



# 2023-2025 BIENNIAL BUDGET

**NORTHERN CROPS INSTITUTE**  
**Budget No. 638**

Monday, January 16, 2023  
HB 1020

## **ND HOUSE APPROPRIATIONS - GOVERNMENT OPERATIONS DIVISION**

**Representative David Monson, Chairman** | Government Operations Division

## **NORTHERN CROPS INSTITUTE REPRESENTATION**

**Jim Bahm, Chairman** | Northern Crops Council

**David Cook, President** | North Dakota State University

**Greg Lardy, Vice President, Agricultural Affairs** | North Dakota State University

**Mark Jirik, Director** | Northern Crops Institute

**NORTHERN CROPS INSTITUTE**

NDSU Dept. 7400, PO Box 6050 | Fargo, North Dakota 58108-6050



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# AGENCY OVERVIEW

## Agency Statutory Authority

North Dakota Century Code 4.1-15.

## Major Statutory Responsibilities

The Northern Crops Institute shall provide technical and marketing assistance through specialized training courses and technical services that facilitate domestic and market development and expanded sales of northern grown crops. The institute shall render services including:

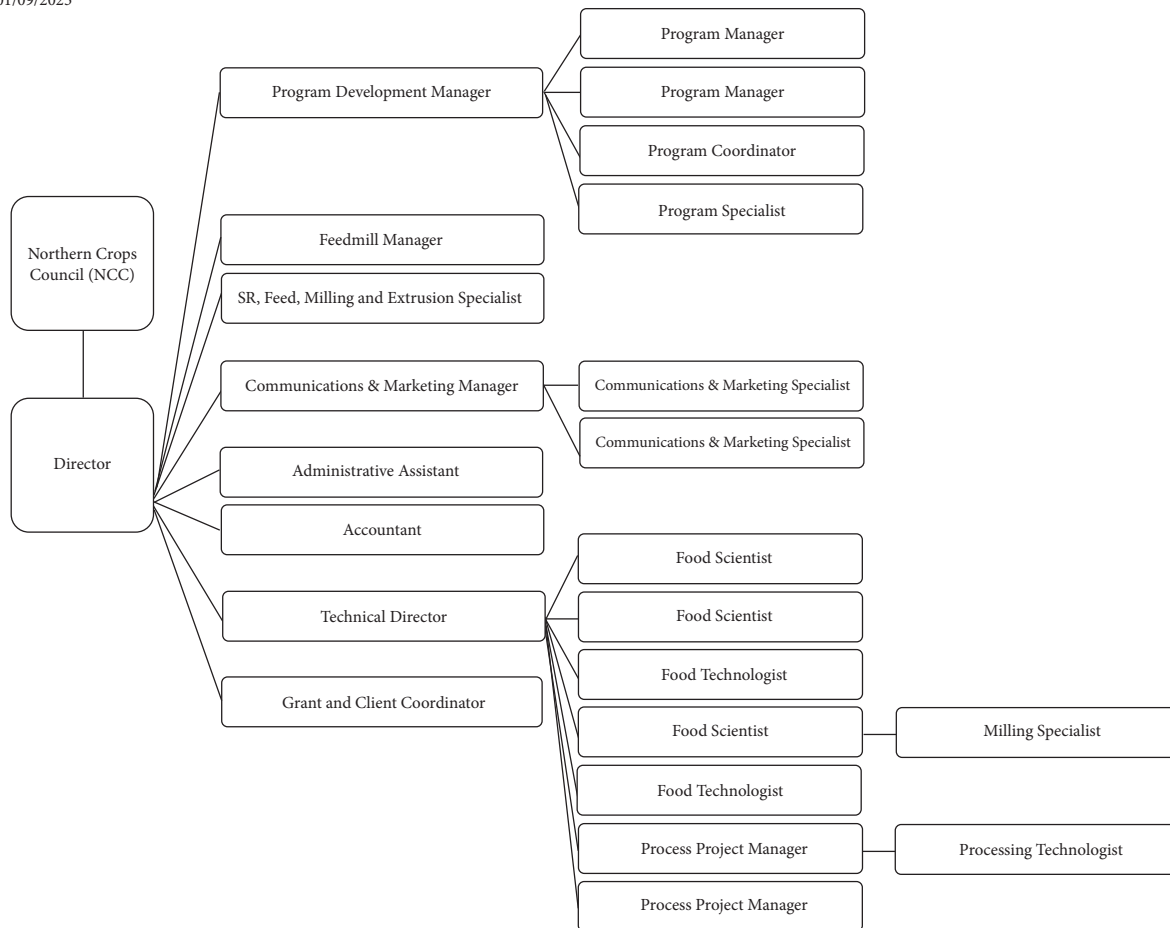
1. In-plant consultations regarding crop quality problems, product manufacturing, and possible purchasing methods and standards.
2. Short courses in product milling and processing, plant management, county elevator management, grain grading, and marketing of crops.
3. Educational and career and technical education training programs in milling, processing, manufacturing, purchasing methods, marketing procedures, product sales techniques, and other related subjects to be conducted for users of northern crops.
4. Short-term investigations, consultation, evaluation, and research to solve technical problems involved in the maintenance of quality and utilization of northern crops.
5. Annual surveys and quality analyses of new northern crops and monitoring of the quality and condition of commodities in market channels.
6. Research on northern crop damage problems and solutions.
7. Identification of problem areas in marketing northern crops abroad.
8. Preparation of instructional, informational, and reference publications on the end use, technical aspects of marketing, and utilization of northern crops for distribution domestically and abroad.

## Purpose and Structure

NCI is a small agency with four distinct areas that work collaboratively to fulfill the mission of expanding markets for crops grown in the region.

1. Programs – Focus on the educational aspect of the mission
2. Technical Team – Focus on technical services and technical support for our courses and training.
3. Communications – Focus on communications and marketing of courses, technical services, and any other outreach that is needed.
4. Administration – Provide guidance, financial overview, and administrative help

An organizational chart for the NCI can be found on the next page.



# FINANCIAL AUDIT FINDINGS

The State Auditor's office audited the Northern Crops Institute and did not identify any areas of concern.

# CURRENT BIENNIUM MAJOR ACCOMPLISHMENTS & CHALLENGES

## Agency Major Accomplishments

1. NCI completed its second value survey. Prime46, an external market research company was engaged to provide an independent assessment of the effectiveness and areas of improvement for Northern Crop Institutes programs and technical services. Generally, NCI does two types of courses – industry support (food safety, feed safety, grain elevator training) and market development courses (procurement, quality, product development). From a technical service standpoint, NCI provides product development work funded via grants and fee for service work with individual companies. The focus of the survey was on the market development courses and work with businesses by surveying those that attended courses and those who conducted technical services with us in 2020 and 2021. We wanted some distance from the course and service work to see the actual changes in behavior and investment. Some interesting results and findings:



