NDSU NORTH DAKOTA STATE UNIVERSITY

2022 CAMPUS MASTER PLAN

March 2022

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SECTION 1: OVERVIEW

BACKGROUND AND HISTORY OF NORTH DAKOTA STATE UNIVERSITY 1.a.

Background of NDSU. On July 2, 1862, President Abraham Lincoln signed the first Morrill Land Grant Act. The Morrill Act, also called The Land-Grant College Act of 1862, provided funding for the establishment of land grant colleges and universities in the United States specializing in "agriculture and the mechanic arts." The act, named for its sponsor Vermont Congressman Justin Smith Morrill, granted each state 30,000 acres of land for each of its respective congressional seats. Funds from the sale of the land were used by some states to establish new schools; other states turned the money over to existing state or private colleges to create schools of agriculture and mechanic arts, known as A&M colleges. Military training was required in all land-grant schools' curriculum, which led to the Reserve Officers Training Corps being established as an educational program for future army, navy and air force officers. The second Morrill Land Grant Act of 1890 initiated regular appropriations to support the land-grant colleges and also led to the establishment of a number of colleges for African American students.

History. On March 8, 1890, North Dakota Agricultural College (NDAC) was established as North Dakota's land-grant institution by the State's first legislative assembly under the provisions of the Morrill Act. Also that year, the Agricultural Experiment Station (AES) was organized in connection with NDAC. Discussion began on the location of an agricultural college as early as 1883, and in 1889, the Constitutional Convention made the decision to locate the college in Fargo, North Dakota. The function of non-resident teaching, or Extension Service, was added to the college in 1914 with the congressional passage of the Smith-Lever Act.

Thirty students were enrolled in the first class held at NDAC in January, 1891 – a winter short course in agriculture. Studies in both agriculture and "traditional" courses then followed, and mechanic arts (engineering) and home economics were offered the following year. Five professors were hired to teach the courses. This first faculty group consisted of young professors who had gained notability in their respective fields and were hired from other land-grant institutions. They were: Dr. H. E. Stockbridge, the first president/director of the Experiment Station; C. B. Waldron, professor of arboriculture and the first professor to arrive at the college; H. L. Bolley, professor of botany and zoology; E. F. Ladd, professor of chemistry; and T. D. Hinebauch, professor of veterinary science.

The first classes were taught in a set of rented rooms in the basement and on the main floor of the Fargo College. By 1892, College Hall (the current "Old Main" administration building) provided the space for all academic activities. Located on the first floor of the building was the library and a botany-zoology laboratory, with the president's office in the tower area as it is today. A chemistry laboratory occupied the basement level and the uncompleted upper floor was used as a student/faculty gymnasium. In addition to College Hall, the campus included a heating plant, a greenhouse, and a farm consisting of a house and barns.

The Graduate School awarded its first degree in 1899 but master's degrees were not given regularly until 1921. Then in 1959, the university received authorization to grant Ph.D. degrees in the areas of chemistry, pharmacy, plant science, animal science and entomology.

The institution was known as North Dakota Agricultural College until 1960 when a constitutional amendment, approved by the voters of North Dakota on November 8, changed the name to the university's present title of North Dakota State University of Agricultural and Applied Sciences or NDSU. (For a detailed timeline of the university and the events that influenced its history, see https://library.ndsu.edu/ndsuarchives/collections/history-ndsu)

Land Grant. The "First Annual Catalogue" of the university defined the character and design of the institution, as well as its objective at that time: "'The design of the institution is to afford practical instruction in agriculture and the natural sciences connected therewith, and also the sciences which bear directly upon all industrial arts and pursuits"…. Further, "the object of this institution is not the making of farmers, but rather the making of men and women, and then so to equip them that, if their inclinations draw them toward the farm, their efforts there may be reasonably expected to be attended by success. It is not the intention, however, to limit or restrict the capabilities of students, and while the curriculum is made sufficiently rigid to enforce the principles on which the work of the institution is founded, abundant scope is given by means of electives for the display of individual preferences and the development of personal abilities." (University Archives)

Traditionally, land grant universities have three principal responsibilities:

- *Teaching: Instructional programs are designed to educate students in ways that equip them to become skilled practitioners as well as knowledgeable, analytical and concerned members of society.*
- *Research: Both basic and applied research are conducted at NDSU, as well as creative activity in the arts and humanities. Scholarly inquiry in all units seeks to broaden basic knowledge.*
- *Public Service: Through wide-ranging programs in Extension Service, continuing education, library services, cultural and entertainment programs, NDSU makes its resources available to a very large segment of the state's population. And finally, the University has a widely diversified state economy, one able to play a significant role within the regional, national and international marketplace.*

NDSU's mission has evolved but still embodies the basic functions of education, research and extension/public service.

Founding Dates in NDSU History 1.a.i.

July 2, 1862	First Morrill Land Grant Act signed by President Abraham Lincoln creating institutions of higher learning
August 7, 1889	Territorial Legislature votes to locate the Agricultural College in Fargo
March 8, 1890	Law signed establishing North Dakota Agricultural College (NDAC) as the State's land-grant university
October 15, 1890	Horace Stockbridge named first president of NDAC (1890-1893)
January 1891	First students admitted for short courses
September 8, 1891	NDAC opened in rented rooms in Fargo College
January 1892	NDAC begins operating in the first permanent building on campus, Administration Building ("Old Main")
June 25, 1895	First graduating students (five graduates) awarded Bachelor of Science degrees

Other Significant Dates in NDSU History

1895 Student enrollment was 29; First Bachelor of Science degrees awarded to five students

1896 Board adopts faculty resolution recommending the organization of a summer school

1901 Student enrollment reached almost 400 for the winter quarter

1903 Edgeley sub-station established as first branch agricultural experiment station

1905 Dickinson sub-station established for agricultural and grass research; Student enrollment reaches 600 students

1907 Williston sub-station established to conduct research on irrigated crops and dryland farming practices; Clarence Putnam, leader of the Cadet Band, composed music to “The Yellow and the Green”, which became the school song

1908 First greenhouse erected for Experiment Station scientists

1909 Chemistry building burns and explodes and is responsible for the vacant area between Old Main and South Engineering; Hettinger and Langdon Branch Experiment Stations established; Green and yellow adopted as school colors

1913 Student Life Train: Students traveled to 30 North Dakota towns in three days to share with people across the state what NDAC was all about and to correct impression that “the AC is a one-horse institution”

1914 Extension Service organized to extend land-grant education opportunities throughout the state; Little Country Theater established

1915 Student Commission type of government initiated

1917 Six newly organized schools established: Agriculture, Chemistry & Pharmacy, Education, Home Economics, Mechanic Arts, Veterinary Medicine & Surgery, in addition to a group of applied sciences

1919 School of Science & Literature organized

1922 Sports teams’ name/mascot changed from “Aggies” to “Bisons”, named after the “staunchest and most persistent fighter of the Plains”

1923 Campus consists of 20 buildings; Cadet Band received its third successive 100 percent inspection rating as an ROTC unit. The band was awarded a presidential citation and a “Gold Star” rating and thus, the “Gold Star Band” was born

1942 Officer Candidate School Opens at AC

1945 The North Central REC Agricultural Experiment Station and Seed Farm established south of Minot

1950 Institute for Regional Studies established by North Dakota State Board of Higher Education

1953 Graduate School established; Williston Research Station relocated and expanded to emphasize dryland agricultural research

1957 A tornado caused major damage to the campus on June 20, 1957. Many campus buildings were damaged, including the library, Health Center and Festival Concert Hall. The path of destruction was nine miles long. The YMCA building was destroyed. Classes were canceled for several days.

1959 PhD program established in plant & animal science, pharmacy, entomology and chemistry

1960 Institutional name change from North Dakota State Agricultural College (NDAC) to North Dakota State University of Agriculture and Applied Sciences as of December 8, 1960; Carrington Irrigation Station established

1961 13th Street officially changed to University Drive; 10 acres of NDSU land transferred to USDA for construction of Metabolism and Radiation Research Laboratory

1963 Bachelor of Arts and Master of Arts degrees first offered; First Doctor of Philosophy (Ph.D.) degrees awarded – one each in Agronomy and Entomology; Dalrymple Experiment Plot established at Agronomy Seed Farm

1964 Vice President for Academic Affairs position created

1965 Associate degrees granted

1966 KDSU-FM, new NDSU stereo radio station, began broadcasting

1967 Tri-College University established (NDSU, MSU-M, Concordia); Upper Great Plains Transportation Institute established

1969 Vice President for Agriculture position established; Vice President for Business & Finance position established; Edgeley Branch Experiment Station closed

1971 Development Foundation created; NDSU-Bottineau Branch established (until 1996)

1972 Preliminary steps taken in creating College of University Studies

1974 Vice President for Student Affairs position established

1977 Central Grasslands Research Station created (Stutsman & Kidder counties)

1983 Northern Crops Institute organized

1986 Numerous NDSU buildings placed on the Nation Register of Historic Places, including Old Main, South Engineering, Putnam Hall and Ceres Hall, among others; NDSU Research Foundation incorporated

1990 NDSU’s Centennial celebrated

1992 Plans for new college: Human Development and Education

1994 Tribal colleges receive land-grant institution status

2000 Student enrollment reaches 10,000; Vice President for Research, Creative Activities & Technology Transfer position established; Vice President for University Relations position established; NDSU Research & Technology Park ground breaking ceremony held

2004 Student enrollment exceeded 12,000 mark; NDSU Downtown Campus dedicated; NDSU makes jump from NCAA Division II to Division I in athletics

2006 Ten year re-accreditation received (North Central Association of Colleges & Secondary Schools)

2007 Vice President for Information Technology position established

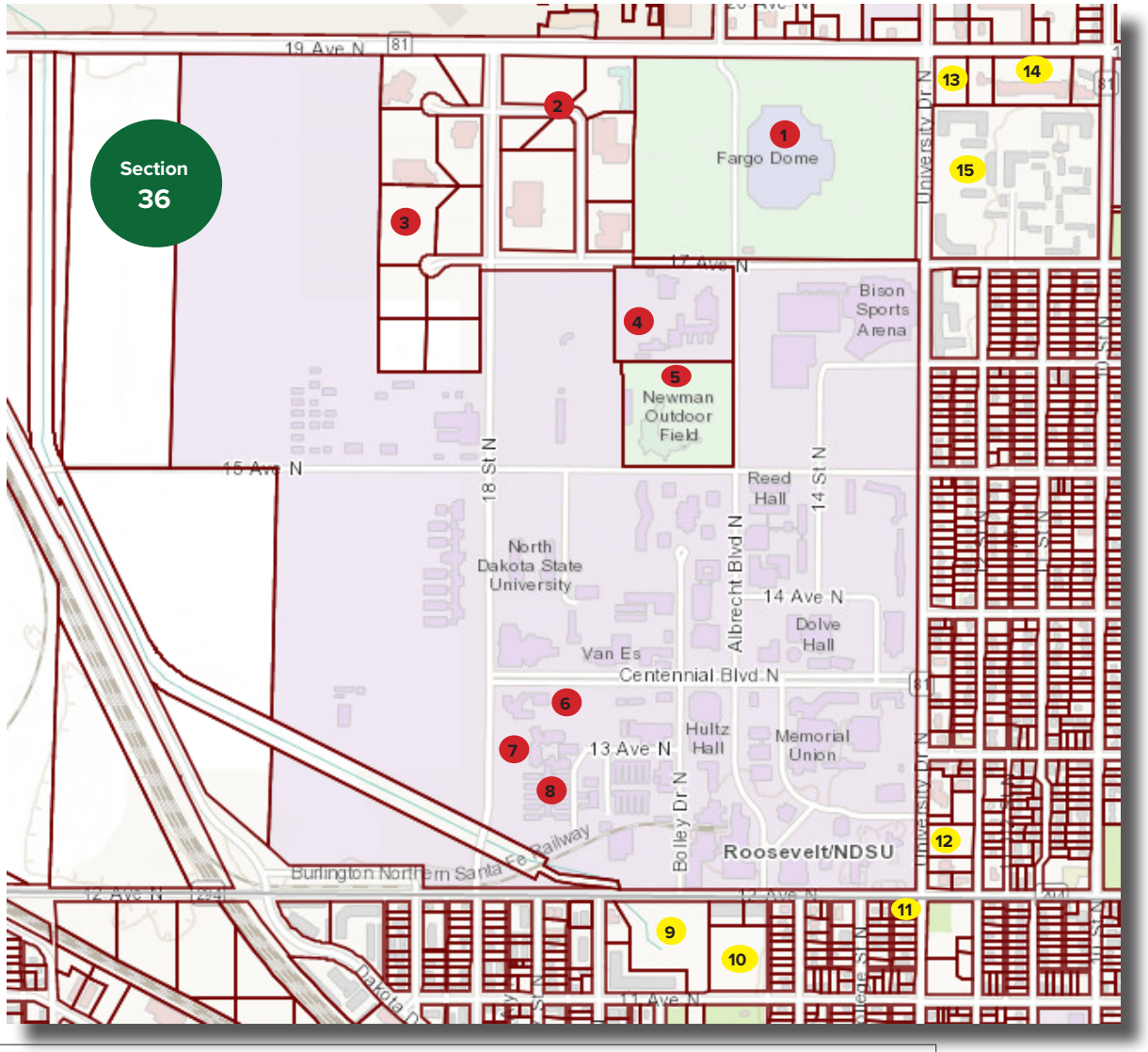
2011 NDSU named to the nation's top 108 public and private universities in Carnegie Commission on Higher Education's elite category of “Research University/Very High Research”

2017 Largest-ever class of 2,251 eligible students graduates from NDSU

2019 NDSU announces campaign goal of $400 million for *In Our Hands: The Campaign for North Dakota State University,* the largest higher education fundraising initiative in ND history. The campaign exceeded this goal by 47% and in one year less than planned, raising $586.7 million by December 31, 2021.

2021 NDSU re-designated R1 research institution “Doctoral University: Very High Research Activity” by Carnegie Classification on Higher Education, its highest classification. NDSU remains North Dakota's first and only university to be named to this category, and similarly, the state's only university in the National Science Foundation's top 100 institution rankings.

2022 NDSU captures its 9th out of 11 FCS national titles from the 2011-2021 college football seasons. No FCS program has claimed more national championships than NDSU football.



LEGEND: Main Campus *(Section 36 - Township 140 North - Range 49 West)*

#	Lessee or Owner	Property	Land	Date
1	City of Fargo	Fargodome	Lessee	1989
2	NDSU Research & Technology Park, Inc.	Research Park 1st Addition	Lessee	1999
3	NDSU Research & Technology Park, Inc.	Research Park 2nd Addition	Lessee	2003
4	United States of America	USDA Bioscience Lab (10 acres)	Owner	1961
5	City of Fargo	Newman Outdoor Field	Lessee	1995
6	ND State Seed Department	Johansen Hall	Lessee	1993
7	United States of America	Northern Crops Science Laboratory	Lessee	1986
8	United States of America	Headhouse-Greenhouse Complex	Lessee	1980

NDSU Main Campus & Perimeter Properties

LEGEND: Campus Perimeter Properties

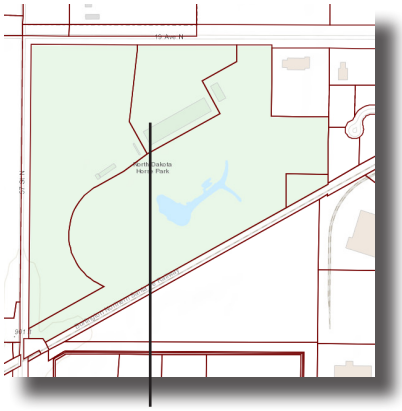
#	Property	Description	Acquired	#	Property	Description	Acquired
9	Wm. G. Johnson	Block 5	1956	13	McDonald's Corporation (Lessee)	NDSU 1st Addition	1966
10	Barretts	Blocks 1 & 2	1957, 1966	14	University Towne Center (Lessee)	NDSU 1st Addition	1966
11	Kirkhams 2nd Addition	Lots 13 & 14, Block 12	1994	15	University Village	NDSU 1st Addition	1966
12	Ohmers	Portions of Lots 70 & 71	1966				

Source: Cass County Treasurer

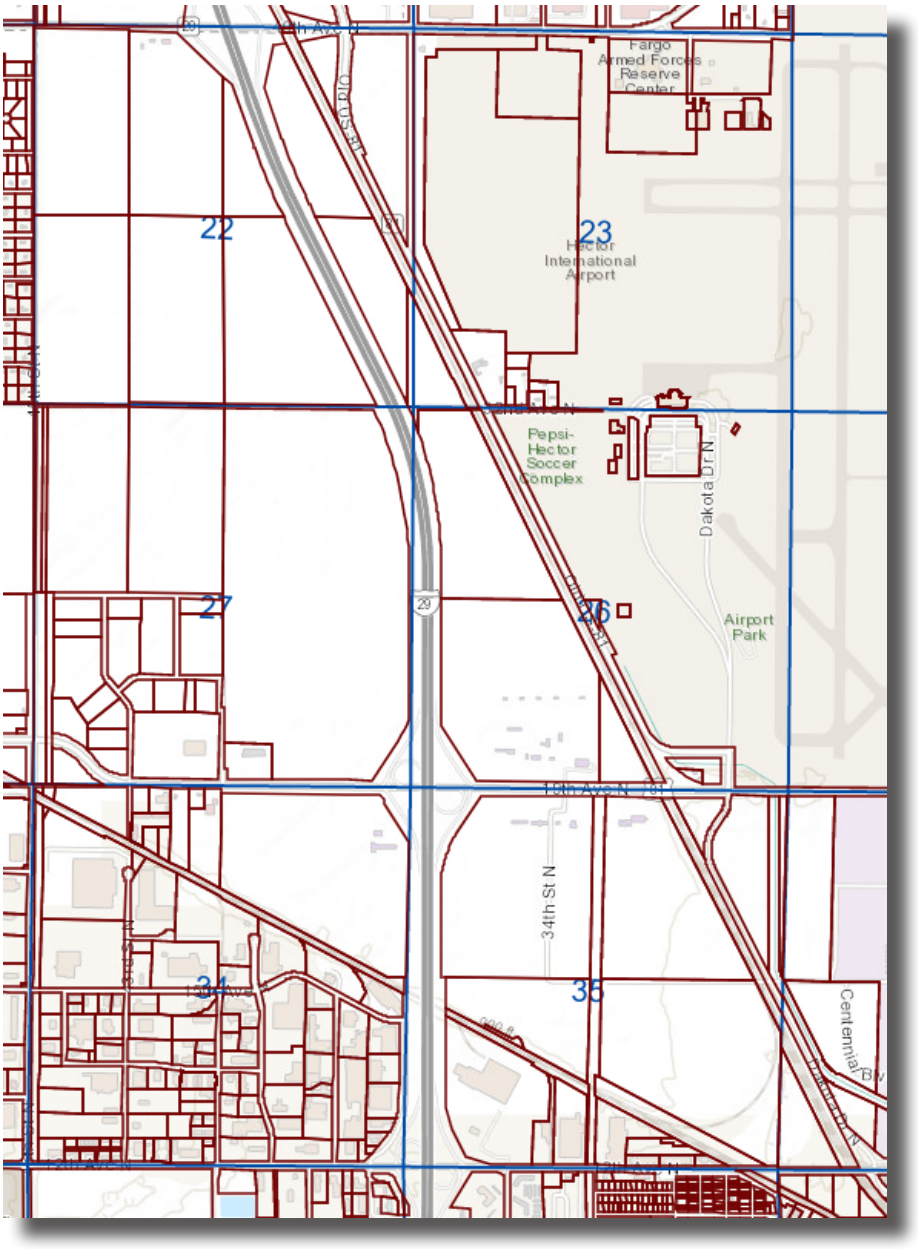
Cass County Properties

CASS COUNTY *

Section	Quarter	Acquired
22	NW ¼	1968
	SW ¼	1972
	NE ¼	1965
	SE ¼	1965
23	SW ¼	1965
26	NW ¼	1961
	SW ¼	1948
	SE ¼	1956
27	NE ¼	1959
	SE ¼	1963
34	NE ¼	1949
35	NW ¼	1948
	SW ¼	1911
	NE ¼	1946, 1974
	SE ¼	1911; 1921
*All Township 140N - Range 49W		

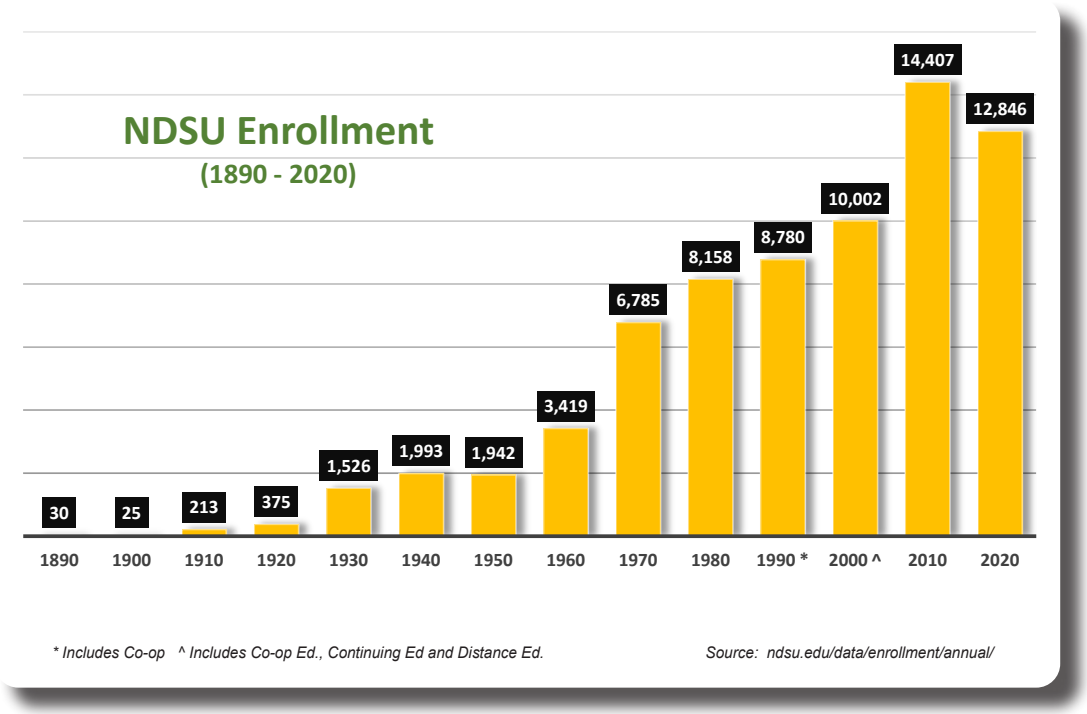


NDSU Equine Center
Lot 3, Block 1
Acquired: 2014

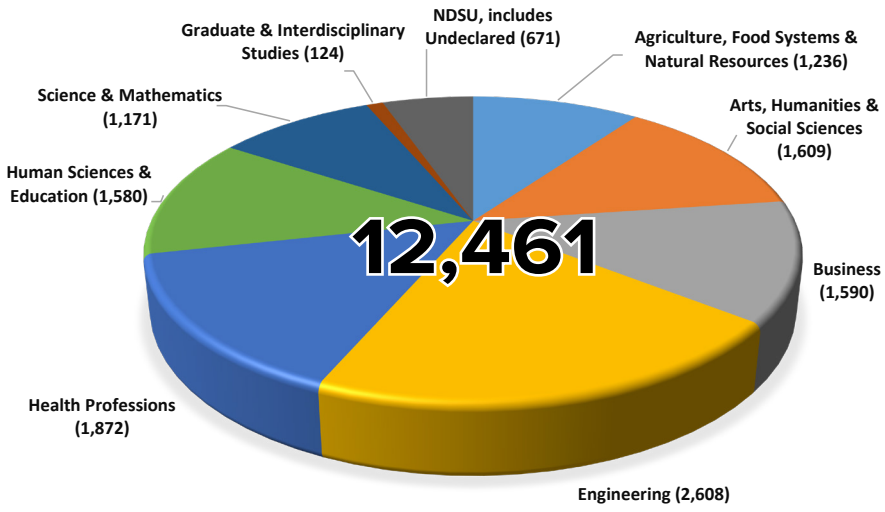


Addition/Removal of Major Buildings ***1.a.iii. (2)***

See APPENDIX page 32 for comprehensive building list



TOTAL STUDENT HEADCOUNT
Official Enrollment Census Summary - Fall 2021



79%	Face-to-Face On-Campus Students
3.53	Freshman Average GPA
2,491	Freshman Class Size
40%	Entering FYRs with H.S. GPA of 3.75 or Higher

MISSION 1.b.

Through its land-grant mission, NDSU serves the state and region through student education, service to the state, and research and creative endeavors.

MISSION

MISSION STATEMENT

We provide transformational education, create knowledge through innovative research, and share knowledge through community engagement that meets the needs of North Dakota and the world.

VISION

VISION STATEMENT

To lead the advancement of our land-grant ideals through innovative education, research and outreach

VALUES

CORE VALUES

The keystone to the success of the NDSU strategic plan is our commitment to shared governance, transparency, responsible decision-making, and a sustainable future. The strategic plan is based on the following NDSU core values:

- Collegiality
- Inclusivity
- Community
- Creativity
- Excellence
- Impact
- Innovation
- Integrity
- Resilience
- Responsiveness
- Transformation

NDSU provides transformational education, creates knowledge through innovative research, and shares knowledge through community engagement that meets the needs of North Dakota and the world (*NDSU Strategic Plan 2021-2026; Our Future: Innovation, Outreach and Education*). We are a student-focused, land-grant, research university. The University provides students with affordable access to an excellent education at a highly ranked research institution. We connect teaching and research in rich learning environments, and educate future leaders who will create solutions to national and global challenges. As a land-grant institution, our research and creative activities focus on the most difficult and challenging issues faced by society. We serve the state and improve lives through cutting-edge research, creative works and collaborative partnerships with the people we serve, and strong outreach to every county of the state.

We reaffirm our underlying commitment to ethical behavior, foster and celebrate diversity in all of its forms, and we safeguard and foster transparency, shared governance and academic freedom as fundamental values. We pledge to be good stewards of the resources entrusted to us by the State of North Dakota.

Our strategic plan for 2021-2026 (https://www.ndsu.edu/strategicplan/) establishes overall goals in the areas of Diversity, Inclusion and Respect; Student Success and Achievement; Research and Creative Activities; Education, Extension and Outreach; and Resource Planning and Development. Departments will assess their progress on goals and sub-goals on a regular basis to ensure that we advance our land-grant ideals through innovative education, research, and outreach.

Education 1.b.i.

As shown in the Appendix *"Top 20 Hard-to-Fill Jobs Requiring a Bachelor's Degree in North Dakota Over the Past 12 Months*" on page 73, NDSU offers degree programs in 19 of the top 20 Hard-to-Fill Jobs (November 2020 – October 2021). Occupations in very high or high demand include, for example, Software Developer/Engineer, Registered Nurse, Sales Representative, Business Development/Sales Manager, Cyber/Information Security Engineer/Analyst, and Civil Engineer. Moreover, we have significantly increased the number of bachelor's degrees awarded over the past 10 years in high need areas such as Computer Science, Economics, Business Administration, Computer Engineering, Finance, Marketing and Nursing (page 79).

Additionally, we offer degree programs in 18 of the top 20 Hard-to-Fill Jobs Requiring a Master's Degree (page 74) and 12 out of 20 requiring a Doctoral Degree (page 75) over this same time-span. We also provide pathways to 45 of the 50 Hard to Fill jobs in the state (page 76); for example, our BS in Health Sciences is a pathway to becoming an Administrator in Health Care.

NDSU will strive to meet workforce development needs in the state over the next six years. We will regularly review and implement recommendations by entities such as the North Dakota Workforce Development Council (https://www.workforce.nd.gov/uploads/8/WDCReportFINAL2018.pdf) whose 2018 Strategic Plan focused on expansion of the health care workforce which will drive the expansion of our programs in Nursing, Allied Sciences, Public Health, Dietetics, Athletic Training and other health-related areas. We will also develop and expand more diverse career explorations of career opportunities for youth (for example, through our STEM camps) and desire to restore North Dakota Governor's School on our campus.

Recruitment of out-of-state students is important because our 2020 Career Outcomes Report indicated that 78% of NDSU graduates stayed in the state post-graduation. The top employers for all degree types includes Sanford Health, Doosan Bobcat, Fargo Public Schools, Aldevron, Essentia Health, John Deere, Bell Bank, Collins Aerospace, AgCountry Farm Credit Services, Applied Engineering, Inc, Eide Bailly, LLP, Open Systems International, Inc. (OSI) and United Health Group.

NDSU leaders are active in, for example, the Fueling our Future Initiative through the Fargo Moorhead West Fargo Chamber of Commerce and the Greater Fargo/Moorhead Economic Development Corporation. We are expanding our efforts in entrepreneurship, including a proposed Center for Entrepreneurship and Family Business, and continue efforts to prepare our students to work in areas such as international business, agriculture, education and public policy.

NDSU's Career and Advising Center (https://career-advising.ndsu.edu/) provides current students with tools to explore labor market opportunities and pathways and will make efforts to expand internship opportunities. A platform that will also allow prospective students to explore careers opportunities is being vetted. Moreover, increasing diversity amongst the number of types of employers who participate in our Career Fairs and On-campus Recruiting is a priority. The 2020 Career Outcomes Report documents an 88% success rate for recent graduates who are employed or continuing their education, with a 95% success rate for those who completed a graduate degree; we will strive to sustain these very high career success rates for our graduates and alumni. NDSU has been, and will continue to be, responsive to meeting regional workforce needs.

Research 1.b.ii.

This section of the Master Plan provides a broad overview of research and creativities at NDSU with supplemental information available in the appendices.

Research and creative activities are integral components of the job descriptions for many people at NDSU. For example, in 2021, NDSU had 807 faculty with 518 in tenured or tenure-track positions and 289 instructors, lecturers, and part-time academics. Tenured and tenure-track faculty have a designated percentage of time in their workloads dedicated to research and creative activities, although the percentages vary. Other faculty may or may not have workload expectations related to research or creative activities. Campus also has technicians, post-docs, graduate and undergraduate students who support the research mission.

Funded Research. There were 812 funded projects in research and creative activities in 2022. A list of these awards is provided in an appendix on page 82. This work includes a wide-range of areas including, but not limited to the following:

- Plant breeding and pathology (wheat, soybeans, barley, oats, sugar- beets, potatoes, etc.)
- Microbiome nutrient efficiency
- Production and precision agriculture
- Animal nutrition
- Soil health and reclamation, snow-pack monitoring, water quality, wildlife habitat
- Polymers and coatings, green energy, nanotechnology
- Medical research related to Cancer, Alzheimer's Disease, Cardiovascular Diseases, Diabetes, Obesity, Kidney Diseases and Respiratory Diseases
- Drug Discovery, Pharmacology and Drug Delivery
- Cell Biology and Physiology, Environmental Adaptation, Biological Education Research
- Large Data Analysis and Data Science, Nonparametric Statistics, Time Series Analysis and Bayesian Statistics
- Visual and Cognitive Neuroscience, Health, Social/Personality and Developmental Psychology
- Cultural Competence
- Strategic Communication, Disaster Science and Risk Management
- Architecture, Landscape Architecture, Interior Design, Visual Arts, and Graphic Design
- Educational pedagogy and outcomes, comparative education, common metrics, access and equity
- Politics, public policy, policing and incarceration
- Nutrition, physical activity and health outcomes, indigenous food systems
- Successful aging and child abuse prevention, influence of interpersonal connections on health and development across the lifespan
- Accounting quality and consequences of misconduct, sales, digital marketing, entrepreneurship and social entrepreneurship

Also included in the Appendix on pages 80 and 81 is a working draft listing faculty research interests related to tech hubs and the digital economy. The NDUS Chancellor, the Vice Presidents for Research and Creative Activity at UND and NDSU, and others in rural mid-western states are working together to position our institutions for potential federal funding in this area.

As we look to the future, research at NDSU will continue to focus on solving complex and compelling problems to meet societal needs. The National Science Foundation uses the term

"convergence science" to frame the interdisciplinary work that is needed to catalyze innovation and discovery to address these challenges. NDSU is well-positioned to continue and expand our research in critical areas such as crop production, material science, pharmaceutical science, protecting human health, and understanding the food, energy and water nexus.

Research and creative activities in each academic college are briefly summarized below:

Agriculture, Food Systems and Natural Resources
The College of Agriculture, Food Systems and Natural Resources conducts research in plant breeding, plant pathology, soil science, agronomy, food security, animal-human bond, livestock production, and precision agriculture.

Arts, Humanities and Social Sciences
The College of AHSS has three primary areas of research that encompasses areas of culture, social issues, and design. The Center for Social Science Research is dedicated to serving the state and region with research in health, social science, and economic impacts.

The major research areas in Social Sciences are strategic communication, policing and incarceration, public policy, politics, social health, and disaster science and risk management. In the Humanities, the primary research areas are rhetoric, literacy, and professional writing, English literature and culture, American history, public history, business and health, ethics, religion, Spanish language, culture, and education to support workforce needs in K-12 education, global businesses and agricultural communication, cultural values, pre-law pathways, written development, and communication.

The Division of Performing Arts (including the Challey School of Music and Department of Theatre Arts) engages in research and creative activity that develops and enhances artistic individual expression and performance by actors and performing musicians, the design and technical expression for the stage.

Within the School of Design, Architecture and Art, primary areas of research include design focusing on architecture, landscape architecture, and graphic design; performing arts that includes music education in K-12 and theater production; visual arts including community and public art and K-12 art education. Architecture engages in research focused on means and methods to improve the built environment for current and future residents of North Dakota and beyond. Landscape Architecture is conducting research related to The Historic Land Use and Land Management implemented by Native Nations and National Parks, and Interactive Curriculum Assessment. The Visual Arts program supports research and creative activities in the areas of Art Education, Graphic Design, Studio Arts.

Business
Research in the College of Business addresses a variety of areas such as organizational behavior, social networks and interpersonal conflict; entrepreneurial well-being, social entrepreneurship, serial entrepreneurs and entrepreneurial experiences; sales, distribution and digital marketing; competition, buyer-supplier relationships, business capabilities and firm innovation; public transit and mobility services in rural and small urban areas; the role of policy in enhancing economic development; the use of information and communication technologies by microfinance organizations to expand their outreach; real-estate investment decisions; corporate social responsibility, the drivers of human flourishing, connected and autonomous vehicles, the intersection of technology, transportation and security, as well as many other topics. There is a more complete overview of the College of Business in the Appendix on page 82.

Engineering
Research on bio-based materials, energy, artificial intelligence, cybersecurity, and autonomous systems is conducted in the College of Engineering. Sustainable energy infrastructure, bio-based polymers and coatings and additive manufacturing, high performance concrete, power grids and structures for noninvasive cancer detection are a few of the areas of focus in the past few years.

Research related to technology and the digital economy in Engineering, Computer Science and other areas are highlighted on pages 80 and 81. Many of the funded research projects mentioned previously are in the College of Engineering.

Graduate and Interdisciplinary Studies
The College of Graduate and Interdisciplinary Studies (CGIS) supports all graduate students and programs at NDSU in a variety of ways. Interdisciplinary programs in which graduate students and faculty conduct research at the intersection of disciplines are also housed in the CGIS. Many of the world's most complex problems will be solved through interdisciplinary work that fosters discovery.

NDSU offers interdisciplinary programs in the following areas of study:

- Cellular and Molecular Biology
- Environmental and Conservation Sciences
- Genomics and Bioinformatics
- Materials and Nanotechnology
- Natural Resources Management
- STEM Education
- College Teaching Certificate

Health Professions
Within the College of Health Professions, Improvement of Patient Outcomes through Advancement and Collaboration in Pharmacy Research is the major focus of the Department of Pharmacy Practice.

The faculty and graduate students in the Department of Pharmaceutical Sciences are engaged in research in the natural and biological sciences. Primary research areas of the faculty include drug discovery, pharmacology, drug delivery and pharmacokinetics for Alzheimer's disease, cancer, cardiovascular diseases, diabetes, obesity, kidney diseases and respiratory diseases.

The School of Nursing is focused on applied research including documenting the Voices of American Indian Nurses; research related to tobacco prevention and control; survivorship of loss by suicide, the assessment of cultural competence among healthcare professionals, and programs such as Stop the Bleed Training which empowers North Dakota rural communities to manage traumatic injuries. The Spirit Lake Community Assessment project focuses on Elder Victims' Needs.

Research in the College of Health Professions is highlighted on page 81, which provides a more comprehensive overview of their work.

Human Sciences and Education

Research in the College of Human Sciences and Education focuses on improving health and human performance, individual and family relationships and well-being, educational outcomes and equity, and advancing life quality and economic well-being by addressing personal, societal, and global needs in the near environment.

Examples of research related to health and human performance include nutrition and chronic disease prevention, macronutrients for health aging, pediatric nutrition and community health, exercise physiology and biomechanics, orthopedic evaluation, frailty and aging, school-wide physical activity, whole child approaches and coaching, sport marketing and finance, and sport for development and peace.

In the area of individual and family relationships, research is conducted on parenting, fatherhood, healthy marriages, family stress, rural families, grief and bereavement, identify development in emerging adults, student load debt, gender equity in higher education, social relationships and well-being across the life span, peer affiliation patterns, age related differences and changes in cognitive and functional abilities and aging in place. In the area of Counselor Education and Supervision, research includes the study of marginalized counselor identities, intimate partner violence, substance abuse counseling, college drinking and substance abuse, shame and shame resilience, and spirituality and religion in counseling.

Educational outcomes and equity are studied through projects on institutional effectiveness, indigenous theory and methodology, learning theory, school transformation, college student learning and development, social and political contexts in schools, collegiate residential environments and outcomes, and research experiences for secondary teachers.

Studies of the near environment include designing inclusive websites for people with disabilities, community event participation, turnover intention in the hospitality industry, use of social media by small fashion design retailers, determinants of downtown image and retail patronage, aging in place, evidence-based design and interior design assessment processes.

Science and Mathematics

Coatings and green energy, cancer research, and nanotechnology are the leading areas of research in the College of Science and Mathematics. Environmental Adaptation, research in Biology Education and Cell Biology and Physiology are also prominent.

The Statistics program has five primary research areas including Large Data Analysis and Data Science (Computational Statistics, Statistical Machine Learning, Data Mining), Nonparametric Statistics, Statistical Analysis of Gene Expression, Time Series and change-point problem, and Bayesian Statistics.

Visual and Cognitive Neuroscience or how various types of information are processed in the brain is a focus in the Psychology Department as are Health Psychology—effects of stress, sleep, and other psychological factors on physical health; Social/Personality Psychology—individual personality processes and group interactions; and Developmental Psychology—cognitive, social, and neuropsychological processes related to growth and maturation over the life span.

Research activities in the Department of Physics are centered on two broad areas: materials physics and physics education research. Within materials physics, faculty focus specifically on properties of biomaterials and nanomaterials.

Please see the APPENDIX for additional information regarding the following sections:			
1.b.i.	Education	Appendix	Page 34
1.b.ii.	Research	Appendix	Page 80
1.b.iv.	Public Service	Appendix	Page 102

SECTION 2: PLANNING ASSUMPTIONS & DRIVERS

MASTER PLAN PREPARATION 2.a.

NDSU Master Plan Stakeholders (2021)

NDSU President's Cabinet

Provost: Dr. Margaret Fitzgerald, Melissa Lamp, Phil Hunt, J.D., Emily Berg

Finance & Administration: Bruce Bollinger, Gina Haugen, Joshua Schroetter

Facilities Management: Michael Ellingson, Brent Dekrey

Agriculture Affairs: Dr. Greg Lardy, David Ruhland

STRATEGIC PLANNING CONFORMANCE 2.b.

