natural resources educator, Montgomery County
- Veronica Bullock, county Extension director, agriculture and natural resources educator, Franklin County
- Veronica Jalomo, former community wellness coordinator

## **Beginning Farmer Virtual Program Participants Adopt Recommended Practices for Operational and Financial Success**

- Amy Thompson, Beginning Farmers, agriculture and natural resources state office
- Beth Vansickle, agriculture and natural resources educator, Madison County

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- Brooke Alford, former agriculture and natural resources educator, Marion County
- James Wolff, county Extension director, agriculture and natural resources educator, Allen County
- Jeff Hermesch, agriculture and natural resources educator, Dearborn County
- Jeff Pell, agriculture and natural resources and community development educator, Putnam County
- John Woodmansee, agriculture and natural resources educator, Whitley County
- Lais McCartney, agriculture and natural resources educator, Hancock County
- Mark Carter, agriculture and natural resources, precision ag educator, Blackford County
- Mathias Ingle, agriculture and natural resources educator, Howard County
- Michele Jones, agriculture and natural resources educator, Morgan County
- Richard Beckort, co-county Extension director, agriculture and natural resources educator, Jackson County
- Sara Dzimianski, agriculture and natural resources educator, Perry County
- Sarah Hanson, food systems coordinator, agriculture and natural resources state office



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