- *87% of course participants said as a result of the course at NCI, they have a greater confidence in the U.S. supply chain.*
  - *97% of course participants said as a result of the course at NCI, they have a better understanding of U.S. crop quality.*
  - *56% of course participants said as a result of the course at NCI, they increased the volume purchased of U.S. Commodities.*
  - *As a result of our tech services 45%, of our clients report an increase in overall usage of northern grown crops in their products.*
  - *Our technical service clients reported that as a result of their experience at NCI, their average investment in the region has increased 24%.*
  - *It also highlights the level of our course participants, with 30% being research and development, 20% being purchasing, 20% being processing/production, and 8% being management.*
2. NCI has seen remarkable growth in the number of clients and projects. In the last biennium, NCI worked with approximately 90 clients doing 137 different projects. We are currently on track to assist over 120 clients on over 200 projects.
  3. NCI has almost doubled its level of special funding from the last biennium to the current biennium. Special funding in our budget rose from 44% last biennium to 70% this biennium. NCI has done this through increased grants, conducting additional programs, expanding our technical services, and soliciting sponsorships and additional support from the industry.
  4. The biennium was a tale of two very different years in terms of short courses. 2021 continued to see us host all of our courses in an online or hybrid format as a result of the pandemic and international travel shut downs. NCI saw record participation in our 15 short courses with 498 participants attending online and 24 attending in person. Participants were from 33 different countries. 2022 was a year for us to return to our roots with in person courses, and continue to utilize our online education tools as we hosted in person, online, and hybrid courses. NCI hosted a total of 20 short courses in 2022 with 335 participants from 49 countries. In total, NCI hosted 35 short courses with 857 participants in the current biennium.
  5. Growing markets for feedstuffs grown in the region remains a top priority for the Northern Crops Institute. Including tours (Riverview Dairy Tour in conjunction with NDSU), webinars (Future of Feeding), projects (currently five ongoing projects involving feed milling/pelleting and more proposed) and short courses (four specific feed courses, two additional with direct connections).
  6. NCI is hosting four ongoing webinar series: Market Update, Cereal Innovators, Future of Feeding, and Everything Ethanol. Over 5,000 people from 70 countries have viewed these webinars dedicated to growing markets in 2021 and 2022. NCI's webinars have three purposes. The first is to support our overall mission, the second is to find good speakers for our other events, and the third is to explore new areas of markets and gauge interest in certain topics. These webinars are free to participants, and continue to have positive impacts on our programs and markets and other partners have discussed conducting webinars for their specific commodities.

7. The first NCI conference in recent history was conducted in July. NCI's "Ancient Grains" conference held at Elk River, MN at the Oliver Kelley Farm was met with high praise from the industry. 93% of attendees reported it as meeting (36%) or exceeding (57%) their expectations and 100% said they would recommend it to a colleague. 87% said their understanding of ancient grains increased. This conference hosted hands-on demonstrations in the Oliver Kelley Farm kitchens, key note speakers included Ardent Mills executives, craft millers and bakers, expert researchers and industry experts from across the country, and panel discussions from a wide cross section of the industry.
8. The second conference occurred in September in Fargo/Moorhead. This conference was titled, "The Next 5 Years." This conference focused on the changing landscape of the region as it relates to agriculture. There were four key note speakers, followed by facilitated conversations. Topics were geopolitics, global food production, sustainability policies, and fuel transitions. The feedback was overwhelmingly positive with 93% saying it would benefit their work, 76% saying the conference would benefit their daily life, 32% said the conference would change how their organization functions, and 32% said it would directly impact their businesses financially. "The Next Five Years" Conference met (39%) or exceeded (55%) expectations, and 97% of the attendees would recommend it to a colleague.
9. After two years without hosting international trade teams, NCI was happy to open its doors to 107 participants from eight trade teams from almost 20 countries for meetings, tours, and updates at our facilities.
10. NCI has greatly expanded its work in helping grow market for biofuels. In the 21-23 biennium, NCI already hosted two ethanol procurement short courses and has an additional short course on the schedule. In addition, two short courses are already on the schedule for the first six months of the next biennium.
11. NCI followed up its sold-out release of the "Full Fat Soybean Meal Feeding" Handbook with its second handbook, "Ancient Grains of the Great Plains." One additional handbook is going to be released by the end of the biennium, "Wheat Quality Handbook." Two others handbooks are in development, "Barley Foods" and "Kitchen to Consumer: A Practical Guide to Launch Your Food Product Idea."
12. NCI continued its work in human and animal food safety conducting two courses this biennium. In addition, NCI has worked with a number of small scale and niche grower groups and organizations conducting workshops for small scale producers.
13. NCI continued its work in conjunction with the U.S. Grains Council in their efforts growing feed demand in Africa. NCI team members Shane Mueller (feed center manager) and Kim Koch (senior feed and food scientist) taught at the U.S. Grains Council's Center for Feed Manufacturing in Tunis, Tunisia.
14. The NCI communications and marketing team have assisted at a wide variety of industry events in a technical service and support capacity, from assisting with annual meetings and conferences ranging from the annual spring wheat tour to the Prairie Grains Conference.
15. NCI recently launched on-demand courses with Barley to Beer and The Next Five Years. This is a new mode of delivery, allowing participants to register at any time and progress at their own pace. Additional courses are being developed including Introduction to Sourdough Baking, Feed Milling 101, and Introduction to Risk Management.



## Agency Challenges

1. Commissioned in 1990, The NCI Feed Mill is faced with a number of major issues:

- The current pellet mill was manufactured in 1956 and is beyond its useful life. Many parts (gear boxes, shafts) are no longer manufactured and are getting extremely difficult to source.
- The current bulk ingredient bins were all installed in 1990 and have been patched and repaired a number of times. There are no longer places to attach patches and there is an issue with leaks and some concerns about structural integrity.
- The auditorium and bathrooms are on the second floor of the building, and the facility is not currently handicap accessible.
- The current lab is extremely small and attempts to conduct training and short courses are hampered by the lack of space for this teaching component.
- We've focused on increasing the work that we do for the livestock industry, however, the current space we have to work with was not designed to handle the number of crops and ingredients that currently are needed.



2. The pandemic continued to be a major hurdle for the first half of the biennium. The team at NCI did not let the obstacles stand in the way of fulfilling our mission. Instead, they used the crisis to propel us forward to achieve the goals and objectives sooner than originally intended.

3. As the industry continues to change and develop, NCI has struggled to find people with the talent and skills in some of the areas that we need. As an example, for more than a year, we had posted a position, and engaged with a recruiting firm to find someone that would have oilseed processing experience both to help us develop courses, as well as assist with our technical services. We couldn't find anyone with those skills within our budget. This is one of many examples of having to develop our talent in house. At the same time, the competitive landscape for good quality employees also continues to go up, so both hiring, and retaining a talented team is an ongoing challenge.

4. Changing Trends: NCI continually looks at trends, changes, and challenges in the food and feed industry, as well as in crop production and we are constantly looking for opportunities to assist in developing markets and assist organizations and the industry. A few examples:

- Extrusion – NCI lacks a simple single screw extruder which is common in most food and feed applications. As the developing world increases demand for healthy snack foods and aquaculture, the lack of a single screw extruder limits how we can assist these industries to grow.
- Oilseed Refining – NCI has formed a mutually beneficial relationship with NDSU in oilseed processing. With the advent of gene editing, the ability for the industry to develop niche market oilseeds has significantly expanded. Some estimates put the number of specialty soybeans in product development alone at over 40 new traits. NDSU has hexane extraction capabilities and NCI has ability to deodorize the oil, however the middle step of oil refining is a key missing piece that is limiting our capabilities to help the industry develop.
- Protein isolation is a key component of the pulse and soybean industry and a growing importance in the cereal sector as more focus is being spent in extracting protein. North Dakota and the other states NCI serves, has the potential to be a leader in this area, however NCI lacks much of the

equipment needed (pin mills, sorters, fractionation, spray dryers, etc) to effectively help this industry grow. needed (pin mills, sorters, fractionation, spray dryers, etc) to effectively help this industry grow.