NDSU's Strategic Plan for 2021-2026 is titled *Our Future: Innovation, Outreach and Education*
https://www.ndsu.edu/fileadmin/strategicplan/Strategic_Plan_3-12-21.pdf

As shown in the table below, NDSU's strategic plan is built on five overarching goals related to: 1) Diversity, Inclusivity, and Respect; 2) Student Success and Achievement; 3) Research and Creative Activities; 4) Education, Extension and Outreach; and 5) Resource Planning and Development. The NDSU community prioritizes and values diversity and inclusion. We take collective responsibility for ensuring a sense of belonging, respect, and justice that supports each person's success. We have embraced the vision to lead the advancement of our land-grant ideals through innovative education, research and outreach. The keystone to the success of the NDSU strategic plan is our commitment to shared governance, transparency, responsible decision-making and a sustainable future. The strategic plan is based on our core values of collegiality, inclusivity, community, creativity, excellence, impact, innovation, integrity, resilience, responsiveness, and transformation.

Diversity, Inclusivity and Respect Create and maintain an open and collegial environment to promote inclusivity and diversity as a cornerstone of education, research and outreach.	**Student Success and Achievement** Provide transformational experiences for students from diverse backgrounds through high-quality education and opportunities for personal and professional development.
Research and Creative Activities Advance NDSU's stature as a nationally and internationally recognized research university, engage in transformative research and creative activity, and increase the quality and quantity of scholarly activities to generate new insights and knowledge that will benefit the state and address central challenges of our global future.	**Education, Extension and Outreach** Provide innovative, student-centered education and conduct transformative research that impacts the state through meaningful outreach.
Resource Planning and Development Support and enhance innovation and excellence through strategic investments in sustainable infrastructure.	

The strategic plan has inspired actions in a variety of ways. For example:

The President's Council on Diversity, Inclusion and Respect was created to ensure that NDSU strives to improve the university climate for students, faculty, staff and all stakeholders, with additional consideration of underrepresented groups as evidenced by regular assessment. Thus far, we are in the process of completing a student equity audit and campus climate surveys which will inform our work through 2026. It is possible that we will need to expand staffing or redesign space in areas such as the Office of Multicultural Programs, Admissions, Veterans Services, and the Counseling Center to strengthen our services to diverse audiences.

NDSU has continued investment in a centralized and coordinated care platform called Navigate that identifies at-risk students, integrates advising services, and increases accessibility to advisors and other support offices. In the future we will be exploring whether a platform that integrates the functions of Navigate is available in a format that can "talk to" the platform we use in Registration and Records for course scheduling and degree mapping to streamline these functions and better serve students. An RFP will be created for implementation in FY23.

A newly formed Retention Committee is focusing on implementing and evaluating high impact practices to increase retention and graduation rates. Moreover, an examination of the curriculum through Curricular Analytics to interrogate the academic program curriculum and reduce curricular barriers to student success while upholding academic rigor will be launched beginning Spring Semester, 2022.

NDSU has again achieved the Carnegie Classification of R1 "Doctoral University: Very High Research Activity" in recognition of our accomplishments in Research and Creative Activity. Investments to sustain this high level of productivity will be needed in areas such as core laboratory facilities, equipment, faculty start-up packages, graduate assistantships and the like, throughout the duration of our strategic plan.

Current and Projected Enrollment. 2.b.i.

	Current Enrollment Category – Fall 2021	2.b.i.(1)
(a)	Headcount	12,461
(b)	FTE	10,861
(c)	FT Student Headcount	10,024
(d)	PT Student Headcount	2,437
(e)	On-Campus Face-to-Face Student Headcount [1]	9,781
(f)	Students Enrolled at NDSU (but also attending another institution)	351
(g)	Students Attending NDSU (but enrolled in an NDSU class from another institution)	117

[1] Previously labeled as "Full-time, On-campus student headcount"

Projected Enrollment	2.b.i.(2)
Fall 2023	12,557
Fall 2025	12,629
Fall 2027	12,624

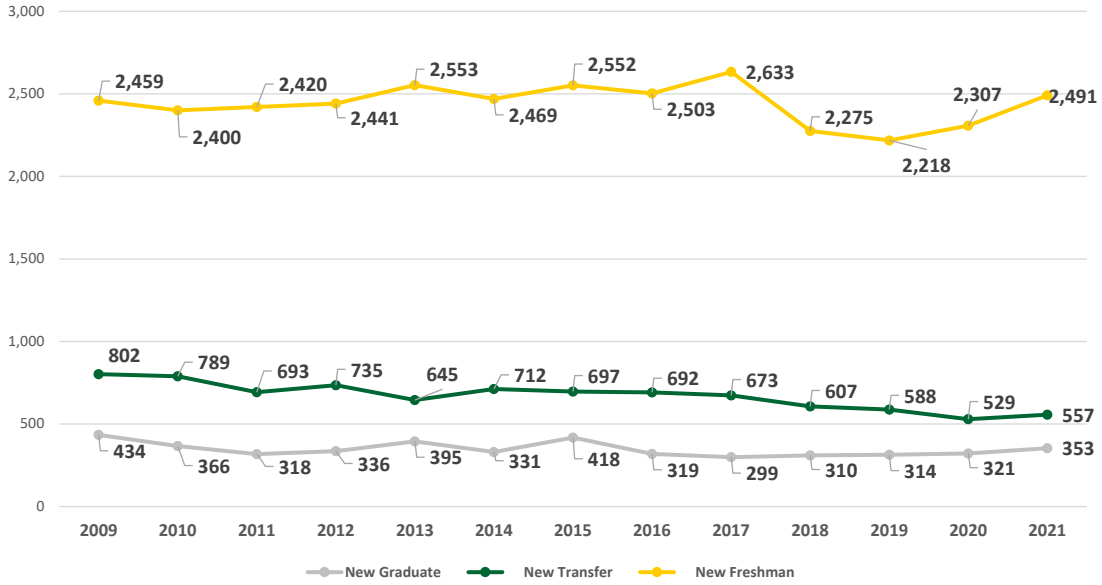
Current Enrollment: Due to changing demographics, increased graduation rates, and increasingly competitive market conditions, along with a worldwide pandemic affecting enrollments nationwide, enrollment at NDSU has fallen since 2015. Changes in recruitment tactics, infusion of private scholarship support due to a successful capital campaign, and alignment of academic programs to meet current and future workforce demands will lead to a stabilization in enrollment beginning in fall of 2023 and holding steady through fall of 2027. These strategies, combined with a renewed focus on retention and student success, poise NDSU to remain a campus of choice for both in-state and out-of-state undergraduate and graduate students seeking a highly interactive and mostly in-person student experience, although we do plan to expand efforts in on-line and hy-flex delivery in some disciplines to serve, for example, place-bound students, working professionals, and students in our degree-completion program.

The table on the next page illustrates enrollment over time and the current trajectory for growth explained above.

Projected Enrollment: Based on a statistical forecast performed by the Office of Institutional Research and Analysis, overall headcount is expected to stabilize by fall of 2023 with a predicted enrollment of 12,557 compared to 12,461 in fall of 2021. We expect enrollments of 12,629 in fall of 2025 and 12,624 in fall of 2027. These predictions assume an incoming class of 2,400 undergraduate students per year, graduate enrollment of 1,950 per year, professional student enrollment of 305 students per year, and steady retention and graduation rates. Anticipated increases in enrollment are expected as a result of the following: the size of the high school graduating classes in ND, expansion of dual-credit offerings in areas not served by the NDUS two-year institutions, expansion of the degree completion program, and additional efforts to serve working professionals needing advanced degrees or credentialing.

The web-site for the NDSU Office of Institutional Research and Analysis provides student data dashboards in the areas of admission, enrollment, race ethnicity, degrees awarded, graduation rates and retention rates: https://www.ndsu.edu/oira/dashboards/

NDSU New Student Enrollment



International students are included.

Current and Projected Sponsored Project Research Expenditures (2023, 2025 and 2027) 2.b.ii.

Function Code	Function Description	2020-2021 Actuals	2022-2023 Projections	2024-2025 Projections	2026-2027 Projections
11	General Academic Instruction	$ 1,711,756.53	$ 1,745,991.66	$ 1,780,911.49	$ 1,816,529.72
21	Community Service	$ 24,584,083.21	$ 25,075,764.87	$ 25,577,280.17	$ 26,088,825.78
31	Institutional Research	$ 83,505,043.26	$ 85,175,144.13	$ 86,878,647.01	$ 88,616,219.95
33	EPSCoR	$ 12,554,250.98	$ 12,805,336.00	$ 13,061,442.72	$ 13,322,671.57
51	Student Services	$ 1,488,213.75	$ 1,517,978.03	$ 1,548,337.59	$ 1,579,304.34
71	Physical Plant	$ (803.86)	$ (819.94)	$ (836.34)	$ (853.06)
81	Scholarships and Fellowships	$ 21,957,700.35	$ 22,396,854.36	$ 22,844,791.44	$ 23,301,687.27
92	Other Unexpended Plant Funds	$ -	$ -	$ -	$ -
		$ 145,800,244.22	$ 148,716,249.10	$ 151,690,574.09	$ 154,724,385.57

Current/Projected Outreach & Training Program; Future Academic Program Enrollment; Research Area Growth

2.b.iii. 2.b.iv; 2.b.v.

This portion of the plan outlines areas where we expect to see changes in enrollment and research over the next six years. The impacts of such changes will also be discussed in Section 2.b.vi. and Section 3 on Facility and Physical Infrastructure Goals – Six Year Outlook. In addition to outlining key initiatives in each of the academic colleges, information pertaining to the services needed in support of these efforts is provided. The first part of this section focuses on enrollment and research growth in the academic colleges, followed by a brief discussion of needs in the Career and Advising Center, TRIO, Veterans Services, Student Health Services, the NDSU Counseling Center, One Stop, the Office of Teaching and Learning, the Office of Multicultural Programs and the Equity Office.

COLLEGE OF AGRICULTURE, FOOD SYSTEMS, AND NATURAL RESOURCES (CAFSNR)

Enrollment in CAFSNR is expected to increase from the current 1,236 to over 1,500 in the next three to five years. Food Systems and Security and Healthy Communities are foci of the NDSU strategic plan; we expect graduate and undergraduate enrollment to increase across agricultural fields due to this emphasis. The College needs adequate space to conduct research in the plant breeding, plant pathology, soil science, agronomy, food security, animal-human bond, livestock production, and precision agriculture programs. These activities require up-to-date labs that have access to clean water, improved HVAC, and adequate space both for teaching and research. In addition, modern shop space is necessary for the precision agriculture research and teaching program. We also expect continued growth and interest in the animal-human bond and livestock production research and teaching programs. The current facilities are outdated, antiquated, lack adequate space and are in dire need of infrastructure upgrades that will necessitate extremely expensive deferred maintenance.

COLLEGE OF ARTS, HUMANITIES AND SOCIAL SCIENCES (CAHSS)

The college expects enrollment growth in Architecture, Landscape Architecture, Criminal Justice, Communication, Emergency Management, Visual Arts, and Performing Arts. Job growth for employers requiring a bachelor's degree is strong in most areas. Our programs offer North Dakota students unparalleled access to a world-class education taught by nationally recognized faculty. Arts, Humanities, and Social Science graduate programs are a key metric for Carnegie classification, and our faculty provide a high level of research output.

NDSU has the only architecture and landscape architecture programs in North Dakota. The inclusion of the visual arts department into the College's new School of Design, Architecture and Art helps position NDSU as a destination for design and art education. All three departments have had significant undergraduate and graduate enrollment increases the past four years. This increased student demand will necessitate additional space.

The Challey School of Music's current performance venues, rehearsal space, and teaching labs are inadequate to student demand, especially for Music Education's undergraduate, graduate, and Ph.D. degrees. We have one of the few remaining Music Education Programs in the region, and our program has National recognition. Current theater spaces have outdated infrastructure, equipment, and amenities. The School anticipates the need to remodel existing facilities and an addition to provide faculty and graduate student offices, rehearsal spaces, and back-of-house space.

COLLEGE OF BUSINESS (COB)

In the spring of 2021, NDSU worked with Huron Consulting to identify opportunities for strategic prioritization. The consultants indicated opportunities for growth in the COB through three initiatives: the development of an online undergraduate program in Marketing, expanding credentialing opportunities in the undergraduate Finance degree, and the development of Accelerated (4+1) and remote MBA options.

The College is pursuing these efforts aggressively and expects significant growth in all three areas over the next six years. In order to be effective, these initiatives will require additional space for faculty, ongoing support for subscriptions and maintenance of the Barry Hall finance-related facilities, and a specialized classroom for delivering engaging MBA courses in a remote format.

Supply chain management is one of the areas most severely impacted by the COVID-19 pandemic, highlighting an industry need for more professionals who are prepared to meet the supply chain challenges of the future. In order to respond to this need, the College of Business has recently introduced a supply chain management undergraduate major. Burning Glass indicated that there have been 8,377 regional job postings for supply chain positions in the last 12 months, roughly half of which are in the areas of operations management, procurement, and supply chain analysis. There are a variety of positions available within this sector, and the number of available positions is expected to continue to grow over the next 10 years. The average salary for supply chain professionals in our region is $64,990—well above the living wage for the area. There is only one other bachelor's degree program in supply chain management in our region, Metropolitan State University, which is not accredited. Given the potential job prospects, it is reasonable to assume that we could begin the major with 20 students, and grow the enrollment to 100 within a few years.

COLLEGE OF ENGINEERING (COE)

There is a pressing need for more engineers in the state of North Dakota. The December 2021 Burning Glass report shows over 8,400 job postings in North Dakota that College of Engineering graduates can fill, and openings in those areas are projected to grow 7% over the next decade. NDSU is the major supplier of engineers, computer scientists, and construction professionals in North Dakota, producing 70% of the graduates in the state in 2021. In addition to keeping North Dakota students in the state, hundreds of College of Engineering graduates from out of state take their first job in North Dakota, helping the state

fill some of its critical workforce need. North Dakota needs the College of Engineering to produce more graduates, and the quality of our facilities is hindering our ability to attract students who are also looking at other regional engineering programs that offer more modern and innovative learning environments. As the state's flagship engineering school and a net importer of workers, NDSU is uniquely positioned to meet North Dakota's growing workforce need. However, meeting the shortfall will require additional capital investment to attract students. The current College of Engineering facilities were designed to accommodate less than half the current student, faculty, and staff population, and the quantity and quality of space present ongoing operational challenges.

In response to North Dakota's workforce needs, the College of Engineering has added new academic programs in environmental engineering, robotics, and biomedical engineering, and expanded curricular offerings in energy, cybersecurity, biomaterials, and software engineering. However, student-faculty ratios in the College of Engineering are high, and our facilities are sub-par relative to competing engineering programs. Without an investment in people and facilities, we will not realize the anticipated enrollment growth in these high-demand areas.

Since 2017, the College has seen an over 25% increase in Ph.D. enrollment and a nearly threefold increase in new research awards and contracts. Due to our strategic investment in growing areas like biobased materials, energy, artificial intelligence, cybersecurity, and autonomous systems, we have the potential to significantly increase this rate of growth if space limitations can be addressed. Our ability to recruit, hire, and retain top faculty and research staff is threatened by the limitations of our current facilities. Through necessity, many spaces are inappropriately used for multiple purposes. A research lab is often also used for graduate student offices, teaching space for undergraduates, and student project workspace. This practice has been a concern in accreditation reviews. Insufficient and antiquated laboratory space could also become a barrier to retaining Carnegie R1 status because of this detrimental effect on faculty recruitment, retention, and research production. Building a new Engineering and Computer Science Facility on campus is critical to recruiting and retaining students, faculty and staff to NDSU.

COLLEGE OF HEALTH PROFESSIONS (CHP)

During the Spring 2020 semester, the College of Health Professions moved into the new $28 million Aldevron Tower. The new facility allows all of the College's health professions programs to be housed in a single location. It also includes state-of-the-art, inter-professional clinical laboratories and experiential learning spaces to allow for program growth. As the College utilizes these spaces, additional program growth opportunities can be pursued. They include increasing enrollment in our nursing programs by developing an accelerated nursing program in Fargo with a target enrollment of 24 students per year.

There are also growth opportunities with the online RN-BSN program which serves North Dakota nurses who need to upgrade their credentials to provide a higher level of nursing care. Through collaboration with North Dakota State College of Science and Williston State College, NDSU plans to increase student enrollment of the online RN to BSN nursing program from 24 to 50 per year. We also plan to increase student enrollment of the online LPN to BSN nursing program from 32 to 48 per year.

The Department of Pharmaceutical Sciences has successfully competed for prestigious R01 and COBRE research grants. Successfully competing for these grants requires animal experiment models. We plan to expand the animal core facility to facilitate sustained and enhanced success in competing for R01 and COBRE research grants.

The Department of Public Health plans to develop and implement a Ph.D. program in epidemiology and the Department of Pharmacy Practice launched a new Center for Collaboration and Advancement in Pharmacy to expand its clinical research, outreach, and engagement capacities.

The Department of Allied Sciences plans to further expand its partnership with Sanford in Fargo by adding five-to-ten new respiratory care students. It also plans to work with Sanford Health in Bismarck to facilitate radiography, echocardiography, and medical sonography coursework as well as internships (10-15 new students).

To facilitate greater clinical experiences for our faculty and students, we would like to build a full-service health clinic on or near campus staffed by faculty and students to serve the needs of NDSU employees and the north Fargo community, possibly in collaboration with our NDSU Student Health Service and/or an existing healthcare system. This would also provide opportunities for expanding the College's outreach mission across the state in addressing the critical healthcare workforce shortage, providing valuable health information, health education, and access to healthcare experts to remote medically underserved rural communities via telehealth/telepharmacy consultations with NDSU health experts.

COLLEGE OF HUMAN SCIENCES AND EDUCATION (CHSE)

The School of Education is proposing an elementary education degree program to meet the needs of the Fargo-Moorhead Metro area, the state of ND and the region. The SOE currently houses a high-quality secondary education program and several graduate degrees and is seeking to expand the number of students served through graduate education. For example, the popular master's in education in educational leadership is delivered on campus (hybrid) as well as in cooperation with school districts across ND, where faculty travel to deliver the program. The School of Education also houses a CACREP accredited counseling masters and doctoral program designed to help meet the critical shortage of mental health professionals in the state.

In order to be more responsive to student demand and increase enrollment, programs in Apparel, Retailing, Merchandising and Design, and Hospitality and Tourism Management are converting several courses to an online format, and are exploring ways to combine programs to create offerings that will attract more students and meet changing workforce needs to facilitate growth. The Interior Design program is growing, and we

anticipate studio space capacity challenges in accommodating these numbers.

The Department of Human Development and Family Science expects to attract more students through its online offerings and the dual-degree programs in elementary education with Valley City State University (VCSU) and social work with Minot State University (MiSU) remain highly popular, with enrollments constrained only by accreditation and licensing requirements.

The Athletic Training Strategic Alliance recently decided that the minimum professional degree level will be a master's, and the change will be fully implemented nationally in 2026. While current undergraduate Athletic Training programs at other institutions need to go through a transition into or development of a new mater's level program, the Master of Athletic Training (MATrg) program at NDSU is already well established and highly regarded in the Athletic Training profession. Mayville State University (MaSU) is adding a Bachelor of Science in Allied Health degree. Preliminary conversations have occurred with MaSU faculty regarding a potential partnership as a "feeder program" and clinical site for the MATrg program. Additionally, the Exercise Science and Rehabilitative Studies program at VCSU and MATrg program at NDSU are currently working on the memorandum of agreement to offer an accelerated program. The successful development of this agreement will increase an enrollment in the MATrg program. The program also seeks to expand enrollment from external recruitment and working cooperatively with our undergraduate program in Exercise Science which is a logical and direct major to prepare undergraduate students for a graduate program in Athletic Training.

The Sport Management program is currently working on a program assessment plan to fulfill requirements for accreditation by the Commission on Sport Management. Successful accreditation of this program will help with the development of a professional blended Master's Degree Program in Sport Management within the next five years. Currently, students are not provided an option to further their Sport Management education here at NDSU. This has been addressed as a point of concern among Sport Management students and faculty, who both agree that an option to continue their education would entice them to remain at NDSU for at least two more years.

The Dietetics program has changed its current program concentration from Gerontology to Sport Nutrition to accommodate growing interests and demands by the Dietetics students and graduate students in the Exercise Science and Nutrition master's and doctoral programs. The new program concentration is highly marketable, thus helping with student recruitment for an accelerated BS/MS DEP program as well as Exercise Science and Nutrition master's and doctoral programs in the Department of Health, Nutrition, and Exercise Sciences (HNES). Dietetics faculty are also exploring ideas on possible collaborative program option offerings between undergraduate Dietetics and Exercise Science programs or between undergraduate Dietetics program and the Master's program in Athletic Training. This collaborative option would provide innovative and unique program nationally, and should draw many prospective students in all three programs. It is our understanding that there is no such combined program in the nation. Lastly, dietetics faculty are currently working on the articulation agreement with Bismarck State College to increase in transfer students to the dietetics program at NDSU. Continued efforts in articulation agreements with community colleges and regional universities will help with program enrollment and growth.

Physical education has been identified as a teaching shortage area in ND, which presents potential for further growth. Moreover, the online Leadership in Physical Education and Sport (LPES) graduate program has increased program capacity from 20 to 32 in 2020 and again to 40 in 2021.

Various researchers have been active in cross-sectional and intervention related research in trying to mitigate the impacts of health-related conditions. Research in physical activity and nutrition intervention contribute to the expanding knowledge of what must be done to keep our society healthy and functioning optimally. Growth will continue in exercise science and nutrition research as the need grows to understand the influence of physical inactivity and poor eating habits on various health outcomes (e.g., blood pressure, obesity, type II diabetes, etc.) and how these health conditions will impact all populations, from children to aging adults. Research is also needed to better understand ways to optimize human performance, for example in reducing falls and increasing strength in aging individuals and reducing injuries amongst high-performing athletes.

COLLEGE OF SCIENCE AND MATHEMATICS (CSM)

The College of Science and Mathematics provides coursework and conducts research that are critical in supporting NDSU's emphasis on STEM (Science, Technology, Engineering and Mathematics) and generating increased enrollment in STEM-related majors. Moreover, the college expects enrollment in required general education courses to track NDSU overall enrollment. For example, students in nursing, pharmacy, engineering, education, health sciences areas are required to take a number of the courses taught by the College of Science and Mathematics.

The College expects to see continued increases in enrollment in psychology and biological sciences programs and is working to create renewed interest in lower enrolled programs due through more intentional recruiting methods, updates to those programs to address workforce needs and increased enrollment in accelerated and 4+1 master's programs.

COLLEGE OF GRADUATE AND INTERDISCIPLINARY STUDIES (CGIS)

Convergence science and research area growth. Convergence science was identified by the NSF in 2016 as an area for investment and research area growth. "Convergence research is a means of solving vexing research problems, in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation." Several NDSU Ph.D. programs already exist which have potential for research area growth around convergence science, and include six interdisciplinary STEM Ph.D. programs that are housed in the Graduate School. Still others are in the pipeline. Food insecurity

and sustainable materials are two examples of tracks in the new NSF Convergence Accelerator RFP that NDSU is poised to respond to.

By intentionally bringing together diverse researchers and graduate students to frame the questions, we can begin to identify future areas of research growth. Being proactive also provides opportunities for reinvigorating existing interdisciplinary programs, especially those with enrollment capacity. In addition, focusing on convergence science and advertising the graduate programs that support convergence science will help to attract excellent students and increase graduate enrollment. Prospective graduate students are interested in crosscutting research. The job opportunities are enormous.

Supporting Research Growth. NDSU is a Carnegie Commission top tier research institution and graduate students (and postdocs) are the workforce for the research. In alignment with the growth in research, the need for graduate students in research-intensive programs has also grown. Such growth in research-focused graduate education, combined with the opportunities revealed by a recent climate survey, necessitates corresponding changes in the number and types of services provided to our graduate students and our graduate faculty. Commitment to these needs is vital in order for ALL graduate students, not just those in research-intensive fields, to persist to graduation and excel in their professional fields. Opportunities for students to engage in meaningful mentoring relationships, receive ongoing and critical feedback, and 'integrate their individual identities with those of their academic units' are vital to their academic and professional success. Developing a graduate culture on campus pays other dividends (particularly as we have increasingly pivoted to a virtual environment). As outlined in the Chronicle of Higher Education (May 2021), cultivating a sense of belonging results in a perception of support from peers and faculty, increases classroom comfort, and empathy.

NDSU has numerous existing resources for building graduate culture and community. But a dedicated space is needed for connecting graduate students to these important resources and taking full advantage of the community building opportunities. If we can identify/re-purpose a space for a 'Grad Hub,'' we can intentionally connect graduate students and graduate faculty to important resources and build community. Indeed, many Graduate Schools have identified a similar need and there are now many successful examples, from around the country, of dedicated spaces that are used by Graduate Schools to build (and support) graduate community and culture.

Given the current budget situation, it will require creative solutions. The One-Stop in the Student Union helps graduate students get information about student accounts and financial aid; One-Stop would complement the proposed Grad Hub for connecting graduate students to resources and building graduate community. Our Graduate Professional Skills Academy (GPS), Center for Writers (CFW), and the dedicated graduate study room in the library are existing, smaller hubs that could be used as building blocks for a future Grad Hub.

The academic programs and colleges at NDSU are supported by several departments, which are in need of improvements to their physical spaces or infrastructure as outlined below:

- **TRIO Student Support Services (SSS), TRIO Upward Bound (UB) Programs, and Veterans Educational Training (VET) programs** are located in spaces needing major renovation and remodeling including HVAC improvements. Their current space on third and fourth floors of Ceres Hall lacks a centralized reception area making navigation of the area confusing for students. The space has never been fully renovated since construction in 1910 and retains much of the original knob and tube wiring, push button switches, doors/hardware and HVAC. Wiring added more than a decade ago still runs open along the ceiling in the hallway, and the floors in many offices are severely slanted. Flooring from the 1950's is still in use in the stairwell between the floors and is badly worn. Offices rely on window air conditioning units which are loud, making student interaction difficult. Additionally, the fourth floor lacks access to an elevator making it inaccessible for students with some physical disabilities. TRIO SSS is a federally funded program that provides free services such as mentoring, tutoring, and financial support to first generation, low income students and those with disabilities. TRIO UB is a federally funded program that seeks to prepare high school students who are low-income, first generation to be college ready. VET is a state funded program to assist veterans in beginning or continuing their post-secondary education.

- A **Degree Completion Program** was initiated in the spring of 2020 to provide a fast track to a degree for students who have some college, but no degree. The program is aimed at students who have been out of college for a minimum of 2 years, have previously earned a minimum of 60 credits, and have a 2.0 minimum GPA. The program has averaged 25 students per semester since its inception and growth is expected due to recently acquired private scholarship support. We are excited about the program's ability to help meet regional workforce demand for employees with bachelor's degrees. Needs for the program include additional scholarship support and additional online course offerings to increase access for working professionals.

- Mental and physical health needs of college students are rising and outpacing current staffing and facilities. Long-term plans include a collaboration with the College of Health Professions to construct an **integrated Student Health Service, Counseling Center and clinical practice clinic**. The facility would require a minimum of 30,000 square feet and could be added adjacent to the existing Aldevron Tower. This collaborative center would allow expansion of highly-successful existing student services in a centralized and highly visible location on campus. Additionally, the co-located facility would allow for practice opportunities for faculty and students in the College of Health Professions.

- **Dual credit opportunities** exist for NDSU to teach on-line/hybrid options for high school students in niche areas such as education, computer science and music. These

offerings will help meet the needs of rural North Dakota high schools unable to provide these course options to students. Efforts are underway to create appropriate courses and connections with many high schools through the NDSU Office of Teaching and Learning. Staffing and resources will be needed to ensure college instructors tailor their courses to this high school audience to facilitate positive learning outcomes and liaise with the administrators and students in the districts for seamless registration and grade recording, as well as to answer questions and provide support to students.

- Investments in an enterprise level artificial intelligence system (also known as a chatbot) is needed in the near future to maintain NDSU's responsiveness to prospective and current students. Chatbots are becoming commonplace on higher education websites and are designed to answer low level student questions, providing 24-hour access all year long, even during university closures. These Chatbots are trained to provide basic information to answer common questions that take up limited staff time while also providing referral to a live person at the appropriate juncture.

- **NDSU's One Stop** service center has been in place since 2007 and serves as a centralized service center to provide students and visitors with information on student accounts, financial aid, scholarships, tuition, bill payments, registration and student records maintenance. The center is set up in a "bank teller" style which works well to facilitate most short-term transactions but is not well-suited to longer, more confidential discussions about students' private financial matters. The back office set up is cramped and prone to distraction due to the close nature of 5 office cubicles, and staff who could all be on the phones at any given time. In addition, the current air handling system does not allow for temperature control of this space and it is often hot and uncomfortable for staff. A remodel of the current space is needed to mitigate the noise/distraction, allow for temperature control and also provide for a small, private meeting space suited for a staff member to have private conversations with a student and their family members. This could be done without adding square footage to the current space and redesigning the mostly unused area of the existing footprint.

- The **Office of Multicultural Programs** is lacking space to house employees funded on grant projects. Additional staff are also needed to meet the goals of our strategic plan. If additional permanent staff are hired in the future to support programming efforts, larger or redesigned spaces would be needed. Moreover, areas of our Equity Office are in need of repair, for example, the carpet is worn or torn in several places. Likewise, space for the Career and Advising Center is limited and some spaces are not suitable for the functions they serve.

Facility / Physical Infrastructure Components Insufficient / Inadequate to Support Current Functions of NDSU 2.b.vi.

NDSU faces significant limitations, in both facilities and infrastructure, in supporting its teaching, outreach and research missions. Many of these concerns are outlined elsewhere in the document. Here, we provide some examples:

- Provide a first-class 21st century education for learners of all ages and backgrounds that render them career-ready and prepared for a lifetime of learning and change. NDSU needs to increase the use of innovative instructional methods and delivery options for career-ready students. A university-wide infrastructure and support for cutting-edge technology and digital tools is required to meet the needs for education, research, and outreach.

- Support and enhance innovation and excellence through strategic investments in sustainable infrastructure. NDSU's backbone is the people, places, processes, technology, and financial resources that make up our infrastructure. Developing and implementing an institution-wide strategy for technology, data, and information use that improves student education and experiences, enhances research capabilities and supports organizational decision-making will allow us to remain resilient and responsive as global events, changes in higher education, and technology evolves.

- Twenty-first century research is heavily reliant on technology in a way that was not envisioned when most spaces on the NDSU campus were built. Many buildings on the NDSU campus are 50 years or older and do not have adequate electrical or HVAC to meet the requirements of modern laboratories. In particular, some buildings lack the infrastructure necessary to correctly operate fume hoods, which are a basic safety element in labs that use chemicals and other potentially toxic materials.

- Tenured and tenure-track faculty are expected to complete research projects that receive national and international recognition. Such recognition is evidence that the research is high-quality and addresses important problems. In the sciences, this research requires laboratory space; the size of a lab varies with the type of research. Currently, there are tenured and tenure-track faculty who either lack adequate space or have access to no appropriate research space. Hiring in some fields, including biology, has been delayed due to lack of space. This delay in hiring has also affected our ability to teach biology courses with best-practice pedagogies.

- For NDSU to maintain its position as a research university, it must be a leader in graduate education. NDSU's strategic plan calls for expansion of graduate education in focused areas of strength. For NDSU, this entails expanding graduate enrollment in agriculture, the sciences, and the health professions. Due to their role on campus, graduate students require office space in order to fulfill their employment responsibilities. At most universities, graduate students share office space. However, even this arrangement is not possible for many departments at NDSU. Some graduate students have "offices" in active labs, in classrooms, in computer labs used by undergraduates or in hallways. This space issue limits growth in graduate enrollment.

- Over the past several decades, research activity, along with teaching laboratory needs, at NDSU has grown, but the physical space devoted to each has not kept pace with that growth. As a result, research is being inappropriately conducted in spaces that would best be used for undergraduate teaching. Combining such activities into one space creates safety issues, and serves neither use well. In addition, the overcrowded spaces prevent purchasing state-of-the-art equipment for students to use.

- Space needs on campus have changed over time, with storage still lacking. While the campus has allowed mechanical rooms to be used for a short period, these cases have increased and the short periods have become permanent. The storage materials become a fire hazard, create code issues and create maintenance challenges.

Network 'Core' Infrastructure

Current Overview: NDSU-IT currently has in place an advanced Enterprise Class architecture and technology that supports the business, educational and advanced research activities of the university. In general, the network core is architected and provisioned using modern technology and sophisticated management practices to minimize complexity, while at the same time, providing high quality network services, broad access and outreach for authenticated clients/users affiliated with the university and the university system.

Strategic Planning: We believe that the university's reliance on the resources and services NDSU-IT provides will continue to grow and expand as network capable, non-computing, devices become fully integrated into all aspects of campus. With more and more mission critical systems, applications and devices being deployed, NDSU-IT will continue to advance leading edge technologies to ensure a reliable, scalable and secure networking environment, thus providing a competitive advantage as a leading research institution.

- Continue to evolve and enhance internal network monitoring and management automation

- Migrate non-life safety analog and digital phones to SIP/VoIP network-based phones by 2024

- Continue to improve network reliability through implementation of high availability and fail-over infrastructure

- Anticipate and increase network throughput proactively to address network utilization demands

- Investigate and position the network infrastructure for future generations of cellular and WiFi wireless technologies as they emerge and evolve

- Establish a periodic cost baseline for network equipment refreshes 2023

- Expand WiFi capabilities and capacities to continue to meet the rapidly growing use and deployment of networked devices

High Level Goal: Safety and Security Infrastructure including Video Surveillance and Card Access

Safety and security technology continues to evolve and as these changes occur, NDSU evaluates the advances in technology in order to incorporate those which are consistent with its safety and security vision. Also, planning for technology obsolescence and replacement is vital to ensuring services are available 24/7 and fully reliable to meet campus life and safety and security needs.

These various systems are monitored and controlled from the 24/7 University Police Communications Call Center.

NDSU maintains a philosophy of securing the envelope of its buildings through a system which incorporates fully integrated and centralized electronic door access and video surveillance. That philosophy is used when evaluating locations for infrastructure improvement related to life safety and security. There are a number of building envelope locations that have yet to be brought online in accordance with this vision and those areas will be a focus point. Common areas of high student traffic are locations where life safety and security resources are also focused.

Standard Level of Maintenance – NDSU 2.c.i.

Mechanical / Electrical	Standard	Justification
Fire Alarms	Update all outdated panels in the next 15 years and schedule to replace panels based on the industry standard of 25 years or as technology changes.	Fire alarms are a life/health/safety issue and having addressable systems that are reliable and up-to-date is critical to the mission of the campus.
Electrical Systems	Replace main switch gear and controls every 30-40 years; replace interior wiring with any major renovation every 40-50 years. Updated receptacles as codes change.	Outdated electrical systems create a high risk for fire and personal safety. Electrical malfunctions can cause many other failures including that of valuable equipment, disruption of class activities and irreparable loss of research. The mission of the campus cannot be completed without a reliable electrical system.
Lighting	Replace lighting every 30-40 years. Upgrade to LED as we replace them.	LED lighting saves on energy usage while also providing better light output. Fluorescent lamps and ballasts must be properly handled and disposed of, so switching to LED eliminates this issue.
Generators	Replace every 20-30 years	Generators are used for three purposes: emergency services (lighting, fire alarm, fire pump, etc.), back-up power for critical equipment, and load shedding. All three functions are crucial to the mission of the University. Industry standards show a generator typically lasts about 20-30 years.
Water and Waste/ Vent Piping	Replace all cast iron piping every 30-40 years; replace all PVC piping every 60-70 years	Broken and failed waste piping causes odor, health, and mold problems over the years. Troubleshooting these problems is labor intensive and, in some cases, it can be expensive to make repairs. Depending on the surrounding materials, the liquid leaks can have detrimental effects that exponentially increase the damage costs.
Sprinkler Systems	Design into new construction, review with major renovations, install in residence life facilities	When major renovations are planned, the installation of sprinklers will be standard. Most of the older buildings on campus are not sprinkled, including many residence life buildings.
Central Boilers	Replace water tube boilers after 40-50 years. Replace coal boilers within the next 5-10 years.	NDSU's heating plant has four boilers. If the largest boiler (new in 2015) is not operating, the other three boilers need to run at the same time during winter conditions. We are at the point that both coal boilers are beyond their useful life and need to be replaced. We will be looking at future growth and redundancy.
Fume Hoods	Replace every 15-20 years	Fume hoods are required to keep occupants safe while they work with hazardous materials. Once the controls start failing or the parts wear, the hoods do not properly contain the fumes. This can lead to fumes entering the lab space, creating a risk to more than just the person working at the hood. Old fume hoods are also energy inefficient compared to new models.
Heat Exchanger	ASHRAE standard of replacement every 25 years	Heat exchangers convert steam to hot water to heat our buildings. If the shell or tube fails, we are left with the potential of the building freezing. Heat exchangers are also used to provide domestic hot water for the buildings and follow the same standards.
Elevators	Replace elevator controls and components every 20 years	Properly operating elevators are a necessity for the function of a multilevel building. Older elevators with reliability problems create stress and disorder when individuals get stranded inside.
Interior	**Standard**	**Justification**
Flooring	Replace in high traffic areas every 8-10 years; in offices every 15-25 years; in other areas every 10-30 years Epoxy flooring: Resurface every 20 years on labs with minimal chemicals and 10 years for chemical labs	Snow, rain, dirt, sand, de-icing chemicals, salt and other elements are tracked into buildings and are embedded into carpets, increasing the susceptibility to allergens and other health related problems. Frayed and bubbling carpeting can cause a tripping hazard. The goal of NDSU is to attract and retain students, faculty and staff; a worn out looking facility is contrary to that objective. Epoxy flooring is the primary flooring for labs. Rubber flooring, concrete and VCT are other product choices but the room/facility use and the stakeholders will help determine the product. Proper flooring is important for safety and also recruitment reasons.
Paint	Paint classrooms and laboratories every 10-15 years; offices every 15-20 years; corridors every 8-10 years.	A pleasant looking facility is one of the best recruitment and retention options available to a campus. Paint is one of the least expensive maintenance items to perform.
Ceilings	Replace lay-in ceilings every 30 years	Ceiling grid starts to yellow or rust over time, diffusers begin to look old, and lights need replacement. We will update ceilings as projects come up and funding allows.

Building Enclosure	Standard	Justification
Exterior Doors	Replace exterior doors with aluminum - replacement every 25 years	Properly operating exteriors doors are important for security but also preventing outside conditions from entering the building.
Roofs	Replace EDPM roofs every 20-25 years; standing seam metal roofs every 50-75 years	Visual inspections will be completed yearly and conditions will be reviewed. Keeping a tight building envelope should be a priority of any organization and roofs are one of the central areas in that category. Postponing replacement until numerous leaks appear not only increases costs but can also create unhealthy environments, such as moldy conditions, that the campus doesn't want.
Windows	Replace every 20-30 years	Keeping a tight building envelope should be a priority of any organization and windows fit into this category. Windows that have lost their glass are inefficient and increase the utilities cost for a campus. Moisture conditions will develop with older windows and can affect other things in a room, including the air quality.
Tuckpointing	Spot check/minor repair every 10 years; major repairs every 40-50 years.	Keeping a tight building envelope should be a priority of any organization and tuckpointing fits into this category. Improper mortar joints allow moisture to penetrate to the inside of the building, generally behind walls. This creates a high probability for mold and interior finish damage. Preventing mold conditions helps to preserve both physical and human assets and is a priority of the campus.
Other	**Standard**	**Justification**
Asbestos	Remove all asbestos in the renovated/ project zone. Goal is to have all asbestos removed within 40 years.	Multiple mobilizations and containment work of asbestos materials greatly increases costs to the campus and the state. The ability of the campus trades groups to perform their work efficiently and safely is hampered when having to work around asbestos. Any maintenance activity within the vicinity of asbestos increases the chances of disturbing the material and creating an unhealthy risk for our employees and contractors. In many instances, work has to be halted or postponed until the situation can remedied.
Classroom Seating	Replace movable seating every 15 years and fixed seating every 20 years.	It is important that the campus has seating that is structurally sound and fits the ergonomic needs of the students. Waiting until failure generally results in a safety incident and is something that we want to avoid.
ADA	Continue to improve ADA on campus.	With half of the buildings on campus being 50 years old or older, some do not meet the various implemented ADA codes. In some cases, the improvement is well beyond financially what we can reasonably do without a renovation project. Areas we have worked on include elevators, bathrooms and power door operators but there is still more that can be done. In any major renovation, it is a requirement to meet the ADA standards.
Parking Lots	Concrete parking lots are our standard. Replacement is every 25-35 years.	Concrete parking lots have a longer life cycle cost over asphalt. The soils conditions and climate we have are more conducive for concrete, which and requires less maintenance over the life of the material.
Research Labs	Proper laboratory configuration, adequate ventilation and infrastructure for activity	Many of the research laboratories need to be separate from general student studies. This is a high priority. There are some cases where faculty have offices inside labs, actually requiring students to enter an environment that can be unsafe for them if they need to visit with the faculty. As research activities have grown, the infrastructure has not always kept up with the lab needs and this practice can jeopardize the ability to secure more grants and have successful research. Lastly, a large portion of the labs require much more equipment than the buildings were designed for and the HVAC needs to be upgraded to help insure research results are reliable.
Faculty Offices	One faculty per office, with the office safely accessible.	Due to FERPA, all faculty need a single office. This office shall be accessible from a corridor or common space.
Graduate Student Offices	General space of 45-75 square feet outside of the lab	In too many situations, graduate students do not have a dedicated space for their office work and are left to sit in the middle of experiments in labs. Graduate students do not need individual offices and can occupy a variety of arrangements but we need to locate them in safe areas/conditions and not in active laboratories or even in public spaces like open computer labs.
Demolition		Many things will be need to be considered when decommissioning a building other than just total deferred maintenance. Structural considerations, space efficiency, ADA accessibility, location, building age and materials, replacement costs, historical value and displacement options are some of the items for the evaluation process. Possible buildings that are being reviewed include Ag and Bio Engineering (ABEN) and Engineering Administration.

