

# IOWA STATE UNIVERSITY®

## Iowa Soybean Research Center

### April 2023 Newsletter

Vol. 17

## Iowa State Delivers \$5 Billion Impact to State's Economy

A recent [ISU News Service article](#) by Angie Hunt reported that Iowa State University had a \$5 billion economic impact on the state of Iowa for fiscal year 2021-22. This was attributed to ISU's cutting-edge research, economic development support for business and industry, student and visitor spending, alumni earnings, campus operations and construction and ISU Extension and Outreach. Over the last four years, Iowa State received 645 invention disclosures, filed 182 new patent applications and produced 174 licenses.

According to ISU's Office of Innovation Commercialization, Iowa Soybean Research Center affiliates were responsible for 38 invention disclosures, 18 patent applications (including foreign patent applications) and 24 licenses for technologies during fiscal years 2018-2022.

Of the \$5 billion total, Iowa State-supported startup and spinoff companies accounted for \$1.7 billion in income to the state's economy, an equivalent to supporting 11,178 jobs. [SoyLei](#)

[Innovations](#) was one such startup highlighted in Hunt's article for its development of a soybean-oil-based alternative to petroleum-based asphalt. University research spending and activities were credited with an additional \$235.3 million in added income, the equivalent of 3,822 jobs. The full [Economic Value Report](#) is available via ISU's website.



# ISRC Celebrates National Soyfoods Month

Whether you have tried soyfoods and beverages or not, now might be a good time to try out a new recipe in celebration of April as National Soyfoods Month. The ISRC can hook you up with some fantastic recipes, and since many everyday products already contain soy or are cooked in soy oil, soy may already be a part of your diet and you are just not aware of it.



Above is a variety of soy recipe offerings courtesy of [Soy Connection by U.S. Soy](#).

Soy is a healthy and sustainable food source and is the only plant-based protein to contain all of the essential amino acids that animal proteins do. Also, soyfoods have come a long way in being more readily available and flavorful.

For a variety of soy recipes, check out the following websites.

[Old Capitol Food Company](#) - This Iowa company specializes in tofu made from Iowa soybeans

[Soy Connection](#) - Funded by U.S. Soy

[The Soyfoods Council](#) - Funded by the soybean checkoff

## Nutrien and Sound Ag Join the ISRC

The ISRC welcomes Nutrien and Sound Agriculture as the center's newest industry partners. The companies provide financial support to the center and have representatives serving on the ISRC's industry advisory council, which provides guidance on research funding priorities for the center. Nutrien and Sound Ag join representatives from AGCO, Albaugh, AMVAC, BASF, Bayer, Beck's, Cornelius Seed, Corteva Agriscience, FMC, GDM, Innvictis/Simplot, Merschman Seeds, Mosaic, Peterson Genetics, Syngenta and UPL.



"The ISRC is excited that Nutrien and Sound Agriculture are joining the center and thank them for their support. We recognize Nutrien as one of the world's largest providers of crop inputs, particularly potash and nitrogen fertilizer. And, Sound Agriculture's innovative work with microbes and plant breeding is fascinating. Their perspectives and experiences will be extremely useful in discussions by the ISRC Industry Advisory Council about how center-funded research can help Iowa's soybean farmers achieve higher yields," said Greg Tylka, director of the Iowa Soybean Research Center and professor of plant pathology, entomology and microbiology at Iowa State.

"We welcome Nutrien and Sound Agriculture as the center's latest industry partners and look forward to gaining their valuable perspective identifying ways to enhance soybean production. Ultimately, we have a shared goal providing robust agronomic systems and environmentally sustainable solutions to benefit Iowa's soybean farmers and consumers," said Christie Wiebbecke, senior director of research for the Iowa Soybean Association and chair of the Iowa Soybean Research Center's Industry Advisory Council.