5. **Outreach and Marketing:** As a small organization, one of our constant struggles is making sure that people know who we are, and communicating what our capabilities are. So much of the focus is on making sure that our programs and clients are supported, that our limited resources are effectively and efficiently employed so that potential clients and course participants know what we can provide.
6. **Staffing:** NCI has significantly increased its number of programs over the last biennium and is working to increase the reach and capabilities of our technical services. In order to do this, a large number of students, grad students, part time employees, contractors, and temporary labor has been employed. This has benefited NCI as we've grown, however, it has created a work force that continues to fluctuate and is creating additional work with recruiting, onboarding and training.

## NEXT BIENNIUM GOALS & PLANS

1. In July 2019, the Northern Crops Council finalized the NCI strategy document outlining the growth plans for NCI. To that end, NCI is planning for the biennium:
  - Growing the number of short courses back with the goal of 40+ with the rationale that the more we educate the industry, the more it drives growth of markets.
  - Developing seminars, webinars, and conferences both domestically and internationally. We've seen explosive growth in our webinars; however, NCI will need to continue to grow its webinars to support its mission and long term growth of its courses and technical services.
  - NCI has successfully launched two conferences, with another one planned this spring. Our hope is to double that in the next biennium.
  - NCI will release an additional three handbooks for the next biennium.
  - NCI made its first step towards measuring impact in 2020 with the value survey. We anticipate that this will continue and be further improved each year. In addition, we need to develop a measure of capacity utilization of equipment and facilities.
  - Increase overall awareness of NCI and attract more clients to utilize our services to help grow demand for northern grown crops.
  - Continue growing our external funding.
2. The Northern Crops Institute is looking forward to successfully transitioning to our new home at the Peltier Complex on the campus of NDSU. This investment by the state of North Dakota and our partners will take NCI to a completely different level in terms of NCI's capabilities, with an understanding that it will raise the bar on expectations as well. It will open up new avenues for collaboration and cooperation between NDSU, USDA, the North Dakota Trade Office, and NCI.



# COMPARISON OF 2021-23 APPROPRIATION & ESTIMATED SPENDING

	2021-23 Appropriation	Actual Expenditures Through 11/30/22	Remaining Balance	Comments
<b>Total General Fund Appropriation</b>	<b>\$1,987,142</b>	<b>\$1,319,513</b>	<b>\$667,629</b>	--Balance will be drawn down for expenditures by end of biennium.

Source: November 2022 Appropriation Status Report

## REQUEST/RECOMMENDATION COMPARISON SUMMARY

### 2023-2025 Needs-Based Budget

Reconciliation of 2021-23 Original General Fund Appropriation to  
2023-25 Executive Recommendation

	<b>NCI</b>
<b>General Fund:</b>	
2021-23 Original General Fund Appropriation	\$ 1,987,142
Cost to continue	16,505
2021-23 Adjusted GF Appropriation	<u>\$ 2,003,647</u>
Executive Recommendation Base Increases (Decreases):	
Compensation package salary/benefit /health insurance increases	165,246
Total Executive Recommendation Increases	<u>165,246</u>
2023-25 Total Executive Recommendation - General Fund	<u>\$ 2,168,893</u>
Increase (Decrease) From 2021-23 Adjusted Appropriation, Less Base Adjustments	<u>165,246</u>
Full-time equivalent positions 2021-23	7.75
Full-time equivalent positions 2023-25 Executive Recommendation	8.80
<b>Other Funds:</b>	
2021-23 Original Other Fund Appropriation	\$ 1,922,618
Cost to continue	16,610
2021-23 Adjusted Other Fund Appropriation(Base Budget Request)	<u>\$ 1,939,228</u>
Executive Recommendation Base Increases (Decreases):	
Compensation package salary/benefit /health insurance increases	161,897
Special funding authority for continued growth and staff programs	1,500,000
One-Time Northern Crops Institute Feed Center	3,900,000
Total Executive Recommendation Increases	<u>5,561,897</u>
2023-25 Total Executive Recommendation - Other Funds	<u>\$ 7,501,125</u>
Increase (Decrease) From 2019-21 Adjusted Appropriation, Less Base Adjustments	<u>5,561,897</u>
Full-time equivalent positions 2021-23	5.80
Full-time equivalent positions 2023-25 Executive Recommendation	9.35

# FUNDING BREAKDOWN

North Dakota University System  
Northern Crops Institute  
Major Components of current base level

	638
	Northern Crops Institute
Salaries	\$ 4,562,123
Operating	1,207,895
Equipment	-
Capital Projects	-
Total Budget	<u>\$ 5,770,018</u>
Funding:	
Federal Fund	\$ -
General Fund	2,168,893
Special Fund	<u>3,601,125</u>
Total Funding	<u>\$ 5,770,018</u>

Source: SHERPA 2023-25, Governor's Recommendation

## CURRENT BIENNIUM ONE-TIME FUNDING ITEMS

No one time funding was requested during the current biennium.

## NEXT BIENNIUM ONE-TIME FUNDING ITEMS

### Repairs, Updates, and Improvements to the NCI Feed Center:

The feed mill was designed and built over thirty years ago, and feed science has changed in that time period. The Northern Crops Institute would like to invest in upgrading the facilities to include:

- Upgraded equipment including the current pellet mill. The pellet mill was an original piece of the NDSU Experiment Station and was transferred to NCI in 1990; it is approximately 70 years old and while it has been maintained, it is beyond its useful life, parts are difficult to obtain, and it is in danger of critical failure.



- Current bin storage space limits what NCI can do from a product development standpoint, and are also 30+ years old. These bins will need to be replaced or there is a risk of critical failure and emergency funding in the near future.
- The current facility does not have adequate warehouse space for ingredients and finished feed storage. We possess donated equipment that is inaccessible most of the time due to lack of space.
- Current facility is not ADA compliant. This project will include an elevator to allow access for all to our educational facilities.
- Expanded educational facilities – current facilities do not have proper educational spaces, especially as we host international course participants. There are no breakout rooms, no place to serve meals (today participants eat outside, in a conference room, or are taken offsite).
- No room for new feed technology – more animal feeds, especially aqua feed utilize extrusion processing and NCI doesn't have the space or equipment to fulfill that mission effectively today.
- Parking lot, approaches and service drive are near impassable in the spring due to a clay underlay, this will allow paving of the parking lot (and prevent incidences where equipment and trailers sink into the lot).

No additional employees will be needed as a result of these upgrades.

Cost Analysis:

Building Costs (warehouse, lab, entrance, elevator, breakout space)	\$2,400,000
Equipment Costs -Pellet Mill	\$650,000
Bin Storage (replace 4 bins, build 4 additional, conveyance)	\$700,000
Parking Lot (pave parking lot)	\$150,000
Total	\$3,900,000

Additional operating costs will be minimal as much of the equipment will replace existing infrastructure.

NCI requests \$3.9 million to repair, upgrade, update, and expand the feed mill and equipment. The governor has recommended \$3.9 million in one-time funding from the Strategic Investment and Improvement Fund.

## FUNDING DEPOSITS

NCI collects course fees and charges technical service fees for the services that we render. NCI continually strives to market our services and our courses and aim to maximize the impact of this funding. These funds are reinvested in equipment and at times personnel to run the equipment and assist the industry.

NCI always looks for ways to increase special funding, and have managed to almost double that funding in the last biennium, this money is then reinvested to help us further fulfill our mission of growing markets for crops grown in the region.

Our hope is that as we do more, that special funding also increases. Part of the challenge of much of this funding, especially with grants, is it doesn't provide funding for administration or overhead costs, which makes the appropriated funding all the more important.

# APPROPRIATION BILL ADDITIONS

There is no need for any other sections to be included or are being requested/recommended to be included in the agency appropriation bill.

# OTHER BILLS BEING CONSIDERED

There are no other bills being considered at this time.

# LIST OF REQUESTED CHANGES

There is no list of requested changes.