General Facility / Physical Infrastructure Component Maintenance - Priority Listing		2.c.ii
Item	**Category**	**Justification**
HVAC Systems	Health, Teaching, Research	HVAC systems are necessary to maintain building air quality to prevent occupants from getting sick. This has become re-emphasized over the past 2 years with COVID. We need to have reliable equipment that can provide the best quality possible. The equipment keeps the temperature comfortable to allow for efficient learning and work. HVAC systems keep equipment from failing in computer clusters, IT closets, and telecom rooms. This equipment also prevents pipes from freezing in the winter.
Fire Alarms	Life Safety	Test and maintain the current fire alarm systems. Some buildings do not have a fire alarm system, so we need to add one. We also need to replace aging systems that no longer work well or that consistently cause problems.
Generators	Life Safety, Teaching, Research	Must be maintained to provide emergency power to buildings, full redundancy to research buildings, and to meet our Xcel Energy contract. The Xcel Energy contract allows us to reduce our energy rate by allowing Xcel to transfer our building (Loftsgard, R1, R2, and Renaissance) load to generators. The research buildings need full redundancy to keep fume hoods operating and occupants safe.
Electrical Systems	Life Safety, Teaching, Research	Replace aging switchgear, particularly where parts are difficult to find. We cannot have a main electrical gear problem that would cause a building to lose power for an extended time. Main switchgear and panels need to be added to keep up with current classroom trends and research. For example, more cooling is needed in older buildings because computers have been added that weren't planned for when buildings were originally constructed.
Underground Telecommunications Infrastructure	Life Safety, Teaching, Research	NDSU currently operates and maintains a diverse and well-structured telecommunications underground distribution architecture. It is a composite of fiber optics, category 3 twisted pair, CATV hardline and various hybrid cable types in support of advance data networking and telecommunication systems, video communications, environmental monitoring systems and an array of security applications. Maintenance and repair continues to be an increasing issue with plant age. As well, physical security, location and documentation requirement continue to increase. The underground infrastructure is vital for fire alarm communication. As funding and projects allow, we are switching this communication over to fiber for better reliability.
Telecommunications	Life Safety, Teaching, Research	NDSU's centralized telecommunications technologies continue to provide the latest generation Voice over Internet Protocol (VoIP) and unified communications with geographically redundant enterprise survivability. In addition to the main campus, the centralized and integrated systems provide fully transparent services to several remote locations including sites in Wahpeton, Dickinson and Bismarck. Leveraging the North Dakota state network, and NDSU's robust Unified Communications environment, these initiatives realize the efficiency and convenience benefits of providing centralized enterprise voice services and 5-digit VoIP dialing between NDSU remote sites and other University System campuses.
Steam Distribution	Life Safety, Teaching, Research, Underground Infrastructure	The steam distribution system, which resides in tunnels, is physically inspected each month. Large areas of the campus have had the piping replaced, but areas of pipe requiring updating still remain. The system remains extraordinarily essential to the viability of the campus. Without steam generation and subsequent distribution, we would have substantial property loss, if buildings froze due to no heat. We would also have problems in food service preparation, due to our steam being food grade and used in the Dining Centers on campus. We are continuing to update the tunnels to provide for proper piping inspection and structural reliability.
Heating Plant	Life Safety, Teaching, Research	The heating plant is another essential function of the campus. Without steam generation for distribution, we would be exposed to the same risks explained above. While investment has been made into the facility and its components, the reality is we lack adequate coal unloading facilities and our two coal boilers, while being constantly maintained and upgraded, are going to need replacement in the next 5 –10 years simply due to their age.
Building Envelope	Windows, Doors, Tuckpointing, Insulation, etc.	Maintaining the building envelope ensures that the building interior is not needlessly damaged by moisture leaking into the structure. Water leaking into a building over time can cause structural and mold issues. Minimizing heating and cooling transfer through the building envelope is important for reducing the need for space heating and cooling, ensuring maximum energy efficiency.

Water/Sewer	Underground Infrastructure	Underground utilities are very important to the operation of a building. Timely replacement of pipes ensures that the University operations continue without delays and costly emergency repairs. Replacement of corroded water pipes maintains sufficient water flow with less pumping needed and less leakage into the soil. Properly maintained sewage piping keeps ground water out of the pipes in high water events preventing sewer backup issues and makes sure the sewage does not leak contaminating nearby soil.

Anticipated Building / Fire Code / Statutory Changes Which Will Require Immediate Updates or Changes to Facilities or Physical Infrastructure 2.c.iii.

NDSU must continue to work on replacing, upgrading and expanding its fire alarm systems. As the systems age, they no longer meet current codes. Progress has been made on improving fire alarm panel communication and replacing outdated fire alarm panels but this activity must be planned and scheduled due to the quantity of buildings on campus.

With half of NDSU's buildings over 50 years of age, ADA challenges will continue to be addressed as they need attention.

NDSU is not aware of any code changes that will require immediate attention at this time. Any new codes will be followed at the time a major renovation takes place.

LIFE SAFETY / RISK ASSESSMENT CONCERNS / PROJECTIONS 2.d

Potential Life / Safety / Security Conditions 2.d.i.

NDSU has greatly improved lab space on campus over the past few years; however, overcrowded labs and a lack of workspace remains a reality for many departments. Through necessity, many spaces are inappropriately used for multiple purposes. For example, a research lab is often also used for graduate student offices, a teaching space for undergraduates, and a student project workspace. Whether it is manufacturing students welding or engineering students working with various mechanical or electrical equipment, inadequate lab space poses a safety risk. These spaces should be separated.

We have two coal boilers in our Heating Plant that need replacement, as both are approaching their end of life. During winter operations, we need reliable boilers for not only for heating but also research activities. This is a risk to students living on campus as well as infrastructure located within buildings.

One of the fundamental requirements of any building is a properly operating HVAC system. This has been amplified over the past several years due to COVID. We have used emergency funding to improve air quality where we can, but there are limits on labor and materials that have restricted what we can get done. Also, the growth of research and undergraduate activities has led to quick decisions on adding equipment, such as fume hoods, to labs. Without adequate fresh air, fume hoods will draw fumes from other areas that negatively affect the air quality of the building.

Priority Order of Life Safety / Risk Assessment Concerns / Projections 2.d.ii.

1. Add and upgrade fire alarms
2. Improved exterior lighting for visibility and camera performance
3. Expanded video surveillance system
4. Card access security upgrades
5. Add and upgrade fire suppression
6. Add building generators
7. Replace coal boilers
8. Expand campus emergency phones

Potential Needs Required Due to Codification or Statue Changes 2.d.iii.

There are not any codes that we believe will have a large impact on NDSU at this time.

SECTION 3: FACILITY & PHYSICAL INFRASTRUCTURE PRIORITY GOALS (SIX-YEAR OUTLOOK)

PROGRAM & ENROLLMENT DRIVEN NEEDS (PED) 3.a.

PED 1 **Agronomic, Pathology and Soil Field Labs.** Agriculture is a multi-billion dollar industry that directly aligns with NDSU's mission as a land grant research university. Various buildings throughout campus house existing Agronomic, Pathology and Soils Field Labs that were built in the 1950's and 1960's. Research and the amount of lab space needed have increased – in some cases tenfold – since then, but the necessary infrastructure has not kept pace with the growth. Dramatic transformations in research and testing have also taken place during this time. In order to continue the progress, proper air handling/ventilation, infrastructure to support new technology and equipment, proper environmental conditions, adequate lab space and storage, along with additional space, are all needed to conduct vital research to assist producers and businesses, especially in areas such as increased crop production and viability. The effective and timely transfer of research-generated knowledge and technology to the agricultural industry and the larger scientific and public sectors benefits the state, the nation and the world, along with providing greater opportunities for graduate students.

In addition, the current facilities and infrastructure in several areas related to Agriculture, Food Systems and Natural Resources are in dire need of upgrades and expansion. Research activities in Plant Breeding, Plant Pathology, Soil Science, Food Security, Animal-Human Bond, Livestock Production and Precision Agriculture lack adequate space to support critical activities.

PED 2 **College of Engineering.** As the state's flagship engineering school and a net importer of workers, NDSU is uniquely positioned to meet North Dakota's growing workforce needs. However, meeting the shortfall will require additional capital investment to attract students. The existing Engineering complex was developed in the mid-1960s and supported approximately 1,050 students with a focus primarily on undergraduate teaching. Since that time, student enrollment has increased to more than 2,600 and the college's mission has expanded to include new academic programs, curricular offerings, and an extensive research enterprise that annually brings in millions of dollars to the state from external grants and contracts. This growth has come with only minor expansions and renovations to the physical facilities, further impairing the College's student-to-faculty ratio and also its per student assignable square footage. Today's senior Engineering students are also required to complete a Capstone project but for some students, limited or non-existent workspace hampers meeting this academic requirement. The quantity and quality of teaching and research space presents continuing challenges for students, faculty, and industry needs, inhibits enrollment growth, and limits research program expansion.

PED 3 **Update venues for Performing Arts.** The current performance venues, rehearsal spaces, and teaching labs for Performing Arts were all designed more than 50 years ago for a goal of 45 to 60 undergraduate majors. Today, there are almost 160 undergraduate and graduate majors, nearly four times the original estimated number. As an example, the Gold Star Marching Band and similar groups lack spaces large enough to accommodate their rehearsal needs so they must find other suitable (and available) areas. The enrollment growth has also limited adequate practice spaces for individual student or small group performances. Students' ability to reach their academic goals is impeded by training in places not designed with proper acoustics, and merely converting them will not resolve these issues. In addition, current theater and other performance spaces have outdated infrastructure, equipment, and amenities. The existing accommodations are inadequate to meet the student demands of a premier and nationally recognized arts program.

PED 4 **Create additional space for research labs.** NDSU has again been designated as an R1 "Doctoral University: Very High Research Activity" research institution by the Carnegie Classification of Institutions of Higher Education. Carnegie's R1 distinction is its highest classification and is presented to only the top research institutions in the country. NDSU is one of only three universities in the six-state region to be designated as R1, along with the University of Minnesota and Montana State University.

Research funding is critical to NDSU and the State of North Dakota, as a whole. Research labs are vital components when applying for grant funding; however, NDSU is limited in the quantity of labs spaces and the infrastructure necessary for research activities. Researchers cope by sharing both research areas and teaching spaces in the same environment. This combination is ineffective, inefficient and, in many cases, unsafe. For on-going and future research, it is important that the campus re-purpose non-efficient/ other spaces or create additional labs in new facilities, with proper infrastructure items being a key component. The opportunity for more undergraduate and graduate students also grows with increasing research.

PED 5 **Student Success Support Services.** Today's students have more choices than ever for seeking educational opportunities, and competition for these students is at an all-time high. NDSU continues to review its support functions and other student services for best practices. In recent years, NDSU merged the Career Center and the Advising Resource Center into one function, the Career and Advising Center (CAC), thereby eliminating the need for students to visit multiple areas. However, this and other support spaces can lack proper workflow, prominent locations, or even accessibility, which are all critical student expection factors. As another example, NDSU welcomes private employers to visit campus, allowing students to meet with employers in a familiar and convenient on-campus location. This new concept requires spaces that provide quiet and private meeting areas not originally designed into our buildings.

PED 6 **Co-locate faculty in related areas.** The NDSU School of Education is currently divided across three buildings, which is inefficient and frequently confusing for those attempting to locate its faculty and staff. It is also in the process of seeking to add an elementary education degree to its academic portfolio, which will require additional teaching, classroom and office space. A single facility is needed that includes dedicated space to house the School's personnel and would allow it to transform educational and counselor preparation to better meet the current needs of the state and region. This facility would ideally be developed with a lab school in partnership with the Fargo Public Schools to simultaneously prepare teachers, administrators, and school counselors, as well as provide facilities to prepare counselors for tele-mental health and other emerging needs.

PED 7 **Expansion of educational opportunities in health-related professions and research.** According to the U.S. Bureau of Labor Statistics, demand for health-related majors in the state and region, as well as the earnings they garner, remain extremely strong. To meet our program enrollment and research goals in these areas, two ideas have surfaced to assist in achieving these needs. The first is a substantial expansion of the animal core facility to facilitate sustained and enhanced success for several disciplines, including Pharmaceutical Sciences, Biological Sciences, Microbiology, and other fields, in competing for R01 and COBRE research grants.

The second idea is to combine or create a clinical practice facility/health clinic. This facility will expand our ability to offer advanced clinical education opportunities for students, provide valuable practice opportunities for our faculty while sharing their health expertise with the community and state, and provide greatly needed health care services to underserved communities in north Fargo, as well as to remote underserved rural communities in North Dakota using telehealth/telepharmacy. NDSU has more than 20 years of experience in delivering telehealth/telepharmacy services and research to remote medically underserved rural communities across the state and nation. Such a facility may also allow the NDSU Student Health Center to be situated in the same location, providing interdisciplinary professional opportunities for disciplines such as Nursing, Public Health, Allied Sciences Dietetics, Exercise Science and Athletic Training.

PED 8 **Housing**: NDSU needs to keep residence halls and apartments in top condition to recruit new students and to keep current students on campus. Students seeking post-secondary education look for campuses with modern facilities, which includes updated residence halls and apartments as one of their priorities, since the campus will be “home” during their stay. NDSU will continue to update facilities with the goal of providing students with an excellent on-campus experience.

PED 9 **Dining:** NDSU has learned that even with up-to-date dining facilities, students’ needs and expectations change, requiring Dining to be fluid in this changing environment. Technology and flexibility are two recent key examples that have led to a more positive student experience. NDSU will continue to review Dining’s program, spaces and student needs for any future modifications.

PED 10 **Student Activities:** Another campus retention and recruiting tool is engaging current and prospective students in campus activities. Whether activities are held in the Wellness Center or on campus grounds, keeping facilities up to date is important. If new activities are desired by students, NDSU needs to be flexible and find ways to provide them.

PED 11 **Athletics:** Athletes must train and condition 12 months out of the year to be competitive in Division 1 sports and that requires year-round accessible and functional facilities. While NDSU has been very successful in its various athletic programs, the ability to adapt to an ever-changing environment is vital to that continued success. Adequate indoor training space is needed for more than 400 athletes at NDSU. Even outdoor surfaces, such as turf, are becoming increasingly critical for programs, not only for recruitment but also for safer playing spaces.

DEFERRED MAINTENANCE PRIORITY REPAIRS (DMP) 3.b.

The list below provides a sample of different repair projects being considered by the campus; however, it is NOT in priority order. Bidding climate, contractor availability, condition changes from now until the funds are available, programmatic and changing campus needs will be factors on which projects rise to the top of the priority list. Included is a **Building Condition Report** *showing the average rating has improved from 2.012 in 2016 to a 1.83 currently. NDSU is using its funding wisely to improve the conditions of the buildings on campus*

DMP 1 **Renovate Residence Halls:** Our high-rise Residence Halls need renovation and repairs. The piping, HVAC, and electrical systems are beyond their useful life and are starting to cause issues. The elevators need replacement as well. As we go through the buildings, asbestos will be abated, accessibility will be improved, and we will update finishes.

DMP 2 **Roofs:** We need to continually work on replacing roofs that develop leaks and are beyond their useful life.

DMP 3 **Mechanical System Upgrades:** Close to half of the buildings on campus are 50 years old or older and the life expectancies of their mechanical systems are less than that. Many of these HVAC systems were not designed for the current lab (and even classroom) activities performed within those facilities. HVAC related health concerns are driving factors to correct these systems, with an increased need due to COVID. More and/or larger ductwork is needed to accommodate the ventilation issues. In addition, fall time periods are warmer and supplementary cooling is needed for the number of students we have in the buildings. As a few examples, Van Es, Stevens Hall, and Ceres are high priority buildings for upgraded mechanical systems.

DMP 4 **Windows Replacement:** Single pane windows are still in use in many buildings. They should be replaced not only to reduce uncomfortable temperature conditions but to also reduce increased utility costs in inefficient buildings. Old windows can have water infiltration and condensation issues. Replacing them cuts down on mold and rotting wood.

DMP 5 **Heating Plant Boilers:** The heating plant has four boilers, one of which was replaced in December 2015. The two coal boilers are beyond their useful life and one of the boilers has tube leaks. Various auxiliary equipment will need to be replaced and the tubes that are plugged should also be replaced. Continued tube fails have required the plant to reduce the capacity of the boiler to mitigate the failures, which results in running more boilers at particular loads. These boilers need replacement to maintain heat for the campus.

DMP 6 **Plumbing:** Plumbing systems are needed for nearly every function of our campus - labs, classrooms, and bathrooms are a few of the areas where running water and waste piping are required. There are huge impacts if a system fails. We have piping around campus that is beyond its useful life according to industry standards. We need to replace bad piping and drain piping that does not slope the correct way and ensure pipes are sized correctly for future additions/buildings. In addition, our research facilities need specialty water systems that require advanced controls and must be extremely reliable.

DMP 7 **Fire Alarms:** Some of the building fire alarms do not meet current codes because they are unreliable and the replacement parts are obsolete. The campus will be able to replace some of these fire alarms in the next six years without a major renovation. However, other fire alarm and system replacements will be very invasive and will need to be included as a part of other renovation/ replacement projects.

DMP 8 **Water/Sewer:** The majority of NDSU's water and sewer lines are original and some are close to 100 years old. Over the last few years, unexpected failures have occurred that have resulted in some damaged research and interrupted classes and labs. These unplanned outages cost extra money. There have also been leaks in Residence Halls that have been repaired, but the piping systems need replacement. The priority will be to replace the main lines first. Many of the branch lines can be replaced at a later date.

DMP 9 **Tuckpointing:** With an aging building infrastructure on campus, it is important to maintain a good building envelope and tuck pointing is one component. The masonry is in good shape on some of the buildings but for others, the amount of work is more extensive. NDSU will continue to work at reducing this deferred maintenance item over the next six years.

DMP 10 **Exterior Doors:** Properly operating exterior doors in good shape are not only essential for the security of the building but also aid in keeping the elements outside. Many of the older building doors are made of steel that tends to rust. The campus is replacing with them with aluminum doors. In addition, a nice-looking door makes a positive impression as a recruitment tool.

DMP 11 **Maintain and Upgrade Network Infrastructure:** (underground copper, fiber and coax plant) Upgrade network media layer as appropriate to enable the use of advance networking architectures. Develop and improve the data-carrying capacity and capabilities of the telecommunications infrastructure by increasing the campus backbone bandwidth by 400% by 2028. Develop channels across the university to assess and promote new technologies and advance the network infrastructure meeting those emerging needs. Further prepare the network infrastructure for wider deployment of digital learning (expanding network access), and improve internal monitoring and diagnostic functionality for all network activity.

DMP 12 **Parking Lots:** Parking lots are essential for students, staff, faculty and customers to park their vehicles. Well maintained lots help with recruitment, allow for more efficient snow removal and reduce overall maintenance liability risks. Updating the lighting at the same time as improving the lots not only reduces energy consumption but also improves the light levels and safety.

DMP 13 **Maintain and Expand Existing Wi-Fi Systems:** Continue to develop and deploy mobile (Wi-Fi) systems and solutions as well as capacity and coverage planning.

DMP 14 **Upgrade Classroom Technologies:** Continue to deploy state-of-the-art scale up solutions to enable the use of new teaching technologies as they are developed in the future.

DMP 15 **Upgrade and Expand Voice over Internet Protocol (VoIP):** Voice over Internet Protocol (VoIP) and unified communications with geographically redundant enterprise survivability for the Main Campus and several offsite entities across the state.

DMP 16 **Softball Field Complex:** Many updates have been done to the softball complex, but an indoor practice facility, ticket booth, concessions, and working bathrooms facilities are still needed.

DMP 17 **Housing:** University Village was initially constructed in 1969 to provide additional housing for the increase in married students on campus. The apartments contain a living room, kitchen, bathroom and bedroom(s) but lack a laundry room within each building. They also have a need for the privacy, amenities, space, and storage today's students seek in apartment-style living on campus. The current apartments lack accessibility because the two-bedroom units are two story townhouses and the one-bedroom units are located on three levels. All units are primarily concrete block construction so overall insulation is low. None of the existing buildings have improved safety features such as card access, exterior surveillance, or sprinkler systems. Original telecommunication wiring does not meet current standards and no affordable solution exists to provide campus Internet connectivity. Finally, some buildings have foundation concerns that would require significant investment to correct. Demand for campus apartments remains high. The need to demolish and replace these apartments is more cost effective than attempting repairs.

DMP 18 **Structural Evaluations:** Before buildings are renovated, consideration will be given to sight evaluations for any structural shifting, cracking walls, deteriorated footings or any other visual components to insure the structural integrity of the facilities.

DMP 19 **Accessibility:** Student accessibility needs have increased but many of the campus buildings were built before the ADA regulations went into effect. Campus accessibility improvements, including bathrooms, classrooms, offices, entrances, elevator upgrades, etc., will continue as funds are available.

DMP 20 **Sidewalks:** Sidewalks are the main path of pedestrian traffic on campus. The clay soils here and the various North Dakota weather patterns tend to shift or crack concrete materials. In addition, the older sidewalks did not incorporate NDSU's current standard for rebar and are inclined to shift in elevation, causing tripping hazards. Keeping sidewalks safe is a priority.

DMP 21 **Classroom Seating:** Safe, durable, and comfortable seating is a necessity for student learning and retention. Over time, NDSU has learned that some products don't last long and need replacement to avoid students from getting hurt from the seating.

DMP 22 **Maintain Existing NDSU Data Centers:** Formulate techniques to take advantage of three disparate NDSU data centers to provision additional redundancy, backup and growth.

DMP 23 **Athletic Facilities:** Surfaces, such as a track, softball field, soccer practice area, etc., not only need to be in top condition for athletes' safety but also to serve as a recruiting tool for students or for enlisting other colleges to visit and play here. It is important that the public/spectators have a practical space to observe and enjoy the activities, too. Updates and improvements to the Dacotah Field complex will be needed to keep the facility in top condition.

DMP 24 **Facilities Management:** Multiple buildings containing Facilities Management staff and equipment are aging and need major work or replacement. The quonset buildings that house our carpentry and grounds crews are beyond their useful life and need replacement. Plumbing, HVAC, and electrical is extremely limited or non-existent. Indoor space to store and work on equipment is necessary during our cold months. Adequate facility space is critical for Facilities Management to maintain campus and keep up with department needs and requests.

LIFE / SAFETY / SECURITY (LSS) PRIORITY NEEDS 3.c.

Due to the age and condition of the campus buildings and infrastructure, Life/Safety/Security issues are spread throughout the campus and are not specific to only one area or building.

LSS 1 **College of Engineering:** CIE, CME, Dolve and EE all have labs with research activities that are commingled with undergraduate studies that should be in a separate space. These conditions increase the risks to students but can also result in negative impacts on the research. Many of the labs are also overcrowded, which is not what the students expect from NDSU and the State of ND.

LSS 2 **Sprinkler Systems in Buildings:** For the safety of occupants and preservation of campus buildings, NDSU will add sprinkler systems to buildings as budgets and projects allow.

LSS 3 **Exterior Lighting:** Exterior lighting is important to campus safety for students, employees and even the public. We will continue to improve lighting in parking lots and on buildings as funding as projects allow.

LSS 4 **Card Access:** Exterior card access entry on NDSU buildings is a priority and a safety necessity. We will continue to add card access on entry doors as funding and projects allow.

LSS 5 **Video Surveillance:** It is a priority to expand our video surveillance system across the campus and to have the surveillance on all public building entrances, both interior and exterior. We will continue to add video surveillance as funding and projects allow.

LSS 6 **Fire Alarm Systems:** Keep our occupants and buildings safe by updating and replacing fire alarm systems. Some systems can be done as a stand-alone project while others will need to updated during planned renovations.

SECTION 4: INVENTORY

INSTITUTIONAL REAL ESTATE HOLDINGS as of JANUARY 1, 2022 4.a.

i.	**Total square feet / acres of land owned by NDSU**	**Land: 20,130.39 acres**
ii.	**Total square feet / acres of land owned by affiliated foundations and located within one (1) mile of NDSU owned property**	**Land: 13.47 acres**
iii.	**Total square feet / acres of land leased by NDSU**	**Land: 12.8 acres**
(1)	***Total square feet / acres of land leased by the institution and owned by affiliated foundations:***	***Land: 6.0 acres***
	811 2nd Avenue North, Fargo, ND 58102 Richard H. Barry Hall opened in August 2009 as home to the College of Business, Department of Agribusiness and Applied Economics, North Dakota Trade Office and Center for Global Initiatives and Leadership. Richard H. Barry Hall is comprised of the former Pioneer Mutual Life building built in 1925 and a 75,000 square foot addition. In all, the building is an expansive 135,000 square foot, state-of-the-art facility perfect for current and future business professionals to connect. It features 12 conference rooms, two-story atrium, 12 classrooms, 250-seat auditorium, six-story faculty office tower including 131 offices, student study areas on each floor, behavioral lab, investment management center, Bison Connection student service center, branch of the NDSU Bookstore, branch of the NDSU Library and coffee bar. It is named after the late Richard H. Barry (1909-1988) who was a renowned financial consultant and economic catalyst, described as "Fargo's doctor of financially ill businesses."	Land: 3.0 acres
	1616 12th Avenue Northwest, Fargo, ND 58102 Prairie Hall (former Criminal Justice Public Policy building) was initially the home for an NDSU sorority and the YWCA. The building was remodeled and now includes offices, classrooms and computer clusters for the Center for Social Research and the office of Publication Services.	Land: 0.4 acres
	1201 12th Avenue North, Fargo, ND 58102 The three-story Graduate Center houses research laboratory and office space for two departments. The Psychology Department conducts human participant research in health, social and clinical psychology. The Human Development and Family Science Department has an infant research lab. The building houses office space for graduate students and graduate research assistants for both departments.	Land: 0.3 acres
	711 2nd Avenue North, Fargo, ND 58102 Klai Hall is the former office space for Lincoln Mutual Insurance and was reincarnated in the fall of 2008 as a state-of-the-art facility for NDSU's School of Design, Architecture, and Art's Dept. of Architecture and the Dept. of Landscape Architecture. Klai Hall features studios, classrooms, a model shop, computer lab, laser cutter facilities and library for the Department of Architecture and Landscape Architecture.	Land: 1.2 acres
	650 NP Avenue, Fargo, ND 58102 Renaissance Hall is a 100-year-old building, formerly a farm implement warehouse and dealership, and is now a state-of-the-art facility housing NDSU's School of Design, Architecture, and Art's Dept. of Architecture and the Dept. of Visual Arts and the Tri-College University office. It includes studios, classrooms, a wood shop, computer laboratories, gallery and an outdoor sculpture area.	Land: 1.1 acres
	NDSU Foundation owns a variety of properties east and off of the campus. The campus is not leasing any of the properties; however, they could be available for a mixed-use facility if the campus would need it in the future.	Various
(2)	***Total square feet / acres of land leased by the institution but owned by a non-affiliated entity (does not include the lease of buildings, or rental of space, whereby the institution does not lease the real estate under the building)***	***Land: 6.8 acres***
	3551 7th Avenue North, Fargo, ND 58102 The West Building houses the offices and facilities of the Center for Heritage Renewal and the Institute for Regional Studies and University Archives. The Center for Heritage Renewal focuses on applied history research to serve the regional public and the historical profession. Tom Isern, University Distinguished Professor of History, directs the center. The Institute for Regional Studies and University Archives collects and preserves historical resources of the region and promotes their use by the NDSU community, scholars and the public. Important historical, legal, fiscal and social records of the university are made available to students, researchers and the public. It also serves as a warehouse for Facilities Management and is the location for monthly State Surplus Auctions.	Land: 6.8 acres

iv.	**Total square feet/acres of land owned by the institution and leased to others (including affiliated foundations):**	**Land: 131.74 acres**
	1800 University Drive North, Fargo, ND 58102 Fargodome multi-use entertainment, sports and convention space	Land: 50.6 acres
	1515 15th Avenue North, Fargo, ND 58102 Newman Outdoor Field multi-use entertainment space and baseball field	Land: 11 acres
	1100 19th Avenue North, Fargo, ND 58102 University Towne Center multi-business shopping mall	Land: 4.5 acres
	1220 19th Avenue North, Fargo, ND 58102 McDonald's fast food eating establishment	Land: 1.4 acres
	1845 NDSU Research Circle North, Fargo, ND 58108 The NDSU Research and Technology Park operates to enhance the investments in North Dakota State University by the citizens of North Dakota. Through partnerships with international, national and regional centers of excellence, high technology-based businesses, and the research community at NDSU, the Research and Technology Park will achieve successful technology based development and broaden the economic base of North Dakota. Scientific and technological advancement will be promoted through the development of facilities and research centers conducive to cutting edge research. The park will establish an innovation accelerator unit, which offers space, facilities and services to technology-based entrepreneurs and businesses.	Land: 55 acres
	1313 18th Street North, Fargo, ND 58108 ND State Seed research lab space established by the ND Legislature in 1931 to carry out certification, laboratory and regulatory functions for the state's agricultural industry.	Land: 1.16 acres
	1305 18th Street North, Fargo, ND 58108 Northern Crops Science Laboratory research space that is a part of the United States Department of Agriculture/ Agricultural Research Service (USDA-ARS)	Land: 7 acres
	1230 18th Street North, Fargo, ND 58108 Headhouse/Greenhouse research lab space that is a part of the United States Department of Agriculture/ Agricultural Research Service (USDA-ARS)	Land: 1.08 acres

INSTITUTIONAL FACILITY ASSETS AS OF JANUARY 1, 2022		4.b.
Asset Type	**Total Square/ Linear Feet**	**Total Replacement Value**
i. Type One Facilities	**2,223,782 sq. ft.**	**$463,702,322**
ii. Type Two Facilities	**434,741 sq. ft.**	**$129,533,754**
iii. Type Three Facilities	**2,137,730 sq. ft.**	**$385,628,946**
iv. Leased Facilities	**594,078 sq. ft.**	**N/A**
Institution Owned and Maintained Asset Type:		
v. Paving:		
(1) Roadways	954,886 sq. ft.	
(2) Parking Lots	2,923,196 sq. ft.	
(3) Sidewalks	1,070,004 sq. ft.	
vi. Infrastructure:		**Number of:**
(1) Direct Buried Steam Lines	15,099 ln. ft.	Manholes/Valve Houses: 57 vaults
(2) Water Mains	38,516 ln. ft.	
(3) Sanitary Sewer Lines	34,144 ln. ft.	Manholes/Related Appurtenance: 209 appurtenance
(4) Storm Water Mains	79,056 ln. ft.	Manholes/Related Appurtenance: 178 appurtenance
(5) High Voltage Distribution Lines (both direct buried and aerial)	None - Owned by Xcel Energy	Transformers: 0 Switches: 0
(6) Fiber Optic Cable, Telecommunication Cable (Copper), or Specialized Data Cable:		
a) Inside data cable	2,320,000 ln. ft.	
b) Outside copper network	28,000,000 ln. ft.	
c) Outside fiber-optic network	112,200 ln. ft.	
d) Leased fiber-optic	80,100 ln. ft.	
e) Underground conduit	91,000 ln. ft.	
f) Fiber-optic cables	2,250 strands	
(7) Miscellaneous Buried or Aerial Infrastructure:		
a) Outside cable TV network	18,000 ln. ft.	
b) Inside cable TV network	229,100 ln. ft.	
vii. Outdoor Athletic Fields:		**Type**
Ellig Track	109,067 sq. ft.	Synthetic Track - complete summer 2022
Ellig Infield	82,578 sq. ft.	Grass - complete summer 2022
Dacotah Field	89,129 sq. ft.	Astro Turf
Ellig Softball Field	51,677 sq. ft.	Field Turf
Ellig Softball Practice	74,100 sq. ft.	Agrilime/Grass
Football Turf Practice	112,900 sq. ft.	Field Turf - complete fall 2022
Soccer Practice	88,388 sq. ft.	Grass
Hammer Throw	90,616 sq. ft.	Grass
Redhawks Baseball Field	120,522 sq. ft.	Agrilime/Grass
viii. Greenspace	4,260,016 sq. ft.	Maintained/Unmaintained

SPACE UTILIZATION	4.c.
i. Space Inventory	
(1) Total amount of space for all institutional buildings including leased space	4,755,076 Net Sq. Ft.
(2) Total amount of assigned space	3,937,398 Net Sq. Ft.
(3) Total amount of unassigned space	817,678 Net Sq. Ft.
(4) Overall space efficiency	17.19%
ii. Space Utilization	
(1) Total Assigned Space (TAS) per enrollment category	878383.53
a) TAS / Headcount Enrollment	70.49
b) TAS / Full Time Equivalences	80.88
c) TAS / Full Time Student Headcount	87.63
d) TAS / Part Time Student Headcount	360.44
e) TAS / Full Time On-Campus Student Headcount	89.81
(2) Classroom Utilization (as per Fall 2021 scheduling)	58.79%
(3) Class Lab Utilization (as per Fall 2021 scheduling)	90.22%
iii. Deferred Maintenance	
(1) Total deferred maintenance - Type 1 Facilities	$208,143,240
(2) Total deferred maintenance - Type 2 Facilities	$52,457,530
(3) Total deferred maintenance - Utility Infrastructure and Paving	$19,205,300

APPENDIX

Addition / Removal of Major Buildings *1.a.iii.(2)*

NDSU Major Buildings ***(in use as of 2022)***

BLDG#	BUILDING NAME	YR BUILT
001	Administration (Old Main)	1891
003	Ceres Hall	1910
005	Ladd Hall	1909
006	Memorial Union	1952
007	E. Morrow Lebedeff Hall	1953
008	Churchill Hall	1931
009	Dinan Hall	1953
010	Alba Bales House	1922
011	Putnam Hall	1905
012	Library	1949
013	South Engineering	1907
014	Ag & Biosystems Engineering **	1938
016	Music Education	1982
018	Dolve Hall	1951
020	Bentson Bunker Fieldhouse	1931
021	Minard Hall	1901
022	Heating Plant	1904
023	Morrill Hall	1922
024	West Butler Quonset (Ag Quonset)	1949
025	Quentin Burdick Building (IACC)	1992
026	Hultz Hall	1978
028	Harris Hall **	1953
029	Lord & Burnham Greenhouse (South)	1950
031	Thorson Maintenance Center	1949
032	Grounds Maintenance (Butler) Building	1949
034	Shepperd Arena	1951
035	RSO/Chemical Storage	1948
036	Wiidakas Laboratory	1949
037	Waldron Hall	1958
041	East Butler Quonset (Maintenance)	1949
042	Stockbridge Hall	1956
043	Bison Court East	2005
044	Bison Court West	2005
045	North Stands	1954
046	Animal Nutrition And Phy. Center	1960
047	Longwell Building	1949
050	Wallman Wellness Center	2001
052	Sudro Hall	1959
053	Walster Hall	1959
055	Reed Hall	1961
056	Burgum Hall	1961
057	North Weible Hall	1963
058	Johnson Hall	1963
059	Residence Dining Center	1964
060	Residence Life Facility Service	1967
061	South Weible Hall	1965

BLDG#	BUILDING NAME	YR BUILT
062	Pharmacy Radiation Lab	1963
063	Engineering Administration	1965
064	Engineering	1965
065	Electrical Engineering	1965
066	Civil & Industrial Engineering	1965
067	Sevrinson Hall	1966
068	Thompson Hall	1966
069	Askanase Hall	1966
070	Stevens Hall	1966
071	Potato Research/Pesticide Storage	1966
072	Sanford Health Athletic Complex	1971
073	University Village Service & Repair	1995
074	University Village (Courts)	1968
075	University Police And Safety Office	1971
076	Seim Hall	1972
077	Pavek Hall	1987
078	Loftsgard Hall	1991
079	Ellig Sports Complex	1994
080	West Dining Center	1972
081	Sugar Beet Research Facility	1971
082	Van Es Hall	1976
083	KKB Family Life Center	1974
084	Ehly Hall	2000
085	Robinson Hall	1976
086	Ag Service Center/Pilot Plant	1991
087	Hastings Hall	1955
088	Niskanen 30 Plex	2003
092	Niskanen North	1983
093	Northern Crops Institute **	1983
094	Construction Management Engineering	1981
095	Parking Office	1960
097	Facility Management Storage Facility	2007
098	Niskanen South	1982
100	President's House	2009
101	Mathew Living Learning Center East	2003
103	Material Handling & Storage Facility	2009
104	Mathew Living Learning Center West	2008
114	Niskanen 1/D	2010
115	Niskanen 2/E	2010
116	Niskanen 3/F	2010
129	Equine Science Center	2002
136	Shelly Ellig Indoor Track And Field	2012
137	Research 1 Addition	2013
145	A. Glenn Hill Center	2014
147	Lord & Burnam Greenhouse (North) **	1950

** (See Demolished Properties)

NDSU Major Buildings *(new as of 2016)*			
BLDG#	**BUILDING NAME**	**YEAR**	**PURPOSE FOR ACTION (as related to program needs)**
159	Catherine Cater Hall	2019	New residence hall for sophomore students
160	Apartment 1701	2018	Upgraded housing for enrollment, retension and student expectations
161	Nodak Insurance Football Performance Complex	2022	Under construction
162	Sugihara Hall	2022	Co-locating Chemistry, Geosciences related activities in single facility
163	Aldevron Tower	2020	Co-locating College of Health Professions programs
164	Peltier Complex	2022	Currently in design

Demolished Properties				
BLDG#	**BUILDING NAME**	**YEAR**	**REMOVED**	**PURPOSE FOR ACTION (as related to program needs)**
	Chemistry Building	1906	1909	Caught fire and was demolished
	The Creamery	1895	1922	Dairy Barn was built on campus in 1914, no further use for Creamery
	Trailer City	1946	1948	Demolished
	Music Hall (Chemical Laboratory)	1897	1951	Music Dept relocated to Putnam; building torn down
	Silver City	1947	1957	Destroyed by tornado in 1957; not rebuilt
	Y.M.C.A.	1919	1957	Destroyed by tornado in 1957
	Francis Hall (the Dormitory)	1893	1959	Demolished due to structural problems
	North Court	1948	1971	Units sold or torn down
	Dakota Hall	1918	1972	Demolished
	Festival Hall (Drill Hall or Armory)	1897	1982	Damaged by fire in 1951, roof damaged by tornado in 1957; last community concert/celebration in July 1982
	Veterinary Building (OLD Van Es Laboratory - not the current Van Es)	1909	1984	Demolished Vet Science Barn
	Mechanic Arts (additions in 1899, 1901)	1893	1993	Condemned; Computer Center moved into new facilities in IACC at that time
	Architecture Quonset	1949	2004	Demolished
	Art Building	1948	2004	Demolished
	President's House (#1)	1949	2007	Demolished
	Seed House	1908	2013	Demolished
048	Reed Post Office & Property	1949	2014	Demolished to Expand AD Lot
004	Health Center (C. I. Nelson Health Center)	1939	2015	Demolished to make room for parking lot and STEM building
109	Thordarson Hall		2015	Demolished
017	Geosciences Building	1913	2020	DMP, LSS, ADA issues; demolished; Geosciences to new Sugihara Hall
015	Dunbar Hall	1965	2022	DMP, LSS, ADA issues; demolished; Chemistry to new Sugihara Hall
014	Ag & Biosystems Engineering	1938	**	DMP, LSS issues; to be demolished; departments to Ladd Hall
028	Harris Hall	1953	**	To be demolished for new Peltier Complex
093	Northern Crops Institute	1983	**	To be demolished for new Peltier Complex
147	Lord & Burnam Greenhouse (north)	1950	**	To be demolished for new Peltier Complex

