

# For the Land and Its People

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### May–June 2022

The mission of NDSU Agricultural Affairs is to provide life-long learning opportunities and effective solutions that improve the lives of North Dakotans and build a better world. To build a better world, we must learn from and build relationships with diverse organizations and people. This issue of the For the Land and Its People highlights some of the ways the College of Agriculture, Food Systems, and Natural Resources (CAFSNR); North Dakota Agricultural Experiment Station (NDAES); and NDSU Extension are working to build a better world.

Enjoy.

**Greg Lardy**

Vice President for Agricultural Affairs

**NDSU** NORTH DAKOTA STATE UNIVERSITY

College of Agriculture, Food Systems, and Natural Resources  
North Dakota Agricultural Experiment Station  
NDSU Extension



# An Exchange of Knowledge and Culture: NDSU Develops Global

**A** small seed of an idea was planted in 1998. The Potato Association of America's 82nd Annual Meeting was held in Fargo, North Dakota, that year, and some researchers from the country of Chile were in attendance.

After learning more about North Dakota State University's potato research program, they went home with a vision for collaboration and knowledge exchange.

Twenty-four years later that seed matured and on April 7, 2022, a collaborative agreement between the University of Los Lagos (ULAGOS) and NDSU was inaugurated at a ceremony on the ULAGOS campus. The agreement between the two universities marks a beginning of shared research, innovative learning opportunities and Extension outreach.

"We believe local and global partnerships increase the opportunities and value we provide for our students, faculty, staff and stakeholders," says Greg Lardy, NDSU vice-president for agricultural affairs. "We look forward to the exchange of information that will take place because of this partnership."

Gary Secor, NDSU Department of Plant Pathology professor, has led the facilitation of the agreement for NDSU.

"The general area of focus will be to strengthen capacities and broaden agricultural expertise for both parties, but not just in potato research," explains Secor. "Technology, research, teaching and Extension activities centered around cereals, potatoes, pulse crops, canola, camelina, pasture management, beef cattle production and sustainable agriculture are all areas that we'd like to explore."

"Because North Dakota and southern Chile have similar climates, trialing of NDSU varieties of potato, soybean, wheat and canola is one of the highly anticipated projects," says Secor. "These crops are used for salmon feed, as Chile is the world's leading producer of farmed salmon."

In addition to the agreement, the ceremony also announced the beginning of a new agronomy major at ULAGOS. Using NDSU as the model for research, teaching and Extension outreach, ULAGOS has a vision to become the center of agriculture for the region, providing research data and recommendations to farmers and ranchers throughout southern Chile.

"Researchers at ULAGOS are on the forefront of new technologies, specifically drone-application of fungicides," says Secor. "So not only will NDSU faculty and staff share our knowledge, but we will bring back new ideas to NDSU as well."

"One of the goals of the new NDSU Agriculture Affairs Strategic Plan is to cultivate partnerships that meet the greatest needs of our students, faculty, staff and stakeholders," says Sam Markell, NDSU Department of Plant Pathology professor and NDSU Agricultural Affairs strategic plan co-chair. "This agreement opens the door to many research, Extension and teaching opportunities, and will be an opportunity to experience a new country and culture."

## The agreement encourages:

- Faculty mobility between the two universities
- Joint research activities in agronomy and biotechnology
- Participation in seminars and academic meetings
- Exchange of academic materials
- Special short-term academic programs and short courses
- Development of academic courses and materials
- Student mobility for research and study
- Integration of activities with other regional agriculture institutions upon mutual agreement



# Partnership in Chile

“The Los Lagos region, where ULAGOS is located, has mountains, a temperate rainforest, volcanoes, lakes, rivers, hiking and abundant fishing,” says Secor. “These exchanges are designed to be inclusive and full of chances to experience the rich culture and flavor of Chile.”

To kick-start the exchange of knowledge, a newly-hired research agronomist at ULAGOS will be visiting NDSU in June. Javier Hernandez is particularly interested in trialing NDSU spring wheat and non-GMO soybean varieties as a potential source of non-animal protein for the salmon industry

“We are excited to welcome Dr. Hernandez to campus this summer and look forward to our faculty and students visiting Chile as well,” says Secor. “I believe this is the start of a valuable partnership.”

#### FOR MORE INFORMATION:

ULAGOS Coverage of Agreement Signing – <https://youtu.be/xoM7vFfbgk>

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We believe local and global partnerships  
increase the opportunities and value we provide  
for our students, faculty, staff and stakeholders.





## NDSU Extension Helps Guide Poultry Farmers Through HPAI

“It’s my job to serve the people in my county,” says Julianne Racine, NDSU Extension agriculture and natural resources agent in LaMoure County. “It’s my job to help them understand how to prevent this virus, provide resources and next steps if their flock is infected and to be a listening ear for poultry owners who are struggling with the emotions of losing birds to highly pathogenic avian influenza (HPAI).”