# ISRC Research Project Update: Implementing Non-Chemical Tactics for Integrated Weed Management in Soybean

The ISRC received four research project updates in March on current ISRC-funded projects, which can be found under the [“Research” section of the ISRC website](#). The following article highlights Prashant Jha’s project that was selected for funding by the ISRC Industry Advisory Council in October 2021 titled, “Enhancing Implementation and Adoption of Non-Chemical Tactics for Integrated Weed Management in Soybean.”



Above is the weed seed destructor that Jha used in his study. *Photo provided by Prashant Jha, ISU.*

The objectives of Jha’s project were two-fold: 1) Integrate ecologically based weed management strategies, through the use of cover crops and harvest weed seed control to manage herbicide-resistant weed seed banks in soybean. 2) Quantify the economic benefits and risks of adopting a diversified weed management program to mitigate herbicide resistance for development of decision support tools for soybean producers.

Jha studied two new harvest weed seed control technologies to manage herbicide-resistant weeds on farm fields: chaff lining and the weed seed destructor. In the fall of 2021, Jha initiated long-term field experiments at ISU Research Farms and in three Iowa farmers’ fields with the planting of a cereal rye cover crop. The field sites had a natural uniform infestation of glyphosate-resistant waterhemp, and intensive soil sampling was conducted at each site prior to the study to estimate pigweed density in the soil seed bank. The cereal rye cover crop was terminated at the anthesis (flowering) stage. Herbicide treatments in soybean started during the 2022 growing season. Pigweed emergence was monitored biweekly and a final density count was done before soybean harvest. Data on waterhemp seed production/retention at soybean harvest was recorded in each plot. The seed destructor was implemented in the fall of 2022 for harvest weed seed control.

Preliminary results show 75-80% of waterhemp seeds are retained by plants at the typical harvest dates of soybean in Iowa. Header loss accounted for 30% of waterhemp seed losses at harvest and an additional 10% loss could occur at the grain tank and from seeds escaping through the combine thresher. More than 90% of waterhemp seeds that entered the combine and passed through the seed destructor had moderate to severe physical damage making them non-viable. Biological data on waterhemp emergence, percent control and end-of-season seed bank decline as influenced by cereal rye cover crop by herbicide by harvest weed seed control interactions will be collected in soybean in 2023. Results will be included in a final report later this year.

Also worth noting, Jha demonstrated a Redekop Weed Seed Destructor attached to a John Deere S680 combine at the 2022 Farm Progress Show in Boone, IA. Also, this project received an additional \$620,000 in funding from USDA-NIFA for multi-state collaboration that includes researchers from Iowa, Arkansas, Illinois and Kansas.

## **Additional ISRC-funded project updates:**

[Low-Cost Multimodal Sensor Arrays for Early Detection of Soybean Diseases](#)

[Effects of Increased Atmospheric CO<sub>2</sub> and Abiotic Stress on Soybean Performance in the Enviratron](#)

[Time of Disease Onset as an Early Indicator of Soybean Resistance to SDS](#)

# ISA & NCSRP FY24 Request For Proposals



The Iowa Soybean Association and the North Central Soybean Research Program (NCSRP) both recently released their requests for proposals.



The due date for [submission of proposals to ISA](#) is Monday, May 8, 2023.

The due date for [submission of proposals to NCSRP](#) is Monday, May 22, 2023



## ISRC/ISU Welcomes ISA's New Senior Director of Research Dr. Christie Wiebbecke

The ISRC hosted a reception on February 28<sup>th</sup> to welcome and introduce ISA's new Senior Director of Research Dr. Christie Wiebbecke to ISU researchers. The event was held in the Seed Science Building atrium with introductions made by associate dean for research and discovery Carolyn Lawrence-Dill and ISA's retiring Senior Director of Research Ed Anderson. Dan Robison, Endowed Dean of Agriculture and Life Sciences; Kendall Lamkey, agronomy chair and Steven Harris, plant pathology, entomology and microbiology chair also attended.