Other Properties		
BLDG#	**PROPERTY NAME**	**TYPE**
108	West Building (Knox Bldg)	Leased
117	Stop-N-Go Center	Leased
122	Fargodome	Leased
123	Prairie Hall (Criminal Justice Public Policy)	Leased
127	Renaissance Hall	Leased
131	Research Building I	Leased

BLDG#	**PROPERTY NAME**	**TYPE**
132	Research Building II	Leased
140	Graduate Center	Leased
141	Community Health Pharmacy	Leased
142	Richard H. Barry Hall	Leased
144	Klai Architecture And Landscape	Leased
149	NDSU Nursing At Sanford Health-Bismarck	Leased

** NOTE: Instructional faculty numbers listed are totals by THAT DEPARTMENT, *not by the program.*

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Accountancy		M.Acc.		There is a strong demand in Fargo, greater North Dakota, and the entire U.S. for graduates in all three AFIS disciplines. Demand far outpaces supply with a current shortfall in ND that is anticipated to grow in the coming years. As a result, placement rates are between 95% and 100% for the department's graduates.	Accounting and Information Systems	Business	13	1
Accounting	B.S.			There is a strong demand in Fargo, greater North Dakota, and the entire U.S. for graduates in all three AFIS disciplines. Demand far outpaces supply with a current shortfall in ND that is anticipated to grow in the coming years. As a result, placement rates are between 95% and 100% for the department's graduates.	Accounting and Information Systems	Business	13	1
Advanced Nursing Practice (Also See NURSING)			D.N.P.	A variety of health care organizations/ bodies have identified the critical role advanced practice nurses play in meeting the health care needs of our nation, especially in underserved and rural populations. The NDSU DNP program prepares graduates to meet these critical needs in our state and region. Family Nurse Practitioners manage the primary care, episodic care, and chronic disease states of patients across the life span. Of the 25 DNP graduates since 2014, 92% are employed in North Dakota or Minnesota (57% in North Dakota and 43% Minnesota). This program aligns well with NDSU's mission as a land grant university.	School of Nursing	Health Professions	41	2
Agribusiness	B.S.			Provide agribusiness and applied economics graduates for industry, governmental organizations, and farm managers. Provide skilled employees to fill the expertise void needed in applied economics, agriculture and agribusiness, to replace an older workforce in North Dakota. Agribusiness is designed to train students to assume leadership in all aspects of the Agribusiness industry. Students in this program earn a minor in the College of Business Administration at the same time they are earning their Agribusiness degree.	Agribusiness and Applied Economics	AFSNR	23	0
Agribusiness		M.B.A		Provide agribusiness and applied economics graduates for industry, governmental organizations, and farm managers. Provide skilled employees to fill the expertise void needed in applied economics, agriculture and agribusiness, to replace an older workforce in North Dakota. Agribusiness is designed to train students to assume leadership in all aspects of the Agribusiness industry. Students in this program earn a minor in the College of Business Administration at the same time they are earning their Agribusiness degree.	Management and Marketing	Business	19	1
Agribusiness and Applied Economics		M.S.		Prepare students for top entry level industry jobs. Prepare students for PhD programs. Research completed by graduate students are mostly focused on North Dakota and regional issues. The contribution of research output generates new knowledge and increases total factor productivity, an important element to grow GDP.	Agribusiness and Applied Economics	Agriculture, Food Systems, and Natural Resources	23	0

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Agricultural and Biosystems Engineering	B.S.A.B.En.	M.S.	Ph.D.	The mission of this program is to prepare men and women for careers requiring integration and application of engineering, agricultural, physical and biological sciences and business to manage resources and systems for producing, processing and marketing food, feed, fiber and fuel worldwide in a sustainable manner. The program is designed to provide students with a broad background in engineering and science, and hands-on experience to become problem solvers of tomorrow. This degree program produces graduates who enter the engineering workforce of the agricultural and construction machinery industry, rural electric cooperatives, food handling and processing industry, environmental consulting industry, production agriculture, and state and federal government agencies.	Agricultural and Biosystems Engineering	Agriculture, Food Systems, and Natural Resources; Engineering	13	3
Agricultural Communication	B.A., B.S.			This course of study is for students who have a strong interest both in agriculture and in communication so they can work as communication specialists for agribusiness and agricultural public policy agencies.	Communication	Arts, Humanities and Social Sciences	11	4
Agricultural Economics	B.S.			Provide agribusiness and applied economics graduates for industry, governmental organizations, and farm managers. Provide skilled employees to fill the expertise void needed in applied economics, agriculture and agribusiness, to replace an older workforce in North Dakota. Agricultural Economics focuses on helping students acquire skills in management, marketing, and financial aspects of production agriculture and resource decisions.	Agribusiness and Applied Economics	Agriculture, Food Systems, and Natural Resources	23	0
Agricultural Education	B.S.	M.Ed., M.S.		See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Agricultural Systems Management	B.S.			The mission of the program is to prepare men and women for careers in the broad field of agriculture and allied areas that involve the integration of technical and business knowledge. The program blends the study of physical systems principles, engineering technology, agricultural sciences, business management, and communications so that students get a deep understanding of agriculture as a system rather than a specific aspect of agriculture. The graduates of this program enter workforce as farmers, agricultural consultants, technical experts at equipment/chemical/seed dealerships, rural electric companies, insurance companies and food processing industry, bankers, agriculture educators and/or start their own businesses.	Agricultural and Biosystems Engineering	Agriculture, Food Systems, and Natural Resources; Engineering	13	3

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Animal Science	B.S.			BS Animal Sciences. The Animal Science major is designed to prepare students for careers in Animal Agribusiness and related fields. Course work includes biological principles, scientific relationships, management practices, marketing, and business concepts applicable to animal products, and livestock production systems. Five options are available. Each is designed to strengthen career preparation. 1. Animal Production, Management and Husbandry - This option is designed for students desiring a background in the principles of managing animals. It leads to broad training in animal husbandry, production and management. Employment opportunities include careers in livestock production, allied support fields and in agricultural extension for the Cooperative Extension Service. 2. Animal Biomedical Science - This option offers students a more scientific approach to animal science, preparing them for veterinary medicine, graduate research in animal science, teaching, food technology and the biotechnology industry. Students may receive an animal sciences degree while meeting academic requirements for veterinary school. 3. Animal Agribusiness - This option is designed for students desiring a background in the business and economic principles as they apply to the livestock industry. It leads to broad training in animal husbandry, production, business and management. Employment opportunities include careers in agribusiness, sales and marketing of livestock and products for the livestock industry, and various public and private institutions which serve the business of animal agriculture. 4. Livestock Media - This option offers students an opportunity to acquire skills in journalism, advertising and public relations in addition to the basics of animal science. Employment opportunities include working for magazines, breed associations or commodity organizations. 5. Meat Science - This option provides the opportunity to emphasize knowledge about the science concerning muscle biology and evaluation and processing of red meat. There are numerous career opportunities in the meat industry.	Animal Sciences	Agriculture, Food Systems, and Natural Resources	26	3
Animal Science		M.S.	Ph.D.	Graduate (MS, PhD) in Animal Sciences Graduate degrees in Animal Sciences prepare students for a variety of careers in research, academia, government, education, and industry positions. Recent employment by our graduates includes positions as technical service advisors for the feed industry, academic and teaching positions at major universities, work as extension specialists, work as technical consultants to the meat industry, and a wide variety of other positions.	Animal Sciences	Agriculture, Food Systems, and Natural Resources	26	3
Anthropology	B.A., B.S.	M.A., M.S.		The Anthropology program provides students with a critical understanding of culture, preparing them for work in urban and community planning offices, state and local public history organizations, in K-12 schools as social studies teachers, and park services employees.	Sociology and Anthropology	Arts, Humanities and Social Sciences	9	0

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Apparel, Retail Merchandising, and Design	B.A., B.S.			Apparel, Retail Merchandising and Design (ARMD) graduates are problem solvers and leaders who create and manage products, services, and experiences. The goal is to insure the ND consumers have a steady supply of needed and wanted goods and services via Omni-channel mechanisms. Apparel, Retail Merchandising and Design is an important part of everyday life in North Dakota and the region that people often take for granted. It includes product development, apparel marketing, sales/distribution, and product quality assurance, and small business ownership which are valuable to the continued growth of the state. Retailers are the heart of every local community. Small businesses and entrepreneurs are engines of local commerce that employ and serve their neighbors. There are 117,410 jobs supported by the retail industry in North Dakota resulting in 13% of the total GDP for the state. The education offered via a degree in Apparel, Retail Merchandising and Design (ARMD) enables students to develop transferable business, organizational, and analytical skills. STEM concepts, creative-problem solving, and team building skills are fostered and applied across the curriculum. NDSU is the only university in the state to offer a four-year B.S. degree in ARMD. Students earn a minor in business administration to augment their knowledge in the field ARMD. Graduates find many career opportunities in all areas of the state.	Apparel, Merchandising, Interior Design, and Hospitality Management	Human Sciences and Education	11	4
Applied Statistics		M.S.	Ph.D.	See Statistics	Statistics	Science and Mathematics	7	0
Architecture	B.S. Arch.	M.Arch.		We serve the needs of North Dakota by proving professional Architects. These degrees lead to professional license by the State. Our graduates provide services ranging from building design, master planning, and architectural design. The primary goal is the health, safety and well-being of citizens through great design. Our guiding principle is to educate design leaders who will provide North Dakota with individuals who will solve building and landscape problems.	Architecture	Arts, Humanities and Social Sciences	13	8
Art	B.A., B.F.A., B.S.			Visual Arts is an expansive field that connects to many different workforce needs from design oriented professions to entrepreneurial studio artist. Visual Arts also serves a public agenda to provide high quality cultural programming and capitol for Fargo-Moorhead region, and the State of North Dakota.	Visual Arts	Arts, Humanities and Social Sciences	7	1
Art Education	B.A., B.S.			Per the ND ESPB - “Due to severe teacher shortages, the Board declared the shortage areas for 2015-16 at the May 7, 2015 meeting. All content/degree areas are considered shortage areas; no content exceptions.” Graduates with qualifications in both studio art and art education can find careers in educational settings outside of the K-12 schools.	Visual Arts	Arts, Humanities and Social Sciences	7	1
Athletic Training		M.A.Trg.		The Master of Athletic Training Program is entry-level master’s, professional program. The MATrg program was recently granted ten years of continuing accreditation by the Commission on Accreditation for Athletic Training Education (CAATE). The Athletic Training Strategic Alliance announced in May 2015 that the entry-level degree for athletic training will transition from a Bachelor’s degree to Master’s degree. New professional standards and program requirements for accreditation are being developed by the CAATE to reflect the degree change. The new accreditation requirements may impact the program’s need for faculty and equipment/ resources.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2

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Behavioral Statistics	B.A., B.S.			See Statistics	Statistics	Science and Mathematics	7	0
Biochemistry		M.S.	Ph.D.	Undergraduate and graduate programs supply trained workforce professionals in health care, energy sector, pharmaceuticals, analytical laboratories, environmental sustainability, forensic science, toxicology, materials, solar energy, quality control, safety, hazardous waste management as well as related professional fields of patent law, education, etc. Graduate students become leaders and managers in all these areas.	Chemistry and Biochemistry	Science and Mathematics	20	3
Biochemistry and Molecular Biology	B.A., B.S.			A biochemistry and molecular biology degree provides professionals in the areas of medicine, health, biotechnology, materials, forensics, genetics, medical imaging, education, food and drug safety. Faculty also participate in interdisciplinary programs including: B.S. – biotechnology, Ph.D. – STEM Education, Ph.D. – Materials and Nanotechnology	Chemistry and Biochemistry	Science and Mathematics	20	3
Biological Sciences	B.A., B.S.		Ph.D.	The Department of Biological Sciences is home to one of the largest groups of undergraduate majors on campus (approximately 550 students). We provide foundational degrees in biology, botany and zoology that provide students a broad background in biology at the undergraduate and graduate levels. Undergraduate students graduating with one of our majors may continue on for MS, PhD or a professional degree in medicine, optometry, dentistry, chiropractic care, or other health-related professions critical to the state of North Dakota. Our undergraduate majors also attract students interested in working with conservation and management organizations to improve and protect North Dakota's and the Nation's natural resources. Our graduate programs typically enroll between 45-50 students across a variety of departmental and interdisciplinary majors. Graduate students apply to work with specific faculty members and generally their research reflects the research programs of the faculty. We attract students nationally and internationally. A number of our graduate students are pursuing research and practice tracks in education. These students evaluate student learning at the K-12 level, impact of informal science education such as that which might happen at science centers, museums or zoos, as well as student learning at the collegiate-level. In the near future the department plans to consolidate the three departmental majors into a single Biological Sciences track with options for BA/BS, MS and PhD.	Biological Sciences	Science and Mathematics	20	2
Biological Sciences Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Biology		M.S.		See Biological Sciences	Biological Sciences	Science and Mathematics	20	2
Biomedical Engineering		M.S.	Ph.D.		Interdisciplinary			

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Biotechnology[1]	B.A., B.S.			Biotechnology continues to rapidly develop into new research areas. Surveys indicate there will be a continuing high demand for well-educated personnel. Job opportunities are found in life science departments in colleges and universities; private and government research institutes; food production, pharmaceutical and agri-chemical industries; and in the biotechnology industries. Graduates of this program have the educational background and laboratory experience to take advantage of any of these job opportunities. Graduates of the biotechnology program are now successful and productive scientists at pharmaceutical, agri-chemical and biotechnology companies, and at government and private research institutions throughout the country. The majority (approximately 60 percent) of graduates from the biotechnology program choose to continue their education in graduate or professional schools. Graduates of the biotechnology program have earned master's and doctoral degrees in many diverse areas, including cellular and molecular biology, biology, microbiology, plant sciences, animal physiology, cancer biology and virology at many of the most respected universities in the United States. Graduates of our program are now established and productive professors, physicians and veterinarians.	Interdisciplinary			
Business Administration	B.S.	M.B.A.		This program serves all for-profit, non-profit, and government organizations by developing management professions with broad knowledge and skills in business disciplines. In addition to providing a broad business education to undergraduates, the MBA and BA Minor provide needed management and business education to people with degrees in other disciplines.	Management and Marketing	Business	19	1
Business Analytics		M.S.			Accounting and Information Systems	Business	13	1
Business Education	B.S.				School of Education	Human Sciences and Education	30	2
Cellular and Molecular Biology			Ph.D.	The CMB program was formed in 1988 and was the first interdisciplinary graduate program at NDSU. The program was designed to respond to the evolving nature of research in the life sciences in which it was recognized that biological phenomena emerge from molecular and cellular events and that the elucidation of such processes increasingly relies on multidisciplinary approaches. The program offers interdisciplinary research education and training opportunities in basic and applied life sciences leading to a Ph.D. degree. In this setting, students learn to integrate across concepts and to use multiple approaches to study contemporary biological problems, preparing them for careers in academia and private industry.	Interdisciplinary			
Cereal Science		M.S.	Ph.D.	Cereal Science Graduate program provides training in plant based food science and technology. North Dakota needs well trained employees capable of understanding complex food systems to solve food processing problems. Our graduates are hired by the milling, baking, malting, brewing, specialty ingredients and food processing industries. North Dakota with its many crops is well suited to address niche markets in these areas which could/should provide employment in rural areas.	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2

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Chemistry	B.A., B.S.	M.S.	Ph.D.	Undergraduate and graduate programs supply trained workforce professionals in health care, energy sector, pharmaceuticals, analytical laboratories, environmental sustainability, forensic science, toxicology, materials, solar energy, quality control, safety, hazardous waste management as well as related professional fields of patent law, education, etc. Graduate students become leaders and managers in all these areas.	Chemistry and Biochemistry	Science and Mathematics	20	3
Chemistry Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Civil Engineering	B.S.C.E.	M.S.	Ph.D.	The department of civil and environmental engineering is one of the 239 (ABET 2014) undergraduate civil engineering degree-granting programs in the nation. The program has been continuously accredited by ABET since 1948. The department is also one of the 250 M.S and 140 Ph.D. degree granting programs (gradschools.com) in the country. The civil and environmental engineering department has a single undergraduate degree program in civil engineering, and offers three graduate degrees, 1) M.S. in civil engineering, 2)M.S. in environmental engineering and 3) Ph.D. in civil engineering. The department also participates in interdisciplinary programs such as 1) Materials and Nanotechnology, 2) Environmental and Conservation Sciences, 3) Natural Resource Management,4) Transportation and Logistics and 5) Engineering. Education, research and service activities of Universities are the backbone to the profession and the society. The demand for civil engineering graduates is high. According to the U.S. Bureau of Labor Statistics, the job growth projection for civil engineers between 2012 and 2022 (10 years) is 20%, which is much higher than the average for all occupations (11%) and engineers (9%). This increase is attributed to the need for fixing aging infrastructure, to satisfy the needs of growing U.S. population and increased demand for a cleaner environment. Our civil engineering graduates are hired in the state and nationally by private and public sector companies and agencies. Some also continue their education to obtain graduate degrees. The purpose of our undergraduate program is to prepare our graduates for successful careers in civil engineering. Civil engineers play a vital role in our communities. They design 1) the infrastructure including roads, highways, airports, railways, ports, bridges and tunnels, 2) drinking water purification and distribution systems, 3) wastewater treatment, solid waste disposal and mitigation of hazardous wastes, 4) office and residential buildings, schools and hospitals, sports stadiums and sky scrappers and industrial buildings, 5) dams, levees, underground structures, retaining walls, mitigation for landslides and earthquakes.	Civil, Construction and Environmental Engineering	Engineering	19	10

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Civil Engineering	B.S.C.E.	M.S.	Ph.D.	The intent of our M.S. degree programs are to provide our graduates with advanced skills and knowledge in state-of-the-art research and design in the sub-areas of civil engineering to prepare them for successful careers in civil engineering or doctoral programs. The Ph.D. program prepares graduates for conducting independent research and deal with complex engineering problems for high-level careers in civil engineering or academic/research careers. The need for graduates with M.S. and Ph.D. has increased nationally and is expected to increase substantially because of new licensing initiatives taken by professional and licensing organizations and as Universities and the industry prepare for global opportunities and global challenges due to outsourcing. The professional organizations have made it clear that for maintaining economic prosperity there is a need for U.S. engineers to take leadership roles by increasing the depth and breadth of state-of-the-art knowledge, through innovation and research and by developing strong leadership and management skills. The National Council of Examiners for Engineering and Surveying (NCEES) with strong support from the American Society of Civil Engineers (ASCE) has recommended to the licensing boards to mandate M.S. or equivalent advanced degree or credits as a requirement to be eligible for Professional Engineering licensing examination. Research and innovation are critical to moving the boundaries of the profession to make the world safer, more sustainable, and for improving the quality of life. According to the National Academies report “Research Universities and the Future of America: Ten Breakthrough Actions Vital to Our Nation’s Prosperity and Security (2012)”, research and innovation are critical to sustaining the prosperity of the United States. Our faculty is working on cutting-edge research supported by peer-reviewed grants and publish in peer-reviewed journals, indicating the work to be of high significance to the profession. The leadership and service to various professional organizations are key to the success of the organizations. The outreach activities by faculty aids in the recruitment of minority students as well as to bring the excitement of the profession to potential students and people at large. The department meets the North Dakota workforce need by preparing graduates for the civil engineering industry, and researchers for improving the quality of life of our communities and maintaining global competitiveness in innovation.	Civil, Construction and Environmental Engineering	Engineering	19	10
Coatings and Polymeric Materials		M.S.	Ph.D.	The programs train students in the area of polymer and materials science with a focus on paint and coatings technology. We offer a minor at the B.S. level as well as M.S. and Ph.D. degrees. Since 1905 NDSU has been carrying out research and education in the field of paint and coatings technology and is recognized as a world leader in this field. Paint and coatings are an essential technology since their primary function is to protect materials (e.g. cars, bridges, houses, airplanes, pipelines) from deterioration. Our graduates are trained in materials properties, materials degradation, materials synthesis, as well as corrosion and methods to mitigate corrosion. Graduates from the program are in high demand both in the United States and around the world at companies in the paint and coatings and allied industries. As one of the very few educational programs in this field in the US, the program enhances NDSU’s reputation as a leader in paint and coatings education.	Coatings and Polymeric Materials	Science and Mathematics	6	1

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Communication		M.A.	Ph.D.	Students are encouraged to engage in applied research that seeks to solve real-world problems. Our doctoral students, who come from a variety of academic backgrounds, strive to understand issues, solve problems, and create programs that can improve organizational, educational, interpersonal, and intercultural settings and situations.	Communication	Arts, Humanities and Social Sciences	11	4
Community Development		M.A., M.S.		The Department of Sociology, Anthropology, and Emergency Management in cooperation with the Department of Agribusiness and Applied Economics offers a master's degree in Community Development. The degree is a multi- institutional, multi-disciplinary, online program in conjunction with the Great Plains Interactive Distance Education Alliance (IDEA). Other institutions participating in this program include Iowa State University, Kansas State University, the University of Nebraska-Lincoln, and South Dakota State University. The objectives of the Community Development graduate degree program are to: increase the skills, knowledge, and competencies of community economic development officials who are currently employed and have limited opportunity to participate in an on-campus degree program; provide graduate training for individuals entering the community economic development career field who require training/ degrees for career advancement; and enhance the community economic development skills, knowledge, and competencies of individuals working with Native American communities, natural resource-based communities, non- profit organizations, and/or state and local government.	Sociology and Anthropology	Arts, Humanities and Social Sciences	9	0
Comprehensive Science Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Computer Engineering	B.S.Cpr.E.			Many ND companies hire NDSU BSCpE graduates to work in the fields of computer software, computer hardware, and embedded systems, which is a combination of hardware and software ubiquitously integrated into our everyday lives (e.g., cell phones, control systems for UAVs, control systems for large farm equipment, etc.).	Electrical and Computer Engineering	Engineering	15	1
Computer Science	B.A., B.S.	M.S.	Ph.D.	Computer science concerns the operation and development of computer hardware, software and networks -- it is fundamentally about problem solving. Computers continue to be increasingly ubiquitous in all reaches of society. According to economic trends and projections by the Bureau of Labor Statistics, computer science is one of the best bachelor's degrees to get in the 2010s, with faster than average job growth projected through 2020 and very good employment prospects. Computer programmers in 2012 earned a median income of $74,280, with the top 10 percent making $117,890 or more.	Computer Science	Engineering	17	1

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Construction Engineering	B.S.Con.E.			The Department of Construction Management and Engineering offers a Bachelor of Science degree in Construction Engineering which provides a blend of engineering and construction courses. The program is designed for those who want to work in the construction industry and enjoy the status of a professional engineer. A thorough knowledge of the physical sciences, math, and engineering is developed during the first two years followed by construction management and engineering courses. The technical side of the program is balanced with the requirement of NDSU's general education. Construction Engineering is differentiated from Construction Management from the standpoint of the use of math, science, and engineering to design projects and processes and analyze problems. The Bachelor of Science degree in Construction Engineering is accredited by the Engineering Accreditation Commission of the ABET. The need for construction engineering professionals has increased significantly in recent years in North Dakota due to the continuous economic development, particularly, in the Bakken oil fields in the west of the State. North Dakota has the lowest construction unemployment rate in the nation according to the News Release from the Associated Builders and Contractors, Inc. in October 2015. The 2014 NDSU Annual Employment Report indicates that 100% of construction engineering graduates found jobs with an average starting salary of $63,000. Nationwide, the Bureau of Labor Statistics (BLS) forecasts 1.6 million new jobs for construction sector by 2022, including more than 78,000 new construction manager jobs. Based on the News Release from BLS on November 6, 2015, construction employment increased by 31,000 in October, 2015 and over the past 12 months, construction has added 233,000 jobs.	Civil, Construction and Environmental Engineering	Engineering	19	10

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Construction Management	B.S.Cons.M.	M.S., M.Cons.M.		Construction management is a combination of advanced technology, construction techniques and management to meet the needs of the rapidly growing construction industry. The program is designed to prepare students for the art of achieving contractor's goals by efficient use of people, capital, machines, and materials to complete a construction project on time and to the satisfaction of the owner. A meld of construction management and business courses gives students a background and an understanding of the management point of view in the construction industry. The Bachelor of Science in Construction Management program is accredited by the American Council for Construction Education. The need for construction management professionals has increased significantly in recent years in North Dakota due to the continuous economic development, particularly, in the Bakken oil fields in the west of the State. North Dakota has the lowest construction unemployment rate in the nation according to the News Release from the Associated Builders and Contractors, Inc. in October 2015. The 2014 NDSU Annual Employment Report indicates that 91% of construction management graduates found jobs with an average starting salary of $50,000. Nationwide, the Bureau of Labor Statistics (BLS) forecasts 1.6 million new jobs for construction sector by 2022, including more than 78,000 new construction manager jobs. Based on the News Release from BLS on November 6, 2015, construction employment increased by 31,000 in October, 2015 and over the past 12 months, construction has added 233,000 jobs.	Civil, Construction and Environmental Engineering	Engineering	19	10
Counseling		M.Ed., M.S.		The Counselor Educational program, accredited by the Council for Accreditation of Counseling and Related Programs (CACREP), within the School of Education prepares counselors to work professionally with persons from diverse cultural backgrounds and in a variety of settings. Program specializations are available in school counseling and in clinical mental health counseling at the master's degree level. We have master's options in Clinical Mental Health Counseling or School Counseling. The Master's of Science (M.S.) and Master's of Education (M.Ed.) degrees in counseling are considered entry-level preparation for qualification as a practitioner. Either degree serves a foundation for national certification and state licensure. The M.S. degree places more emphasis on research than the M.Ed.	School of Education	Human Sciences and Education	30	2
Counselor Education and Supervision			Ph.D.	Prepare school and community counselors for credentials necessary to work as a school counselor in ND K-12 schools. NOTE in relation to next survey item: Enrollment will stay the same because we are at maximum capacity as required by our CACREP accreditation with current faculty. With more faculty there could be an increase in enrollment.	School of Education	Human Sciences and Education	30	2

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Criminal Justice	B.A., B.S.	M.S.	Ph.D.	The criminal justice program (B.A., B.S., M.S., Ph.D.) seeks to develop in students a mastery of criminal justice concepts, a proficiency in employing and evaluating research methodologies in criminal justice, and an understanding of the theory undergirding criminal justice knowledge and practice. Student proficiency in methods and understanding of theory significantly informs the mastery of key concepts, including criminal law, criminal procedure, the extent and distribution of crime, the causes of crime, the prevention of crime, policing, corrections, criminal court systems, criminal justice policy, juvenile delinquency, and other areas. Students who complete our undergraduate programs are prepared to serve North Dakota and the nation in criminal justice careers (e.g. law enforcement, probation, corrections administration, victim advocacy, etc.) and/or pursue law school or graduate school. Students completing our graduate programs are prepared for advanced careers in criminal justice policy analysis, research, and higher education.	Criminal Justice	Arts, Humanities and Social Sciences	5	0
Crop and Weed Sciences	B.S.			This program is not meeting all the workforce demand. One agronomic employers in the region added 100 employees two years in a row and still are in need of more agronomists. Consulting firms are adding territories and many retirements are expected in the near future. Some graduate from the program return to their family farms to eventually lead the farming operations.	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2
Developmental Science			Ph.D.	Ph.D. graduates in developmental science are needed to fill positions in academia, government agencies, and nongovernmental organizations. They are equipped to do research and design and evaluate interventions focused on promoting positive youth development, successful aging, global public health, and effective educational practices and human services.	Human Development and Family Science	Human Sciences and Education	8	2
Dietetics	B.S.	M.S.		We offer an undergraduate dietetic degree with two options: Dietetic Education Program (DEP) and Didactic Program in Dietetics (DPD). These majors provide didactic courses required to prepare students to practice entry level dietetics. The DEP provides 1200 supervised practice hours to be able to sit for the Commission on Dietetic Registration (CDR) Examination for Dietitians. The DPD majors are required to complete the supervised practice hours at another site. By 2018, all students must complete a graduate degree before they are eligible to sit for the RD CDR exam. In order for NDSU to remain competitive nationally, we will need to offer a graduate-level dietetics program. We currently offer three Master's degrees: 1) an online MS in dietetics through the Great Plains Interactive Distance Education Alliance (Great Plains IDEA, 2) an MS in Exercise/Nutrition Science, and 3)an MPH with emphasis in Health Promotion which is a collaboration with the Department of Public Health. In addition we offer a PhD in Exercise Science and Nutrition.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Earth Science Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2

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Economics	B.A., B.S.			Provide agribusiness and applied economics graduates for industry, governmental organizations, and farm managers. Economics help develop the social science skills concerned with personal, business, and social choice and values. Provide skilled employees to fill the expertise void needed in applied economics, agriculture and agribusiness, to replace an older workforce in North Dakota.	Agribusiness and Applied Economics	Agriculture, Food Systems, and Natural Resources	23	0
Education		M.Ed., M.S.	Ed.D., Ph.D.	Society is constantly changing and what is known about best practices in education is growing. We strive to be aware of these changes and adjust our program to prepare candidates who are ready to effectively meet the needs of diverse student populations. Therefore, the School of Education strives to provide exemplary preparation and continuous development of educational professionals who will employ best practices, shared leadership, responsiveness within a dynamic world, respect for all, high expectations for self and others, and reflection for continuous improvement.	School of Education	Human Sciences and Education	30	2
Education: Teacher Education		M.Ed., M.S.		Preparation and professional development for ND school teachers, primarily Grades 7-12 but K-12 in Music and Physical Education/Health Education. The NDSU Teacher Education program is an NCATE accredited program. Teacher candidates are prepared for licensure in North Dakota as well as other states. A variety of teaching specialties are offered through this program: Agricultural Education; Art Education; Biology Education; Chemistry Education; Comprehensive Science Education; Earth Science Education; English Education; English with Communication Education; Family & Consumer Sciences Education; French Education; Health Education; History; Education; Mathematics Education; Music (Instrumental) Education; Music (Vocal) Education; Physical Education; Physics Education; Social Science Education; Spanish Education. The graduate program in Teacher Education is committed to the development of educators who are dedicated to educational equity for all persons. The teacher education program is aligned with the National Board for Professional Teaching Standards (NBPTS) to reflect the importance of applied research and content development of educators. Plans of study for either the M.Ed. or M.S. in Teacher Education may emphasize teacher licensure, curriculum and instruction, or a wide range of education disciplines.	School of Education	Human Sciences and Education	30	2
Educational Leadership		M.Ed., M.S.	Ed.S.	Preparation and professional development for school administrators (principal, superintendent) and other school leaders in ND K-12 schools and districts.	School of Education	Human Sciences and Education	30	2
Electrical and Computer Engineering		M.Engr., M.S.	Ph.D.	Many ND companies hire ECE graduates with advanced degrees to work in all of the areas previously described under EE and CpE.	Electrical and Computer Engineering	Engineering	15	1
Electrical Engineering	B.S.E.E.			Many ND companies hire NDSU BSEE graduates to work in a large variety of industries, including Power/Energy (e.g., coal fired power plants, wind farms, electric co-ops, etc.), electronics/power electronics (e.g., John Deere, Bobcat, etc.), control systems (e.g., factory automation / robotics), biomedical engineering, etc.	Electrical and Computer Engineering	Engineering	15	1

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Emergency Management	B.S.	M.S.	Ph.D.	From a North Dakota workforce perspective the Emergency Management degree serves several need areas. First, large municipalities such as Fargo and Bismarck have Emergency Managers as part of city government. In addition, each county has an Emergency Manager and thus individuals with our degree fit those county positions. In addition, the North Dakota State Office of Emergency Services employs a range of individuals to address Emergency Management tasks and administration, planning, mitigation, preparedness, etc. Some state universities (e.g. the University of North Dakota in Grand Forks) employ Emergency Managers. Other state, county and municipal offices can benefit and may employ Emergency Management educated graduates to do business continuity or continuity of operations planning. In addition to the aforementioned public sector positions, there are a wide range of private sector positions with retailers (e.g. Target, Macy's, financial institutions such as Gate City Bank, etc.). These positions often involve business continuity planning activities as well as other forms of protective planning. One of our graduates does that type of work for West Acres Mall. In summary, the number of positions in North Dakota in the public and private sector is very meaningful. From a public agenda perspective, a role of government at all levels (federal, state, county, municipal) is to protect the citizens. Emergency Management is a core function of government through the activities of mitigation, preparedness, response, and recovery. Our curriculum is built upon those four phases of the hazard cycle. From an academic perspective this program addresses the previously mentioned core functions and concepts of mitigation, preparedness, response and recovery but also utilizes the foundational concepts of hazard (flooding potential, tornadoes, hazardous materials incidents, etc.), risk (the likelihood that a hazard incident will occur), and vulnerability (the potential for harm to the population and infrastructure). As an emerging discipline this field provides a new source of knowledge that serves to protect society.	Emergency Management and Disaster Science	Arts, Humanities and Social Sciences	4	1
Engineering			Ph.D.	Engineering's graduate programs emphasize innovation, engagement and rigorous multi-disciplinary research. See Agricultural & Biosystems Engineering; Civil Engineering; Electrical & Computer Engineering; Industrial Manufacturing & Engineering; Mechanical Engineering; and the interdisciplinary NDSU Graduate Programs of: Environmental & Conservation Science; Materials & Nanotechnology; Natural Resource Management; STEM Education; and Transportation & Logistics.	College of Engineering	Engineering	College-Wide Program	

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English	B.A., B.S.			•Rooted in the liberal arts and humanities, the study of literature fosters creative and critical abilities, promotes multiculturalism and tolerance in a globalized world, and fosters understanding of cultural, historical, ethical, aesthetic, and linguistic forces that shape our lives. •Effective writing makes social and professional engagement possible. The study of rhetoric, composition, literacy, and professional writing enhances facilities in writing, communication, and technology much valued by local communities, industry, and organizations. •Creative writing merges an interest in literary studies with the art of writing, providing a hands- on experience of literature, encouraging students to create literary texts in a variety of media and genres, and emphasizing the power of the individual to respond to human experience in a changing world. •The study of linguistics cultivates an appreciation for the English language, its history, conventions, structures, and uses.	English	Arts, Humanities and Social Sciences	23	7
English		M.A.		The MA in English and PhD in Rhetoric, Writing, and Culture meet the needs and principles described below. The PhD focuses especially on the second bullet point discussing the study of rhetoric, composition, literacy, and professional writing. Both degrees prepare students to meet the state's workforce needs as teachers in higher education (the MA for junior and technical colleges; the PhD for 4-year colleges and universities), writers/communication specialists, technical writers and editors, and to fill positions in non-profit organizations. •Rooted in the liberal arts and humanities, the study of literature fosters creative and critical abilities, promotes multiculturalism and tolerance in a globalized world, and fosters understanding of cultural, historical, ethical, aesthetic, and linguistic forces that shape our lives •Effective writing makes social and professional engagement possible. The study of rhetoric, composition, literacy, and professional writing enhances facilities in writing, communication, and technology much valued by local communities, industry, and organizations. •The study of linguistics cultivates an appreciation for the English language, its history, conventions, structures, and uses.	English	Arts, Humanities and Social Sciences	23	7
English Education	B.A., B.S.			In addition to the needs and principles listed below (the same as the undergraduate degree in English), the undergraduate degree in English Education serves the state's workforce need by training qualified secondary education teachers. •Rooted in the liberal arts and humanities, the study of literature fosters creative and critical abilities, promotes multiculturalism and tolerance in a globalized world, and fosters understanding of cultural, historical, ethical, aesthetic, and linguistic forces that shape our lives •Effective writing makes social and professional engagement possible. The study of rhetoric, composition, literacy, and professional writing enhances facilities in writing, communication, and technology much valued by local communities, industry, and organizations. •Creative writing merges an interest in literary studies with the art of writing, providing a hands- on experience of literature, encouraging students to create literary texts in a variety of media and genres, and emphasizing the power of the individual to respond to human experience in a changing world. •The study of linguistics cultivates an appreciation for the English language, its history, conventions, structures, and uses.	School of Education	Human Sciences and Education	30	2

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Entomology		M.S.	Ph.D.	We serve the agricultural and natural resource stakeholders of the state, region, and nation.	School of Natural Resource Sciences	Agriculture, Food Systems, and Natural Resources	20	1
Environmental and Conservation Science		M.S.	Ph.D.	The graduate program leading to an M.S. or a Ph.D. in Environmental and Conservation Sciences (ECS) rests on an integrative curriculum and a multidisciplinary team approach. The program emphasizes the common ground shared by all sciences, and seeks to bridge methodological and philosophical boundaries that might hinder interdisciplinary communication and cooperation. The program offers three tracks: Environmental Science, Conservation Biology and Environmental Social Sciences. The Environmental Science track focuses on abiotic environmental issues, such as water, air, and land pollution. The Conservation Biology track focuses on biotic issues, such as the preservation of biodiversity and ecosystem function. The Environmental Social Sciences track emphasizes relationships between humans and the natural environment such as cultural and behavioral issues, policy, business and economics, and sustainable development.	Interdisciplinary			
Environmental Design	B.S.			The Landscape Architecture program is one of approximately 63 accredited programs in the United States. Landscape architects provide a wide variety of professional services for individual clients, organizations, corporations, and government agencies. They are involved at every phase of the development of a site, from the initial discussion of ideas with the client through the supervision of construction for the project. Master planning of parks, zoos, golf courses, playgrounds, and recreation areas are familiar projects for landscape architects. They may also design multifunctional areas for urban renewal projects, college campuses, industrial parks, new communities, natural areas, reclaimed lands, and wetlands. Besides designing sites, landscape architects often select building locations, prepare cost estimates, initiate long-range planning studies, determine utility corridors, and prepare environmental impact statements for future construction. Whether specializing within a large firm of landscape architects or working in a small professional office, the landscape architect is often collaborating with other professionals, such as engineers, city planners, and architects.	Landscape Architecture	Arts, Humanities and Social Sciences	4	2
Environmental Engineering	B.S. Env.E.	M.S.		See Civil Engineering	Civil, Construction and Environmental Engineering	Engineering	19	10
Equine Science	B.S.			The Equine Science program offers a variety of options for students with an interest in careers with horses, including a Bachelor of Science as well as minors and certificates in both Equine Science and Therapeutic Horsemanship. The B.S. degree is a four-year science based curriculum with a combination of hands-on labs, riding classes and traditional classroom lectures. The minors are designed to complement other majors, while the certificate programs are designed for non-degree seeking students who would like to further their education. Students find employment in a wide variety of careers including work related to stable management, equine breeding and genetics, training, allied industry, and animal health.	Animal Sciences	Agriculture, Food Systems, and Natural Resources	26	3