HPAI is an extremely contagious disease of poultry leading to high mortality. Wild birds, the main carrier of HPAI, spread the disease to new areas when migrating, potentially exposing domestic poultry to the virus. So far, North Dakota has documented 15 flocks, a total 167,000 birds, affected during the spring of 2022. In contrast, the state of Iowa has documented more than 13 million affected birds this spring.

While most of the U.S. is still experiencing cases of HPAI, NDSU Extension specialists and North Dakota animal health officials are hopeful that the outbreak is slowing in North Dakota as migrating waterfowl have made it to their summer homes. However, they caution there may be a resurgence with the fall migration.

“Throughout this outbreak, our goal has been to keep poultry owners updated with the latest biosecurity information to help prevent HPAI, help them know what to do if they suspect their flock has been infected and how to properly dispose of birds,” says Mary Keena, NDSU Extension livestock environmental management specialist.

Throughout the spring, NDSU Extension specialists sent out educational news releases about HPAI and used social media to keep people aware of changing conditions and where confirmed cases were located. Extension also gathered emails from a state-wide voluntary survey to help poultry owners stay up to-date with the latest information.

“We’ve also worked in partnership with state and federal animal health agencies to communicate with poultry owners and be the local point of contact for many people seeking information,” says Keena.

When LaMoure County had three confirmed cases, Racine estimates that she reached out to hundreds of people in her county with information. Using a map of the county, a plat book and the phonebook, she called every person within a 10-mile radius of the confirmed cases.

“We felt it was in the best interest of the general public to make them aware of the situation and to offer guidance,” says Racine. “We also have many 4-H youth in our area with birds, and we wanted them to have the best chance to continue their 4-H projects.”

She adds, “While HPAI has not been a good thing to go through, a bonus has been the opportunity to connect with people in my area. They might not have known about Extension before this, but they know Extension now.”

### FOR MORE INFORMATION:

<https://www.ndsu.edu/agriculture/ag-hub/highly-pathogenic-avian-influenza>

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## NDSU Researchers Monitor the Spread of Clubroot of Canola

**N**orth Dakota leads the U.S. in canola production, producing 1.5 to 1.7 million acres each year. With such high production rates, canola is a major contributor to the state's economy. When canola diseases threaten production, North Dakota farmers face significant losses.

Clubroot on canola is an emerging canola disease that was first identified in North Dakota in 2013. This soil-borne pathogen moves from field to field, traveling on both agricultural and non-agricultural equipment.

"In simple words, the pathogen moves on whatever moves the soil," says Venkat Chapara, research plant pathologist at the Langdon Research Extension Center. "Then, it can live in the soil for more than 17 years."

Managing clubroot requires an integrated approach that includes sanitizing equipment, longer crop rotations and the use of resistant cultivars. However, the only practice widely adopted by farmers is the use of resistant cultivars.

Because restricting the movement of the pathogen is a key strategy in clubroot management, NDSU plant pathologists set out to determine the prevalence of clubroot in North Dakota.

Over the years following its identification in Cavalier County, they conducted annual surveys focused on examining canola roots for clubs or galls. In 2020, the survey went statewide and incorporated soil samples to determine the presence and amount of clubroot resting spores per gram of soil.

While the surveys only found visual gall roots on the canola crop grown in Cavalier County, they found clubroot resting spore DNA in field soil samples collected from 41 of the 50 counties surveyed in the past two years. Over half of those counties had soil samples with more than 80,000 spores per gram of soil, the threshold at which canola will develop symptoms of clubroot if the soil is acidic and the canola variety is susceptible.

"This data indicates that there is a need for continuous annual monitoring for clubroot in North Dakota," says Chapara.

### **FOR MORE INFORMATION:**

<https://www.ag.ndsu.edu/langdonrec/archive/field-crop-disease-research/canola-1/canola-new>  
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# Policy, Systems and Environmental Change Promotes Health in a Big Way

NDSU Extension family and community wellness agents and specialists are working to help North Dakotans live a full and vibrant life. One approach they use is to create policy, systems and environmental change.

The policies, systems and environment in our communities and state have a heavy influence on the choices people make every day, even if they don't realize it. Communities can achieve broad health objectives by ensuring that existing policies, systems and environments support health goals and that healthy choices are accessible by all.

"When our policies, systems and environment promote health, it becomes easier to do the things that are good for us without having to think about it," says Jan Stankiewicz, NDSU Extension community health and nutrition specialist.

With strong local partnerships across the state, NDSU Extension is poised to help communities make policy, system and environmental changes that promote positive health outcomes. Depending on the specific health objectives, NDSU Extension has partnered with park districts, schools and after school programs, local farmers markets and other organizations to help communities and organizations adopt policies, redesign procedures and transform contexts that affect health outcomes.