# COMPARISON OF MAJOR REQUESTS TO THOSE RECOMMENDED IN THE EXECUTIVE BUDGET.

NCI's major request for feed mill were recommended by the executive budget with the appropriations coming from the Strategic Investment Fund.

# NOV. 2021 FEDERAL STATE FISCAL RECOVERY FUNDING APPROPRIATIONS.

No special funds were allocated to NCI during the November 2021 special legislative session.

# FEDERAL FUNDING AVAILABLE FOR THE 2023-25 BIENNIUM

At this time there is limited federal funding available for NCI programs.



CONNECTING IN THE GLOBAL MARKETPLACE

Northern Crops Institute

# 2021 ANNUAL UPDATE

The Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.







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# DIRECTOR'S REPORT



**Mark Jirik**  
Director

2021 will be a year to remember for the Northern Crops Institute. The foundation for growth and a new era in market development were laid down. In a very big way, it was the leadership of our North Dakota elected officials that have brought into motion the building of the Peltier Complex. The building will house the Northern Crops Institute, NDSU's Cereal and Food Science Programs, Meat Science facilities, and Agricultural Engineering and Bioprocessing Labs, in addition to the USDA's cereal processing labs.

It will be a building that fosters innovation and collaboration for the region as a whole. Our founders understood that crops don't end at state borders, and our supporters realized that the impact of this endeavor doesn't stop at them either. It is the reason we are seeing four-state support for the Peltier Complex in giving as well.

Less noticeable, there was a day-by-day change that is occurring at NCI as well. 2021 shattered all previous records when it came to number of people participating in programs. NCI hosted fifteen courses, forty-three webinars, and

released its second handbook. From a technical services standpoint too, there were a record number of clients and projects that shattered anything that has been done before.

All of the work and investment is setting the Northern Crops Institute up for even greater opportunities to have an impact on the region and beyond for 2022. These are investments in realizing our vision of establishing northern-grown U.S. crops as the world's choice for food, feed, and value-added applications.

2021 was also the year that we celebrated forty years as an Institute. None of the work that we've accomplished in 2021 could have happened without the vision and growth of our past teams, leadership, Northern Crops Council members, and commodity group leaders. We are building on their legacy! Here's to the next forty years!

-Mark Jirik, Director



# NCC CHAIR'S REPORT



**Jim Bahm**  
NCC Chair

I'm thankful for the opportunity to be chair of the Northern Crops Council for the last year. In that time, NCC meetings have gone from completely virtual, to hybrid, to back in person; similar to NCI short courses. We know there is a need for all those options going forward. I want to give a big thanks to the staff of NCI for stepping up and carrying NCI forward into the future. From videos, to webinars, great speakers and short courses – the pandemic has only sped up the rate of growth and change.

As chair of the NCC, I took part in a few of the short courses. The grain procurement course, the oldest course at NCI, was a memorable one. There were participants from around the world and close to a hundred people on the virtual course banquet.

While going virtual opens up new opportunities, it is great to be back in person. Already in 2022, I've had the chance to participate in a few in person programs. From the pasta program, to a board leadership course, it has been great seeing people and participants from around the country and the region we serve.

As a farmer and rancher, there is a fair amount of optimism right now. While we'll be late getting the crop, it will get in. The snow and moisture seem to indicate that the drought is broken.

There is also a lot of excitement for the new Peltier Complex as well. I had the chance to participate in the ground breaking ceremony, and have seen the pictures and designs. It is going to be great. The level of support the Peltier Complex is getting from the region has been great. The building will be a place to research, educate, and showcase all the crops grown in the four state region.

Finally, thank you to all the members of the Northern Crops Council for their help, input, and leadership. It has been great seeing so many back in person. Thank you to all of our friends and supporters in Minnesota, Montana, North Dakota and South Dakota. It takes all of us to make the Northern Crops Institute as great as it is!

-Jim Bahm, NCC Chair



**EDUCATION IS THE MOST POWERFUL WEAPON WE CAN USE  
TO CHANGE THE WORLD.**

- Nelson Mandela



# 2021 NORTHERN CROPS COUNCIL (NCC)

The Northern Crops Council is the governing body for the Northern Crops Institute. They dedicate their time and talent to making sure NCI is focused on our mission and properly utilizing the time and resources of the institute. It's members consist of:

- Jim Bahm, Chair** | ND Wheat Commission
- Tim Dufault, Vice Chair** | MN Wheat Research & Promotion Council
- Terry Angvick** | MT Wheat & Barley Committee
- Tregg Cronin** | SD Wheat Commission
- Kris Folland** | MN Soybean Research & Promotion Council
- Doug Goehring** | ND Department of Agriculture
- Kevin Haas** | Northern Pulse Growers Association
- Jiwon Kim** | ND Trade Office
- Greg Lardy** | North Dakota State University
- Peter Matthaei** | Dakota Specialty Milling
- Tony Schneider** | ND Barley Council
- Todd Sinner** | SB&B Foods, Inc.
- Bruce Speich** | ND Oilseed Council
- Dan Spiekermeier** | ND Soybean Council
- John Swanson** | MN Corn Research & Promotion Council
- Vance Taylor** | North Dakota Mill
- Terry Wehlander** | ND Corn Council
- Chris Wiegert** | Healthy Food Ingredients



**WARREN BENNIS**

"Leadership is the capacity to translate vision into reality."





## NCI THANKS OUTGOING NCC MEMBERS FOR THEIR SERVICE

We would like to thank the following outgoing council members for their years of service:

**1**

### **ADAM CARNEY**

Adam Carney (Scobey, MT) represented the MT Wheat & Barley Committee.



# EDUCATIONAL COURSES



2021 was an exciting year for NCI educational programs. Despite the ongoing COVID pandemic, NCI conducted all 15 courses online, and two hybrid courses where participants attended both in-person and online. The first course of the year was Healthy Solutions for Food Barley Uses, a new course held in February. The 28 participants attended online from Japan, South Korea, and the U.S. The course covered topics on the quality, utilization, and nutrition of barley for human food. The School of Wheat Quality was another new course for 2021, featuring Dr. Senay Simsek, NDSU Professor and Director of the Hard-Red Spring Wheat Laboratory. This course was sponsored by the U.S. Wheat Associates (USWA) and was designed for quality control managers and technicians. Over the six weeks, the course provided an in-depth study on the quality analysis of wheat, flour, and bread. Interest in the course was very strong, requiring two sessions, and had a total of 92 Participants from Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

In May, two new soymilk and tofu courses were conducted for 49 total participants from India on the quality and utilization of food-grade (identity preserved) soybeans. These courses were sponsored by the U.S. Soybean Export Council (USSEC), with the first course designed for entrepreneurs interested in starting soy food companies, and the second for current soy food manufacturers. Tofu and soymilk are gaining popularity in India with interest in additional soy-food products, including beverages, desserts, and cheeses. NCI conducted two sessions of the new Food-Grade Soybean Procurement course for USSEC, with participants from Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.



**FIRST IN-PERSON COURSE OF 2021: GRAIN INDUSTRY EMERGING LEADER PROGRAM: MANAGEMENT VS. LEADERSHIP**

The Durum Foods course was another new course for 2021 and focused on the use of durum wheat for products other than pasta. There were 21 participants from Chile, Japan, Turkey, Canada, and the U.S. who attended this online course in August. The Ethanol Procurement for Importers course was also a new offering this year, with 80 participants from 25 countries, and was sponsored by the U.S. Grains Council (USGC). Topics included; U.S. Renewable Fuel Standard, Life Cycle Analysis, Risk Management in Renewable Energy Products, Supply Chain Management, and U.S. Corn and Ethanol Market Situation and Outlook. Participants came from several different countries which included; the United Kingdom, Spain, Saudi Arabia, Netherlands, UAE, Kenya, Ghana, Jordan, Nigeria, India, Singapore, Columbia, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Dominican Republic, Panama, Malaysia, South Korea, Taiwan, Japan, China, and the U.S.