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Exercise Science	B.S.			Currently graduates of the exercise science program are advancing to a variety of health care professions. These professions include, but are not limited to, personal trainer, strength and conditioning coach, fitness and wellness facility management and ownership, physical therapy, occupational therapy, physician assistant, and medical doctors. Though these professions are academically in high demand, our program is limited in its ability to grow due to personnel and space constraints. Even if there was an increase in facility space available to our program, we would still be limited by the academic loads of our current faculty, as even now we are only able to offer classes once per academic year.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Exercise Science and Nutrition			Ph.D.	Exercise Science and Nutrition are traditionally separate disciplines that strive to improve human health or human performance. Combined, the two form a strong and natural approach to improve well-being. Exercise Science and Nutrition includes the study of energy systems, nutrient intake, metabolism, behavior motivation, and the physiology and mechanics of movement. These professionals will have a strong understanding of both Exercise Science and Nutrition that will enable them to assume positions of leadership in research and teaching in community, government, university or other professional agencies and organizations.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Extension Education		M.Ed., M.S.			School of Education	Human Sciences and Education	30	2
Family and Consumer Sciences Education	B.S.	M.Ed., M.S.		See Human Development and Family Science	Human Development and Family Science	Human Sciences and Education	8	2
Finance	B.S.			There is a strong demand in Fargo, greater North Dakota, and the entire U.S. for graduates in all three AFIS disciplines. Demand far outpaces supply with a current shortfall in ND that is anticipated to grow in the coming years. As a result, placement rates are between 95% and 100% for the department's graduates.	Transportation, Logistics and Finance	Business	6	5
Food Safety		M.S.	Ph.D.	The comprehensive food safety curriculum leads to B.S., M.S., and Ph.D. degrees in Food Safety. All these programs are unified around the single issue of food safety, an area of concern for many Americans, the current target of tremendous interest, effort, and spending worldwide, and an area in which shortages of expertise are manifest. Students in food safety are heavily recruited for employment in the food safety fields.	Interdisciplinary			

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Food Science	B.S.			The ND Department of Commerce indicated that "Export growth of North Dakota processed foods has steadily increased, including strong growth during the global recession" and specialty food industries presents North Dakota with an opportunity to generate growth from higher impact sectors such as agricultural biotech and "natural" foods. In addition, food production has traditionally been a strong point in North Dakota's economic, cultural and political foundations." Opportunities for the food industry in the region may emphasize intermediate food ingredients to complement the local production of agricultural commodities and the regional, national and global production of consumer food products. Examples of intermediate food ingredients in the state and region include sugar, pasta, vegetable oils, dry corn milling (especially an opportunity for non-GMO corn), corn sweeteners, flour milling, pulse milling, and specialty grain milling, such as millet or chickpeas. But the food industry is experiencing changes as a result of consumer demand, such as breakfast cereals, interest in local foods, organic foods, and protein, fiber and fat content. Consumer expectations also are influencing government expectations of food manufacturers (e.g., FDA labeling standards).	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2
French	B.A., B.S.			In addition to enabling students to become proficient in the French language, the French major strengthens students' communication and writing skills in their native language, which are highly desirable to employers, through the focus on learning about other languages. The study of another language and culture, with a study-abroad experience, prepares students to better interact with others in a diverse workplace and clientele in North Dakota or in a job with a broader national or international focus, such as the emerging economies of Sub-Saharan Africa or companies doing business in Canada. French education majors serve the state by educating elementary and secondary students.	Modern Languages	Arts, Humanities and Social Sciences	7	1
French Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
General Agriculture	B.S.			The degree program in General Agriculture is designed to serve students who wish to pursue a college education in several broad areas of agriculture or who want to tailor a program to meet their specific career objectives. Traditionally, students interested in careers focusing on agricultural production follow the General Agriculture curriculum or pursue majors in Animal Science, Crop and Weed Science, Equine Science or Horticulture.	College of Agriculture, Food Systems, and Natural Resources	Agriculture, Food Systems, and Natural Resources	College-Wide Program	
Genomics and Bioinformatics		M.S.	Ph.D.	Genomics and Bioinformatics is an interdisciplinary graduate program that involves faculty from nine departments. Advanced research and study focuses on either functional or computation genomics. The program is designed to provide both M.S. and Ph.D. students the necessary skills and intellectual background to work cooperatively with others in a research area that takes a systems-wide approach to the study of the organization and expression of the many genes and their products expressed in an organism.	Plant Sciences		38	2

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Geology	B.A., B.S.			Energy Sector (Oil and Gas Industry) / Environmental Quality (Water, Soil, Air) / Geotechnical (Site Geological Surveys) / Geoenvironmental (Pollution, Reclamation, Carbon Sequestration, & Site Reconnaissance Studies) / Consulting (Environmental and Engineering Firms) / Software Technicians (Geospatial Technology) / Software Development (Geospatial Technology).	Geosciences	Science and Mathematics	7	1
Gerontology			Ph.D.	The Doctor of Philosophy (dual-major) option in Gerontology provides unique opportunities to study and conduct research in this growing and exciting field. The mission of the Gerontology Ph.D. is to promote aging-related research and education at North Dakota State University that uses a discipline based perspective that serves to enhance the length and quality of life.	Human Development and Family Science	Human Sciences and Education	8	2
Health Education	B.S.			The health and physical education programs prepare private and public K-12 health education teachers, physical education teachers, and coaches for employment throughout the state of North Dakota and neighboring states. Our enrollments have remained steady for the past five years and it is anticipated to remain steady in the future. Even though it is anticipated that the enrollment will remain steady we are in need of teaching space due to the sharing of building space with the Dept. of Athletics, and the Army and Air Force ROTC programs.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Health, Nutrition and Exercise Science		M.S.		The Department of Health, Nutrition, and Exercise Sciences (HNES) offers graduate study leading to the Master of Science (M.S.) degree in HNES with options in Exercise/Nutrition Science and Leadership in Physical Education and Sport. The Exercise/Nutrition Science option prepares the graduate for advanced positions with an emphasis in the areas of physical activity, exercise science, nutrition, and health promotion. The department is devoted to researching and understanding the long-term effects of physical activity and nutrition, and translating this research into effective exercise science and wellness programs for children, adolescents, and adults of all ages. The Leadership in Physical Education and Sport (LPES) option is an online program that prepares teachers and coaches to become actively engaged in leadership roles within school systems or professional organizations. This degree prepares students to be master teachers, head coaches, department heads, and activities directors at the interscholastic level; assistant coaches, lecturers, and assistant or lead directors at the intercollegiate level; and to become actively engaged in leadership roles within professional organizations.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Health Services	B.S.				College of Health Professions	Health Professions	College-Wide Program	
History	B.A., B.S.	M.A., M.S.	Ph.D.	The overall mission of the NDSU History program is to provide a publicly engaged and inter-disciplinary education through various majors (B.A., B.S., public history, history and social science education, MA, PhD), giving our graduates the ability to participate in reasoned argument, provocative inquiry, critical evaluation of sources, creative problem-solving, collaborative research, and lifelong learning; many of our students obtain teaching licenses for secondary teaching and some go on to graduate school for advanced historical study.	History, Philosophy and Religious Studies	Arts, Humanities and Social Sciences	15	0

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History Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Horticulture	B.S.			As a result of economic and population growth in North Dakota, horticultural products are a growing commodity within the state. There has been a significant increase of employment opportunities within the state and region associated requiring a 4-year baccalaureate horticulture degree. The NDSU horticulture program prepares undergraduate students to meet these needs within the state and region as well as prepares potential students for graduate school opportunities.	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2
Horticulture		M.S.		Agriculture is the major economic engine in North Dakota, and crops provide a high percentage of the income from agriculture. Specialized academic and research training in Plant Sciences and Horticulture is available in all areas of cropping systems, including plant breeding and genetics, weed science, biotechnology, field and forage crop production and management, and crop physiology. Each study area is designed to provide students with a comprehension of the discipline and of relevant regional and global-community social issues. Employment opportunities are high for MS and PhD graduates. These NDSU M.S. and Ph.D. graduate degrees prepare students for advanced placement within private companies and government entities for production and/or research positions.	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2
Hospitality and Tourism Management	B.A., B.S.			Hospitality and tourism is North Dakota's third largest industry and one of the highest workforce needs, not only in the Fargo-Moorhead area, but also increasingly statewide. The Hospitality and Tourism Management (HTM) program is a pipeline for providing hospitality leaders, managers, and workers for the greater Fargo metro and the state. We are the only four-year program for HTM in the State, and the only one accredited in the region (Montana, South Dakota, Minnesota, and Wyoming). There are only 62 accredited programs nationwide. We have a generalist program that prepares students for multiple sectors of the hospitality and tourism industry. Due to the job opportunities in the greater Fargo area, many of our students are employed in the field, filling workforce needs and gaining valuable work experience while pursuing their degree. The academic and on-the-job training they receive prepares them well for upward mobility once they graduate. We have successful alumni working in the state in lodging, food service, events, travel, and tourism. Due to the growth in the industry statewide, we are seeing more recent graduates stay in the state or alumni that come back after working out of state.	Apparel, Merchandising, Interior Design, and Hospitality Management	Human Sciences and Education	11	4
Human Development and Family Science	B.A., B.S.	M.S.		Graduates in HDFS are needed for positions in social and human services, including child care administration, after school and extra-curricular programs, elder care and support, family financial planning and credit counseling, parent and family life education, extension programming, child protection, and child care licensing. These graduates are trained to facilitate and promote optimal development and well-being while considering the individual and family within the community context; this focus serves the public good.	Human Development and Family Science	Human Sciences and Education	8	2

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Industrial and Manufacturing Engineering			Ph.D.	The Department of Industrial and Manufacturing Engineering offers graduate studies at both the Master of Science and Doctor of Philosophy levels. A Master of Science degree may be earned in either Industrial Engineering and Management (IE&M) or Manufacturing Engineering (MfgE). The IE&M master's program is designed to equip students with the ability to analyze, design, and manage industrial and business systems as well as to enable students to develop scholarly abilities to further pursue a Ph.D. degree in industrial and manufacturing engineering.	Industrial and Manufacturing Engineering	Engineering	6	2
Industrial Engineering and Management	B.S. I.E.Mgt.	M.S.		The IME Department offers high quality undergraduate and graduate programs through innovative teaching, imaginative research and scholarship. We offer two programs of study: Industrial Engineering & Management and Manufacturing Engineering. Industrial Engineering concentrates on designing, installing, and improving procedures and systems for effective and efficient operation of enterprises in healthcare, financial, transportation, distribution and other types of service industries; governmental units and agencies. Manufacturing engineering involves 1) designing processes to make high-quality, functional and economical products; 2) developing facilities for efficient production systems; and 3) utilizing advanced technologies such as laser machining, welding, robotics and micro-manufacturing. Both programs are accredited by the Engineering Accreditation Commission of the ABET, http://www.abet.org	Industrial and Manufacturing Engineering	Engineering	6	2
Interior Design	B.A., B.S.			Graduates from the Interior Design (ID) program plan, design and furnish interiors of commercial, residential and/ or industrial buildings to raise the productivity and improve safety of intended users. The interior design program is the only one in the state. Graduates of the ID program are highly sought by architectural firms, contractors, builders and retailers because of the need for efficiencies in space planning.	Apparel, Merchandising, Interior Design, and Hospitality Management	Human Sciences and Education	11	4
International Agribusiness		M.S.		Prepare students for top entry level industry jobs. Prepare students for PhD programs. Research completed by graduate students are mostly focused on North Dakota and regional issues. The contribution of research output generates new knowledge and increases total factor productivity, an important element to grow GDP.	Agribusiness and Applied Economics	Agriculture, Food Systems, and Natural Resources	23	0
Journalism	B.A., B.S.			This course of study is designed to help students know how to use public print and/or broadcast communication media. Upon graduation, these students serve as newspaper reporters, editors, copy and feature editors, TV and radio broadcast technicians, TV and radio broadcast anchors, and communication specialists throughout ND.	Communication	Arts, Humanities and Social Sciences	11	4
Landscape Architecture		M.L.A		We serve the needs of North Dakota by proving professional Landscape Architects. These degrees lead to professional license by the State. Our graduates provide services ranging from landscape design, master planning, and land use strategies. The primary goal is the health, safety and well- being of citizens through great design. Our guiding principle is to educate design leaders who will provide North Dakota with individuals who will solve building and landscape problems.	Landscape Architecture	Arts, Humanities and Social Sciences	4	2

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Management	B.S.			This program serves all for-profit, non-profit, and government organizations by developing management professionals with knowledge and skills in all areas of management, including strategy, human resource management, operations management, and supply chain management.	Management and Marketing	Business	19	1
Management Communication	B.A., B.S.			This course of study is designed to train student to be effective managers, leaders, and communication specialists in corporate environments. Upon graduation, these students serve as human resource managers, conflict resolution specialists, arbitrators and negotiation specialists, and corporate trainers in health, insurance, media, and hospitality industries throughout ND.	Communication	Arts, Humanities and Social Sciences	11	4
Management Information Systems	B.S.			There is a strong demand in Fargo, greater North Dakota, and the entire U.S. for graduates in all three AFIS disciplines. Demand far outpaces supply with a current shortfall in ND that is anticipated to grow in the coming years. As a result, placement rates are between 95% and 100% for the department's graduates.	Accounting and Information Systems	Business	13	1
Manufacturing Engineering	B.S. Mfg.E.	M.S.		See Industrial Engineering and Management	Industrial and Manufacturing Engineering	Engineering	6	2
Marketing	B.S.			This program serves all for-profit, non-profit, and government organizations by developing marketing professions with knowledge and skills in all areas of marketing, including marketing communications, retail management, sales and sales management, product/ service management and marketing research.	Management and Marketing	Business	19	1
Mass Communication		M.A., M.S.		See Communication	Communication	Arts, Humanities and Social Sciences	11	4
Materials and Nanotechnology		M.S.	Ph.D.	The Materials and Nanotechnology Program at North Dakota State University is an interdisciplinary Graduate Program spanning several Colleges and Centers, but sustained primarily by the College of Science and Mathematics, the College of Engineering and Architecture, the Graduate School and the Center for Nanoscale Science and Engineering. Both PhD and Master's degrees are offered. Graduate students work closely with one or more faculty on challenging problems directed at meeting the technological needs of society in the 21st Century. Areas of focus include sensing and electronic design, flexible electronics and photovoltaics, polymer nanocomposites and high performance polymer coatings, biologically synthesized materials, biomedical engineering, combinatorial science, and targeted drug delivery systems. Research projects are conducted in any number of state-of-the-art laboratories across campus, including Research 1, Research 1A, Research 2, and Batcheller Technology Center in Research and Technology Park. The Fargo-Moorhead area is rapidly emerging as a competitive and attractive region for new start-up companies and high-tech industry.	Interdisciplinary			

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Mathematics	B.A., B.S.	M.S.	Ph.D.	Mathematics is a central component of an educated workforce. The tools developed by mathematicians are used throughout the STEM disciplines, making it a central piece of efforts to increase the STEM workforce. In addition, the mathematics majors provides students a strong foundation in critical thinking, experience with completing open ended projects, and experience communicating technical material to others. This makes mathematics majors ideal candidates for positions across the workforce. Specifically with respect to North Dakota, mathematics majors find jobs in many professions, including government, education, engineering, management, and analysis positions. We also prepare students for professional or graduate study in a variety of areas such as the various STEM disciplines, STEM Education, Business, and Law. Finally, quantitative skills have always been a fundamental part of the liberal arts.	Mathematics	Science and Mathematics	17	1
Mathematics Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Mechanical Engineering	B.S.M.E.	M.S.	Ph.D.	There is a very strong demand in North Dakota and throughout the upper Midwest for mechanical engineers. The 2014 placement rate of our graduates was 94% with an average starting salary of $57k (2015 data not yet available). Our graduates go into numerous industrial sectors, including manufacturing, energy, biomedical, aerospace, automation, etc. Feedback from advisory board members and other recruiters indicates a looming shortage of mechanical engineers in our region.	Mechanical Engineering	Engineering	21	3
Medical Laboratory Science	B.S.			The Bachelor of Science, major in Medical Laboratory Science, assists in meeting the state's workforce need for certified, licensed medical laboratory scientists to work in hospital and clinic laboratories to perform and analyze all types of lab studies necessary to assist a physician in diagnosis and treatment, disease monitoring and prevention. NDSU's MLS program is only one of two in the NDUS. According to the U.S. Department of Labor Bureau of Labor Statistics, approximately 450 medical laboratory scientists are employed in the state, with employment of clinical laboratory workers expected to grow approximately 13%, about as fast as average for all occupations through 2022. For the past three years, 42% of NDSU MLS graduates became employed in ND immediately upon graduation.	Allied Sciences	Health Professions	1	0
Merchandising		M.S.		The master's degree in Merchandising is designed for professionals in a variety of merchandising fields. This program provides students with a global perspective of the interaction of cultural, economic, political, social, and environmental systems as they relate to the industry. In the ever-changing global environment, the ability to merchandise products to the consumer is a strategic advantage, and will distinguish graduates of this program from their peers in the industry.	Apparel, Merchandising, Interior Design, and Hospitality Management	Human Sciences and Education	11	4

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Microbiology	B.S.	M.S.	Ph.D.	Microbiology is a fundamental biological science which offers a variety of challenges and opportunities. Microbiologists have made some of the most important scientific discoveries in this century. The discipline covers a wide spectrum of specialized interest areas that illustrate how microbes affect human and animal health, our environment, food safety, food technology, and the biotechnology industry. For this reason, even students who choose to major in other fields may benefit from a minor in microbiology. Students majoring in microbiology are well prepared to enter graduate school, veterinary school, and medical school, or to establish careers in food or pharmaceutical industries, hospitals, public health agencies, universities, research laboratories, and other biomedical industries.	Microbiological Sciences	Agriculture, Food Systems, and Natural Resources	11	1
Music	B.A., B.S., B.Mus.	M.M.	D.M.A.	The smallest undergraduate degree program; useful, however, for those who wish to (1) study music in a broad liberal arts context, (2) seek a double major, generally along with a technical degree such as architecture or engineering, or (3) acquire a music major supplemented by a non-degree course of study such as pre-medicine. The undergraduate degree (B.Mus in Music Education) prepares music teachers in P-12 education, and results in North Dakota licensure. There is a music teacher shortage in North Dakota, and we have a 100% employment rate for all of our graduates who wish such careers. Licensure in other states is generally not arduous due to the comprehensive nature of the curriculum. The graduate degree (M.M. in Music Education) is directed at P-12 music teachers who wish to remain full time teachers while pursuing the master's degree. Enrollment in this program grows yearly; these students wish to sharpen their skills, develop teacher networks, and increase their salaries by having attained advanced degrees.	Music, Challey School of	Arts, Humanities and Social Sciences	14	3
Natural Resources Management	B.S.	M.N.R.M., M.S.	Ph.D.	We serve the agricultural and natural resource stakeholders of the state, region, and nation.	School of Natural Resource Sciences	Agriculture, Food Systems, and Natural Resources	20	1
Nursing/Advanced Nursing Practice	B.S.N.		D.N.P.	The state of North Dakota is experiencing a critical shortage of nurses creating a high demand. The BSN program aligns with the land grant mission of NDSU to meet the critical need for nurses in the health care workforce. The majority of our pre-licensure BSN graduates work in the state/ region following graduation. For example, 99% of the spring 2015 graduates were employed in North Dakota or Minnesota following graduation (86% North Dakota and 14% Minnesota). A variety of health care organizations/ bodies have identified the critical role advanced practice nurses play in meeting the health care needs of our nation, especially in underserved and rural populations. The NDSU DNP program prepares graduates to meet these critical needs in our state and region. Family Nurse Practitioners manage the primary care, episodic care, and chronic disease states of patients across the life span. Of the 25 DNP graduates since 2014, 92% are employed in North Dakota or Minnesota (57% in North Dakota and 43% Minnesota). This program aligns well with NDSU's mission as a land grant university.	School of Nursing	Health Professions	41	2

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Pharmaceutical Sciences	B.S.	M.S.	Ph.D.	The Department of Pharmaceutical Sciences, one of the five academic divisions of the College of Health Professions subscribes to the missions of the College and of North Dakota State University in the provision of Teaching, Research, and Service. The Department provides instruction in disciplines applicable to science. The faculty is engaged in research in the natural and biological sciences, as well as mentor post-doctoral, graduate and professional students in advanced concepts of pharmaceutical science and in the process of scientific inquiry. The Department provides service to the University and scientific communities through its participation in student activities and projects, institutional committees, and external organizations related to research in the pharmaceutical sciences. The Department endeavors to respond to the changing needs of society and to foster the growth of its constituents by pursuing its mission in an environment of academic, ethical and scientific excellence. The Department of Pharmaceutical Sciences teaches pharmacists how basic sciences applied to Pharmacy. Currently, there are thirteen faculty (8 tenured and 5 tenure track), 30 graduate students and 8 post- doctoral fellows/research associates in the department. The department envisions to be a recognized leader in pharmaceutical sciences by achieving excellence in research, teaching and service through innovation, collaboration and professionalism. The department meets the North Dakota workforce need by preparing pharmacists for health care, and pharmaceutical scientists for growing healthcare industries.	Pharmaceutical Sciences	Health Professions	15	0

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Pharmacy			Pharm.D.	NDSU School of Pharmacy (NDSU SOP) that is one of four academic programs in the College of Health Professions (CHP) and the only pharmacy program in the state of North Dakota. The majority of the pharmacist workforce in the state are graduates of this program. Pharmacy practice faculty (both professors of practice and tenure-track or tenured faculty) are dedicated to the College and University mission to provide excellence in Teaching, Research and Service. The department provides high-quality clinical, public health, and social and administrative sciences education and training delivered via didactic courses, laboratory work, high- and low-fidelity clinical simulations and experiential clinical training at diverse pharmacy practice settings ranging from community pharmacies, ambulatory/health clinics, long-term care facilities and hospitals, providing a variety of institutional services ranging from general medicine, oncology, pediatric, and psychiatry among others. In addition, the department is involved in interprofessional education within the college/ university health professional programs to address current and future needs for interprofessional collaboration and practice in research as well as clinical settings to improve patient health outcomes, patient satisfaction and organizational effectiveness and to decrease health-care costs and medication errors. Faculty from the department are advisors for professional student chapters of variety of professional pharmacy associations and through this are involved in community health screenings, outreach and preparing students with the applied practice to become community and institutional leaders in their own right. All of these initiatives are designed to coalesce into training that prepares knowledgeable, skilled, ethical, compassionate and self-guiding entry level pharmacists capable of providing high-level patient-centered pharmaceutical care grounded in evidence and effective in interprofessional environments to address healthcare needs of rural and urban populations. In addition, the department provides a continuing pharmacy education program for pharmacists and pharmacy technicians in the state of North Dakota to address current and future needs of diverse populations and to educate and train alumni and licensed- practitioners in the state in changes to the profession, in scientific information and understanding of provision of care for diverse and changing populations.	Pharmacy Practice	Health Professions	19	6
Philosophy/Ethics	B.A., B.S.			NDSU Philosophy program is to provide a publicly engaged and inter-disciplinary undergraduate education, giving our graduates the ability to participate in reasoned argument, provocative inquiry, critical evaluation of sources, creative problem-solving, collaborative research, and lifelong learning. Our students, due to their skills in problem-solving, analysis, and communication, have a very high job placement rate.	History, Philosophy and Religious Studies	Arts, Humanities and Social Sciences	15	0
Physical Education	B.S.			The health and physical education programs prepare private and public K-12 health education teachers, physical education teachers, and coaches for employment throughout the state of North Dakota and neighboring states. Our enrollments have remained steady for the past five years and it is anticipated to remain steady in the future. Even though it is anticipated that the enrollment will remain steady we are in need of teaching space due to the sharing of building space with the Dept. of Athletics, and the Army and Air Force ROTC programs.	School of Education	Human Sciences and Education	30	2

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Physics	B.A., B.S.	M.S.	Ph.D.	Physics is generally perceived to be a challenging program that relatively few but often some of the academically strongest students obtain a degree in. For example, 0.2% of all college graduates but about 2% of Stanford undergraduates major in physics. Also, students who study physics do better on SAT, MCAT and GRE tests. Physics is attractive to many highly intellectually capable students because physical theories represent pinnacles of human achievement, are intellectually stimulating, and form the basis of many modern technologies. Students who study physics are prepared to work on forefront ideas in science and technology, in academia, the government, or the private sector. Physics opens the door to many career options, including fields like engineering and programming. Jobs directly as a physicist typically require a PhD. Therefore, graduate school is a common path for physics majors.	Physics	Science and Mathematics	10	1
Physics Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Plant Pathology		M.S.	Ph.D.	The Department of Plant Pathology offers graduate study leading to the M.S. and Ph.D. degrees. Advanced degrees may involve specialized training in the following areas: host-parasite genetics, molecular biology and genomics, epidemiology, tissue culture, soil and seed-borne diseases, microbial ecology, and integrated disease management.	Plant Pathology	Agriculture, Food Systems, and Natural Resources	15	0
Plant Sciences		M.S.	Ph.D.	Agriculture is the major economic engine in North Dakota, and crops provide a high percentage of the income from agriculture. Specialized academic and research training in Plant Sciences and Horticulture is available in all areas of cropping systems, including plant breeding and genetics, weed science, biotechnology, field and forage crop production and management, and crop physiology. Each study area is designed to provide students with a comprehension of the discipline and of relevant regional and global-community social issues. Employment opportunities are high for MS and PhD graduates. These NDSU M.S. and Ph.D. graduate degrees prepare students for advanced placement within private companies and government entities for production and/or research positions.	Plant Sciences	Agriculture, Food Systems, and Natural Resources	38	2
Political Science	B.A., B.S.			The political science program (B.A., B.S.) is designed to provide students with a broad-based education in political science through and its subfields through coursework in political theory, methodology, American government, international politics, comparative politics, public policy, and constitutional law. Students who complete the program are well-equipped to serve North Dakota and the nation in all levels of the public sector, in non-governmental organizations (NGOs), and in law-related careers after attending an appropriate graduate school or law school.	Political Science & Public Policy	Arts, Humanities and Social Sciences	8	0
Precision Agriculture	B.S.				Agricultural and Biosystems Engineering	Agriculture, Food Systems, and Natural Resources; Engineering	13	3

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Psychological Clinical Science			Ph.D.	The primary purpose of this program is to prepare students for careers in academic or research settings. Thus, a major emphasis is on research training. We hope to train researchers who will contribute to psychological knowledge through the investigation of clinically relevant issues, including basic research on the nature, etiology, and course of health related problems or psychological disorders, as well as applied research which investigates the prevention and treatment of health and mental health problems.	Psychology	Science and Mathematics	16	12
Psychology	B.A., B.S.	M.S.	Ph.D.	Psychology programs contribute in multiple ways. Undergraduates are trained to understand human thought and behavior, think critically, and to understand and apply empirical research results. Graduate students (depending on their specific programs) are trained in both basic and applied research, psychotherapy, and teaching. Some of our graduate alumni help meet needs for human service professionals in the state. Others are basic research scientists who add to our knowledge of physical and mental health, as well as the basic sensory and cognitive processes governing human functioning.	Psychology	Science and Mathematics	16	12
Public Health		M.P.H.		Public health is defined as the practice of helping members of society live healthier, longer lives. More specifically, public health focuses on improving the general health of communities through efforts to monitor the spread of diseases, initiatives (both clinical and policy-oriented) to prevent disease and disability, and by promoting healthy lifestyles through education and community engagement. It is practiced by multidisciplinary teams whose members' training spans a wide array of academic and vocational fields. The Mission of the NDSU MPH Program is to promote health and well-being in diverse populations with an emphasis on American Indian and other underserved populations by providing educational, practical, and research opportunities for public health professionals. The MPH program builds capacity of the existing public health workforce and acts as a catalyst for leadership development, continuing education, diversity, and innovation among the public health workforce.	Public Health	Health Professions	6	3
Public History	B.A., B.S.			The Public History program prepares students for employment in fields such as archives and museums, historical editing, historic preservation, costume conservation, and archeology, such as: Museums, intended to prepare students for work as a curator, interpreter, or administrator in museums; Archives, intended to prepare students for work with documents and/or photographs in a archival repository; and Historical Preservation, intended to prepare students to work with the National Historic Preservation legislation to identify historic buildings and sites throughout the nation.	History, Philosophy and Religious Studies	Arts, Humanities and Social Sciences	15	0
Public Policy		M.P.P.			History, Philosophy and Religious Studies	Arts, Humanities and Social Sciences	15	0

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Radiologic Sciences	B.S.			The Bachelor of Science, major in Radiologic Sciences, assists in meeting the state's workforce need for licensed, certified radiologic technologists to perform diagnostic imaging exams in hospitals, clinics, and diagnostic imaging centers in general x-ray, CT, MRI, interventional radiography, and mammography. These graduates also continue on to advanced credentialing programs and return to the state to work in related specialty areas like radiation therapy. NDSU's Radiologic Sciences program is only one of two in the NDUS; the other is located in western ND at Minot State University. According to the U.S. Department of Labor Bureau of Labor Statistics, approximately 500 radiologic technologists are employed in ND, with employment of radiologic technologists expected to grow faster than average for all occupation through 2022. For the past three years, 41% of NDSU graduates became employed in ND immediately upon graduation. Growth in the Radiologic Sciences program is influenced by the number of clinical spots available in affiliated hospitals where students do their applied didactic and clinical education required for their degree. We anticipate the addition of a sonography/ultrasound track as an NDSU Radiologic Sciences option within the next five years, with a concurrent increase of approximately 50 RS majors. This increase has the potential to increase enrollment in undergraduate general education courses, chemistry, physics, anatomy & physiology, microbiology, and math, as well as, the potential need for additional office space for advising students.	Allied Sciences	Health Professions	1	0
Range Science	B.S.	M.S.	Ph.D.	We serve the agricultural and natural resource stakeholders of the state, region, and nation.	School of Natural Resource Sciences	Agriculture, Food Systems, and Natural Resources	20	1
Respiratory Care	B.S.			NDSU's Bachelor of Science, major in Respiratory Care, is the only program in the NDUS that assists in meeting the state's workforce need for licensed, registered respiratory therapists, specialists on the health care team that evaluate, treat, and educate patients with heart and lung disorders. For the past three years, 65% of NDSU's Respiratory Care graduates became employed in ND immediately upon graduation. According to the U.S. Department of Labor Bureau of Labor Statistics approximately 400 respiratory therapists are employed in ND in hospitals and clinics, rehabilitation and skilled nursing facilities, sleep labs, and home care companies, with employment of respiratory therapists expected to grow faster than average for all occupation through 2022. This growth is attributed to a substantial increase in numbers of the middle-aged and elderly that heighten the incidence of heart and lung disorders.	Allied Sciences	Health Professions	1	0

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Rhetoric, Writing and Culture			Ph.D.	The MA in English and PhD in Rhetoric, Writing, and Culture meet the needs and principles described below. The PhD focuses especially on the second bullet point discussing the study of rhetoric, composition, literacy, and professional writing. Both degrees prepare students to meet the state's workforce needs as teachers in higher education (the MA for junior and technical colleges; the PhD for 4-year colleges and universities), writers/communication specialists, technical writers and editors, and to fill positions in non-profit organizations. •Rooted in the liberal arts and humanities, the study of literature fosters creative and critical abilities, promotes multiculturalism and tolerance in a globalized world, and fosters understanding of cultural, historical, ethical, aesthetic, and linguistic forces that shape our lives •Effective writing makes social and professional engagement possible. The study of rhetoric, composition, literacy, and professional writing enhances facilities in writing, communication, and technology much valued by local communities, industry, and organizations. •The study of linguistics cultivates an appreciation for the English language, its history, conventions, structures, and uses.	English	Arts, Humanities and Social Sciences	23	7
Social Science Education	B.A., B.S.			See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Sociology	B.A., B.S.	M.S.		The sociology program educates students for participation in health departments, urban and regional planning offices, social services, non-governmental organizations, and community organizations.	Sociology and Anthropology	Arts, Humanities and Social Sciences	9	0
Software Engineering		M.S., M.S.E.	Ph.D.	Software engineering focuses on technical and managerial leadership for large and complex systems. Founded on engineering principles, software engineering is more involved with software quality and software testing. Testing and quality assurance are increasingly important as computers continue to be absorbed into all reaches of society. According to the Bureau of Labor Statistics, the median annual wage for applications software developers was $90,060, and employment of software developers is projected to grow 22 percent from 2012 to 2022, mainly due to a large increase in the demand for computer software.	Computer Science	Engineering	17	1
Soil Science	B.S.	M.S.	Ph.D.	We serve the agricultural and natural resource stakeholders of the state, region, and nation.	School of Natural Resource Sciences	Agriculture, Food Systems, and Natural Resources	20	1
Spanish	B.A. B.S.			In addition to enabling students to become proficient in the Spanish language, the Spanish major strengthens students' communication and writing skills in their native language, which are highly desirable to employers, through the focus on learning about other languages. The study of another language and culture, with a study-abroad experience, prepares students to better interact with others in a diverse workplace and clientele in North Dakota or in a job with a broader national or international focus, such as companies doing business with South and Central America. Spanish education majors serve the state by educating elementary and secondary students.	Modern Languages	Arts, Humanities and Social Sciences	7	1
Spanish Education	B.A., B.S.				School of Education	Human Sciences and Education	30	2

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Speech Communication		M.A., M.S.		See Communication	Communication	Arts, Humanities and Social Sciences	11	4
Sport Management	B.S.			The need for educated and prepared sport business professionals is evident within the community and the state of North Dakota. The high interest from local and state sport related organizations in working with the Sport Management is a direct representation of that. The interest from students is also increasing with an expected increase in enrollment and the need for additional faculty and facilities. One way for NDSU to stand apart within the next 5 years would be a space dedicated to sport business related community projects, a sports business institute of sorts.	Health, Nutrition, and Exercise Sciences	Human Sciences and Education	21	2
Statistics	B.A., B.S.		Ph.D.	Statistics involves the analysis of numerical data. This ranges from the calculation of simple statistics to the mathematical theory behind very sophisticated statistical procedures. Statistical tools are used by professionals in areas such as agriculture, pharmacy, business, human development, and social sciences. The Department of Statistics offers a major leading to a B.S., M.S., or Ph.D. degree, as well as minors in statistics for both undergraduate and graduate students. The program emphasis is on applied statistics, consulting, and computational methods.	Statistics	Science and Mathematics	7	0
STEM Education			Ph.D.	See Education: Teacher Education	School of Education	Human Sciences and Education	30	2
Strategic Communication	B.A., B.S.			This course of study prepares students to conduct market- focused research for the purposes of designing messages that effectively inform various internal and external stakeholders. The complexity of the ND workforce (i.e. natural resource, health, and corporate institutions) requires communication specialists grounded in advertising, message design, and public relations practices for effective and meaningful internal and external communications.	Communication	Arts, Humanities and Social Sciences	11	4
Theatre Arts	B.A., B.F.A., B.S.	M.A.		Our graduates are hired every year across the state in educational, community and professional theatres, in schools and in entertainment. Some of our graduates also go on to work regionally, attend Grad school or find work elsewhere across the United States. With the growth of Fargo, there are more opportunities and more need in the future in the workforce of ND for people with skills that we teach.	Theatre Arts	Arts, Humanities and Social Sciences	6	2

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Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Transportation and Logistics		M.S.C.M	Ph.D.	Our lives depend on the transportation of people and goods—nearly every facet of our lives is affected by transportation. Transportation is continually evolving, growing and changing to meet the needs of our fast-paced world. As businesses operate in an increasingly global environment, the management of the global supply chain becomes a critical focus for competitive advantage. The transportation industry needs professionals with the advanced education to meet the challenges of the 21st century. A wide range of career opportunities exists in the transportation industry: civil engineering, plane and ship pilots, bridge designers, transit system managers, railroad engineers, environmental engineers, contract managers, transportation planners, logistics specialists, auditors, accountants, biologists, foresters, archaeologists, and many more. Similarly, the supply chain logistics industry offers a wide variety of opportunities facilitated by advances in big data, analytics, and remote sensing and tracking technologies. More and more, careers focus on leveraging information and technology in the supply chain as executives see the strategic value of human capital in supply chain. An advanced degree in transportation and logistics will help you stand out when you begin your career or are advancing within the industry. The Transportation & Logistics graduate programs at NDSU will enhance your knowledge, skills, and opportunities for a successful career in the transportation industry. NDSU's doctorate, a master's degree and certificate programs will help you advance your education and become a leader in the industry.	Transportation, Logistics and Finance	Business	6	5
Transportation and Urban Systems		M.S., M.T.U.S.		This degree focuses on: (1) urban transportation systems; (2) relationships between transportation, land use, environment, emergency response, and logistical delivery systems; (3) coordinated planning, operations, and security; and (4) the spatial dimensions of urban systems. The curriculum is built around the topics of public transportation systems, geographic information systems, freight transportation and logistical delivery systems, urban geography and land use, the environmental impacts of transportation systems, transportation systems security, and the sustainability of transportation and urban systems.	Transportation, Logistics and Finance	Business	6	5
University Studies	B.U.S.			The Bachelor of University Studies (BUS) degree is a baccalaureate degree offered in order to meet the need for an educated workforce and created to provide a customized, nontraditional degree for students whose goals and objectives cannot be met via a traditionally established academic major or minor. The program allows flexibility in designing a degree with appropriate areas of emphasis, allowing students to meet unique personal and career goals. This degree is not designed to replace any existing NDSU major, and all students are encouraged to seek an existing campus major when such a major is available. Each degree is individually tailored to meet the needs of a particular student and is designed by the student with assistance from an academic advisor before being approved by a committee composed of campus-wide representation.	College of Arts, Humanities and Social Sciences		University-wide Program	

Program Offerings & Titles (1)(a) – Workforce Need / Public Agenda / Academic Principle (iv)					Number of Instructional Faculty (iii) **			
Program Title (a)	**Bach**	**Mast**	**Doct**	**Workforce Need / Public Agenda / Academic Principle Served by Program**	**Department**	**College**	**F/T**	**P/T**
Veterinary Technology	B.S.			Veterinary technicians are important members of the animal health care team. They primarily function as professional technical support to veterinarians, biomedical researchers, and other scientists. Veterinary Technicians can also find work in a number of areas outside of clinical veterinary practice. Our graduates also work in the areas of teaching, industry, research, government and a variety of livestock and animal care related businesses.	Animal Sciences	Agriculture, Food Systems, and Natural Resources	26	3
Women and Gender Studies	B.A., B.S.			We serve all North Dakota citizens because issues of gender permeate all aspects of society. Citizens educated in gender are better able to navigate work, social, and relational contexts.	Women & Gender Studies		2	0

**** NOTE: Instructional faculty numbers listed are totals by THAT DEPARTMENT, *not by the program.***

Number of Degrees (i) - Number of Graduates (ii)

1.b.i.(1)(a)

Number of Degrees Awarded / Graduates by Academic College *(Spring 2021 Totals)*

Total Primary Degrees Awarded: 1,883 **Secondary or Tertiary Majors Awarded: 84**

COLLEGE OF AGRICULTURE, FOOD SYSTEMS, AND NATURAL RESOURCES

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Agribusiness & Applied Economics (M.S.)	-	-	-	3	-	**3**
Agribusiness (B.S.)	4	-	-	-	-	**4**
Agricultural Economics (B.S.)	25	-	-	-	-	**25**
Agricultural Systems Management (B.S.)	6	-	-	-	-	**6**
Animal Science (B.S.)	18	-	-	-	-	**18**
Animal Sciences (M.S.)	-	-	-	1	-	**1**
Animal Sciences (Ph.D.)	-	-	-	-	1	**1**
Crop & Weed Sciences (B.S.)	22	-	-	-	-	**22**
Economics (B.S.)	9	-	-	-	-	**9**
Equine Science (B.S.)	3	-	-	-	-	**3**
Food Science (B.S.)	1	-	-	-	-	**1**
General Agriculture (B.S.)	5	-	-	-	-	**5**
Horticulture (B.S.)	3	-	-	-	-	**3**
Microbiology (B.S.)	14	-	-	-	-	**14**
Microbiology (M.S.)	-	-	-	3	-	**3**
Natural Resources Management - AF&N (B.S.)	16	-	-	-	-	**16**
Natural Resources Management (M.S.)	-	-	-	4	-	**4**
Natural Resources Management (MNRM)	-	-	-	1	-	**1**
Plant Pathology (M.S.)	-	-	-	1	-	**1**
Plant Pathology (Ph.D.)	-	-	-	-	2	**2**
Plant Sciences (M.S.)	-	-	-	2	-	**2**
Plant Sciences (Ph.D.)	-	-	-	-	2	**2**
Precision Agriculture (B.S.)	1	-	-	-	-	**1**
Range Science (B.S.)	2	-	-	-	-	**2**
Range Science (M.S.)	-	-	-	2	-	**2**
Veterinary Technology (B.S.)	3	-	-	-	-	**3**
TOTAL	**132**	**-**	**-**	**17**	**5**	**154**