One example of a policy, systems and environment initiative is NDSU Extension's work helping farmers markets become authorized retailers for the Supplemental Nutrition Assistance Program (SNAP). As more farmers markets and farm stands in the state have started accepting SNAP benefits, more North Dakotans are able to access fresh, local food.

Another example is the Smarter Lunchrooms movement. NDSU Extension has worked with school administrators, food service directors and staff to make simple changes to lunchrooms that encourage students to make nutritious food and beverage choices, and decrease food waste.

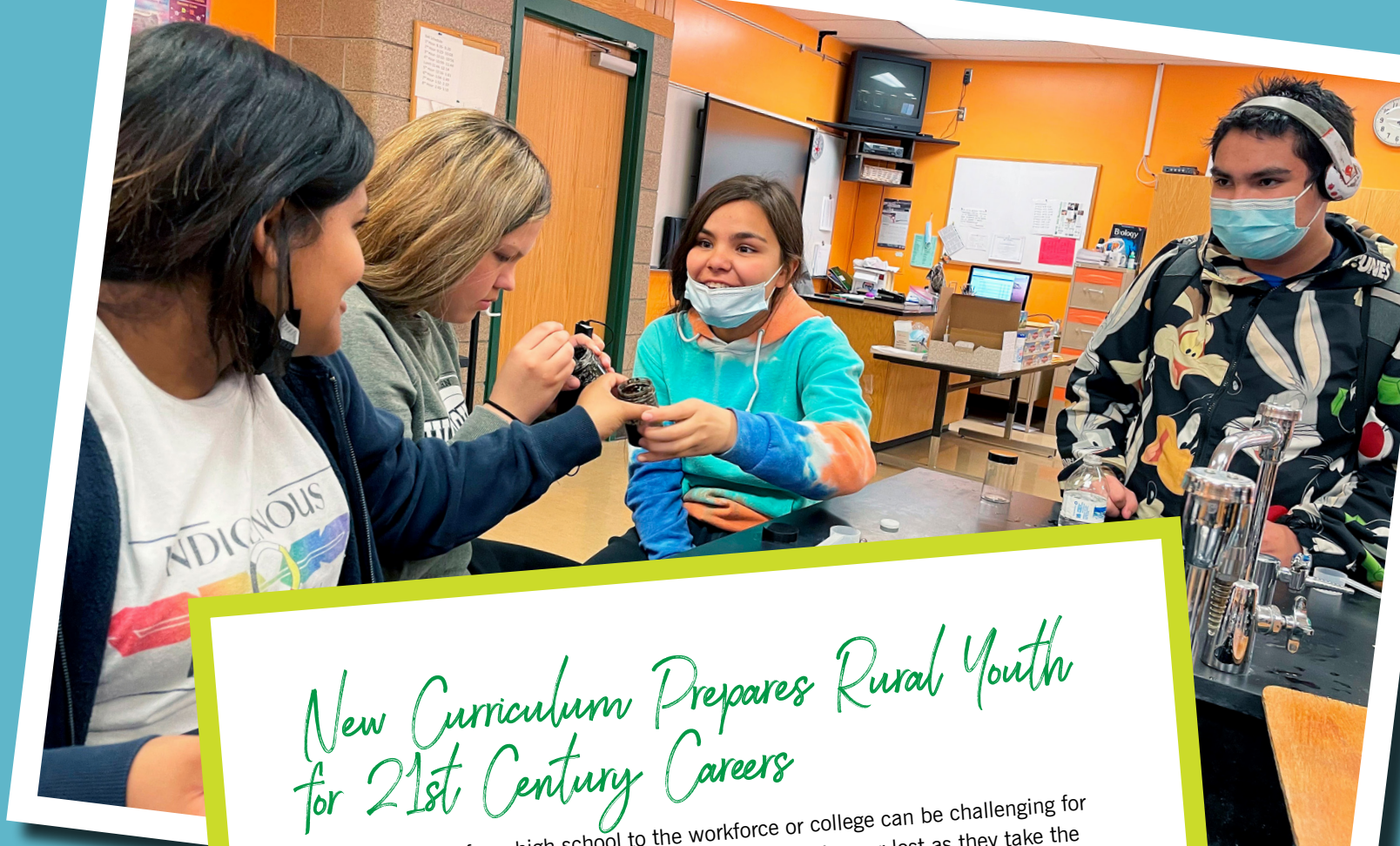
"These changes are effective and sustainable, and can be low- to no-cost," says Stankiewicz. "It makes sense for communities to implement changes that encourage and promote health. It takes time and effort to change systems, but the collaborative nature and significant impact make it a good return on investment."