The Grain Procurement Management for Importers course was conducted online again in September with 80 participants representing 22 countries. These countries included; Brazil, Chile, China, Colombia, Ecuador, Indonesia, Israel, Japan, Kenya, Mozambique, Nigeria, Oman, Philippines, R.O.C. Taiwan, Saudi Arabia, Senegal, Tanzania, Thailand, Tunisia, Turkey, UAE, and the U.S. The Quality Feed Pellet Production course was held in November with 19 participants from Eastern Europe.

NCI was also able to host two hybrid courses this past year, meaning participants attended both in-person and online. The Grain Industry Emerging Leader Program: Management vs. Leadership was held in June/July, and the Barley and Malt Quality course was held in September. We are looking forward to holding courses both in-person and online this coming year.

# 2022 COURSE SCHEDULE

\* Subject to change. TBD = to be determined.

- |          |  |           |  |
|----------|--|-----------|--|
| <b>1</b> | <b>HEALTHY SOLUTIONS FOR FOOD BARLEY USES (ONLINE)</b><br>February 1-10                                | <b>10</b> | <b>INTSOY: INTRODUCTION TO SOYBEAN (IN-PERSON)</b><br>August 7-12                                      |
| <b>2</b> | <b>BOARD LEADERSHIP (IN-PERSON)</b><br>March 22-23   | <b>11</b> | <b>GRAIN PROCUREMENT MANAGEMENT FOR IMPORTERS (IN-PERSON)</b><br>September 12-23                       |
| <b>3</b> | <b>PASTA PRODUCTION AND TECHNOLOGY (IN-PERSON)</b><br>April 26-28                                      | <b>12</b> | <b>BARLEY AND MALT QUALITY (IN-PERSON)</b><br>October 3-6  |
| <b>4</b> | <b>FOOD SAFETY - PREVENTIVE CONTROLS FOR HUMAN FOOD (IN-PERSON)</b> May 11-13                          | <b>13</b> | <b>CONTRACTING FOR WHEAT VALUE (U.S. WHEAT)</b><br>October 3-6   |
| <b>5</b> | <b>FOOD SAFETY - PREVENTIVE CONTROLS FOR ANIMAL FOOD (IN-PERSON)</b> May 16-18                         | <b>14</b> | <b>GRAIN PROCUREMENT MANAGEMENT FOR IMPORTERS (ONLINE)</b><br>October 10-21                            |
| <b>6</b> | <b>FOOD GRADE SOYBEAN PROCUREMENT (IN PERSON)</b><br>June 6-10   | <b>15</b> | <b>PLANT-BASED TEXTURIZED PROTEIN PRODUCTS (IN-PERSON)</b><br>October 17-21                            |
| <b>7</b> | <b>CUSTOM GRAIN PROCUREMENT COURSE (U.S. WHEAT)</b><br>June 13-17                                      | <b>16</b> | <b>ETHANOL PROCUREMENT FOR IMPORTERS (ONLINE)</b><br>October 24-November 10                            |
| <b>8</b> | <b>DULUTH PORT TOUR (IN-PERSON)</b><br>June 20-21  | <b>17</b> | <b>PELLETING TECHNOLOGY (ONLINE)</b><br>November 1-10  |
| <b>9</b> | <b>GRAIN INDUSTRY EMERGING LEADER PROGRAM -<br/>MERCHANDISING TO LEADERSHIP (IN-PERSON)</b> June 22-24 | <b>18</b> | <b>GRAIN INDUSTRY EMERGING LEADER PROGRAM: LEADERSHIP<br/>VS MANAGEMENT (IN-PERSON)</b> December 13-15 |

## ON-DEMAND COURSES

- |          |   |          |                                   |
|----------|---|----------|-----------------------------------|
| <b>1</b> | <b>BARLEY TO BEER</b><br>Coming soon                  | <b>3</b> | <b>DURUM FOODS</b><br>Coming Soon |
| <b>2</b> | <b>INTRODUCTION TO RISK MANAGEMENT</b><br>Coming soon |          |                                   |



# WEBINARS



NCI webinars have proven to be a powerful tool in developing markets, connecting people, and sharing ideas to grow markets for crops grown in the region. The webinars have allowed us to reach audiences and share messages that we would not be able to during an in-person course. It eliminates the need for travel, and allows us to plant seeds of innovation in the region and globally.

This past year, NCI hosted a total of 42 webinars under the following series names: the NCI Market Update, Future of Feeding, and Cereal Innovators. In total, 2,535 participants from 59 countries worldwide participated in one of the webinars or watched its recording. This statistic shows why the NCI truly thrives at *Connecting in the Global Marketplace*.

The NCI Market Update webinar is an hour-long commodity market update that features a new speaker each month. These speakers share the latest news and analysis impacting the global commodity markets. Frayne Olson, a past Market Update presenter and NDSU professor, highlighted the importance of these webinars.

*“The online market updates provide a good opportunity to stay in touch with the NCI program participants. Although it is not as nice as meeting in person, it allows everyone to stay connected and remain current on rapidly changing market conditions. Accurate information is critical for making good crop marketing decisions. These market updates allow participants to interact with a variety of professionals and hear different perspectives and viewpoints.”*

The Future of Feeding webinar series focuses on using innovation in the processing of animal food, the equipment being used, and using grains from our region for co-products. Robert Thaler, a past Future of Feeding presenter and SDSU professor, described the value of this webinar series.

*“Things that we eat impact us, just like things that animals eat impact them... Talking about nutritional information is always fun. Feedstuff is an important topic because many different aspects go into it.”*

These webinars have been an excellent way for NCI to create online resources. They have been vital in uncovering different opportunities for our organization. NCI would like to thank its participants, speakers, and sponsors for all they have done to help NCI and our mission.



## NCI LAUNCHES CEREAL INNOVATORS WEBINAR SERIES

The Northern Crops Institute (NCI) held the first installment of a new webinar series titled, “Cereal Innovators,” on January 13th, 2021. 47 attendees from 15 countries participated in the live webinar featuring Brian LaPlante from Back When Foods, Inc., as he discussed, “Everything You Need To Know About Sourdough”. This series is held the second Wednesday of each month and focuses on new and unique ways to use cereal grains. Topics throughout the series include new processes, helpful information on milling and baking, equipment information, and uses for cereal grains grown in our four-state region. Registration is free and open to the public.

**LEARN MORE AT: [NORTHERN-CROPS.COM/WEBINARS](https://www.northern-crops.com/webinars)**

# HANDBOOKS



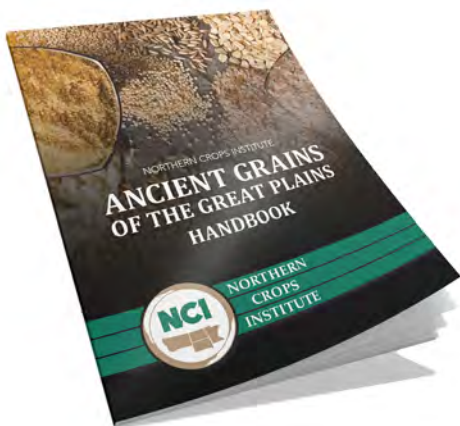
The Northern Crops Institute released its *Ancient Grains of the Great Plains Handbook* this past fall. The handbook was designed to provide an overview of the broad category of crops known as ancient grains, also known as heritage grains. The handbook's purpose is to introduce ancient grains categories, their characteristics, and uses. It aims to provide introductory information on ancient grains so that its readers will dive deeper into the production, procurement, processing, and/or marketing of ancient grains and ancient grain products.