COLLEGE OF ARTS, HUMANITIES & SOCIAL SCIENCES

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Agricultural Communication (B.S.)	3	-	-	-	-	3
Anthropology (B.S.)	4	-	-	-	-	4
Architecture (B.S.Arch.)	60	-	-	-	-	60
Architecture (M.Arch.)	-	-	-	58	-	58
Art (B.A.)	1	-	-	-	-	1
Art (B.F.A.)	6	-	-	-	-	6
Art (B.S.)	4	-	-	-	-	4
Communication (M.A.)	-	-	-	1	-	1
Communication (Ph.D.)	-	-	-	-	1	1
Criminal Justice (B.A.)	1	-	-	-	-	1
Criminal Justice (B.S.)	23	-	-	-	-	23

Criminal Justice Administration (M.S.)	-	-	-	1	-	1
Emergency Management (B.S.)	9	-	-	-	-	9
English (B.A.)	3	-	-	-	-	3
English (B.S.)	3	-	-	-	-	3
English (M.A.)	-	-	-	2	-	2
Environmental Design (B.S.)	12	-	-	-	-	12
French (B.A.)	2	-	-	-	-	2
History (B.A.)	1	-	-	-	-	1
History (B.S.)	3	-	-	-	-	3
History (Ph.D.)	-	-	-	-	2	2
Journalism (B.S.)	7	-	-	-	-	7
Landscape Architecture (B.L.A.)	1	-	-	-	-	1
Landscape Architecture (M.L.A.)	-	-	-	12	-	12
Management Communication (B.S.)	3	-	-	-	-	3
Music (B.Mus.)	8	-	-	-	-	8
Music (B.S.)	4	-	-	-	-	4
Music (M.M.)	-	-	-	2	-	2
Philosophy/Humanities (B.S.)	1	-	-	-	-	1
Political Science (B.A.)	1	-	-	-	-	1
Political Science (B.S.)	16	-	-	-	-	16
Public History (B.S.)	1	-	-	-	-	1
Publishing (Cert.)	-	2	-	-	-	2
Sociology (B.S.)	4	-	-	-	-	4
Spanish (B.A.)	1	-	-	-	-	1
Spanish (B.S.)	1	-	-	-	-	1
Strategic Communication (B.A.)	1	-	-	-	-	1
Strategic Communication (B.S.)	11	-	-	-	-	11
Theatre Arts (B.F.A.)	2	-	-	-	-	2
Theatre Arts (B.S.)	1	-	-	-	-	1
University Studies (B.U.S.)	26	-	-	-	-	26
Women's Studies (Cert.)	-	1	-	-	-	1
TOTAL	**224**	**3**	**-**	**76**	**3**	**306**

COLLEGE OF BUSINESS

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Accountancy (M.Acc.)	-	-	-	5	-	5
Accounting (B.S.)	24	-	-	-	-	24
Business Administration (B.S.)	49	-	-	-	-	49
Business Administration (M.B.A.)	-	-	-	15	-	15
Business Analytics (Cert.)		6	-	-	-	6
Business Analytics (M.S.)	-	-	-	10	-	10
Digital Marketing & Innovation (Cert.)	-	2	-	-	-	2
Entrepreneurship (Cert.)	-	4	-	-	-	4
Enterprise Resource Planning (Cert.)	-	3	-	-	-	3
Finance (B.S.)	36	-	-	-	-	36
Finance (Cert.)	-	7	-	-	-	7

Leadership & Management Skills (Cert.)	-	9	-	-	-	9
Management (B.S.)	31	-	-	-	-	31
Management Information Systems (B.S.)	17	-	-	-	-	17
Marketing (B.S.)	35		-	-	-	35
Professional Selling (Cert.)		12	-	-	-	12
Supply Chain Management (M.S.C.M.)	-	-	-	1	-	1
Transportation & Logistics (Ph.D.)	-	-	-	-	1	1
TOTAL	**192**	**43**	**-**	**31**	**1**	**267**

COLLEGE OF ENGINEERING

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Agricultural & Biosystems Engineering (B.S.A.B.En.)	10	-	-	-	-	**10**
Civil Engineering (B.S.C.E.)	51	-	-	-	-	**51**
Civil Engineering (Ph.D.)	-	-	-	-	1	**1**
Computer Engineering (B.S.Cpr.E.)	22	-	-	-	-	**22**
Computer Science (B.A.)	3	-	-	-	-	**3**
Computer Science (B.S.)	39	-	-	-	-	**39**
Computer Science (M.S.)	-	-	-	10	-	**10**
Computer Science (Ph.D.)	-	-	-	-	1	**1**
Construction Engineering (B.S.Con.E.)	4	-	-	-	-	**4**
Construction Management (B.S.Con.M.)	30	-	-	-	-	**30**
Construction Management (M.Cons.M.)	-	-	-	2	-	**2**
Construction Management (M.S.)	-	-	-	1	-	**1**
Cybersecurity (Cert.)	-	1	-	-	-	**1**
Electrical & Computer Engineering (M.Engr.)	-	-	-	1	-	**1**
Electrical & Computer Engineering (Ph.D.)	-	-	-	-	1	**1**
Electrical Engineering (B.S.E.E.)	40	-	-	-	-	**40**
Industrial Engineering & Management (B.S.I.E.Mgt)	15	-	-	-	-	**15**
Manufacturing Engineering (B.S.Mfg.E.)	7	-	-	-	-	**7**
Mechanical Engineering (B.S.M.C.E.)	98	-	-	-	-	**98**
Mechanical Engineering (M.S.)	-	-	-	2	-	**2**
Software Engineering (Cert.)	-	1	-	-	-	**1**
Software Engineering (M.S.E.)	-	-	-	4	-	**4**
Software Engineering (Ph.D.)	-	-	-	-	2	**2**
TOTAL	**319**	**2**	**-**	**20**	**5**	**346**

COLLEGE OF GRADUATE & INTERDISCIPLINARY STUDIES

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Biotechnology - AF&N (B.S.)	2	-	-	-	-	2
Cellular & Molecular Biology (Ph.D.)	-	-	-	-	1	1
Community Development (M.A.)	-	-	-	1	-	1
Community Development (M.S.)	-	-	-	1	-	1
Environmental & Conservation Science (M.S.)	-	-	-	2	-	2

Environmental & Conservation Science (Ph.D.)	-	-	-	-	3	3
Food Protection (Cert.)	-	1	-	-	-	1
Genomics & Bioinformatics (M.S.)	-	-	-	1	-	1
TOTAL	**2**	**1**	**-**	**5**	**4**	**12**

COLLEGE OF HUMAN SCIENCES & EDUCATION

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Advanced Athletic Training (M.S.)	-	-	-	2	-	2
Agricultural Education (B.S.)	7	-	-	-	-	7
Agricultural Education (M.S.)	-	-	-	1	-	1
Apparel, Retail Merchandising & Design (B.S.)	12	-	-	-	-	12
Athletic Training (M.Atr.)	-	-	-	6	-	6
Biological Science Education - HD&E (B.S.)	4	-	-	-	-	4
Chemistry Education - HD&E (B.S.)	1	-	-	-	-	1
College Teaching (Cert.)	-	3	-	-	-	3
Comprehensive Science Education (B.S.)	1	-	-	-	-	1
Counseling (M.Ed.)	-	-	-	18	-	18
Counselor Education & Supervision (Ph.D.)	-	-	-	-	3	3
Dietetics (B.S.)	13	-	-	-	-	13
Dietetics (M.S.)	-	-	-	1	-	1
Earth Science Education - HD&E (B.S.)	2	-	-	-	-	2
Education (Ed.D.)	-	-	-	-	1	1
Education (M.Ed.)	-	-	-	4	-	4
Education (Ph.D.)	-	-	-	-	2	2
Educational Leadership (M.Ed.)	-	-	-	7	-	7
Educational Leadership (M.S.)	-	-	-	1	-	1
English Education - HD&E (B.S.)	5	-	-	-	-	5
Exercise Science & Nutrition (Ph.D.)	-	-	-	-	2	2
Exercise Science (B.S.)	40	-	-	-	-	40
Family & Consumer Science Education (B.S.)	3	-	-	-	-	3
Family Financial Planning (Cert.)	-	3	-	-	-	3
French Education - HD&E (B.S.)	1	-	-	-	-	1
Gerontology (Cert.)	-	1	-	-	-	1
Health, Nutrition & Exercise Science (M.S.)	-	-	-	7	-	7
Hospitality & Tourism Management (B.S.)	4	-	-	-	-	4
Human Development & Family Science (B.S.)	102	-	-	-	-	102
Human Development & Family Science (M.S.)	-	-	-	5	-	5
Interior Design (B.S.)	12	-	-	-	-	12
Mathematics Education - HD&E (B.S.)	2	-	-	-	-	2
Merchandising (M.S.)	-	-	-	1	-	1
Physical Education (B.S.)	10	-	-	-	-	10
Social Science Educ - HD&E (B.S.)	14	-	-	-	-	14
Spanish Education - HD&E (B.S.)	1	-	-	-	-	1
Sport Management (B.S.)	17	-	-	-	-	17
TOTAL	**251**	**7**	**-**	**53**	**8**	**319**

COLLEGE OF HEALTH PROFESSIONS

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Advanced Nursing Practice (D.N.P.)	-	-	4	-	11	15
Medical Laboratory Science (B.S.)	8	-	-	-	-	8
Nursing (B.S.N.)	104	-	-	-	-	104
Pharmaceutical Sciences (B.S.)	62	-	-	-	-	62
Pharmaceutical Sciences (Ph.D.)	-	-	-	-	3	3
Pharmacy (Pharm.D.)	-	-	82	-	-	82
Public Health (M.P.H.)	-	3	-	-	-	3
Public Health (M.P.H.)	-	-	-	5	-	5
Radiologic Sciences (B.S.)	14	-	-	-	-	14
TOTAL	**188**	**3**	**86**	**5**	**14**	**296**

COLLEGE OF SCIENCE & MATHEMATICS

Program (Degree)	BACH	CERT	PROF	MAST	DOCT	Total
Applied Statistics (M.S.)	-	-	-	1	-	1
Biochem & Molecular Biology (B.S.)	16	-	-	-	-	16
Biochemistry (Ph.D.)	-	-	-	-	1	1
Biological Sciences (B.S.)	72	-	-	-	-	72
Biological Sciences (Ph.D.)	-	-	-	-	1	1
Biology (M.S.)	-	-	-	3	-	3
Chemistry (B.S.)	3	-	-	-	-	3
Chemistry (Ph.D.)	-	-	-	-	2	2
Coatings & Polymeric Materials (M.S.)	-	-	-	1	-	1
Geology (B.S.)	7	-	-	-	-	7
Mathematics (B.S.)	12	-	-	-	-	12
Mathematics (M.S.)	-	-	-	3	-	3
Physics (B.S.)	1	-	-	-	-	1
Physics (M.S.)	-	-	-	2	-	2
Physics (Ph.D.)	-	-	-	-	1	1
Psychology (B.A.)	1	-	-	-	-	1
Psychology (B.S.)	46	-	-	-	-	46
Psychology (Ph.D.)	-	-	-	-	1	1
Statistics (B.S.)	4	-	-	-	-	4
Statistics (Cert.)	-	4	-	-	-	4
Statistics (Ph.D.)	-		-	-	1	1
TOTAL	**162**	**4**	**-**	**10**	**7**	**183**

Secondary & Tertiary Majors

Program	Total
Accounting	1
Animal Science	2
Art	1
Biochemistry & Molecular Biology	1
Biological Sciences	1
Business Administration	4
Computer Science	4
Criminal Justice	3
Crop and Weed Sciences	2
Economics	1
Emergency Management	2
English	3
Equine Science	5
Finance	3
French	2
French Education	1
Global Business	1
Health Education	7
History	1
Human Development & Family Science	1
International Studies	5
Management	1
Management Communication	1
Management Information Systems	1
Marketing	2
Mathematics	1
Philosophy/Humanities	1
Physics	3
Political Science	1
Psychology	3
Sociology	3
Soil Science	1
Spanish	2
Statistics	9
Theatre Arts	1
Women & Gender Studies	3
TOTAL	**84**

Top Hard-to-Fill Jobs Requiring a Degree in North Dakota Over the Past 12 Months

(November 2020 - October 2021)

1.b.i.

Top 20 Hard-to-Fill Jobs Requiring a Bachelor's Degree

Burning Glass Occupation	Burning Glass Occupation Family	Job Postings	Demand	Time to Fill ^	Effort	BG Salary	LQ *	Concentration
Software Developer/ Engineer	Information Technology	1,697	Very High	47 days	Similar	$68,670	1.4	High
Registered Nurse	Health Care including Nursing	1,590	Very High	36 days	Similar	$76,061	1.1	Average
Sales Representative	Sales	692	Very High	45 days	Harder	$71,871	1.3	High
Business Development/ Sales Manager	Sales	460	Very High	36 days	Similar	$97,159	1.0	Average
Business / Management Analyst	Planning and Analysis	456	High	45 days	Harder	$77,589	1.2	Average
Recruiter	Human Resources	395	High	30 days	Similar	$57,921	1.5	High
Project Manager	Business Management and Operations	381	High	40 days	Similar	$74,802	1.0	Average
Healthcare Administrator	Health Care including Nursing	326	High	41 days	Similar	$85,287	1.4	High
Accountant	Finance	310	High	42 days	Harder	$49,265	0.8	Low
IT Project Manager	Business Management and Operations	304	High	45 days	Similar	$94,851	1.1	Average
Cyber / Information Security Engineer/ Analyst	Information Technology	303	High	55 days	Much Harder	$89,600	1.3	High
Network Engineer/ Architect	Information Technology	297	High	45 days	Similar	$100,028	1.3	High
Operations Manager/ Supervisor	Business Management and Operations	281	High	36 days	Similar	$62,454	1.1	Average
Retail Store Manager/ Supervisor	Sales	278	Very High	29 days	Similar	$57,549	0.9	Average
Civil Engineer	Engineering	261	High	54 days	Much Harder	$78,459	2.0	Very High
Program Manager	Business Management and Operations	257	High	30 days	Easier	$85,926	1.1	Average
Marketing Manager	Marketing and Public Relations	240	High	36 days	Easier	$93,156	0.8	Low
General Manager	Business Management and Operations	226	High	37 days	Similar	$78,226	1.2	Average
Intensive / Critical Care Nurse	Health Care including Nursing	226	Very High	35 days	Similar	$101,968	1.5	High
Systems Analyst	Information Technology	215	High	52 days	Much Harder	$83,165	0.9	Average

* LQ: Location quotients show how concentrated demand is within a particular geography. US-wide average demand equals 1.0; an LQ of 1.2, for example, indicates 20% higher demand than the US average (or 1.2 times the US concentration)..

^ Time to Fill for a particular BGTOCC is determined using historic data for jobs. The indicators (Easier/Much Easier/Similar/Harder/Much Harder) are for a BGTOCC in the selected location relative to that occupation nationwide.

Top 20 Hard-to-Fill Jobs Requiring a Master's Degree

Burning Glass Occupation	Burning Glass Occupation Family	Job Postings	Demand	Time to Fill ^	Effort	BG Salary	LQ *	Concentration
Software Developer/ Engineer	Information Technology	324	Very High	47 days	Similar	$72,473	1.0	Average
Nurse Practitioner	Health Care including Nursing	152	Medium	46 days	Much Harder	$71,240	0.7	Low
Business Development/ Sales Manager	Sales	137	Very High	36 days	Similar	N/A	1.3	High
Speech Language Pathologist	Health Care including Nursing	127	High	47 days	Much Harder	N/A	0.9	Average
Business/ Management Analyst	Planning and Analysis	116	High	45 days	Harder	N/A	1.1	Average
College Professor/ Instructor	Education and Training	114	High	66 days	Much Harder	$55,749	0.7	Low
Healthcare Administrator	Health Care including Nursing	109	High	41 days	Similar	N/A	1.0	Average
Program Manager	Business Management and Operations	91	High	30 days	Easier	N/A	0.9	Average
General Manager	Business Management and Operations	89	High	37 days	Similar	N/A	1.1	Average
IT Project Manager	Business Management and Operations	82	High	45 days	Similar	N/A	1.0	Average
Marketing Manager	Marketing and Public Relations	82	High	36 days	Easier	N/A	0.8	Low
Network Engineer/ Architect	Information Technology	80	High	45 days	Similar	N/A	1.4	High
Mental Health/ Behavioral Counselor	Community and Social Services	79	Medium	43 days	Similar	$78,779	0.9	Average
Product Manager	Design, Media, and Writing	72	Medium	41 days	Similar	N/A	0.7	Low
Family/School/General Social Worker	Community and Social Services	69	Medium	43 days	Similar	$67,327	0.6	Very Low
Project Manager	Business Management and Operations	69	High	40 days	Similar	N/A	0.9	Average
Researcher/ Research Associate	Science and Research	64	High	46 days	Similar	$33,992	1.0	Average
Biostatistician	Planning and Analysis	63	Medium	35 days	Similar	N/A	2.6	Very High
Registered Nurse	Health Care including Nursing	63	Very High	36 days	Similar	$74,791	0.4	Very Low
Financial Manager	Finance	60	Medium	47 days	Harder	N/A	0.6	Very Low

* LQ: Location quotients show how concentrated demand is within a particular geography. US-wide average demand equals 1.0; an LQ of 1.2, for example, indicates 20% higher demand than the US average (or 1.2 times the US concentration).

^ Time to Fill for a particular BGTOCC is determined using historic data for jobs. The indicators (Easier/Much Easier/Similar/ Harder/Much Harder) are for a BGTOCC in the selected location relative to that occupation nationwide.

Top 20 Hard-to-Fill Jobs Requiring a Doctorate Degree

Burning Glass Occupation	Burning Glass Occupation Family	Job Postings	Demand	Time to Fill ^	Effort	BG Salary	LQ *	Concentration
College Professor/ Instructor	Education and Training	136	High	66 days	Much Harder	$73,138	1.0	Average
Pharmacist/ Pharmacy Director	Health Care including Nursing	115	High	40 days	Harder	N/A	1.3	High
Attorney	Law, Compliance, and Public Safety	86	Medium	58 days	Harder	$88,175	0.9	Average
Physician	Health Care including Nursing	68	Very High	49 days	Much Harder	N/A	0.7	Low
Nurse Practitioner	Health Care including Nursing	62	Medium	46 days	Much Harder	N/A	4.5	Very High
Biostatistician	Planning and Analysis	57	Medium	35 days	Similar	N/A	2.7	Very High
Physical Therapist	Health Care including Nursing	45	Medium	36 days	Similar	N/A	1.5	High
Registered Nurse	Health Care including Nursing	39	Very High	36 days	Similar	$76,680	1.4	High
Researcher/ Research Associate	Science and Research	38	High	46 days	Similar	N/A	0.6	Very Low
Software Developer/ Engineer	Information Technology	33	Very High	47 days	Similar	N/A	0.4	Very Low
Healthcare Administrator	Health Care including Nursing	31	High	41 days	Similar	N/A	1.1	Average
Mental Health/ Behavioral Counselor	Community and Social Services	31	Medium	43 days	Similar	N/A	1.4	High
Data Scientist	Information Technology	30	Medium	49 days	Harder	N/A	0.9	Average
Chemist	Science and Research	23	Medium	47 days	Harder	$88,548	1.0	Average
Social Science Researcher	Science and Research	22	Low	51 days	Harder	$72,396	2.9	Very High
Psychologist	Health Care including Nursing	21	Medium	66 days	Much Harder	N/A	0.5	Very Low
Medical Director	Health Care including Nursing	20	Medium	42 days	Similar	N/A	0.6	Very Low
Occupational Therapist	Health Care including Nursing	20	Medium	35 days	Similar	N/A	2.1	Very High
Medical Scientist	Planning and Analysis	18	Medium	40 days	Similar	N/A	0.4	Very Low
Program Manager	Business Management and Operations	16	High	30 days	Easier	N/A	1.1	Average

* LQ: Location quotients show how concentrated demand is within a particular geography. US-wide average demand equals 1.0; an LQ of 1.2, for example, indicates 20% higher demand than the US average (or 1.2 times the US concentration).

^ Time to Fill for a particular BGTOCC is determined using historic data for jobs. The indicators (Easier/Much Easier/Similar/ Harder/Much Harder) are for a BGTOCC in the selected location relative to that occupation nationwide.

Top 50 Hard-to-Fill Jobs Requiring a Degree in North Dakota

Burning Glass Occupation	Burning Glass Occupation Family	Postings	Demand	Time to Fill*	Effort	BG Salary	LQ**	Concentration	NDSU Degree Programs
Software Developer/ Engineer	Information Technology	1,697	Very High	47 days	Similar	$68,670	1.4	High	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Registered Nurse	Health Care including Nursing	1,590	Very High	36 days	Similar	$76,061	1.1	Average	BS in Nursing
Sales Representative	Sales	692	Very High	45 days	Harder	$71,871	1.3	High	BS in Business Administration, BS in Management, BS in Marketing
Business Development/ Sales Manager	Sales	460	Very High	36 days	Similar	$97,159	1	Average	BS in Business Administration, BS in Management, BS in Marketing
Business/ Management Analyst	Planning and Analysis	456	High	45 days	Harder	$77,589	1.2	Average	BS in Business Administration, BS in Management, BS in Management Information Systems
Recruiter	Human Resources	395	High	30 days	Similar	$57,921	1.5	High	BS in Business Administration, BS in Management
Project Manager	Business Management and Operations	381	High	40 days	Similar	$74,802	1	Average	BS in Business Administration, BS in Management
Healthcare Administrator	Health Care including Nursing	326	High	41 days	Similar	$85,287	1.4	High	BS in Health Services
Accountant	Finance	310	High	42 days	Harder	$49,265	0.8	Low	BS in Accounting
IT Project Manager	Business Management and Operations	304	High	45 days	Similar	$94,851	1.1	Average	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Cyber/Information Security Engineer/ Analyst	Information Technology	303	High	55 days	Much Harder	$89,600	1.3	High	BA/BS in Computer Science
Network Engineer/ Architect	Information Technology	297	High	45 days	Similar	$100,028	1.3	High	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Operations Manager/ Supervisor	Business Management and Operations	281	High	36 days	Similar	$62,454	1.1	Average	BS in Business Administration, BS in Finance, BS in Management
Retail Store Manager/ Supervisor	Sales	278	Very High	29 days	Similar	$57,549	0.9	Average	
Civil Engineer	Engineering	261	High	54 days	Much Harder	$78,459	2	Very High	BS in Civil Engineering, BS in Construction Engineering
Program Manager	Business Management and Operations	257	High	30 days	Easier	$85,926	1.1	Average	BS in Business Administration, BA/ BS in Economics, BS in Management
Marketing Manager	Marketing and Public Relations	240	High	36 days	Easier	$93,156	0.8	Low	BS in Marketing
General Manager	Business Management and Operations	226	High	37 days	Similar	$78,226	1.2	Average	BS in Business Administration, BS in Finance, BS in Management

Burning Glass Occupation	Burning Glass Occupation Family	Postings	Demand	Time to Fill*	Effort	BG Salary	LQ**	Concentration	NDSU Degree Programs
Intensive / Critical Care Nurse	Health Care including Nursing	226	Very High	35 days	Similar	$101,968	1.5	High	BS in Nursing
Systems Analyst	Information Technology	215	High	52 days	Much Harder	$83,165	0.9	Average	BA/BS in Computer Science, BS in Management Information Systems
Construction Manager	Construction, Extraction, and Architecture	210	High	34 days	Easier	$71,145	1.5	High	BS in Construction Management
Computer Systems Engineer/Architect	Information Technology	205	High	43 days	Similar	$96,382	0.8	Low	BA/BS in Computer Science, BS in Management Information Systems
Product Manager	Design, Media, and Writing	199	Medium	41 days	Similar	N/A	0.9	Average	
Human Resources/ Labor Relations Specialist	Human Resources	191	High	46 days	Harder	$54,848	0.9	Average	
Account Manager/ Representative	Sales	187	High	42 days	Similar	$81,045	0.7	Low	BS in Business Administration, BS in Management, BS in Marketing
Computer Programmer	Information Technology	185	Medium	43 days	Similar	$55,672	2.3	Very High	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Computer Support Specialist	Information Technology	180	High	42 days	Harder	$49,295	1.1	Average	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Insurance Sales Agent	Finance	178	High	56 days	Much Harder	$87,604	2.2	Very High	BS in Business Administration, BS in Management
Electrical Engineer	Engineering	177	Medium	42 days	Similar	N/A	1.2	Average	BS in Electrical Engineering
Web Developer	Information Technology	177	Medium	53 days	Much Harder	$45,940	1.3	High	BA/BS in Computer Science, BS in Computer Engineering
Nursing Manager/ Supervisor	Health Care including Nursing	166	High	39 days	Similar	$69,577	1.1	Average	BS in Nursing
Financial Manager	Finance	163	Medium	47 days	Harder	$86,577	0.8	Low	BS in Accounting, BS in Finance
Auditor	Finance	155	Medium	55 days	Much Harder	$90,821	1.1	Average	BS in Accounting, BS in Finance
Business Intelligence Analyst	Information Technology	153	Medium	46 days	Harder	$88,200	1.6	Very High	BA/BS in Computer Science, BS in Management Information Systems
Bookkeeper/ Accounting Clerk	Finance	147	High	35 days	Harder	$42,751	0.7	Low	BS in Accounting, BS in Finance
Network/Systems Administrator	Information Technology	147	Medium	52 days	Much Harder	$67,369	1.1	Average	BA/BS in Computer Science, BS in Management Information Systems
Marketing Specialist	Marketing and Public Relations	139	Medium	38 days	Similar	$46,406	0.9	Average	BS in Marketing
Mechanical Engineer	Engineering	134	Medium	42 days	Similar	$68,320	1	Average	BS in Mechanical Engineering

Burning Glass Occupation	Burning Glass Occupation Family	Postings	Demand	Time to Fill*	Effort	BG Salary	LQ**	Concentration	NDSU Degree Programs
Human Resources Manager	Human Resources	133	Medium	45 days	Harder	$79,509	0.9	Average	BS in Business Administration, BS in Management
Laboratory Technician	Health Care including Nursing	133	High	46 days	Much Harder	$42,003	1.6	Very High	BA/BS in Biochemistry & Molecular Biology, BA/BS in Chemistry, BA/BS in Biological Sciences, BS in Medical Laboratory Sciences, BS in Microbiology
Engineering Manager	Engineering	132	Medium	39 days	Similar	N/A	0.9	Average	BS in Computer Engineering
Business Intelligence Architect / Developer	Information Technology	124	Medium	37 days	Similar	N/A	1.6	Very High	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Financial Analyst	Finance	122	Medium	43 days	Similar	$74,913	0.5	Very Low	BS in Accounting, BS in Finance
Loan Officer	Finance	119	High	49 days	Similar	N/A	1.5	High	BS in Accounting, BS in Finance
Data / Data Mining Analyst	Planning and Analysis	115	Medium	40 days	Similar	$87,286	0.9	Average	BA/BS in Computer Science, BA/BS in Mathematics, BA/BS in Statistics
Account Executive	Sales	114	Medium	51 days	Harder	$78,183	0.6	Very Low	BS in Business Administration, BS in Management, BS in Marketing
Software QA Engineer / Tester	Information Technology	106	Medium	50 days	Harder	$72,720	0.8	Low	BA/BS in Computer Science, BS in Computer Engineering
Database Administrator	Information Technology	105	Medium	47 days	Similar	$88,966	1.1	Average	BA/BS in Computer Science, BS in Computer Engineering, BS in Management Information Systems
Family / School / General Social Worker	Community and Social Services	102	Medium	43 days	Similar	$58,577	1.4	High	
Office / Administrative Assistant	Clerical and Administrative	100	Very High	32 days	Similar	$42,465	0.5	Very Low	

^Time to Fill for a particular BGTOCC is determined using historic data for jobs. The indicators (Easier/Much Easier/Similar/Harder/Much Harder) are for a BGTOCC in the selected location relative to that occupation nationwide.

**LQ: Location quotients show how concentrated demand is within a particular geography. US-wide average demand equals 1.0; an LQ of 1.2, for example, indicates 20% higher demand than the US average (or 1.2 times the US concentration).

Bachelor's Degrees Awarded in High Need Areas (by Academic Year)

	Degrees Awarded *(by academic year)*											
NDSU Degree Programs	**11-12**	**12-13**	**13-14**	**14-15**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**10YR GR**	**5YR GR**
BA/BS in Computer Science	54	41	50	46	61	77	75	80	73	76	**41%**	**-1%**
BA/BS in Economics	10	10	7	13	16	15	10	6	12	14	**40%**	**-7%**
BS in Accounting	66	63	71	70	78	60	78	62	55	61	**-8%**	**2%**
BS in Business Administration	47	53	38	38	34	17	20	40	55	89	**89%**	**424%**
BS in Civil Engineering	82	77	74	86	65	80	67	95	68	71	**-13%**	**-11%**
BS in Computer Engineering	13	14	9	14	17	14	19	25	31	37	**185%**	**164%**
BS in Construction Engineering	15	10	5	5	9	5	7	3	21	6	**-60%**	**20%**
BS in Finance	42	46	49	52	59	62	59	75	89	70	**67%**	**13%**
BS in Management	49	46	52	51	50	64	72	62	50	52	**6%**	**-19%**
BS in Management Information Systems	41	20	32	18	21	16	25	34	18	23	**-44%**	**44%**
BS in Marketing	41	44	33	51	52	49	60	88	85	69	**68%**	**41%**
BS in Nursing	68	90	84	146	149	139	214	216	194	203	**199%**	**46%**
TOTAL	**528**	**514**	**504**	**590**	**611**	**598**	**706**	**786**	**751**	**771**	**46%**	**29%**

FACULTY RESEARCH INTERESTS IN TECH HUBS AND THE DIGITAL ECONOMY		
College	**Department**	**Area of Research Expertise / Notes**
AHSS	EM	Natural and anthropogenic disaster prevention/mitigation
Business	Accounting/ Information Systems	Information systems AND advanced communication tech. tions. Understanding how organizations use information systems is critical for today's business professional. Riggins's research has been considered foundational in several areas including trading partner incentives for developing interorganizational systems, use of information and communications technology in microfinance, management reactions to the digital divide, and business issues related to the use of RFID and the Internet of Things (IoT).
Business	Transportation, Logistics, & Finance	Faculty's research focuses on all aspects of intelligent transportation solutions, including the evolution of cyber-physical security, computing, and data science.
CAFSNR	ABEN	AI, machine learning, & other software advances
CAFSNR	ABEN	AI, machine learning, & other software advances
CAFSNR	ABEN	Robotics, automation, & advanced manufacturing. Faculty works with robotics
CAFSNR	ABEN	Robotics, automation, & advanced Manufacturing. Faculty teaches 2D printing & advanced manufacturing. He is also involved w/Lutzbot, one of the largest 3D printer companies and it is located in Fargo. Lutzbot President is NDSU graduate (Lutzbot.com/aboutm)
CAFSNR	ABEN	Natural & anthropogenic disaster prevention/mitigation. Faculty's background in flooding preparation, recovery, and disaster eduction.
CAFSNR	ABEN	
CAFSNR	Plant Sciences	Genomics, genetics
CSM	CHEM/BIOC	Biotechnology, medical technology, genomics, and synthetic biology
CSM	CHEM/BIOC	Biotechnology, medical technology, genomics, and synthetic biology
CSM	CHEM/BIOC	Biotechnology, medical technology, genomics, and synthetic biology
CSM	CHEM/BIOC	Immense experience
CSM	CHEM/BIOC	Advanced materials science
CSM	Mathematics	Machine learning, information theory, mathematical finance
CSM	Physics	Advanced materials science
CSM	Physics	Advanced materials science AND biotechnology, medical technology, genomics, and synthetic biology
Engineering	CCE	Advanced materials science, engineering, exploration
Engineering	CCE	Advanced materials science & engineering
Engineering	Computer Science	AI, machine learning, & other software advances AND HPC, semiconductors, & advanced computer hardware AND Cybersecurity, data storage, and data management technologies, and Quantum computing & information systems
Engineering	EE	AI, machine learning, & other software advances AND HPC, semiconductors, & advanced computer hardware
Engineering	EE	Biotechnology, medical technology, genomics, synthetic biology
Engineering	EE	Advanced energy, batteries, & industrial efficiency
Engineering	EE	Advanced energy, batteries, & industrial efficiency AND advanced materials science & engineering
Engineering	EE	Advanced materials science, engineering, exploration, AND Biotechnology, medical technology, genomics and synthetic biology
Engineering	IME	AI, machine learning & other software advances
Engineering	IME	Robotics, automation, & advanced manufacturing
Engineering	ME	Advanced materials science
Engineering	ME	Advanced energy & batteries
HP	Pharm Prac	Biotechnology, medical technology, genomics, synthetic biology-**PHARMAGENOMICS**
HP	Pharm Science	Biotechnology, medical technology, genomics, synthetic biology
HP	Pharm Science	Biotechnology, medical technology, genomics, synthetic biology-**PHARMAGENOMICS**

College	Department	Area of Research Expertise / Notes
HP	Pharm Science	Biotechnology, medical technology, genomics, synthetic biology-**PHARMAGENOMICS**
HSE	HNES	Natural & anthropogenic disaster prevention/mitigation (food system and nutrition)
HSE	HNES	Natural & anthropogenic distaster prevention/mitigation (food system & nutrition) AND Biotechnology, medical technology, genomics, and synthetic biology
HSE	HNES	Biotechnology, medical technology, genomics, synthetic biology

RESEARCH in the COLLEGE of HEALTH PROFESSIONS

Department of Pharmacy Practice

Improvement of Patient Outcomes through Advancement and Collaboration in Pharmacy Research. This research investigates the individual and population health impacts of enhanced pharmacist engagement and collaboration. The research utilizes four core principles to effectively train the health professions workforce, including pharmacists and other healthcare professionals, provide coaching and support to implement and sustain advancements, and proactively assesses outcomes of importance to the patient and the healthcare system. Impacts of this approach are being demonstrated in vaccination rates in the state, opioid overdose awareness and availability of antidote when overdoses occur, use of pharmacogenomics data in making medication choices, and in improved access to effective, evidence-based smoking cessation treatment. Additional expansion areas planned including improving safe and judicious use of antibiotics. Scholarship of Teaching and Learning research and advancements in these areas within the learning environments of the PharmD Program further add to the trained workforce of pharmacists focused on advancing patient care through engagement and collaboration when students graduate from our program.

Impact. This research simultaneously involves extensive outreach to the state's healthcare workers, the ND Department of Health and local communities as well as extensive data collection, analysis and dissemination. This research builds on the strengths of the clinical and public health faculty expertise and skills to improve the lives of the diverse citizens of North Dakota and to improve access to care and decrease health disparities and gaps. This is an area of particular import when considering the challenges in meeting current and future health care needs and improving patient care outcomes. This is an area of significant national emphasis as well, but regionally-relevant research is critical to turn contemporary research findings into relevant practice advancements and change for regional and local populations.

Department of Pharmaceutical Sciences

The faculty of the Department of Pharmaceutical Sciences are engaged in research in the natural and biological sciences, as well as mentor post-doctoral, graduate and professional students in advanced concepts of pharmaceutical science and in the process of scientific inquiry. Primary research areas of the faculty include drug discovery, pharmacology, drug delivery and pharmacokinetics for Alzheimer's disease, cancer, cardiovascular diseases, diabetes, obesity, kidney diseases and respiratory diseases.

School of Nursing

Voices of American Indian Nurses. Includes a documentary that has received national and international recognition and dissemination of research data. Recruitment of American Indian students into health care professions.

Research related to tobacco prevention and control. E-cigarette nicotine content, child-resistant packaging, and compliance with state laws.

Survivorship of loss by suicide. Assessing experiences and barriers to accessing support and mental health care in individual who have lost someone by suicide.

Assessment of cultural competence among healthcare professionals. Development and implementation of a rural NP residency program in partnership with Essentia Health that prepares NPs for the expanded scope of practice required in rural settings. Evidence-based supported guide to mitigate the shortage of rural primary care providers.

Stop the Bleed Training. Empowering North Dakota rural communities to manage traumatic injuries.

Spirit Lake Community Assessment Focusing on Elder Victims' Needs. Creating a vulnerable adult protection handbook and policy manual and revision of elder abuse codes.

Department of Public Health

NDSU Department of Public Health (DPH) research focuses on applied public health with an emphasis in areas such as infectious disease, chronic disease, and maternal child health (MCH). Public Health is interdisciplinary, by definition, leading to a variety of foci on improving population health and health equity. The DPH engages in innovative practice-based research in partnership with NDDoH, Sanford Center for Biobehavioral Research, NDSU Extension, community organizations, and tribal nations. Faculty conduct infectious disease research on vaccine practice and policy, antimicrobial stewardship, and we house the Center for Immunization Research and Education (CIRE). Other faculty conduct research related to chronic disease (e.g., diabetes, obesity, cancer, serious mental illness), which includes lifestyle approaches to disease prevention, health promotion, management of chronic disease, and mental health services research. A growing area is MCH research that includes impacts of adverse childhood events, pregnancy and birth outcomes, adolescent reproductive health, and women's health. Research with American Indian populations cuts across all content areas including vaccine hesitancy, healthy lifestyle and obesity, and several MCH topics. In response to the pandemic, faculty expertise led to studies in COVID immunosurveillance, access to healthcare, vaccine hesitancy, and the impact of COVID on mental health of K-12 teachers and university professors, college students' wellbeing, childhood obesity, pregnancy outcomes, and COVID mitigation strategies in American Indian communities.

PRIMARY RESEARCH AREAS in the COLLEGE of BUSINESS		
Primary Research Areas	**No. of Faculty**	**Need**
Management Information Systems (MIS). MIS research at NDSU focusses on data mining, more effective use of large data in making business decisions, and system security	4	All organizations are increasingly dependent on large data to make better business decisions. Along with this dependency comes the need to strengthen data protections and ensure the integrity of data.
Accounting. Research in accounting at NDSU deals primarily with ethical behavior in accounting, greater accuracy and fidelity in documenting financial transactions, and strengthening internal controls in organizations.	9	Organizations, both for-profit and nonprofit, rely on financial information for regulatory, decision-making, and accountability. Research in accounting promotes better performance in all these areas of financial information use.
Finance. Research in finance at NDSU focuses on understanding behaviors in capital markets and the use of capital market data to inform investment decision making.	5	This research is relevant to all organizations in the region to improve investment decision making and increase returns on investment.
Transportation. Transportation research at NDSU is primarily in rail, public transportation, and safety.	5	This research impacts public policy, regulation, and competition in these industries.
Supply Chain. Research in supply chain at NDSU is focused on supply chain resilience and human factors that enhance the supply chain process.	2	This research impacts all organizations since every organization affects and is affected by the supply chain for its products and/or services.
Management. Research in management at NDSU focuses on strategic management, the management of organizations, organization behavior, and entrepreneurship.	10	This research is relevant to all organizations in the region to improve management practice, operations, the selection and management of people, and entrepreneurial efforts.
Marketing. Research in marketing at NDSU focuses on several subfields of marketing including retail management, marketing strategy, consumer behavior, sales, industrial marketing, marketing analytics, innovation, and international marketing.	6	This research is relevant to all organizations that have a marketing function, do advertising or other promotions, utilize salespeople, or manage business relationships.