After working nearly two decades in research and development with an emphasis in soybean breeding, Wiebbecke will lead the ISA's Research Center for Farming Innovation. In addition, Wiebbecke will chair the ISRC's Industry Advisory Council and serve as a member of the center's management team.

Originally, from Traer, Iowa, Wiebbecke graduated with a BS in agronomy from ISU, holds a Master of Arts in Education: Curriculum and Instruction from Chapman University and earned a PhD in Plant Breeding from ISU.

Wiebbecke began her career as a teacher, sharing her passion for learning, science and agriculture with students. She then changed course, embarking on a career in research and development focusing on soybean breeding and developing new soybean varieties for farmers with Bayer Crop Science. Most recently, Wiebbecke served as a soybean technical product manager with Corn States - Bayer's commercial licensing organization.



Top photo from left: ISA's retiring Senior Director of Research Ed Anderson, ISRC Director Greg Tylka, ISA's Senior Director of Research Christie Wiebbecke and Associate Dean for Research and Discovery Carolyn Lawrence-Dill. Bottom photo from left: Mark Licht, agronomy; Madan Bhattacharyya, agronomy; Christie Wiebbecke, ISA and Fernando Miguez, agronomy, share introductions during the welcome reception.

# Happy Retirement to ISA's Ed Anderson

The ISRC would like to wish Dr. Ed Anderson, senior director of research for the Iowa Soybean Association, a very happy and well-deserved retirement. We will miss his leadership, friendship and vast knowledge in the soybean realm. Anderson was instrumental in the establishment of the Iowa Soybean Research Center and has served as chair of the center's Industry Advisory Council and as a member of the ISRC's management team since center's inception in 2014.

Greg Tylka, director of the Iowa Soybean Research Center and professor of plant pathology, entomology and microbiology at Iowa State said, "It's been my great pleasure to work with Ed since the very early days of the Iowa Soybean Research Center. He helped shape how the center is structured and how it functions to leverage soybean farmer checkoff funds with financial support from industry to maximize return on investment for Iowa farmers. Also, ISU owes a debt of gratitude to Ed for his work fostering ISA support of ISU scientists conducting basic and applied research on topics of importance to Iowa soybean farmers. Ed's university and industry research experiences made him eminently qualified to facilitate and nurture discussions among ISA farmer board members about university research proposals and progress reports submitted to ISA."



Ed Anderson, senior director of research for ISA, speaks during the fall ISRC Industry Advisory Council meeting.

Anderson has been responsible for overseeing and integrating the ISA's contract research programs and managing the ISA's Research Center for Farming Innovation (RCFI) since 2013. He has also served, and will continue to serve, as executive director of the North Central Soybean Research Program (NCSRP), a 13-state collaboration for checkoff-funded regional research and outreach programs aimed at improving Midwest soybean farmer productivity, profitability and sustainability. Anyone who knows Anderson knows he has always emphasized and valued the importance of relationships and opportunities for collaboration with his peers at land grant universities, the United Soybean Board and a variety of soybean and agricultural industry groups to leverage resources to enhance the competitiveness of soybean farmers.

Having grown up on a row crop and livestock farm near Woolstock, IA, Anderson graduated with a degree in agricultural biochemistry from Iowa State University in 1984. He went on to work for Monsanto as a research technician at Washington University in St. Louis and in 1991 he earned his Ph.D. in molecular plant virology and plant pathology at the University of Missouri. He then joined the Plant Pathology Department at the University of Florida as a postdoctoral research scientist, where he gained experience in international agriculture through collaborations with USDA-ARS and several researchers in Latin America working on citrus viruses. In 1992, Anderson joined the University of Arkansas as an assistant professor in plant pathology and established a teaching program and two complementary research programs. The programs focused on studying the molecular mechanisms of plant and virus interactions and the transformation and regeneration of novel plant species for transgenic plant research.