The *Ancient Grains of the Great Plains Handbook* provides historical, agronomic, and utilization information on the wide range of gluten-containing, gluten-free, pulse, and oilseed ancient grains. The handbook also discusses current and future food that incorporate ancient grains. The handbook is an easy-to-read user guide developed to assist in incorporating ancient grains into existing and new food products. Handbook readers involved in business or plan to soon be in business within milling and/or food processing will obtain valuable contextual information on ancient grains. Readers will become familiar with ancient grains' advantageous features and benefits, and will also become aware of product development opportunities by incorporating ancient grains into food production systems.

This handbook is an invitation for readers to gain essential, introductory knowledge about ancient grain's features and benefits. The NCI strives to encourage our readers to continue to explore the vast array of ancient grain opportunities to improve the health and wellness of consumers of all ages.

We thank our chapter authors who have devoted their time and expertise to deliver valuable contributions to the handbook. We are also grateful to our reviewers for constructive improvements to each chapter. The authors and reviewers represent private industries, nonprofit organizations, and academia. Finally, we are thankful for the outstanding staff at the NCI for assistance in preparing this handbook. This handbook will be augmented with future education and technical assistance programs from the NCI that will assist producers, entrepreneurs, merchandisers, and manufacturers in taking full advantage of using ancient grains.

To purchase your copy of the *Ancient Grains of the Great Plains Handbook*, please visit: [northern-crops.com/store](http://northern-crops.com/store).



## NCI HOSTING ANCIENT GRAINS CONFERENCE

Mark your calendars for NCI's Ancient Grains Conference, this July 20th, 2022, at the Oliver Kelley Farm in Elk River, MN.

The Ancient Grains Conference aims to provide an educational and promotional setting to explore the characteristics and utilization of ancient grains. In the United States, ancient grains are starting to make a comeback within the food industry. They offer infinite ways to be prepared. NCI recognizes that these grains are underutilized, and the industry has only touched the surface in new food and beverage development.

**Registration Fee:** \$195 before June 29th, \$250 after June 29th

*This fee also includes a complimentary copy of the Ancient Grains of the Great Plains Handbook - a \$125 value (as shown to the left).*

# CONNECTING IN THE GLOBAL MARKETPLACE

The Northern Crops Institute is an international meeting and learning center that unites customers, commodity traders, technical experts, and professors for discussion and education.

The Northern Crops Institute is a globally recognized facility. In the past year, we had the privilege of educating 2,104 live participants and 953 non-live participants from 63 different countries through our courses, webinars and recordings of both. It is through these avenues that we work to expand and maintain domestic and international markets for northern-grown crops.

During last year's courses and webinars, participants had the opportunity to virtually tour farms and facilities, engage in virtual demonstrations, attend a variety of lectures from university professors and technical experts in the industry, and much more.

At the Northern Crops Institute, we believe that crops grown in the northern-tier of the U.S. are valued by perceptive worldwide customers and will stand the test of quality against competitors. We also believe that adapting to new trends and technologies is necessary to remaining vital to the agricultural industry. This year's record participation showed us that we can persevere through anything, and allowed us to truly connect in the global marketplace.



## COURSE PARTICIPANT

“To be honest, I didn't know what to expect, but it was amazing. First of all, the member's groups were great and to see the whole supply chain and where the grains come from: the farmers, to the trains, or through the port, and from there to our country, it was pretty amazing to see it. It was an amazing experience. I came back and I was full of energy.”



## DID YOU KNOW?

The Northern Crops Institute hosted a total of 42 webinars in 2021.





# NCI CELEBRATES 40 YEARS

The Northern Crops Institute (NCI) celebrated its 40th anniversary with an event held on November 18th, 2021. This event was held at the Fargo Air Museum and showcased NCI's past, present, and future through historical artifacts, slideshows, and speeches. A short program was held to commemorate our anniversary and featured speeches from Dean Bresciani, President of NDSU; Keith Peltier, Former NCC Chair; Representative Michael Howe, Grandson of George Howe; and Senator Mark Weber, Former NCI Director.



Mark Jirik, director of NCI, reflected on the beginning of NCI's history during his speech.

"40 years ago, our agricultural and elected leaders had a vision to change the game when it comes to marketing the crops of this region. We're here tonight to both celebrate, as well as honor our past."

In total, approximately 150 people attended our 40th anniversary celebration, including past directors, staff, Northern Crops Council members, legislators, advisory board members, commodity groups, ag commissioners, clients, collaborators from NDSU, family and friends.

NCI celebrated its anniversary in 2021 because 40 years prior, the North Dakota Senate Bill 2372 was authorized to establish the Northern Crops Institute. House Bill 1341 provided \$1.5 million for construction and equipment, and the official groundbreaking for the building was held on December 16th, 1981. The Northern Crops Institute's building was then completed in 1983.



Keith Peltier praised NCI for our continued growth and effort towards our mission during his speech.

"NCI is a wonderful institution. They do a great job of promoting the value of the region's products and the region's agriculture. Promotion is about people, and NCI has always had great people. The longevity of their staff speaks to their mission and the consistent message they have been able to deliver."

The Northern Crops Institute celebrated our anniversary on November 18th in concurrent with the groundbreaking for the new Peltier Complex that

was held the next day on November 19th. NCI will be a part of the Peltier Complex and NCI took part in the official groundbreaking and naming ceremony held at NDSU.

# NCI EXCITED TO BE PART OF NEW PELTIER COMPLEX

The Northern Crops Institute (NCI) was pleased to attend the official groundbreaking and naming ceremony of the Peltier Complex, a new state-of-the-art agricultural product development center, that was held on November 19th, 2021.

The official ceremony was held on NDSU's campus in the Wallman Wellness Center and featured several speakers. The event speakers included; NDSU President Dean Bresciani; Governor Doug Burgum; State Senator Rich Wardner; State Senator Ronald Sorvaag; Greg Lardy, NDSU vice president for agricultural affairs; Mark Jirik, director of NCI; Keith Peltier; Eric Berg, NDSU professor of animal science; and Ana Magallanes Lopez, doctoral graduate research assistant.



MARK JIRIK, NCI DIRECTOR, BEFORE THE PELTIER COMPLEX CEREMONY

Mark Jirik commented in his speech how the new building will further improve the work and reach of NCI.

“The Peltier Complex will provide a modern, food safe, educational experience, that will allow us to expand our educational efforts and to produce better collaboration with our university partners, businesses, and with producers from throughout the region.”

Each speaker shared the role they played in the creation of the Peltier Complex. All of which included; supporting bills for approval, fundraising, advocating, research, and more. In the end, it was a team effort that brought everyone to the official groundbreaking of this new state-of-the-art building. The Peltier Complex will join NDSU's food science, meat science, and cereal science labs along with the Northern Crops Institute.



POST CEREMONY GROUNDBREAKING

After the ceremony, attendees were welcome to see the official groundbreaking outside. Each speaker took part in the groundbreaking and was sent home with a souvenir shovel. Construction for the Peltier Complex will begin in the spring of 2022.

# NCI TEAM TRAVELS TO MONTANA

Last July, The Northern Crops Institute's office was a little on the quiet side as eight of our team members hit the road to travel throughout Montana. During the trip, our team members had the opportunity to make stops and tour local businesses, including breweries, farms, mills, and more. Since Montana is part of NCI's four-state region, our team was excited to develop relationships and learn more about the land and crops raised in Montana.