FUNDED RESEARCH AWARDS - 2022	DEPARTMENT NAME	COLLEGE / AREA
2021 NCI Grain Procurement Course	NCI	**College of Agriculture, Food Systems & Natural Resources (CAFSNR)**
2022 NCI Identity Preserved Soybean Procurement Course	NCI	CAFSNR
2022 NCI INTSOY Course	NCI	CAFSNR
2022 Soybean Quality Survey	NCI	CAFSNR
Agricultural Marketing Resource Center (AgMRC)	NCI	CAFSNR
ANALYTICS FOR ISOFLAVONES AND SOYMILK/ TOFU YIELDS FOR A SOY FOODS DATABASE	NCI	CAFSNR
Determination of milling efficiency use when processing corns from different origins (U.S., Argentina, Brazil and Ukraine), during size reduction and pelleting operations.	NCI	CAFSNR
Food Development With Soybean Okara	NCI	CAFSNR
Fortification of Soy Based Foods with Omega 3 Fatty Acids	NCI	CAFSNR
FY22 NCI IP Soybean Procurement (Online)	NCI	CAFSNR
General Funding FY22	NCI	CAFSNR
General Support For Global Education & Promotion of Wheat & Barley	NCI	CAFSNR
General Support for Wheat/Durum Promotion	NCI	CAFSNR
Grain Procurement Management for Importers Course	NCI	CAFSNR
HIGH OLEIC SOY INGREDIENT AND SOYFOOD COMPARISION STUDY	NCI	CAFSNR
Int-Soy Education Course FY22	NCI	CAFSNR
NCI High Oleic Soy Foods Course Development	NCI	CAFSNR
ND NCI Risk Management	NCI	CAFSNR
Project to Develop Baking Guides for the Baking with Soy Program	NCI	CAFSNR
Specialty Crop Block Grant Program - Farm Bill Activities - Integrated Improvement Process of Cold-Hardy Grapes; from Breeding, Production, to Sensory Analysis.	NCI	CAFSNR
Supplement ~ Determination of milling efficiency use when processing corns from the US and Ukraine, during size reduction and pelleting operations.	NCI	CAFSNR

TOFU AND SOYMILK COMPARISION FOR U.S., CHINESE AND INDIAN SOYFOOD BEANS	NCI	CAFSNR
U.S. Barley Malt Introduction webinar	NCI	CAFSNR
Webinar Development	NCI	CAFSNR
Dakota Digital Academy Course Design and Development - PLSC 355	Plant Sciences	CAFSNR
Dakota Digital Academy Course Design and Development Award	Architecture	**College of Arts, Humanities & Social Sciences (CAHSS)**
North Dakota Department of Commerce State Energy Program Grant	Architecture	CAHSS
Data Analysis: Community Health Care Needs Assessment Surveys	Center for Social Research	CAHSS
Economic Contribution of North Dakota State Parks in North Dakota	Center for Social Research	CAHSS
Economic Contribution of Rural Health Care Providers: McKenzie County Healthcare Systems	Center for Social Research	CAHSS
General Operations Support for ND Compass	Center for Social Research	CAHSS
Labor Requirements for Constructing the FM Diversion	Center for Social Research	CAHSS
Mission of Mercy Patient Survey Data Analysis	Center for Social Research	CAHSS
North Dakota Health Needs Assessment	Center for Social Research	CAHSS
North Dakota Statewide Housing Needs Assessment	Center for Social Research	CAHSS
Pregnancy Risk Assessment Monitoring System (PRAMS) and Study of Associated Risks of Stillbirth (SOARS) Implementation	Center for Social Research	CAHSS
Program Evaluation of RAD (Rural Access Distribution) Co-op	Center for Social Research	CAHSS
SCISIPBIO: A Network Science Approach to Conflicts of Interest Metrics, Policies and Communication Design	Communication	CAHSS
National Writing Project Midwest Conference	English	CAHSS
Red River Valley Writing Project DPI Grant 2021-2023	English	CAHSS
Bonanzaville Graduate Assistantship Partnership FY22	History, Philosophy & Rel Stud	CAHSS
Historical and Cultural Society of Clay County Graduate Assistantship Partnership FY22	History, Philosophy & Rel Stud	CAHSS
Strategic Fundraising and Capital Campaigns for Minority Nonprofit Organizations in the Fargo-Moorhead Area (FMA) and the Great Plains Region (GPR).	History, Philosophy & Rel Stud	CAHSS
Collaborative Research: HNDS-I: The Digital Society Project: Infrastructure for Measuring Internet Politics	Political Science	CAHSS
Collaborative Research: Routine Maintenance of Registration Lists	Sociology, Anthropology	CAHSS
North Dakota Council of the Arts Creative Aging - Tiny Press Kit	Visual Arts	CAHSS
Tiny Press Kit / Creative Aging	Visual Arts	CAHSS
Dakota Digital Academy Remote Delivery Course Development Fund	Accounting & Info Systems	**College of Business (COB)**
Entrepreneurship course for the Dakota Digital Academy	Deans Office, Business	COB
Innovate ND Training Workshop	Deans Office, Business	COB
Pharmaceutical Price Controls in ND	Deans Office, Business	COB
Does Existential Self-Regulation Promote Freedom and Flourishing?	Management and Marketing	COB
Schulze Entrepreneurship Challenge	Management and Marketing	COB
CAREER: Reduced-scale Additive Manufactured Models for Quantifying the Behavior of Large Structural Steel Castings	Civil, Construction & Env Eng	**College of Engineering (COE)**
Collaborative Research: Multiscale Mechanics of Adsorption-Deformation Coupling in Soft Nanoporous Materials	Civil, Construction & Env Eng	COE
Corn-based Hydrogels for High-Performance Concrete	Civil, Construction & Env Eng	COE
Corn-derived Emulsions for Corrosion Protection of Oil Pipelines	Civil, Construction & Env Eng	COE
Dakota Digital Academy proposal: Develop the new course CE739: Computational Methods for Engineering	Civil, Construction & Env Eng	COE
Development of corrosion/erosion threat assessment methodologies and enriched preventive and mitigative measures to promote safety of gas gathering pipelines	Civil, Construction & Env Eng	COE
Hyflex delivery of K-12 AI	Civil, Construction & Env Eng	COE
Hyflex delivery of Machine Learning for Engineers	Civil, Construction & Env Eng	COE

Influence of Salt Concentration on the Occurrence of Slope Failures in North Dakota	Civil, Construction & Env Eng	COE
Low-cost and Sustainable Corrosion Mitigation Products Derived from Agricultural Feedstocks	Civil, Construction & Env Eng	COE
Novel Soy-protein and Ionic Liquid based Coating Materials for Corrosion Protection: Phase-2	Civil, Construction & Env Eng	COE
Prostate Cancer Bone Metastasis Testbed for Regenerative Bone Therapies for Bone Metastasis	Civil, Construction & Env Eng	COE
RII Track-2 FEC: Artificial Intelligence on Sustainable Energy Infrastructure Network (AI SUSTEIN) and Beyond towards Industries of the Future	Civil, Construction & Env Eng	COE
Sampling Wastewater for SARS-CoV-2 (2021)	Civil, Construction & Env Eng	COE
Synthesis of Soy-based Hydrogels for Infrastructure Applications	Civil, Construction & Env Eng	COE
Trace fragment shapes, sizes, and motions after impact	Civil, Construction & Env Eng	COE
Dakota Digital Academy (DDA) funding for development of a course - CSCI 488 Human Computer Interaction	Computer Science	COE
Support for Cybersecurity Training for High School Educators	Computer Science	COE
Building energy efficiency improvement of A. Glenn Hill Center at North Dakota State University	Construction Management & Eng	COE
“Smell” a virus: a fast, risk-free, novel sensing system for transmission disease control and prevention	Electrical & Computer Engineer	COE
A flash co-sintering strategy for the fabrication of LiPON-based bulk-type solid-state lithium ion battery	Electrical & Computer Engineer	COE
A novel pancreatic cancer treatment without side effects	Electrical & Computer Engineer	COE
Advanced Materials for Lithium Ion Batteries Phase IV	Electrical & Computer Engineer	COE
An interactive graph-based methodology for cancer drug screening	Electrical & Computer Engineer	COE
Analytical Model Development on Propagation in Biological Tissue	Electrical & Computer Engineer	COE
CAREER: Ultrafast molecular separation and integrated near-field light-metal-flurophore interactions for biomarker detection at point-of care	Electrical & Computer Engineer	COE
Collaborative Research: CIF: Small: A New Paradigm for Distributed Information Processing, Simulation and Inference in Networks: The Promise of Law of Small Numbers	Electrical & Computer Engineer	COE
Course Development Activities for ECE 423 - VLSI Design	Electrical & Computer Engineer	COE
CRII: SHF: Enabling Metal Inter-Layer Via Device Utilization for On-chip Memory in Monolithic Three-Dimensional Integrated Circuits	Electrical & Computer Engineer	COE
Cytotoxic effects of chimeric antigen receptor T-cells manufactured by radio–frequency electric fields	Electrical & Computer Engineer	COE
Development of Device Prototypes for the Monitoring of Surgery Patients	Electrical & Computer Engineer	COE
Distributed Protection and Restoration Schemes for Integration of Large-scaled Solar PV Installations and Responsive Loads: Design, Testbed, Proof of Work and Impact Studies	Electrical & Computer Engineer	COE
ExoIPThT, Secondary Structure of Exosomal Protein for Noninvasive Cancer Detection	Electrical & Computer Engineer	COE
Planning on the creation of a virtual Electrical Engineering Lab for NDSU, College of Engineering students	Electrical & Computer Engineer	COE
Reform Electrical Engineering Lab course (ECE 306) to enhance students’ conceptual understanding of electric circuits by integrating computer simulations into laboratory experiments	Electrical & Computer Engineer	COE
RII Track 4: Probabilistic Dynamic Control Stability Analysis in Power Grids with High Penetration of Renewable Resources	Electrical & Computer Engineer	COE
SaTC: CORE: Small: Formal Verification Techniques For Microprocessor Security Vulnerabilities and Trojans	Electrical & Computer Engineer	COE
IUCRC Phase II at North Dakota State University: Center for Bioplastics and Biocomposites [CB2]	Industrial & Manufacturing Eng	COE
Multi-functional Biodegradable Mulch for Specialty Crop Production	Industrial & Manufacturing Eng	COE
Process development for vehicle level design loads mapping using MBSE	Industrial & Manufacturing Eng	COE
Smart IoT system for Obstructive Sleep Apnea Monitoring and Forecasting in Cancer Patients under Radiotherapy	Industrial & Manufacturing Eng	COE
Strengthening 3D printed (FDM) parts through application of ultrasonic vibration.	Industrial & Manufacturing Eng	COE

Acquisition of Supplies to Support Robotics Education at NDSU	Mechanical Engineering	COE
Additive Manufacturing for RF Antennas, Waveguides, Connectors on Flexible Substrates	Mechanical Engineering	COE
Additively Manufactured High Temperature Friction Stir Tooling through Thermal Spray Techniques	Mechanical Engineering	COE
Advanced membrane electrode assemblies for fuel cells	Mechanical Engineering	COE
Board of Trustees Endowment Grant Program: Development of Remote Lab System	Mechanical Engineering	COE
Cottonseed Oil Based Vitrimers for 3D Printing and Other Applications	Mechanical Engineering	COE
Developing a novel, molten salt torrefaction process to enable solar- or waste-heat driven torrefaction	Mechanical Engineering	COE
Developing printable concrete using eco-friendly recycled carbon fiber/epoxy composites	Mechanical Engineering	COE
Development of a thermochemical, nanocellulose-based material for thermal energy storage	Mechanical Engineering	COE
Engineering Unleashed Fellowship	Mechanical Engineering	COE
Enhancement of Left Atrial Appendage Flow using Artificial Superhydrophobic Surface	Mechanical Engineering	COE
Experimental Investigation of the Effect of Sweep on a Pitching Finite -Aspect-Ratio Wing	Mechanical Engineering	COE
High Performance Bio-based Polymers for Coatings and Additive Manufacturing	Mechanical Engineering	COE
Influences of micro-patterned channel surface on blood cell motion in microfluidics	Mechanical Engineering	COE
Investigating root-cause and reduce fogging behavior of natural fiber-filled thermoplastics – Cont.	Mechanical Engineering	COE
M2M X-Hab 2022 Academic Innovation Challenge Power Rover Project	Mechanical Engineering	COE
Manufacturing and Integration of Lightweight Composite Structures in Ground Vehicle Applications	Mechanical Engineering	COE
ND Space Grant Concertium -NASA Rover Challenge 2020-2021	Mechanical Engineering	COE
Soy Protein-based Soft Gels for Sensors and Soft Robotics	Mechanical Engineering	COE
Using Solar-powered Cooling to Increase Trout Habitat and Refugia in Response to Warming Water Temperatures	Mechanical Engineering	COE
Graduate Research Fellowship Program	Graduate School	**College of Graduate & Interdisciplinary Studies (CGIS)**
North Dakota Trade Office	Graduate School	CGIS
Clinical Pharmacy Teaching Program	Deans Office, Health Professns	**College of Health Professions (CHP)**
Essentia Health _Clinical Teaching Program	Deans Office, Health Professns	CHP
Sanford Health Imagenetics Program	Deans Office, Health Professns	CHP
Southpointe Pharmacy Teaching Program	Deans Office, Health Professns	CHP
ANE - Nurse Practitioner Residency Program	Nursing	CHP
Collaborative Tobacco Prevention and Control Activities 2020-2021	Nursing	CHP
North Dakota Nursing Education Consortium Agreement 2021-2023	Nursing	CHP
Enhancing the Nursing Experience	Nursing, Sanford Bismarck	CHP
Nursing Simulator for Hands On Learning in Bismarck	Nursing, Sanford Bismarck	CHP
Simulation Equipment: Tools for Active Learning in Nursing Education	Nursing, Sanford Bismarck	CHP
Biobehavioral Factors and their Impact on Stress-Related Eating in Obesity	Pharmaceutical Sciences	CHP
Center for Biobehavioral Mechanisms of Eating Behavior (CBMEB)	Pharmaceutical Sciences	CHP
Dakota Cancer Collaborative on Translational Activity	Pharmaceutical Sciences	CHP
Defining the role of Integrin-talin complex in renal cancer progression and fibrosis.	Pharmaceutical Sciences	CHP
Echogenic polymersomes for triggered contents release	Pharmaceutical Sciences	CHP
Enhanced APOE2 Expression into Brain for Effective Therapeutic Strategy for Alzheimer's Disease	Pharmaceutical Sciences	CHP
Investigating the chemical stability of cytarabine in the polypropylene syringe	Pharmaceutical Sciences	CHP

Kisspeptins in the Airway	Pharmaceutical Sciences	CHP
Mechanistic studies on lung metastasis of breast cancer and Covid-19 infection	Pharmaceutical Sciences	CHP
Sex-related variations in the response of anti-platelet drug therapies targeting purinergic signaling pathways in sepsis	Pharmaceutical Sciences	CHP
Targeting Mas Receptor for Diabetic Vascular Disease in Older Adults	Pharmaceutical Sciences	CHP
Tumor-targeted Delivery of Chemotherapeutic for Effective Management of Lung Cancer.	Pharmaceutical Sciences	CHP
Geriatrics Workforce Enhancement Program	Pharmacy Practice	CHP
Improving the Health of Americans through Prevention and management of Diabetes and Heart Disease and Stroke Grant	Pharmacy Practice	CHP
North Dakota Pharmacists Service Enhancement Project	Pharmacy Practice	CHP
North Dakota Pharmacists Service Enhancement Project Pilot Implementation	Pharmacy Practice	CHP
Preventative Care Collaboration – Opioid and Hepatitis C Risk Prevention	Pharmacy Practice	CHP
Antibiotic Resistance Prevention Program and Promotion of Appropriate Antibiotic Use	Public Health	CHP
Community-Engaged COVID-19 Mitigation Strategies to Reduce Disparities in Underserved Populations	Public Health	CHP
COVID 19 Response	Public Health	CHP
COVID-19 Student Projects	Public Health	CHP
COVID-19 Vaccine Education and Assistance	Public Health	CHP
COVID-19/ Student Projects	Public Health	CHP
HRSA Rural Health Care Services Outreach	Public Health	CHP
Improving Vaccine Confidence on College Campuses	Public Health	CHP
Increasing Provider Awareness of HIV and STD Services and Best Practices	Public Health	CHP
Intersections of COVID-19 and inequities in maternal and infant health outcomes in, relation	Public Health	CHP
Maternal and Child Health (MCH) Leadership Competencies	Public Health	CHP
Money Follows the Person Tribal Initiative- Amendment 2021-22	Public Health	CHP
NDDOH Promoting Health Equity	Public Health	CHP
NDDOH Promoting Health Equity Yr2	Public Health	CHP
NDDOH Promoting Health Equity Yr2 (CFDA -93.391)	Public Health	CHP
NDDOH Promoting Health Equity Yr2 (CFDA 93.940)	Public Health	CHP
North Dakota Alzheimer's Disease State Plan	Public Health	CHP
North Dakota Increasing Immunization Rates Project	Public Health	CHP
ADHM 470 Retail Financial Management and Control	Apparel, Merc, Design, Hsp Mgt	**College of Human Sciences & Education (CHSE)**
A Comparison of Blood Flow, Muscle Oxygen Saturation, and Energy Metabolism with Hands-Free Crutches Compared to Traditional Crutches, Medical Knee Scooters, and Normal Ambulation	Health, Nutrition & Exercise	CHSE
Compensation to Offset Research Expenses Associated with Kinesio Tape Projects	Health, Nutrition & Exercise	CHSE
Contract with Royal Roads for Major Project Advising (CISNR-036)	Health, Nutrition & Exercise	CHSE
Contract with Royal Roads University for INDS 517	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Concordia College	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Essentia Health	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Essentia Health	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Minnesota State University Moorhead	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Valley City State University (VCSU)	Health, Nutrition & Exercise	CHSE
Graduate Assistant at Valley City State University (VCSU)	Health, Nutrition & Exercise	CHSE
Graduate Assistant position at Minnesota State University Moorhead	Health, Nutrition & Exercise	CHSE
Graduate Assistantship at Concordia College	Health, Nutrition & Exercise	CHSE

Professional Athletic Training Student Perceptions and Knowledge of Cannabis 2	Health, Nutrition & Exercise	CHSE
Climate Survey Work for the University of Minnesota Duluth	Human Dev and Family Science	CHSE
Evaluation of 21st Century Community Learning Center After-school Programs in North Dakota Year 2	Human Dev and Family Science	CHSE
North Dakota Afterschool Network Graduate Assistantship	Human Dev and Family Science	CHSE
Collaborative Research: Investigating STEM Teacher Preparation and Rural Teacher Persistence and Retention	School of Education	CHSE
Corteva Agriscience CASE Implementation Grant	School of Education	CHSE
Data-Enabled Engineering Projects for Undergraduate Data Science & Engineering Education	School of Education	CHSE
Integrated Academic and Student Support Services: Quality Enhancement and Improvement Accreditation Support	School of Education	CHSE
Library Endowment Grant Program:, Life and Work of Youth Shaping Diversity and Equity	School of Education	CHSE
North Dakota Career and Technical Education Teacher Induction Program	School of Education	CHSE
REU Site: Research experience through collaborative teams in bioprocessing for conversion of waste into products of value	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with Augsburg	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with Bethel University	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with Concordia University	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with St. Catherine University	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with St. Cloud St. University	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with St. Thomas	School of Education	CHSE
Teacher Preparation Common Metrics: Partnership with the University of Minnesota Twin Cities	School of Education	CHSE
Campus Cyberinfrastructure (CC*) Team: Piloting a CI-enabled Tribal Research Collaboration	VP for Information Technology	Information Technology
Acquisition of Goods and Services	Biological Sciences	**College of Science & Mathematics (CSM)**
Bee stress response and overwintering physiology	Biological Sciences	CSM
Cancer-selective therapeutic effects of piperlongumine	Biological Sciences	CSM
CAREER: coffee fungi below and aboveground: agroecological experiment for teaching and learning about fungal diversity and ecosystem function	Biological Sciences	CSM
CAREER: Rapid phenotypic divergence and insulin-like growth factor 1 (IGF-1) signaling in a widespread songbird	Biological Sciences	CSM
Collaborative Research: Parental Effects, Telomere Dynamics, and the Cross-generational Consequences of Stressors	Biological Sciences	CSM
Developmental Plasticity and Insulin-Like Growth Factor (IGF) Expression in the House Sparrow (Passer domesticus) in Response to Temperature	Biological Sciences	CSM
Effects of Spring Storage Duration during Development on Reproductive Fitness in the Alfalfa Leafcutting Bee, Megachile rotundata	Biological Sciences	CSM
Impacts of White Nose Syndrome on the Threatened Bat Populations of North Dakota	Biological Sciences	CSM
Influence of provision microbiome on the development of Megachile rotundata	Biological Sciences	CSM
Modernizing Molecular Biology in Introductory Biology Labs	Biological Sciences	CSM
Monitoring the Relative Abundance of Bats at National Parks of the Upper Midwest	Biological Sciences	CSM
NWRC Blackbird-Sunflower Project	Biological Sciences	CSM
Perceptions of bats among American college students during the novel coronavirus (SARS-CoV-2) pandemic	Biological Sciences	CSM
R11 Track-2 FEC: Insect Cryobiology and Ecophysiology (ICE) Network: Integrating Genomicvs, Physiology, and Modeling	Biological Sciences	CSM
RII Track-4: mRNA processing and adaptation to the environment	Biological Sciences	CSM
Risk-Assessment and Monitoring of Feral Canola Populations in North Dakota	Biological Sciences	CSM
Wetlands for reduction of sediment and nutrient loadings in impaired watersheds	Biological Sciences	CSM

Analytical Ultracentrifuge with Absorbance and Interference Optics	Chemistry and Biochemistry	CSM
CAREER: Proteins under Confinement: Revealing the Impact of Spatial Restrictions on Enzyme Structure, Dynamics and Function	Chemistry and Biochemistry	CSM
CAREER: Investigation of Laser-driven Chemical Reactions by Molecular Dynamics	Chemistry and Biochemistry	CSM
Collaborative Research: Developing cancer-specific targeting new I photosensitizers for in vitro theranostic photodynamic therapy and photothermal therapy	Chemistry and Biochemistry	CSM
Data-Driven and Computationally Assisted Design of Near-Infrared Emissive Metal-Organic Complexes with Earth-Abundant Metals	Chemistry and Biochemistry	CSM
New Silicon Based Materials for Efficient, Low Cost Solar Cells	Chemistry and Biochemistry	CSM
Nickel-Catalyzed Alkyne Hydroamination for Efficient Amine Synthesis	Chemistry and Biochemistry	CSM
REU Site: Green Chemistry at North Dakota State University	Chemistry and Biochemistry	CSM
Silicon-Based Battery Materials	Chemistry and Biochemistry	CSM
Structural Basis for Cell Surface Signaling by a Gram-negative Bacteria Sigma-regulator	Chemistry and Biochemistry	CSM
Template Driven Access to Highly Congested Stereocenters: Synthetic and Mechanistic Studies	Chemistry and Biochemistry	CSM
All-Soy-One-Component Bioplastics for Food Packaging	Coatings & Polymeric Materials	CSM
Bioderived and Biodegradable Polymer Coatings for Paper Used in Food Packaging	Coatings & Polymeric Materials	CSM
Comprehensive Biological Efficacy Testing of Marine Coating	Coatings & Polymeric Materials	CSM
Engineering New, Biobased Fire-retardant Coating Additives from Agricultural Byproducts	Coatings & Polymeric Materials	CSM
Expanded Use of Soy-Based Oil Pretreatment of Recycled Rubber Crumb in Automotive Parts	Coatings & Polymeric Materials	CSM
Exploration of Bio-based Functional Building Blocks for Durable Coatings	Coatings & Polymeric Materials	CSM
Glycidyl Carbamate Resin Systems for Coatings	Coatings & Polymeric Materials	CSM
High-Pressure Hot Water Blasting Surface Preparation and HRCSA Coatings for Bridge Maintenance	Coatings & Polymeric Materials	CSM
Improved Watercraft Coatings II	Coatings & Polymeric Materials	CSM
Plant Oil-Based Latex Adhesives (Year 2)	Coatings & Polymeric Materials	CSM
Preliminary Exploration of Polylignin Biomass for Non-isocyanate Rigid Foams	Coatings & Polymeric Materials	CSM
Robust coatings with amphiphilic surfaces for control of biofouling	Coatings & Polymeric Materials	CSM
Self-sensing Nanoparticles for Corrosion-responsive Release of Inhibitors	Coatings & Polymeric Materials	CSM
Surface Active Polymers for Enhancement in Biofouling Control and Viable Non-toxic Marine Coatings	Coatings & Polymeric Materials	CSM
TARDEC Surface and Ground Water Membrane Fouling Research: Takes 2.5.1 and 2.5.2	Coatings & Polymeric Materials	CSM
Acquisition of X-Ray Fluorescence and Inductively-Coupled Plasma Optical Emission Spectrometers for geoscience research at North Dakota State University	Geosciences	CSM
CAREER: A Late Triassic Origin for Modern Marine Predator-prey Dynamics	Geosciences	CSM
Collaborative Research: a transparent-middle-layer computational and data management infrastructure for synoptic applications of cosmogenic-nuclide geochemistry	Geosciences	CSM
Understand Landform Ages on Stockton Island Tombolo, APIS	Geosciences	CSM
Refinement of stochastic processes via machine/deep learning	Mathematics	CSM
Guided Energy Absorption in Crumpled Polymer Sheets	Physics	CSM
RII Track-2 FED: The Visual Experience Database: A Large-Scale Point-of-View Video Database for Vision Research	Psychology	CSM
120kV Transmission Electron Microscope for Core Electron Microscopy Facility	Core Labs	Miscellaneous Offices
Developing an improved tool for monitoring vinegar syndrome in cellulose acetate formats	Library	Miscellaneous Offices
Sharing Stories: Designing a New Model for Collaborative Traveling Exhibits	Library	Miscellaneous Offices
When Places Speak	MU Operations	Miscellaneous Offices

Louis Stokes STEM Pathways and Research Alliance: All Nations AMP (ANAMP) program	Multi-Cultural Programs	Miscellaneous Offices
EPSCoR RII Track-1: ND- ACES: New Discoveries in the Advanced Interface of Computation, Science, and Engineering	NDSU EPSCoR	Miscellaneous Offices
NDSU NASA EPSCoR funding (FY22)	NDSU EPSCoR	Miscellaneous Offices
ND EPSCoR State Office FY22-23	North Dakota EPSCoR	Miscellaneous Offices
ND EPSCoR State Office Leveraged FY22-23	North Dakota EPSCoR	Miscellaneous Offices
FY 2021 USDA Forest Service Consolidated Payments Grant	North Dakota Forest Service	Miscellaneous Offices
FY 2021 USDA FS Hazardous Fuels Reduction Grant	North Dakota Forest Service	Miscellaneous Offices
NDFS/DPG Woodlands and Grasslands Sustainability Agreement	North Dakota Forest Service	Miscellaneous Offices
North Dakota Statewide Windbreak Renovation Initiative 2.0	North Dakota Forest Service	Miscellaneous Offices
Common Metrics Partnership with Northern Arizona University	Office of Teaching & Learning	Miscellaneous Offices
K-12 Continuing Education Course Development - North Dakota Governor's Emergency Education Relief (GEER) Funding	Office of Teaching & Learning	Miscellaneous Offices
North Dakota Common Metric Administration	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with Alaska Pacific University	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with Minnesota State University Mankato	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with Minnesota State University Moorhead	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with Otterbein University	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with Rochester University	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with University of Alaska Fairbanks	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with University of Alaska Southeast	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with University of Minnesota Morris	Office of Teaching & Learning	Miscellaneous Offices
Teacher Preparation Common Metrics: Partnership with University of South Dakota	Office of Teaching & Learning	Miscellaneous Offices
Making Good: Delivering Educational Equity For & With Indigenous Tribal Students & Communities	Office of the Provost	Miscellaneous Offices
New Beginnings: Supporting Students from Urban Inter-Tribal and Rural Tribal Communities	Office of the Provost	Miscellaneous Offices
HIV/HCV Prevention	Student Health Services	Miscellaneous Offices
Trio Student Support Services	TRIO	Miscellaneous Offices
Upward Bound Project	TRIO	Miscellaneous Offices
Extending the Life of Aged Roofing Shingles- An Expanded Market for Soy-Based Dust Control.	VP for Research	Miscellaneous Offices
NDSU's INBRE Subaward: Undergraduate Research	VP for Research	Miscellaneous Offices
ND Water Commission Matching Funds for NDWRRI Graduate Fellowship Program	Water Resources Institute	Miscellaneous Offices
North Dakota Water Resources Research Institute 104(b) program	Water Resources Institute	Miscellaneous Offices
NDSU Wellness Center Child Care ND Food Program	Wellness Center	Miscellaneous Offices
2020 Advanced Traffic Analysis Center	Upper Great Plains Transport	**Upper Great Plains Transportation Institute (UGPTI)**
2021 ND Insurance Reserve Fund Contribution	Upper Great Plains Transport	UGPTI
2021 North Dakota Local Technical Assistance Program	Upper Great Plains Transport	UGPTI
2021-2022 Transportation Learning Network Contract Extension	Upper Great Plains Transport	UGPTI
2022 DOT Support Center (DOTSC)	Upper Great Plains Transport	UGPTI
ASSESSMENT AND EMPIRICAL SUPPORT FOR BEHAVIORAL PROGRAMS IN ND TRAFFIC SAFETY	Upper Great Plains Transport	UGPTI

ASSESSMENT AND EMPIRICAL SUPPORT FOR BEHAVIORAL PROGRAMS IN ND TRAFFIC SAFETYASSESSMENT AND EMPIRICAL SUPPORT FOR BEHAVIORAL PROGRAMS IN ND TRAFFIC SAFETY CFDA 20.616	Upper Great Plains Transport	UGPTI
Bismarck-Mandan MPO Regional ITS Architecture Update	Upper Great Plains Transport	UGPTI
Coordination of 2022 NDDOT Transportation Conference	Upper Great Plains Transport	UGPTI
Dakota Digital Academy Faculty Award	Upper Great Plains Transport	UGPTI
Grain Movement Database: Soybean Transportation	Upper Great Plains Transport	UGPTI
Grain Transportation Market Information Gathering	Upper Great Plains Transport	UGPTI
HP-CMV Application - Advancing CMV Rural Crash Prevention Tools in North Dakota	Upper Great Plains Transport	UGPTI
HP-CMV Application - Improving CMV Safety through University Partnerships with a Focus on, Distracted Driving and Work Zone Safety: The FMCSA WSC Commercial Vehicle Safety Center and Summit	Upper Great Plains Transport	UGPTI
Improving Public Transportation in Rural Areas and Tribal Communities	Upper Great Plains Transport	UGPTI
LVC Pilot Study	Upper Great Plains Transport	UGPTI
Mountain Plains Consortium Transportation Centers Program Opportunity No. UTCOPENCOMP2016	Upper Great Plains Transport	UGPTI
ND Grain Movement Database: Corn Transportation	Upper Great Plains Transport	UGPTI
ND TRAFFIC SAFETY: OCCUPANT PROTECTION SURVEYS	Upper Great Plains Transport	UGPTI
NDDOT TRANSIT PROVIDER VEHICLE FACILITY AUDIT	Upper Great Plains Transport	UGPTI
NDHP Commercial Vehicle Safety Plan Review and Truck Crash Analysis for 2021-2022	Upper Great Plains Transport	UGPTI
North Dakota MPO Planning Support Program Master Agreement	Upper Great Plains Transport	UGPTI
Northern Plains Railroad Grain Movement	Upper Great Plains Transport	UGPTI
Northern Plains Railroad Grain Movement Report	Upper Great Plains Transport	UGPTI
Seat Belt, Cell Phone and Ride Service Surveys to Enhance Traffic Safety in South Dakota	Upper Great Plains Transport	UGPTI
Small Urban, Rural and Tribal Center on Mobility	Upper Great Plains Transport	UGPTI
Statewide Seat Belt Survey to Enhance Traffic Safety in South Dakota	Upper Great Plains Transport	UGPTI
Teen Road Test Waiver and Simulator (NDDOT OP and ED)	Upper Great Plains Transport	UGPTI
Township Transportation Funding Program (TTFP)	Upper Great Plains Transport	UGPTI
Update Program Plan/Top Level Design for the NDHP for FMCSA ITD Core Compliance	Upper Great Plains Transport	UGPTI
Wheat Transportation Research	Upper Great Plains Transport	UGPTI
Advanced UAS/UAV Application and Data Management Systems and Bioinformatics Tools Integrate GxExM Data for Precision Agricultural Management	AES Ag & Biosystems Eng	**Ag Exp Station & Ext Service**
Agricultural Products Utilization Commission Grant Program	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Bio-based polymer degradation and impact on human health	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
CoRncrete: A Corn-based Construction Material to Replace Cement	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Developing Tools for Better Management of Rangeland, Pastures and Forages	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Development of Soy-formulate for organic ammonia production via hyper-ammonia-bacteria fermentation in a one-pot system	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Evaluating the Allowable Storage Time of Two Soybean Varieties at Two Moisture Levels at Typical Storage Temperatures	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Flax Shive as Alternative Raw Material for Particleboard Production	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Isolation and characterization of hyper-ammonia-producing bacteria for organic ammonia production from Soybean crop and byproducts	AES Ag & Biosystems Eng	Ag Exp Station & Ext Service
Adams County Hemp Feasibility Study	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Develop Farm Model to Conduct Policy Analysis for North Dakota & Northern Great Plains - Phase II	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Economic Contribution of Agriculture in North Dakota	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service

Implications of Recent Surging Ocean Transportation Rates on the Markets for Certain Agricultural Products	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Logistical Competition for Corn Export Shipments from the United States and Ukraine to Targeted International Markets	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Market Development Support	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Marketing Consulting and Research Projects	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Opportunities for CORE-CM in Williston Basin	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Strategies to Improve / Assure Performance of Soybean Purchases	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Strategy & Analysis of GM Wheat	AES Agribusiness & Appld Econ	Ag Exp Station & Ext Service
Acquisition of Goods and Services	AES Animal Science	Ag Exp Station & Ext Service
Agricultural Products Utilization Commission Grant Program	AES Animal Science	Ag Exp Station & Ext Service
Automated titration equipment to enhance analytical capabilities on cellular energy metabolism and mitochondrial function in animals.	AES Animal Science	Ag Exp Station & Ext Service
Characterization of corn harvested at high moisture in cattle feeding yards in the Upper Midwest	AES Animal Science	Ag Exp Station & Ext Service
Development of a science-based management strategy to reduce the use of antimicrobials	AES Animal Science	Ag Exp Station & Ext Service
Impact of High Oleic Soybeans (Trusoy) on Meat and Carcass Quality Traits of Pigs	AES Animal Science	Ag Exp Station & Ext Service
Impacts of feeding a corn-based supplement on beef heifers, their offspring, and grand-daughters	AES Animal Science	Ag Exp Station & Ext Service
Influence of carcass weight and external fat thickness on chilling rate and meat quality of beef carcasses	AES Animal Science	Ag Exp Station & Ext Service
Maternal Nutrition, Epigenetic Modifiers, and Programming of Fetal Organ Development in Beef Cattle	AES Animal Science	Ag Exp Station & Ext Service
National Beef Quality Audit – 2021: In-plant survey of transportation, mobility, live cattle, harvest-floor assessments, and carcass characteristics of fed steers and heifers and market cows and bu	AES Animal Science	Ag Exp Station & Ext Service
National Beef Tenderness Survey 2021-2022	AES Animal Science	Ag Exp Station & Ext Service
Rapid analysis of bioactive plant constituents and steroid hormones in beef cattle matrices	AES Animal Science	Ag Exp Station & Ext Service
Request for a Quibit 4 Fluorometer (Carl A and Jean Y White Memorial Endowment for Agriculture Research Grant Program)	AES Animal Science	Ag Exp Station & Ext Service
Role of placental and fetal pregnanes and their metabolites in parturition and extra uterine survival	AES Animal Science	Ag Exp Station & Ext Service
Strengthening the Nation's Scientific and Professional Workforce in Food and Animal Agriculture	AES Animal Science	Ag Exp Station & Ext Service
Transgenerational Impacts Of Maternal Nutrition On Fetal Epigenetic Programming	AES Animal Science	Ag Exp Station & Ext Service
Workforce Training For Workers In Meat Processing	AES Animal Science	Ag Exp Station & Ext Service
A tool for cheap and rapid tracking of soybean inoculant populations in field soil	AES Microbiological Sciences	Ag Exp Station & Ext Service
Contributions of beneficial soil microbes to corn yield	AES Microbiological Sciences	Ag Exp Station & Ext Service
Harnessing the Microbiome for Protection from Fusarium Head Blight	AES Microbiological Sciences	Ag Exp Station & Ext Service
Identification of rhizobium inoculants tailored for performance with new alfalfa varieties and diverse soil types	AES Microbiological Sciences	Ag Exp Station & Ext Service
Integrating vaccine efficacy and safety by directed suicidal replication	AES Microbiological Sciences	Ag Exp Station & Ext Service
MICROBIOME MANAGEMENT FOR IMPROVED NUTRIENT-USE EFFICIENCY AND WATER QUALITY	AES Microbiological Sciences	Ag Exp Station & Ext Service
Potential for combatting iron deficiency chlorosis with the soybean microbiome	AES Microbiological Sciences	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Unlocking beneficial microorganisms for enhancing adaptability and resilience of dry edible pea	AES Microbiological Sciences	Ag Exp Station & Ext Service
Testing novel food antimicrobials on tomatoes	AES Microbiological Sciences	Ag Exp Station & Ext Service
Testing novel food antimicrobials on tomatoes (APUC Grant Program)	AES Microbiological Sciences	Ag Exp Station & Ext Service
The impact of agricultural practices on microbial spatiotemporal dynamics and contributions to soil health	AES Microbiological Sciences	Ag Exp Station & Ext Service
Towards elite pulse inoculants for the northern US tailored to local soils and varieties	AES Microbiological Sciences	Ag Exp Station & Ext Service

2021 Support of Irrigated Potato Research for North Dakota and Minnesota	AES Plant Pathology	Ag Exp Station & Ext Service
Acquisition of Goods and Services	AES Plant Pathology	Ag Exp Station & Ext Service
Adjusting Planting Date for the Management of Verticillium Wilt	AES Plant Pathology	Ag Exp Station & Ext Service
Adjusting the Cercospora Beticola Disease Forecasting Model Using Spore Germination Conditions for Early Fungicide Application	AES Plant Pathology	Ag Exp Station & Ext Service
Assessment of Genetic Variations of Rhizoctonia Solani Subgroup AG2 Isolates with Genome Fingerprinting Methods	AES Plant Pathology	Ag Exp Station & Ext Service
Attachment A-22/Evaluation of Wheat Seed Treatments	AES Plant Pathology	Ag Exp Station & Ext Service
Barley Bacterial Leaf Streak: Host Resistance and Disease Epidemiology	AES Plant Pathology	Ag Exp Station & Ext Service
Barley Pest Research Initiative for Spot Blotch, Bacterial Leaf Streak, Net Blotch, Stem Rust, and Other Barley Pathogens	AES Plant Pathology	Ag Exp Station & Ext Service
Best Pest Management of Pyrethroid Resistant Soybean Aphids and Soybean Gall Midge Survey	AES Plant Pathology	Ag Exp Station & Ext Service
Characterization of Necrotrophic Effectors in the Parastagonospora Nodorum-Wheat Interaction	AES Plant Pathology	Ag Exp Station & Ext Service
Characterization of North Dakota Spring Wheat Germplasm for Stem, Stripe, and Leaf Rust Resistance	AES Plant Pathology	Ag Exp Station & Ext Service
Characterization of North Dakota Wheat Stripe Rust Populations to Determine Pathogen Aggressiveness at High Temperature	AES Plant Pathology	Ag Exp Station & Ext Service
Characterization of Prevalence of Avirulence Genes in Blackleg Pathogen of Canola and Transfer of Blackleg Resistance into Canola-Quality Germplasm	AES Plant Pathology	Ag Exp Station & Ext Service
Corteva Downy Mildew 2021	AES Plant Pathology	Ag Exp Station & Ext Service
Detection and Quantification of the Common Scab Pathogen in the Field	AES Plant Pathology	Ag Exp Station & Ext Service
Developing Durable Rust Resistance in Hard Red Spring Wheat by Pyramiding Non-Race Specific Adult-Plant Resistance Genes	AES Plant Pathology	Ag Exp Station & Ext Service
Development of a Quantitative PCR-Method to Detecting Wheat Bacterial Leaf Streak Pathogen	AES Plant Pathology	Ag Exp Station & Ext Service
Development of Elite Durum and Hard Red Spring Wheat Germplasm with Scab Resistance	AES Plant Pathology	Ag Exp Station & Ext Service
Development of RNA Fungicides for Management of Sclerotinia Sclerotiorum on Canola	AES Plant Pathology	Ag Exp Station & Ext Service
Development of Sustainable System-Based Management Strategies for Two Vector-Borne, Tuber Necrotic Viruses in Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Effect of Cercospora Leaf Spot on Sugarbeet Root Storage	AES Plant Pathology	Ag Exp Station & Ext Service
Effect of Plant Protection Products on Goss's Wilt Severity and Protection of Yield	AES Plant Pathology	Ag Exp Station & Ext Service
Effect of Sunflower Growth Stage on Phomopsis Stem Canker Development	AES Plant Pathology	Ag Exp Station & Ext Service
Effectiveness of Fungicides to Manage Phomopsis Stem Canker of Sunflower	AES Plant Pathology	Ag Exp Station & Ext Service
Efficacy of Adavelt (GF-4536) Solo and In Mixture with Difenoconazole for Control of Alternaria Early Blight (ALTESO) in Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluate SS-7805, S-2204, and S-2271 at 50 and 100 g ai/ha for Control of Potato Early Blight	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluating Corteva Biological Compounds for Rhizcotonia Control in Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluating Management Tools for Fusarium Head Blight, Ergot and Bacterial Leaf Streak	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluating New Insecticides for Wireworm Control in Sunflower	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluation of Chipping Lines for Reaction to PMTV	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluation of Fungicide Programs and Monitoring Propiconazole Sensitivity in Leaf Spot Pathogens of Wheat	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluation of Products for Control of FHB	AES Plant Pathology	Ag Exp Station & Ext Service
Evaluation of Red Sunflower Seed Weevil Pyrethroid Susceptibility	AES Plant Pathology	Ag Exp Station & Ext Service
FHB Resistance in Wheat	AES Plant Pathology	Ag Exp Station & Ext Service
Field Evaluation of Management Tools for Ergot	AES Plant Pathology	Ag Exp Station & Ext Service
Field Validation of a Quantitative PCR Diagnostic Assay for Common Scab of Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Flea Beetle Insecticide Resistance Bioassay and Midge Trap Survey in Canola	AES Plant Pathology	Ag Exp Station & Ext Service