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## New Curriculum Prepares Rural Youth for 21st Century Careers

The transition from high school to the workforce or college can be challenging for even the most well-supported youth. Many feel anxious or lost as they take the first steps toward adulthood.

Youth in rural, high-need communities may experience unique challenges. For example, the availability of educators trained in specialty topics is often limited, and exposure to diverse career options may be limited due to geographic isolation. As a result, youth may feel limited in their future college or career options.

A collaborative team of Extension professionals from North Dakota and South Dakota developed LaunchSkills, a collection of learning opportunities designed to engage high school students and the educators who work with these youth. The curriculum prepares youth for college and career, providing exposure to career opportunities and post-secondary education and highlights careers in food, agriculture, natural resources and human sciences, sectors that are relevant and available in many high-need communities.

“This innovative learning approach engages high school students in high-need, rural communities to prepare them to be contributing members of the 21st century workforce,” says Meagan Hoffman, NDSU Extension 4-H youth development specialist. “The curriculum can be used by teachers to help youth gain important life-readiness skills and improve their social-emotional learning skills.”

The LaunchSkills curriculum includes a book of lesson plans focusing on readiness skills, a virtual career camp that highlights specific careers, a “Careers in a Box” component with activities to help youth experience aspects of various careers and a webinar series for educators. The curriculum includes both careers that require an advanced degree and those that do not.

The LaunchSkills collaborators received a grant to implement the program in three counties in North Dakota and three in South Dakota during the first year, reaching 532 youth. Since then, LaunchSkills continues to expand, reaching more youth in both states and educators across the U.S.

### FOR MORE INFORMATION:

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# NDSU

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### NDSU's Land-Grant Mission

The College of Agriculture, Food Systems, and Natural Resources has a tradition of excellence in educating students for real-world careers. Our students learn from and work with world-class scientists in state-of-the-art facilities. These interactions, along with a relatively low student-faculty ratio, provide opportunities for students to develop their critical thinking skills, to work in a team setting, and to capitalize on hands-on learning experiences that will allow them to be competitive in a global economy.

The North Dakota Agricultural Experiment Station consists of seven Research Extension Centers placed strategically throughout the state, the Agronomy Seed Farm in Casselton and the Main Station in Fargo. We work to develop techniques and technologies to enhance the production and use of food, feed, fiber and fuel from crop and livestock enterprises.

NDSU Extension empowers North Dakotans to improve their lives and communities through science-based education. We serve all people of the state through our 52 county and Fort Berthold offices, seven Research Extension Centers and the main campus in Fargo.

If you would like more information on the programs in this publication, contact the faculty and staff listed. If you would like more information about our other programs or have questions, comments or suggestions, please contact me.

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## NDSU Research Extension Centers 2022 Field Days Schedule

The North Dakota State University (NDSU) Research Extension Centers (REC) annual field days at the REC sites throughout North Dakota are set. The events feature speakers, presentations and tours covering a diverse array of topics. NDSU's 15th President David Cook will be attending this year's Field Day events.

- July 11** – Central Grasslands Research Extension Center – Streeter, N.D. (10 a.m.-3 p.m. CDT)
- July 12** – Hettinger Research Extension Center – Hettinger, N.D. (5-7 p.m. followed by supper MDT)
- July 13** – Dickinson Research Extension Center – Dickinson, N.D.  
(8 a.m.-Noon agronomy with lunch, 1-3 p.m. horticulture, 5 p.m. supper MDT)
- July 13** – Williston Research Extension Center main site (4-8 p.m. agronomy and horticulture CDT)
- July 14** – Williston Research Extension Center irrigated tour – Nesson Research & Development farm, located 23 miles E of Williston on #1804 (8:30 a.m.-Noon CDT)
- July 18** – Agronomy Seed Farm – Casselton, N.D. (5 p.m. agronomy, 7 p.m. supper CDT)
- July 19** – Carrington Research Extension Center (CREC) – Carrington, N.D. (9:15 a.m.-3:30 p.m. CDT)
- July 20** – North Central Research Extension Center – Minot, N.D. (8:30 a.m.-Noon CDT)
- July 21** – Langdon Research Extension Center – Langdon, N.D. (8:45 a.m.-Noon CDT)
- Aug. 4** – CREC Oakes Irrigation Research Site – Oakes, N.D. (8:30 a.m.-Noon CDT)
- Aug. 9** – NDSU Horticulture Research & Demonstration Gardens – Fargo, N.D.  
(3-7 p.m. plants, local foods and outdoor spaces CDT)
- Sept. 10** – NDSU Horticulture Research Farm near Amenia, N.D.  
(10 a.m.-3 p.m. trees and ornamentals CDT) pre-registration required

For more information, visit <https://www.ndsu.edu/agriculture/ag-hub/research-extension-centers-recs>. NDSU is an R1 research institution as defined by the Carnegie Classification of Institutions of Higher Education.