Eight of our team members left the NCI office on Sunday and headed straight to Greg Kessel's farm in Belfield, ND. With a warm welcome from the Kessel family, our team was able to take photos and videos while learning all about the family-run farm and its history. After saying goodbye to the Kessel family, we had the opportunity to attend the Medora Musical. The beautiful view and the warm air were perfect as the team had time to relax and enjoy each other's company. Our team made our way to Glendive with high spirits to spend the evening before our drive through Montana the next day.



NICK SINNER (LEFT) AND RANDY GILBERTSON (RIGHT)  
DISCUSSING THE HISTORY OF PASTA MONTANA

On day two, our team split into groups to explore two different facilities. Half of the group made their way to Sidney, MT, to visit Meadowlark Brewing. This group was able to tour the location and learn about the organization's passion for making the best quality beer. At the same time, the other group of four made the trip to IND Hemp in Fort Benton, MT. The group toured the facility, where they gathered video footage and learned about the various benefits hemp offers. At the end of the day, the group came together to enjoy some pizza and conversation at Mighty Mo Brewing Co. in Great Falls, MT.

The third day was the group's last full day in Great Falls. The first group started out the day by visiting Montana Milling, where they had the opportunity to tour the facility and see the milling process up close. Afterward, they were able to take a trip to Mike O'Hara's farm in Fort Benton, MT where they took photos and video of different crops and enjoyed conversation at the O'Hara family home. The second group spent the afternoon visiting Pasta Montana in Great Falls, MT. Here, they witnessed the pasta process from start to finish while learning about the exciting company history. After the Pasta Montana tour, they had the opportunity to learn from professionals at Montana's Grain Grading Lab, also located in Great Falls. While touring the facility, they learned about grading different grains. The Grain Grading Lab staff went over each step, which offered a unique experience for NCI's team members. To end the beautiful day, our group was able to see some of the beautiful scenery that Great Falls has to offer. The Giant Springs State Park offered a peaceful atmosphere to help the group unwind from a hard day's work.



NCI TEAM AT O'HARA FARM IN FORT BENTON, MT

Day four of the trip explored Montana State University in Bozeman, MT. Our group spent time on campus learning from different leaders and groups throughout the day. Our team wanted to thank the staff and faculty that shared their passion and research. The team spent the evening going over the highlights of their day, one of which was the excellent food at the MSU dining hall.

On the last day of the trip, we woke up in Miles City, MT, to drive back to Fargo, ND. Our team made it back to NCI's office by the late afternoon, safe and sound. NCI wants to give a huge thank you to everyone involved in our Montana trip. Our Montana trip was an experience of a lifetime, and we can't wait to see what next summer brings.



# INCREASED DEMAND LEADS TO BUSY YEAR FOR NCI TECH TEAM

The NCI Technical team has had a very eventful year. The range of projects and new clients indicates the reputation and demand for our services, and the capability of the team! From local start-ups to multi-national food companies, our project schedule is being reserved months in advance. This requires more planning for labs, resources, and staff.

In addition to baking and pasta projects, we have had increased demand for soy-food projects, such as soy milk and tofu, soy flours and soy protein concentrates, and fermented soy foods. The twin-screw extruder remains in demand as the NCI is uniquely fit for current plant-based and high protein food trends. We are busy with puffed snack products, texturized plant proteins, and high moisture meat analogs. Our solvent extraction work has increased as well with some clients targeting the oil, but many now after the deffated-meal of various crops for flours and protein concentrates. This has brought projects where NCI staff dehull, flake, solvent extract, mill, and finally extrude to a texturized product. Truly end-to-end!



We have also expanded the number of projects sponsored by our commodity group partners, making the direct link to market development for the commodities produced in our region. Adding sensory evaluation to many of these projects completes the cycle from development to the consumer sensory experience.

This past summer, we started work on quality evaluations for the grape breeding program at NDSU. As such, we hired Dr. Brent Trela to lead our enology efforts. We have also hired Dr. Fatemeh Zara and Edil Vidal Torres to lead food development projects and work with clients. We are pleased to have these new team members and expect more growth in the future, including an open position for “Oilseed Processing Specialist”.



We believe the increase in project demand from current and new customers will continue, and we are prepared to meet our mission to promote the utilization of northern-grown crops.



## DID YOU KNOW?

A full list of technical services the NCI provides can be found at [northern-crops.com/technical-services](http://northern-crops.com/technical-services).



## COMMUNICATION

# NCI ADAPTS AND THRIVES THROUGH ANOTHER CHALLENGING YEAR

The COVID-19 pandemic created a shift in how businesses operated everywhere, and the Northern Crops Institute (NCI) was no exception. With the increase of online usage as in-person events were paused, NCI learned how to adapt.

Since NCI was founded, our courses have primarily been in-person and have brought individuals from around the world to learn at the NCI. The pandemic halted our in-person educational courses and in response, we began increasing our online capabilities. Video and online technology has now allowed us to host courses online. This option has increased participation rates by allowing individuals who would not otherwise be able to join in-person, to take courses.

NCI is starting to return to normal in-person courses while also adopting online, on-demand, and hybrid options as well. The number of courses we are able to host will only increase due to our technology and online abilities. In 2021, NCI held 15 different courses with 13 being completely online and two being hybrid, with participants both in-person and online. We look forward to continuing to offer a variety of online and in-person courses.

With our educational courses on pause at the start of the pandemic, NCI found a way to continue providing educational resources to individuals around the world. The result was the start of our NCI webinars. Today we host three different webinars: NCI Market Update, Future of Feeding, and Cereal Innovators. We offer these webinars for free to the public and recordings are available to view after the live webinar on our website.

The pandemic challenged NCI to think outside the box and create online resources we would not have otherwise pursued. With new online capabilities, we are able to continue our mission and create further opportunities for education, technical services, and the marketing of northern-grown crops.



PARTICIPANTS ATTEND THE GRAIN INDUSTRY EMERGING LEADER PROGRAM, NCI'S FIRST IN-PERSON COURSE OF 2021

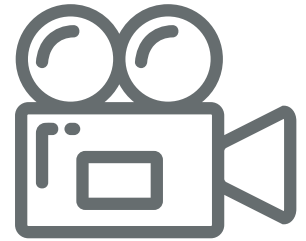


NCI HOSTED A TOTAL OF 42 WEBINARS IN 2021.



PARTICIPANTS ATTEND THE BARLEY AND MALT QUALITY COURSE (HYBRID), BOTH IN-PERSON AND VIRTUALLY.

# NCI EXPANDS VIDEO PRODUCTION CAPABILITIES



The Northern Crops Institute (NCI) video production rate skyrocketed in 2021. With the help of two additional communication team members, the number of videos produced in 2021 surpassed all previous NCI videos combined. In total, NCI produced and/or edited an astounding 111 videos in 2021.

In the spring of 2021, NCI welcomed two new communication team members who jumped right into video production for the online Durum Foods course. During the summer, the team gathered more video footage during their travels across North Dakota and throughout Montana. The tour videos produced during this time showcased Arrow K Farms in Belfield, ND, and O'Hara Land & Cattle in Fort Benton, MT. Other highlights included video tours and interviews at Montana Milling, IND Hemp, Pasta Montana, and Meadowlark Brewing. These videos have already and will continue to be used in NCI's educational courses.