In 1997, he returned to Iowa to build and lead the Laboratory Automation, Engineering and Informatics group at Pioneer Hi-Bred International in Johnston. In 2011, he joined DuPont Pioneer's Trait Strategy Group to help develop disease-resistant product strategies for all crops in all geographies. In 2013, Anderson joined the ISA to serve as senior director of research overseeing the RCFI research team and in an oversight role of soybean-checkoff-funded research at Iowa State University.

In retirement, Anderson will continue duties with the NCSRP and serving in a contract position as a research assistant with the Kansas Soybean Commission overseeing the investment process and managing research projects funded by that organization.

We are sure additional retirement plans will include spending more time with his grandchildren and catching a few St. Louis Cardinals games as well. Congratulations Ed!

# Iowa State University President and ISRC Hosts Retirement Reception for ISA's Ed Anderson



Greg Tylka, left, and ISU President Wendy Wintersteen, right, present ISA's Ed Anderson, center, with a drawing of the ISU campanile at Anderson's retirement reception.

Iowa State University President Wendy Wintersteen and ISRC Director and Morrill Professor Greg Tylka hosted a retirement reception for Iowa Soybean Association Senior Director of Research Ed Anderson on April 14 at The Knoll. ISU research faculty, ISA farmer board directors and staff and ISRC staff joined in to help celebrate. The Iowa State community thanked Anderson for the important work and collaborative relationships he has helped foster during his time at the Iowa Soybean Association.

In remarks, President Wintersteen credited Anderson with "promoting collegial, genuine partnerships and friendships between Iowa State and the Iowa Soybean Association. 'It's amazing what can be accomplished when teams are composed of people who don't care who gets the credit.' That has been Ed's motto and what he truly believes," said Wintersteen.

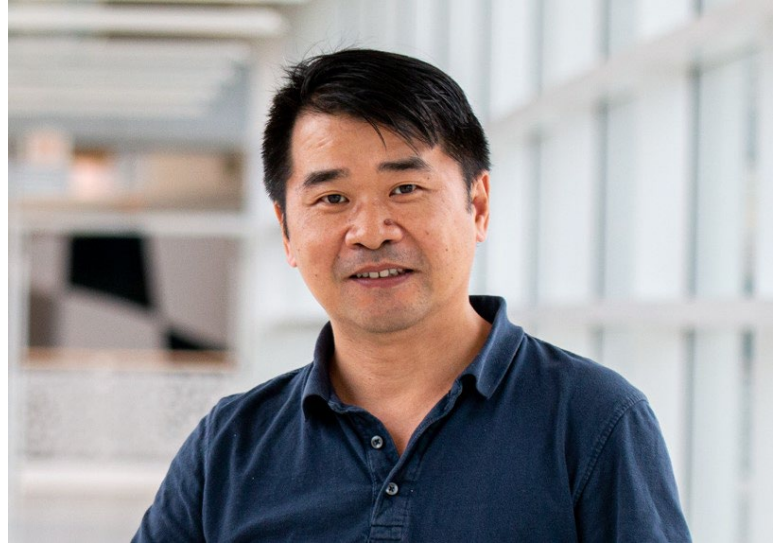
During Anderson's 10 years at ISA, ISU was awarded 180 ISA research contracts in 12 different departments, plus funding for the Iowa Soybean Research Center that Anderson helped establish. Sixty different principal investigators have been funded and more than \$18 million has been invested in research at ISU.



Top row from left: President Wintersteen, Brent Swart, Ed Anderson, Suzanne Shirbroun and Jeff Frank, ISA, converse; Anderson gives comments during his reception. Bottom row from left: Anderson with his wife and children who were able to attend the event, ISA Chief Executive Officer Kirk Leads gives comments and Anderson with wife Brenda.

# Researcher Spotlight: Liang Dong

ISRC affiliate Liang Dong is a professor of electrical and computer engineering at Iowa State University. In October 2021, he became the first recipient of the Vikram L. Dalal Professorship in electrical and computer engineering at Iowa State. His core research areas include sensors, micro-electromechanical systems and biochips. In 2022, he was named director of the Iowa State Microelectronics Research Center (MRC), a multi-disciplinary center that studies semiconductor materials, devices and applications toward the development of microelectronic technologies for use in energy, agriculture and biomedicine. Dong is also a faculty scholar with the ISU Plant Sciences Institute and serves as editor-in-chief of the journal *Sensors and Actuators A: Physical*. He also teaches undergraduate and graduate level courses in electronics, sensors and bioengineering.



Liang Dong, electrical & computer engineering, ISU

Currently, he and Steve Whitham, plant pathology, entomology and microbiology, are working on a two-year project funded by the ISRC in 2021 for the early detection of soybean diseases by using an array of low-cost multimodal sensors. “We hope the new sensors can inform farmers of the presence of the virus early before symptoms occur in plants. In addition, my group is developing a suite of sensors for nutrients, water, greenhouse gas emissions, insects and plant diseases with support from various sources,” said Dong.

Dong summed up the importance of working with the ISRC saying, “ISRC-funded projects provide researchers in different areas of expertise to collaborate more to solve complex problems in soybean research and farming, with engagement from various stakeholders such as farmer representatives. These exciting projects also help with training and workforce development needed to grow our farming sector.”

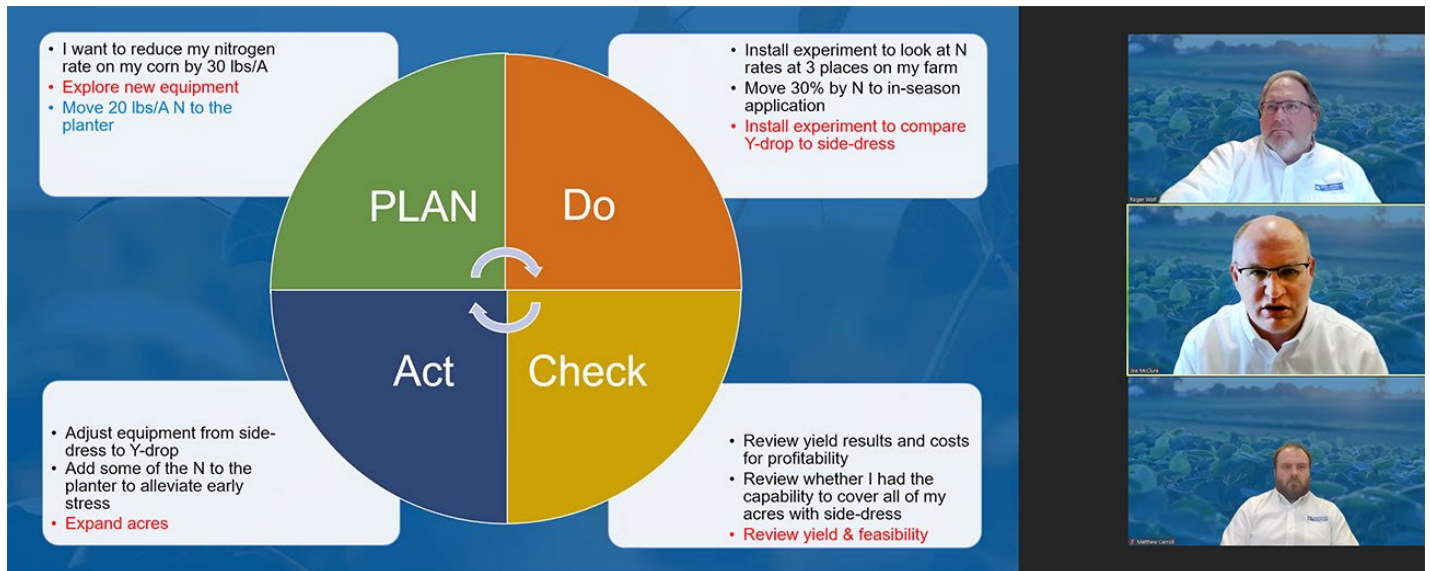


An example of a low-cost multimodal sensor Dong uses in his soybean research.