The fall of 2021 brought a busy time for the communications team with more video footage. The team completed several harvest shoots that included many long days of shooting. The communications team captured and edited hundreds of harvest clips into NCI's video library this past year. Amidst the full swing of harvest, the team was also able to create several course content videos. The communications team completed four-course introductions and promo videos for upcoming courses. Eight more videos and two interview videos from course participants were also created for NCI's Ethanol Procurement course. To top it all off, our team produced a four-part video series with Genesis Feed Technologies for their "Seed to Feed" campaign. The campaign wrapped up with a live-streamed Traceability in Agriculture event hosted at NCI's headquarters.

The last few months of the year kept the communications team busy with video production. NCI celebrated two significant milestones in November; NCI's 40th Anniversary and the groundbreaking for NCI's future headquarters, the Peltier Complex. To end the year, the team worked on three more promotional videos for upcoming courses in 2022.

NCI wants to thank all organizations that welcomed our crew to film within their organization. We want to thank all individuals who took the time out of their busy schedules to show our team around their impeccable facilities. Without the help of these individuals, we would not have been able to produce content.



VIDEO SHOOT AT NCI FEED MILL FOR THE "SEED TO FEED" MINI-SERIES, WITH GENESIS FEED TECHNOLOGIES.

THANK YOU'S

# THANK YOU NORTHERN CROPS INSTITUTE SUPPORTERS

Thank you to all who supported NCI programs and activities in 2021. An additional thanks to our:

## 2021 FUNDING PARTNERS

Minnesota Department of Agriculture

Minnesota Soybean Research & Promotion Council

Minnesota Wheat Research & Promotion Council

Montana Wheat & Barley Committee

North Dakota Barley Council

North Dakota Soybean Council

North Dakota State Appropriations

North Dakota Wheat Commission

Northharvest Bean Growers

South Dakota Department of Agriculture

South Dakota Wheat Commission

Washington Grain Commission



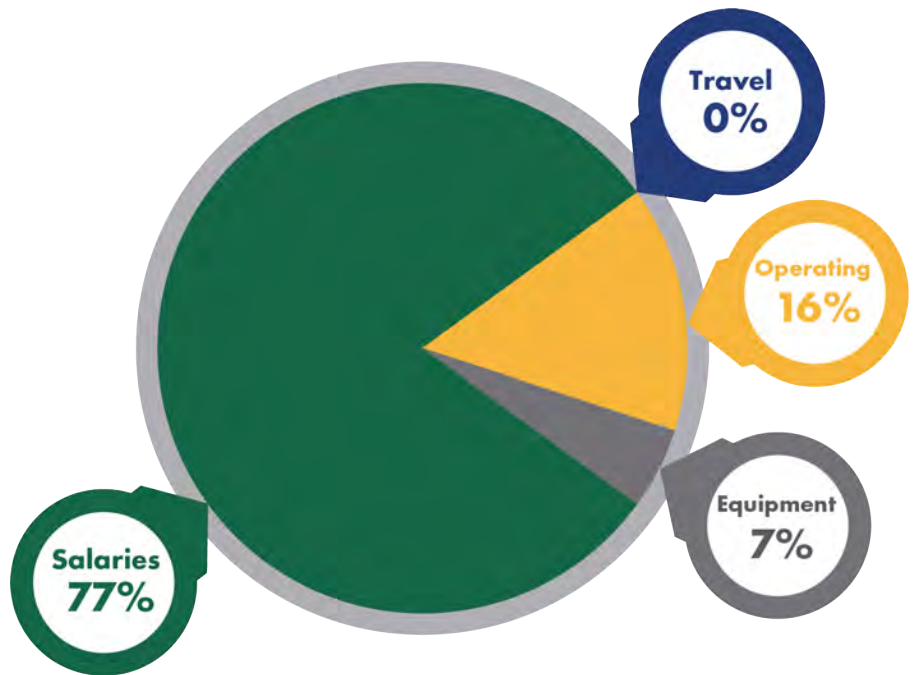
**MARK JIRIK, DIRECTOR**

"Thank you to all who supported the Northern Crops Institute last year. Your generosity allows us to expand and maintain domestic and international markets for northern-grown crops."



# NCI 2021 EXPENSE BREAKDOWN

A breakdown of NCI's fiscal year 2021 final expenses is as follows:



## MISSION:

The Northern Crops Institute supports regional agriculture and value-added processing by conducting educational and technical programs that expand and maintain domestic and international markets for northern-grown crops.





**NEED TO TEST AN INGREDIENT OR GET  
ASSISTANCE WITH PRODUCT OR PROCESS  
DEVELOPMENT?**

We're here for you.



**TECHNICAL SERVICE  
CLIENT**

“Since we started these conversations (with NCI),  
we have probably gained at least 50% in volume.”

# PROCESSING AND PRODUCT DEVELOPMENT

If you need to test an ingredient or get assistance with product or process development, then pilot-scale processing at the Northern Crops Institute might be your solution.

## WE'RE HERE FOR YOU.

NCI's technical staff has worked with food processors and ingredient suppliers, large to small, established to start-up, from all over the globe.

## WE'VE GOT EXPERIENCE.

Our technical staff has experience in a wide variety of crops and food production including milling, pasta production, baking, soyfoods, oilseed extraction, and extruded foods. We can make a variety of baked products, tortillas, breakfast cereals, long and short-good pasta, snack foods, soy milk and tofu, and texturized vegetable protein and meat analogs. NCI also manages a livestock feed production center with full-fat extrusion and pelleting available. Additionally, we can assist with analytical and testing services and staff will travel worldwide to assist in the uses of northern-grown crops.

## WHAT WE OFFER.

We offer cost effective service fees, confidentiality, complete services including purchase of ingredients (specialty ingredients are supplied by client - other ingredients provided at cost) and laboratory for proprietary use (upon approval).

TO LEARN MORE OR CONTACT US WITH QUESTIONS, VISIT:

[WWW.NORTHERN-CROPS.COM/TECHNICAL-SERVICES](http://WWW.NORTHERN-CROPS.COM/TECHNICAL-SERVICES)

## OUR TEAM

We're here to assist you.

### TECHNICAL TEAM

David Boehm | Technical Director  
Kim Koch, Ph.D. | Senior Feed, Milling and Extrusion Specialist  
Shane Mueller | Feed Mill Manager  
Neil C. Doty, Ph.D. | Business Development Manager  
Rilie Morgan | Process Project Manager  
Owen Oltman | Processing Technologist  
Rachel Carlson | Food Scientist  
Brent Trela | Food Scientist  
Fatemeh Zare | Food Scientist  
Mary Niehaus | Food Technologist  
Edil Vidal Torres | Food Technologist

### EDUCATIONAL PROGRAM TEAM

Brian Sorenson | Program Manager  
Nick Sinner | Program Manager  
Krista Jansen | Program Coordinator  
Brooke Thiel | Education Specialist

### COMMUNICATIONS TEAM

Grant Christian | Communications & Marketing Manager  
Kali Berlinger | Communications & Marketing Specialist  
Kari Schiefelbein | Communications & Marketing Specialist

### ADMINISTRATIVE TEAM

Janel Brooks | Accountant  
Lynn Stadum | Administrative Assistant

### EXECUTIVE TEAM

Mark Jirik | Director

### FOLLOW US ON SOCIAL MEDIA!



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Northern Crops Institute



Northern Crops Institute





**CONTACT US:**

Northern Crops Institute  
NDSU Dept. 7400, P.O. Box 6050 | Fargo, ND 58108-6050 USA  
Telephone: 701-231-7736  
E-mail: [nci@ndsu.edu](mailto:nci@ndsu.edu)

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This publication will be made available in alternative formats for people with disabilities upon request, 701-231-6538.

**CONNECTING IN THE**  **GLOBAL MARKETPLACE**

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