Dong said he became interested in working with microelectronics and sensors as they became widely used in consumer electronics, biomedicine and healthcare and he noticed that low-cost microelectronic sensing technologies were under-researched for agriculture and plant science. “I saw the need for more capacity and bandwidth in tools that can provide new datasets to help us better understand how crops respond to biotic and abiotic stresses for breeding purposes. Also, real-time data from fields can help decision-making for optimal management practices toward increasing resource use efficiencies and reducing negative environmental impacts.” Dong said he is excited about his ag sensor research and hopes it can benefit agronomists, plant scientists and conservation groups with reliable and useable data as guidance for breeding and decision-making for agricultural management.

After earning his PHD in Electronic Science and Technology from Tsinghua University in China, he joined the University of Wisconsin-Madison as a postdoctoral researcher then joined the faculty at Iowa State in 2007. Dong said he came to Iowa State due to the numerous opportunities to work with world-class agronomists, plant biologists, soil scientists, data scientists and engineers to develop new research programs in precision and resilient agriculture. He said, “I enjoy working with my collaborators, students and postdocs to develop and deploy agricultural sensors to solve critical problems for food security and sustainability. As a group, we are building something that matters to people. It is full of fun and pride.” An update on Dong and Whitham’s project funded by the ISRC is available on the [ISRC’s website](#).

# ISA Presents March Research Webinar



At right from top, ISA RCFI Co-Directors Roger Wolf and Joe McClure, along with research scientist Matt Carroll, kicked off ISA's research webinar by introducing the plan/do/check/act model.

ISA's Research Center for Farming Innovation (RCFI) team held an "[Innovation to Profit Webinar](#)" on March 2 after an in-person conference was canceled due to a snowstorm in February. Joe McClure, RCFI Co-Director kicked off the webinar by introducing the plan/do/check/act model as a way of implementing a more formal planning mechanism. "A good plan will yield success in the field, so take the time to make a more formal plan. It's important to review results and make adjustments," said McClure.

ISA Research Scientist Matt Carroll and Conservation Agronomist Ryan Johnson gave updates on the benefits and challenges found during long-term cover crop trials, which started in 2016. They continue to collect information, but some of the benefits noted were weed suppression, and improvements in water quality and grazing. Challenges included herbicide carryover, termination challenges, nitrogen management, drought, etc. They also reviewed the benefits and challenges when implementing cover crops into farmers' full production fields.

Research Agronomist Scott Nelson gave an overview of advancements in crop protection, giving tips on weed management and the latest information regarding soybean gall midge. He spoke about the use of disruptive technology such as precision/camera guided spray technology, which offers high-resolution scouting. This approach can reduce herbicide use by up to 90% according to Nelson, who sees this technology becoming the norm in the next 5-10 years. Regarding gall midge, Nelson explained that the pest continues to be identified in more areas, but its severity seemed to lessen in 2022. Research is ongoing to come up with the best way to manage this pest.

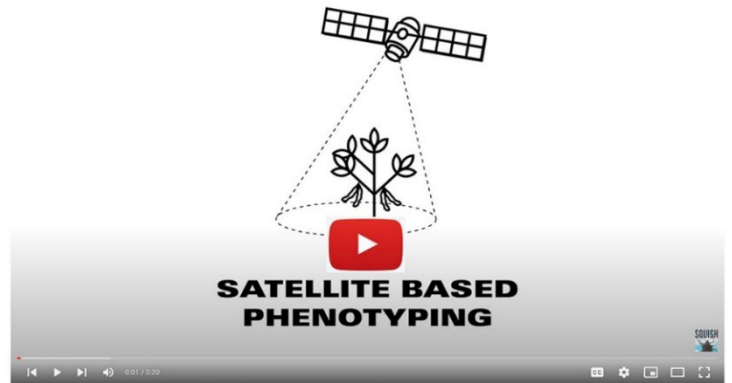
Wrapping up the webinar was a final session focused on research and conservation methods. ISA Conservation Agronomist Ben Porepp discussed Oxbow restoration, pollinator planting in unproductive field areas and water monitoring.

To learn more about how to participate in ISA's research efforts, see <https://www.iasoybeans.com/research/work-with-isa>.



# Soynomics Team Videos Available on YouTube

The Soynomics team at ISU has produced their own line of [Soynomics videos](#) hosted on the Integrated Pest Management and Soynomics YouTube Channels. Each video covers research that members of the group are working on and includes a variety of topics such as use of drones, robots, satellites and varying types of sensors that is advancing sciences and research on heat and water stress, yield prediction, pod counting and yield estimation, disease and insect pest scouting, crop maturity, artificial intelligence and more. They also highlight a 'Women in Ag and AI' initiative that highlights women working to solve complex agricultural problems using an inter-disciplinary approach.



The [Soynomics](#) team is made up of scientists and engineers interested in solving complex problems using modern tools with a focus on soybeans. Team members include Danny Singh and Arti Singh, agronomy; Baskar Ganapathysubramanian and Soumik Sarkar, mechanical engineering; Daren Mueller, Matt O'Neal and Greg Tylka, plant pathology, entomology and microbiology and a talented pool of staff scientists and agronomists, post-doctoral fellows, graduate and undergraduate students working with the above-mentioned scientists – many of the students are featured in the videos.

The team has received research funding from federal agencies and farmer-led organizations to work on digital phenotyping through the use of sensors, aerial systems, ground robots and smartphones complemented with advanced data analytics. Their approaches involve a transdisciplinary focus, with the participation of farmers in helping shape the research directions, and have led to milestone outputs. Brandon Kleinke, Integrated Pest Management, ISU, was instrumental in creating the videos.

## ISU Researchers Host Spring Training for Syngenta

In March, ISRC and ISU researchers and Extension staff hosted a two-day spring agronomy training session for ISRC industry partner Syngenta at ISU's Seed Science Center. Researchers provided updates on a variety of crop-related issues. Day one included presentations by ISU's Greg Tylka on soybean cyst nematode (SCN), Meaghan Anderson on corn and soybean management and Erin Hodgson on insect identification, sampling and management. Day two included updates on corn disease by Alison Robertson and soybean disease by Daren Mueller.



At left, Meaghan Anderson, ISU field agronomist and Regina Hernandez, Syngenta, look at corn plants. At right, Syngenta agronomists look for adult SCN females on soybean roots.

# Save the Date for SoyFest: August 23, 2023!



The ISRC will host its second biennial SoyFest on August 23 from 10am-2pm near Parks Library on the ISU campus. The event is held in August to coincide with Soybean Month in Iowa and the first week of classes at Iowa State University. Join the ISRC staff, ISRC affiliates/ISU researchers, student groups and soy-related businesses as we celebrate all things soy.

This fun and educational experience began in 2021 and was a huge hit with students. The one-day, festival-style event is held on ISU's central campus near Parks Library in order to involve students and to show the many uses of soy including new and everyday uses. SoyFest will feature a free cookout, SoyFest ice cream and soy-related snacks, robotic and technological demonstrations, giveaways, a photo booth, carnival games, a special prize drawing for students, a visit by Cy and more.

Following is a list of businesses and student groups that will be at SoyFest: The Iowa Soybean Association, Iowa Food & Family Project, ISU Creamery, Okabashi Shoes, Corteva, Old Capitol Food Co., HyVee, Agricultural Research Service - U.S. Department of Agriculture and ISU Clubs: Agronomy, Culinary, Dietetics and Food Science. The ISRC is also excited to host the research labs of Eric Cochran, chemical and biological engineering; Arti and Danny Singh, agronomy; Daren Mueller, Erin Hodgson and Matt O'Neal, plant pathology, entomology and microbiology; Lie Tang, agricultural and biosystems engineering and ISU Extension's Randall Cass. Each will provide hands-on learning experiences and demonstrations.

If you or your organization would like to support and/or participate in SoyFest, please email [Jill Cornelis](mailto:jcornelis@iastate.edu).

## Science for Success Holds Webinars

Science for Success held three webinars in March. Videos from the webinars can be viewed by the following links.

Replanting: <https://youtu.be/z4B-EUIXuZY>

PlanterTech: <https://youtu.be/ikZUWgK7Qrc>

Nfixation: <https://youtu.be/N5WK0MAOhx8>

The Science for Success partnership brings together 26 Extension specialists from land-grant institutions across the country, representing more than 80% of US soybean acres. These specialists contribute their own state-gleaned knowledge and research results to the program. As demands of the soybean industry change, the Science for Success team collaboratively uses proven research combined with historic results to adapt Best Management Practices to future challenges. The initiative is funded by the United Soybean Board.



# Key Personnel Changes at ISU



From left, Kendall Lamkey, Mary Wiedenhoeft and Jason Henderson.

ISU recently announced some changes to key positions within the College of Agriculture and Life Sciences and Extension and Outreach.

**Kendall Lamkey** was named associate dean for facilities and operations effective May 16, 2023. A professor of agronomy and crop breeding, Lamkey has been a faculty member at Iowa State since 2002. He has chaired the department of agronomy since 2007 after serving one year as the interim chair. As agronomy chair, Lamkey also served on the ISRC's management team, which makes research-funding decisions based on feedback from the center's Industry Advisory Council.

Lamkey's new role will be to support faculty, students, staff and stakeholders by ensuring the college's facilities and operations on and off campus, and the laboratories, farms, greenhouses and other locations enable the work and learning of students, faculty and staff. He will also lead safety planning efforts and operations.

**Mary Wiedenhoeft** will serve as interim agronomy department chair, also effective on May 16, 2023. Wiedenhoeft, Morrill Professor of agronomy, is a graduate of Iowa State with a B.S. in agronomy and earned her Ph.D. in crop physiology from Washington State University. She was a faculty member at the University of Maine for 12 years before joining ISU's department of agronomy in 1999. She currently serves as the associate chair for academics and director of the Masters in Agronomy Program. As interim department chair, Wiedenhoeft will also serve on the ISRC's management team.

Wiedenhoeft has taught courses on the introduction to crop science, systems analysis in crop and soil management and integrated crop and livestock production systems. She has advised agronomy students and led the agronomy learning community for many years. Her research has focused on sustainable agriculture, agronomic education and the production and management of alternative cropping systems.

**Jason Henderson** began as vice president for ISU Extension and Outreach on April 3. Henderson comes from Purdue University, where he served as director of extension and senior associate dean for faculty development in the College of Agriculture and assistant vice-provost for engagement. From 2007 to 2013, Henderson was the vice president and Omaha branch executive for the Federal Reserve Bank of Kansas City.

Henderson graduated with a degree in economics from Central College and earned an M.S. and Ph.D. in agricultural economics from Purdue University. He grew up on a dairy farm in Arlington, Iowa. Henderson succeeds John Lawrence, who retired on April 2.

# ISRC Affiliate and CALS Highlights

[CALS Ranked #8 Worldwide](#)

[Matt O'Neal Among ISU Faculty Recognized as a 2022 CALS Innovation and Entrepreneurship Faculty Fellow](#)

[O'Neal to Share Sustainable Agriculture Chair Position at ISU](#)

## Upcoming Events

July 25, Indianapolis, IN - [Coordinated Soybean Centers Annual Meeting](#)

July 26-28, Indianapolis, IN - [Soybean Research Forum and Think Tank](#)

August 23, Ames, IA - [SoyFest 2023](#)

Wednesday's at noon - [Iowa Learning Farms Webinars](#)

Special thanks to Dr. Keith and Virginia Smith  
for providing funding to make this newsletter possible.



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