Functional Characterization of Pathogen Produced Effectors and their Host Targets	AES Plant Pathology	Ag Exp Station & Ext Service
Genetic Characterization and Integrated Deployment of FHB Resistance in Wheat	AES Plant Pathology	Ag Exp Station & Ext Service
Identification of Suppressive Soil for Managing Soybean Cyst Nematode in North Dakota	AES Plant Pathology	Ag Exp Station & Ext Service
Identifying Effective Cover Crops for Management of the Root-Lesion Nematode, Pratylenchus Penetrans	AES Plant Pathology	Ag Exp Station & Ext Service
Improvement of Barley Resistance to Fusarium Head Blight, Stripe Rust, and Hessian Fly	AES Plant Pathology	Ag Exp Station & Ext Service
Improving DGLA Production in Soybean for Pharmaceutical Applications	AES Plant Pathology	Ag Exp Station & Ext Service
Improving Disease Management and Agronomic Practices of Sugarbeet	AES Plant Pathology	Ag Exp Station & Ext Service
Improving Resistance of Spring Canola to Sclerotinia Stem Rot	AES Plant Pathology	Ag Exp Station & Ext Service
Integrated Management Strategies and Fungicide Testing for FHB and DON in Small Grains in North Dakota	AES Plant Pathology	Ag Exp Station & Ext Service
Integrating Next Generation Technologies for Blackleg and Soft Rot Management in Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Investigating the Impact of Diseases and Associated Factors on Yield	AES Plant Pathology	Ag Exp Station & Ext Service
Management and Innovative Research of FHB in Barley	AES Plant Pathology	Ag Exp Station & Ext Service
Management and Innovative Research on Economically Important Barley Diseases	AES Plant Pathology	Ag Exp Station & Ext Service
Markell Corteva Canola WM 2021 NA21YT669008F	AES Plant Pathology	Ag Exp Station & Ext Service
Monitoring Plasmopara Halstedii (Downy Mildew) Virulence	AES Plant Pathology	Ag Exp Station & Ext Service
Monitoring Sensitivity of Cercospora Beticola to Foliar Fungicides in sugar beet fields of Minnesota and North Dakota in 2021	AES Plant Pathology	Ag Exp Station & Ext Service
NDSU_BASF_SCN_McCarville_2021	AES Plant Pathology	Ag Exp Station & Ext Service
New Strategies for Management of Cercospora Leaf Spot and Rhizomania Diseases of Sugarbeet	AES Plant Pathology	Ag Exp Station & Ext Service
New Technologies to Study Virus-Host Interactions to Identify Strategies for Sugarbeet Viral Disease Management	AES Plant Pathology	Ag Exp Station & Ext Service
North Central Integrated Pest Management Center (NCIPMC): A Regional Approach to Pest Management Implementation FY18-FY22	AES Plant Pathology	Ag Exp Station & Ext Service
Prevalence of ToxA in Bipolaris Sorokiniana and its Virulence on Wheat and Durum Cultivars	AES Plant Pathology	Ag Exp Station & Ext Service
Research and Extension on Emerging Soybean Pests in the North Central Region	AES Plant Pathology	Ag Exp Station & Ext Service
Resistance of NDSU Dry Bean Breeding Lines and Varieties to Soybean Cyst Nematode	AES Plant Pathology	Ag Exp Station & Ext Service
Resistance of Soybean Cultivars and Germplasm to Soybean Cyst Nematode	AES Plant Pathology	Ag Exp Station & Ext Service
Resistance to Important Soybean Diseases	AES Plant Pathology	Ag Exp Station & Ext Service
Seedling Pathogens in the Soybean Production Cycle: Management and Communication	AES Plant Pathology	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Determining Interaction of Nematode and Fungal Pathogens for Control of Root Rot of Field Pea	AES Plant Pathology	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Impacts of Fungicide Applications and Plant Diseases on Specialty Crop Yields after Hail	AES Plant Pathology	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Mining the Soil and Host Genetics for Sustainable Answers to Verticillium Wilt in Potatoes	AES Plant Pathology	Ag Exp Station & Ext Service
Spring Malting Barley Resistance to Fusarium Head Blight and Spot Form Net Blotch	AES Plant Pathology	Ag Exp Station & Ext Service
Strengthening Canola Profitability in North Central US	AES Plant Pathology	Ag Exp Station & Ext Service
Survey and Management of Dry Bean Diseases in the Northarvest Region	AES Plant Pathology	Ag Exp Station & Ext Service
Testing the Effectiveness of a Race-Nonspecific Resistance QTL for Wheat Tan Spot at Adult Plant Stage	AES Plant Pathology	Ag Exp Station & Ext Service
Transferring of a Resistance Gene from Triticale to Wheat for Bacterial Leaf Streak	AES Plant Pathology	Ag Exp Station & Ext Service
Understanding Differences in P. Allius Populations from North Dakota and Washington State, and their Role in TRV Transmission in Potato	AES Plant Pathology	Ag Exp Station & Ext Service
Validation of Resistance and Parasitism Genes Associated with Infection of Corn Roots by Root-Lesion Nematode	AES Plant Pathology	Ag Exp Station & Ext Service
Virulent Races of Phytophthora Root Rot in North Dakota	AES Plant Pathology	Ag Exp Station & Ext Service

2021 Hard Red Spring and Durum Wheat Regional Crop Quality Survey	AES Plant Science	Ag Exp Station & Ext Service
2021 Hard Red Spring Wheat Regional Quality Survey	AES Plant Science	Ag Exp Station & Ext Service
2021 Montana Barley Crop Quality Survey and Report	AES Plant Science	Ag Exp Station & Ext Service
2021 XtendiMax Hooded Sprayer Deposition	AES Plant Science	Ag Exp Station & Ext Service
Acifluorfen Sugarbeet Tolerance and Weed Control Project	AES Plant Science	Ag Exp Station & Ext Service
Acquisition of Goods and Services	AES Plant Science	Ag Exp Station & Ext Service
Assessing the Importance of Plant Spacing Heterogeneity (skips, doubles, gaps) on Yield, and Heritability of Seedling Emergence in Field Conditions	AES Plant Science	Ag Exp Station & Ext Service
Automated Almaco Planter	AES Plant Science	Ag Exp Station & Ext Service
Autonomous Robotic Systems for Precision Weed Control in Flax	AES Plant Science	Ag Exp Station & Ext Service
Boots on the Ground: Validation of Benchmarking Process through an Integrated On-Farm Network	AES Plant Science	Ag Exp Station & Ext Service
Breeding and Genetics of Two-Rowed Malting Barley	AES Plant Science	Ag Exp Station & Ext Service
Breeding of Glyphosate-Resistant Soybean Cultivars	AES Plant Science	Ag Exp Station & Ext Service
Breeding of Improved Non-GMO Cultivars and Germplasm	AES Plant Science	Ag Exp Station & Ext Service
Canola Breeding for Increasing Oil Yield Per Acre	AES Plant Science	Ag Exp Station & Ext Service
Comparing and Prioritizing Conservation Practices to Enhance Soil Fertility and Productivity in Corn Cropping Systems	AES Plant Science	Ag Exp Station & Ext Service
Deoxynivalenol in Wheat and Inhibition of F. Graminearum by Compounds in Wheat Bran	AES Plant Science	Ag Exp Station & Ext Service
Develop Durum Wheat Resistant to Fusarium Head Blight	AES Plant Science	Ag Exp Station & Ext Service
Developing 6- and 2- rowed Malting Barley Cultivars with Reduced FHB and DON	AES Plant Science	Ag Exp Station & Ext Service
Developing Bioinformatic Pipelines for Genomics-Assisted Breeding using Graphical User Interfaces	AES Plant Science	Ag Exp Station & Ext Service
Developing Durum Wheat Germplasm with Low Cadmium Uptake	AES Plant Science	Ag Exp Station & Ext Service
Developing the Next Generation of Flavonoid Enhanced Dry Beans	AES Plant Science	Ag Exp Station & Ext Service
Development of Hard Spring Wheat Cultivars Resistant to Fusarium Head Blight	AES Plant Science	Ag Exp Station & Ext Service
Development of Late Blight Spore Trapping Network	AES Plant Science	Ag Exp Station & Ext Service
Development of Meat Analogues with Germinated Pulse Protein Extracts	AES Plant Science	Ag Exp Station & Ext Service
Development of Multipurpose Potato Cultivars with Enhanced Quality, Disease and Pest Resistance - North Central Region 2021-23	AES Plant Science	Ag Exp Station & Ext Service
Dry Bean Improvement for the Northern Plains	AES Plant Science	Ag Exp Station & Ext Service
Durum Quality Research Support	AES Plant Science	Ag Exp Station & Ext Service
Early Identification of SCN Disease	AES Plant Science	Ag Exp Station & Ext Service
End Use Market Development Research for Spring Wheat	AES Plant Science	Ag Exp Station & Ext Service
Enhancing the Nutritional and Functional Traits of Dry Bean through Metabolomics, Genetics, and Breeding	AES Plant Science	Ag Exp Station & Ext Service
Enriching and Understanding the Wheat Genome by Inducing Secondary Homoeologous Recombination	AES Plant Science	Ag Exp Station & Ext Service
Essential Oil Nanoemulsion to Control of Mycotoxin Production in Cereals	AES Plant Science	Ag Exp Station & Ext Service
Evaluation of Adjuvants Tank-Mixed with Commercial Herbicides	AES Plant Science	Ag Exp Station & Ext Service
Evaluation of Barley and Malt for Fusarium Infection and Mycotoxins	AES Plant Science	Ag Exp Station & Ext Service
Expand Durum Breeding Project	AES Plant Science	Ag Exp Station & Ext Service
Flax Breeding for Increasing Yield and Oil Per Acre	AES Plant Science	Ag Exp Station & Ext Service
Formation of Non-Aqueous Air-in-Corn Oil Foams as Functional Bakery Ingredients	AES Plant Science	Ag Exp Station & Ext Service
Fostering Resilience and Ecosystem Services in Landscapes by Integrating Diverse Perennial Circular Systems	AES Plant Science	Ag Exp Station & Ext Service
Functional Studies of Candidate Genes Associated with Heterotic Yield Effects (Hybrid Vigor) in Canola	AES Plant Science	Ag Exp Station & Ext Service
Genetic Characterization and Selection for Fusarium Head Blight Resistance in Durum Wheat	AES Plant Science	Ag Exp Station & Ext Service

Genetic Improvement and Potato Cultivar Development for the Northern Plains	AES Plant Science	Ag Exp Station & Ext Service
Genetic Improvement of Dry Beans for Bruchid Resistance for Southern Africa	AES Plant Science	Ag Exp Station & Ext Service
Genomic Analysis of Septoria Nodorum Blotch Susceptibility Genes in Wheat	AES Plant Science	Ag Exp Station & Ext Service
Genomic Approaches for Improving Durable Crown Rust Resistance and Nutritional Quality in Oats	AES Plant Science	Ag Exp Station & Ext Service
Genomics-Assisted Backcross to Improve Grain Yield in Durum Wheat under Drought Environment in Western North Dakota	AES Plant Science	Ag Exp Station & Ext Service
Hard Red Spring Wheat Breeding	AES Plant Science	Ag Exp Station & Ext Service
Hard Winter Wheat Breeding Program for the Northern Plains	AES Plant Science	Ag Exp Station & Ext Service
Herbicide Programs to Control ALS-Resistant Palmer Amaranth and Waterhemp in Dry Beans	AES Plant Science	Ag Exp Station & Ext Service
HRS and Durum Crop Quality Survey	AES Plant Science	Ag Exp Station & Ext Service
HRS Quality Research	AES Plant Science	Ag Exp Station & Ext Service
HRW Quality Research Support	AES Plant Science	Ag Exp Station & Ext Service
Identifying the Molecular Mechanisms Controlling Wound-Healing Processes to Improve Postharvest Quality of Potato	AES Plant Science	Ag Exp Station & Ext Service
Impact of Agronomic and Post-Harvest Management Practices on Potato Quality	AES Plant Science	Ag Exp Station & Ext Service
Impact of Kernel Structure on Milling Quality of Durum Wheat	AES Plant Science	Ag Exp Station & Ext Service
Implementation of Genomic Selection to Improve Yield and Quality in Durum Wheat	AES Plant Science	Ag Exp Station & Ext Service
Improvement of Durum and Bread Wheat for Resistance to Fusarium Head Blight, Stem Rust, and Hessian Fly	AES Plant Science	Ag Exp Station & Ext Service
Improving Waterlogging Stress Resilience and Nutrient Use Efficiency in Soybean	AES Plant Science	Ag Exp Station & Ext Service
Increasing Genetic Diversity in Spring Canola (Brassica Napus L.)	AES Plant Science	Ag Exp Station & Ext Service
Integrated Weed Management in Hemp: A Multistate Effort to Evaluate Practices and Develop Recommendations	AES Plant Science	Ag Exp Station & Ext Service
Integrating Best Management Practices for Herbicide-Resistant Weeds and Herbicide Stewardship in Soybean Production (FY22)	AES Plant Science	Ag Exp Station & Ext Service
Introgression and Pyramiding of Sclerotinia Stem Rot Disease Resistant Gene(s) into Canola Cultivars	AES Plant Science	Ag Exp Station & Ext Service
Introgression of CMS and Restorer System into Double Haploid and Elite Canola Breeding Lines for Hybrid Development	AES Plant Science	Ag Exp Station & Ext Service
Investigating Deacclimation in Canola	AES Plant Science	Ag Exp Station & Ext Service
KWS Sugarbeet Tolerance and Weed Control Project	AES Plant Science	Ag Exp Station & Ext Service
Late Blight Spore Trapping Network for Minnesota and North Dakota	AES Plant Science	Ag Exp Station & Ext Service
Minor Use Pesticide Fund Grant Program	AES Plant Science	Ag Exp Station & Ext Service
Mulch 2o: Biodegradable Composite Hydromulches for Sustainable Organic Horticulture	AES Plant Science	Ag Exp Station & Ext Service
National Processing Trials and Clonal Evaluations	AES Plant Science	Ag Exp Station & Ext Service
Optimizing Transformation of Waterhemp Cell Cultures	AES Plant Science	Ag Exp Station & Ext Service
Potato Agronomy Management Studies - 2021	AES Plant Science	Ag Exp Station & Ext Service
Pulse Crops Breeding and Genetics Research for North Dakota	AES Plant Science	Ag Exp Station & Ext Service
Purchase Small Field Plot Combine	AES Plant Science	Ag Exp Station & Ext Service
QTL Mapping of Sclerotinia Head Rot Resistance and Pyramiding of Basal Stalk Rot QTL in Sunflower	AES Plant Science	Ag Exp Station & Ext Service
Recurrent Genomic Selection to Accelerate Breeding Population Improvement in Spring Wheat	AES Plant Science	Ag Exp Station & Ext Service
Refining Molecular Mechanisms that Control Potato Meristem Dormancy and Tuber Sprouting via Omics	AES Plant Science	Ag Exp Station & Ext Service
Replacement for Mixograph	AES Plant Science	Ag Exp Station & Ext Service
Response of Newly Released Varieties to High Input Management	AES Plant Science	Ag Exp Station & Ext Service
Reversing Herbicide Resistance in Waterhemp: Gene Editing of ALS	AES Plant Science	Ag Exp Station & Ext Service
Seed Treatment Innovation to Improve Abiotic Stress Resilience and Nitrogen Utilization Efficiency in Corn	AES Plant Science	Ag Exp Station & Ext Service

Silphium of the Future: Developing Resources and Methods to Cross the Bridge from Wild Species to Domesticated Crop	AES Plant Science	Ag Exp Station & Ext Service
Spatial Localization and Positional Assembly of Enzyme on Metal-Phenolic Framework Enabling One-Step Digestion for Dietary Fiber Analysis	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Defining Optimum Row Spacing for Improved Size Profile and Yield of Chipping Potato Tubers	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Develop Complementary Pulse Proteins for Improving Nutritional Quality and Functionality of Pulse Proteins	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Evaluation of Russet-Skinned Potatoes for Nitrogen Use Efficiency	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Inducing Sterility in Ornamental Woody Trees and Shrubs	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Pulse Grain Bioprocessing for Enhanced Nutritional Profiles and Functional Properties	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Pyramiding Desirable Bean Rust Genes for Broader and Durable Resistance	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Translating High-Throughput Phenotyping into Realized Genetic Gain in Pulse Crops	AES Plant Science	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Weed Control in Onion: Using an Integrated System for Early Season Control	AES Plant Science	Ag Exp Station & Ext Service
Specialty Wheat Quality Research - Technician	AES Plant Science	Ag Exp Station & Ext Service
Specialty Wheat Quality Research Support	AES Plant Science	Ag Exp Station & Ext Service
Syngenta Hybrid Wheat Trial	AES Plant Science	Ag Exp Station & Ext Service
Technical and Information Services	AES Plant Science	Ag Exp Station & Ext Service
Tempering HRS Wheat with Chlorinated Water: Effect on End-Use Quality	AES Plant Science	Ag Exp Station & Ext Service
Terroir: How Soils Impact Minnesota Cold Hardy Grapes and Wine Quality	AES Plant Science	Ag Exp Station & Ext Service
Testing New High Quality Perennial Cool-Season Forage Grasses with Improved Winter Hardiness and Persistence - Year 2	AES Plant Science	Ag Exp Station & Ext Service
Transfer of FHB Resistance to NDSU Hard Red Spring Winter Wheat Breeding Material	AES Plant Science	Ag Exp Station & Ext Service
University Next Gen Corn Herbicide COI Trials	AES Plant Science	Ag Exp Station & Ext Service
Utility of an Oat Cover Crop for Iron Deficiency Chlorosis and Waterhemp Management	AES Plant Science	Ag Exp Station & Ext Service
Value of Genetic Resistance and Fungicides on FHB Control in Durum	AES Plant Science	Ag Exp Station & Ext Service
Visual Ratings for Iron-Deficiency Chlorosis	AES Plant Science	Ag Exp Station & Ext Service
Weed Control in Sugarbeets	AES Plant Science	Ag Exp Station & Ext Service
White Mold Resistance - QTL: Identification, Interactions, and Fine Mapping in Common Bean	AES Plant Science	Ag Exp Station & Ext Service
Acquisition of Goods and Services	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Active-optical sensor algorithms completion for use in directing in-season N application for yield and protein enhancement.	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Economic Threshold for Sugarbeet Root Maggot Control Decisions	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Evaluation of silver fly predators, Leucopis argenticollis and Leucopis piniperda, of Adelges tsugae in the Pacific Northwest, as biological controls in the eastern US	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Exotic Wood Borer Survey and Identification and Exotic Moth Trap Identification	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Field Validation of Mineral N Cycling from Mixed Crop Residues in Long-term No-till Systems	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Field validation of mineral N cycling from mixed crop residues in long-term no-till systems	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Field Validation of Mineral N Cycling from Mixed Crop Residues in Long-term No-till Systems	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Improving Data and Understanding of Rural Water Suppliers in North Dakota to Support the North Dakota State Water Commission	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Integrated Pest Management of Sunflower Insects	AES School of Nat Res Sciences	Ag Exp Station & Ext Service

Long- term Relationships between Soil Carbon and Soil Acidity in the Northern Great Plains Affecting Soil Survey Interpretations.	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Mineral Analysis of Pollinator Forbs	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Moth and Bee Identifications 2021-2022	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
National Mesonet Program Prime Contract	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Natural Resource Data Acquisition, Integrated Pest Management, and Range and Forest Management on North Dakota Army National Guard Lands in 2021-2022.	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
ND FY21 PPA Grape Commodity Survey	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
NDAWN Crystal Sugar Stations 2021	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Phase I: Reclamation of Soils Impacted by Releases of Produced Waters	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Plant Resistance to Wheat Stem Sawfly 2021-2022	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Reconstructing wildlife habitat, soil health, and forage quality in crested wheatgrass-dominated pastures	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Research and Extension Efforts at the Soil Health and Agriculture Research Extension (SHARE) Farms in Mooreton, ND and Logan Center, ND	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Research and Extension on Emerging Soybean Pests in the North Central Region	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Research and outreach plan 2021 growing season 2-Row Barley project	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Soil Health and Agriculture Research Extension (SHARE) Farm Research Projects in Mooreton, ND and Logan Center, ND	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Soil Management for Sugarbeet Production	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Boosting field pea production and insect pest control: the role of root microbe diversity	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Sugarbeet Insect Biology and Control	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Upper Missouri Basin Soil Moisture and Snowpack Monitoring Existing & New Site Retrofits	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
Using insect biology and cultural practices for management of red sunflower seed weevil	AES School of Nat Res Sciences	Ag Exp Station & Ext Service
FY 21 ND NAHLN Infrastructure	AES Vet Diag Serv Dept	Ag Exp Station & Ext Service
FY 21 ND NAHLN Infrastructure II	AES Vet Diag Serv Dept	Ag Exp Station & Ext Service
Increasing the diagnostic PCR and next-generation sequencing capacity for the diagnosis and variant detection of COVID-19 in animals at the North Dakota State University Veterinary Diagnostic Lab	AES Vet Diag Serv Dept	Ag Exp Station & Ext Service
Vet-LIRN Cooperative Agreement	AES Vet Diag Serv Dept	Ag Exp Station & Ext Service

Assessment of seed treatment effects on soybean and field pea performance	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
BASF Product Evaluations in Cereals	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Comparative impact of biodegradable polymer-coated urea fertilizers on corn	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Corn starter fertilizer trial	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Determining rye safety to soybeans with soil moisture status	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Efficacy of BASF products in soybean, dry bean, and canola	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Efficacy of Monsanto products in dry bean	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Efficacy of Products for Fusarium in Wheat	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Efficacy of VBC products for yield and quality enhancement of sunflower	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Evaluate the effectiveness of ANVOLTM as a urease inhibitor in wheat production	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Evaluation of Corteva Formulations for Anthracnose in Lentil and Ascochyta Blight in Chickpea	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Evaluation of Rizobacter Inoculants in Field Pea and Soybean	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Evaluation of selected plant establishment factors and nutrition inputs in pinto bean	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Expanding the Cover Crop Breeding Network: New species and traits for organic growers	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Field Evaluation of Sclertonia Head and Stalk Rot of Sunflower for Genetic Mapping and Germplasm Development	AES Carrington R/E Ctr	Ag Exp Station & Ext Service

Improved White Mold Resistance in Dry and Snap Beans Through Multi-Site Screening and Pathogen Characterization Throughout Major Production Areas	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Improving white mold management in dry beans	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Irrigated Crop Production in Central and Southeast North Dakota	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Jump starting mycorrhizal colonization in corn following non-host crop	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Management of root rots of field peas with crop rotation	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Minor Use Pesticide Fund Grant Program	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Optimizing fungicide application frequency and application interval relative to soybean maturity for improved white mold management in soybeans	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Optimizing fungicide spray droplet size for improved management of foliar diseases in field peas	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Optimizing fungicide tank-mixes with chlorothalonil for improved management of Ascochyta blight in chickpeas	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Pinto bean crop tolerance to preplant, low-dose application of dicamba	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Rotational Restrictions for S3100	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Scientific Applications & Research Associates (SARA) Terrestrial Acoustic Sensory Array (TASA) Detect and Avoid (DAA) network in North Dakota	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Soybean and other broadleaf-row crop tolerance to preplant low-dose application of dicamba	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Assessment of Improved Haskap Selections for North Dakota	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Optimizing fungicide tank-mixes with chlorothalonil for improved management of Ascochyta blight in chickpeas	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Strategies for reducing erosion through spring cover crops	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Understanding Environmental Controls on Pea Protein	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
US Winter Wheat – Seedling Disease – Managed - Rhizoctonia	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Using data-driven knowledge for profitable soybean management systems	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Yield and performance trials of advanced field pea lines	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Zinc Biofortification Strategies in Spring Wheat	AES Carrington R/E Ctr	Ag Exp Station & Ext Service
Alternative Soybean Production Management Options in Acidic Soils	AES Dickinson R/E Center	Ag Exp Station & Ext Service
Comparison of biological and plant growth regulator treatments applied to Hard Red Spring Wheat in acidic soil environments	AES Dickinson R/E Center	Ag Exp Station & Ext Service
In-furrow fertilizer amendment comparison for Hard Red Spring Wheat in acidic soil environments	AES Dickinson R/E Center	Ag Exp Station & Ext Service
Liming Impacts of Hard Red Spring Wheat and Soils in Western North Dakota	AES Dickinson R/E Center	Ag Exp Station & Ext Service
Novel merging of heifer reproductive and management systems efficiencies to expand small and medium-sized farm business profit	AES Dickinson R/E Center	Ag Exp Station & Ext Service
Surface Lime Impacts on Corn and Western North Dakota No-till Soils	AES Dickinson R/E Center	Ag Exp Station & Ext Service
Surface Lime Impacts on Soybeans and Different Western North Dakota No-till Soils	AES Dickinson R/E Center	Ag Exp Station & Ext Service
NDSU Agricultural Statistics Program	AES Directors Office	Ag Exp Station & Ext Service
Collaborative Livestock Research Between ARS and NDSU-Hettinger Research Extension Center	AES Hettinger R/E Ctr	Ag Exp Station & Ext Service
Introducing prescribed fire on private lands managed by the Game and Fish Department as Private Lands Open to Sportsmen (PLOTS).	AES Hettinger R/E Ctr	Ag Exp Station & Ext Service
North Dakota Flax Variety Trials	AES Hettinger R/E Ctr	Ag Exp Station & Ext Service
Clubroot on Canola: Survey and Outreach in North Dakota	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
Determination of surfactants as soil amendments to manage clubroot on canola in field conditions	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
Efficacy of GF-4630 (3:1 Picoxy+Prothio) for White Mold control in Canola_US.	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
Evaluation of pesticide compounds to manage bacterial leaf blight of field peas	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
Minor Use Pesticide Fund Grant Program	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
NDSU Syngenta Wheat Contract Testing - Langdon REC	AES Langdon R/E Ctr	Ag Exp Station & Ext Service

Nuseed Canola Evaluation Trial	AES Langdon R/E Ctr	Ag Exp Station & Ext Service
2021 Weed Control Research in Pulse Crops	AES North Central R/E Ctr	Ag Exp Station & Ext Service
Corteva Fungicide Efficacy Trial in Lentil	AES North Central R/E Ctr	Ag Exp Station & Ext Service
Evaluation of burndown herbicides prior to canola	AES North Central R/E Ctr	Ag Exp Station & Ext Service
Flax tolerance to soil-applied and postemergence herbicides (2021)	AES North Central R/E Ctr	Ag Exp Station & Ext Service
IR4 Testing 2021/2022	AES North Central R/E Ctr	Ag Exp Station & Ext Service
Minor Use Pesticide Fund Grant Program	AES North Central R/E Ctr	Ag Exp Station & Ext Service
NuSeed Breeding Trials Minot	AES North Central R/E Ctr	Ag Exp Station & Ext Service
Assessment of Soil Health and Nitrogen Economy in Lentil and Pea Cropping Systems	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Canola Population and Fertility Under Irrigation	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Corteva lentil anthracnose foliar fungicide trial 2021	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Determination of optimum irrigation amount and timing for enhanced soybean yield, quality, water productivity, and soil health under semi-arid western ND	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Determining optimal durum seeding date and rate for enhanced growth, yield, grain protein, and low grain cadmium under no-till dryland condition of MonDak region	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Determining optimal flax seeding date and rate for enhanced growth, yield, and quality under no-till semiarid condition	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Determining suitable planting date and soil temperature for enhanced growth and yield of soybean under no-till semi-arid condition	AES Williston R/E Ctr	Ag Exp Station & Ext Service
DON Testing of Durum in Western ND	AES Williston R/E Ctr	Ag Exp Station & Ext Service
DON Testing of HRSW in Western ND	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Evaluation of planting date for chickpea yield and disease	AES Williston R/E Ctr	Ag Exp Station & Ext Service
NMR Oil Analyzer for Seed Oil Content	AES Williston R/E Ctr	Ag Exp Station & Ext Service
North Dakota Dry Edible Bean Variety Trials	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Optimizing Nodulation in Chickpea for Enhanced Nitrogen Fixation	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Root rot of lentil: Evaluation of crop rotation, intercropping and risk assessment	AES Williston R/E Ctr	Ag Exp Station & Ext Service
WREC Seed Cleaning Facility	AES Williston R/E Ctr	Ag Exp Station & Ext Service
WREC Seed Conditioning Facility	AES Williston R/E Ctr	Ag Exp Station & Ext Service
Administration and enhancement of pesticide applicator training and certification program for FY2022 through FY2024.	Ext Ag & NR Pesticide Program	Ag Exp Station & Ext Service
ND Pesticide Safety Education Program 2022, eXtension Foundation	Ext Ag & NR Pesticide Program	Ag Exp Station & Ext Service
Agriculture in the Classroom	Ext Ag Communication	Ag Exp Station & Ext Service
Military Families Learning Network Initiative	Ext Ag Communication	Ag Exp Station & Ext Service
Filling the Pipeline- Preparing the Next Generation of Watershed Management Extension Professionals	Ext Animal Science	Ag Exp Station & Ext Service
Lamb Quality Video Series	Ext Animal Science	Ag Exp Station & Ext Service
North Dakota Corn Council 2021 Producer Education Mini-Grant	Ext Animal Science	Ag Exp Station & Ext Service
North Dakota SARE State Professional Development Program 2021 - 2022	Ext Carrington R/E Ctr	Ag Exp Station & Ext Service
Winter rye cover crop management techniques for soybean	Ext Carrington R/E Ctr	Ag Exp Station & Ext Service
Evidence-Based Disease Prevention and Health Promotion Services	Ext CDFS	Ag Exp Station & Ext Service
Gerontology Specialist Jane Strommen	Ext CDFS	Ag Exp Station & Ext Service
ND Farm and Ranch Stress Assistance Network - State Department of Agriculture - Collaboration with NDSU Extension & Partners	Ext CDFS	Ag Exp Station & Ext Service
North Central Farm and Ranch Stress Assistance Center: Engaging Programs to Support Producer Wellbeing	Ext CDFS	Ag Exp Station & Ext Service
North Dakota Aging in Community Project	Ext CDFS	Ag Exp Station & Ext Service
Expanding Opportunities for Tribal Youth and Native Agriculture at Fort Berthold	Ext County Programs	Ag Exp Station & Ext Service

4-H National Mentoring Program	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Building Community Capacity and Resilience through 4-H in ND Tribal Nations	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Counselors and Access to Maximize Participation (Camp II)	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
FY20 Rural Health and Safety Education	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Growing a CS Pathway for America's Youth 2021	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
MACP Camp Counselor Grant	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Set up and implementation of training programs for best practices in evaluation and PYD	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Strengthening the Heartland: Promoting Life Readiness in Rural Youth	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
Strengthening the Heartland: Supporting Empathic Rural Opioid Response	Ext Ctr for 4-H Youth Dev	Ag Exp Station & Ext Service
North Dakota Soil Conservation District Area Leadership Coordinator Program	Ext Ctr for Community Vitality	Ag Exp Station & Ext Service
RLND Lessons in Leadership Series	Ext Ctr for Community Vitality	Ag Exp Station & Ext Service
2021 NSA Sunflower Production Survey	Ext Dickinson R/E Center	Ag Exp Station & Ext Service
Dickinson Research Extension Center Outreach Pollinator Garden	Ext Dickinson R/E Center	Ag Exp Station & Ext Service
Joint Extension Positions with University of MN	Ext Directors Office	Ag Exp Station & Ext Service
2020-21 Eat Smart Play Hard - NDNC	Ext Food & Nutrition	Ag Exp Station & Ext Service
2021 Eat Smart. Play Hard with Wheat	Ext Food & Nutrition	Ag Exp Station & Ext Service
Cottage Food Extension Outreach 2021-22	Ext Food & Nutrition	Ag Exp Station & Ext Service
Cottage Food Processing Extension Handouts / (NCR FSMA - add on)	Ext Food & Nutrition	Ag Exp Station & Ext Service
Diabetes Prevention Program - OMH - Special Populations	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Beans	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Beef	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Canola	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Dairy	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with DPI	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Potatoes	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Pulses	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard with Soy: Teen Cooking School	Ext Food & Nutrition	Ag Exp Station & Ext Service
Eat Smart. Play Hard: Focus on Teen Cuisine	Ext Food & Nutrition	Ag Exp Station & Ext Service
Ensuring Food Safety Competency of Produce Growers and Processors in the NCR Through Expanded Collaboration with Diversified Populations	Ext Food & Nutrition	Ag Exp Station & Ext Service
Family Nutrition Program 2020-2021	Ext Food & Nutrition	Ag Exp Station & Ext Service
Healthwise 2021-22: Reaching North Dakotans of All Ages with Cancer Prevention Strategies	Ext Food & Nutrition	Ag Exp Station & Ext Service
National Diabetes Prevention Program -1815 - Year 4	Ext Food & Nutrition	Ag Exp Station & Ext Service
ND - NDSU EXCITE	Ext Food & Nutrition	Ag Exp Station & Ext Service
Promoting Healthy Outcomes through Indigenous Food Systems	Ext Food & Nutrition	Ag Exp Station & Ext Service
Pulse Growers Eat Smart. Play Hard 2021	Ext Food & Nutrition	Ag Exp Station & Ext Service
Community-Based Child Abuse Prevention	Ext HD General	Ag Exp Station & Ext Service
Community-based Child Abuse Prevention (ARA)	Ext HD General	Ag Exp Station & Ext Service
Grand Forks County Gearing Up for Kindergarten	Ext HD General	Ag Exp Station & Ext Service
Nurturing Parenting Program	Ext HD General	Ag Exp Station & Ext Service
2021 ND Corn Pest Survey	Ext Plant Pathology	Ag Exp Station & Ext Service
2021 Wheat Pest Survey in North Dakota	Ext Plant Pathology	Ag Exp Station & Ext Service
Developing an Integrated Management of Bacterial Leaf Streak in Spring Wheat in Northern Great Plains	Ext Plant Pathology	Ag Exp Station & Ext Service
Dry Bean Grower Survey of Pest Problems, Pesticide Use, and Varieties in 2021	Ext Plant Pathology	Ag Exp Station & Ext Service

Extension IPM Program of North Dakota	Ext Plant Pathology	Ag Exp Station & Ext Service
Great Plains Plant Diagnostic Network	Ext Plant Pathology	Ag Exp Station & Ext Service
North Central Integrated Pest Management Center (NCIPMC): A Regional Approach to Pest Management Implementation FY18-FY22	Ext Plant Pathology	Ag Exp Station & Ext Service
Orange Wheat Blossom Midge Survey	Ext Plant Pathology	Ag Exp Station & Ext Service
SCN Coalition: Reinforcing and Maintaining Local Efforts and Sustainable Yields	Ext Plant Pathology	Ag Exp Station & Ext Service
Soybean Cyst Nematode Sampling Program: 2021	Ext Plant Pathology	Ag Exp Station & Ext Service
Specialty Crop Block Grant Program - Farm Bill Activities - Virtual Experiences Delivering Real Protection of Specialty Crops from Plant Diseases and Economic Loss	Ext Plant Pathology	Ag Exp Station & Ext Service
Sugarbeet Extension Programs and Program Maintenance	Ext Plant Pathology	Ag Exp Station & Ext Service
The SCN Coalition: Building on Economic Impact	Ext Plant Pathology	Ag Exp Station & Ext Service
Operational Needs for the Potato Extension Specialist	Ext Plant Science	Ag Exp Station & Ext Service
Take Action - Multi State Herbicide Resistant Crops and Weeds Educational Program	Ext Plant Science	Ag Exp Station & Ext Service
Define Wheat Response to Salinity (SHARE Farm Mooreton)	Ext School of Nat Res Sciences	Ag Exp Station & Ext Service
Extension Programming for the SHARE Farms	Ext School of Nat Res Sciences	Ag Exp Station & Ext Service
SHARE Farm- Larimore	Ext School of Nat Res Sciences	Ag Exp Station & Ext Service
Soil Health and Agriculture Research Extension (SHARE) Farm in Logan Center, ND	Ext School of Nat Res Sciences	Ag Exp Station & Ext Service
Developing and deploying a perennial grain crop enterprise to improve environmental quality and rural prosperity	Ext Williston R/E Ctr	Ag Exp Station & Ext Service
Maximizing Profit Opportunities In Pulse Crops	Ext Williston R/E Ctr	Ag Exp Station & Ext Service

NDSU EXTENSION EXTENDING KNOWLEDGE ›› CHANGING LIVES

For the Land and Its People

NDSU Extension empowers North Dakotans to improve their lives and communities through science-based education. You'll find us at work in your county, at Research Extension Centers, and at the main campus of NDSU.

NDSU College of Agriculture, Food Systems, and Natural Resources > ND Agricultural Experiment Station > NDSU Extension

NDSU EXTENSION (www.ndsu.edu/agriculture/extension)

NDSU Agriculture contributes greatly to the success of students, the economic impact of North Dakota agriculture, and the lives of North Dakota citizens on a daily basis. By educating students with interests in agriculture, food systems and natural resources; extending NDSU information to all North Dakota citizens and advancing scientific knowledge through innovative research, we are working to meet the needs of people on a local and global level.

NDSU Extension creates learning partnerships that help adults and youth enhance their lives and their communities. This purpose is accomplished through the dissemination of information and by implementing educational programs geared to the changing needs of North Dakotans.

Faculty and staff on campus work primarily within the academic departments of the College of Agriculture, Food Systems, and Natural Resources, and the College of Human Sciences and Education, but also the College of Arts, Humanities and Social Sciences. Their appointments in these departments make them partners in NDSU's academic programs and research. County and area staff across the state complete the link between those NDSU programs and North Dakota citizens.

NDSU Extension focuses its work around ten program areas:

- Leadership and Civic Engagement
- Livestock Management
- Farm Business Management
- Crop Management
- Natural Resource Management
- Personal and Family Finance
- 4-H Youth Development
- Human Development and Family Science
- Nutrition, Food Safety and Health
- Horticulture and Forestry

NDSU Extension provides user-friendly information that reflects research efforts in North Dakota and across the country.

Public Service Programs

NDSU AGRICULTURE
(https://www.ndsu.edu/agriculture/)

ACADEMICS:
College of Agriculture, Food Systems, & Natural Resources
(https://www.ndsu.edu/agriculture/academics)

The College of Agriculture, Food Systems, and Natural Resources has a tradition of excellence in educating students for real-world careers. As a student-focused, land-grant, research university, we offer students hands-on learning experiences that will allow them to be competitive in a global economy.

- *Agribusiness & Applied Economics*
- *Agricultural & Biosystems Engineering*
- *Microbiological Sciences*
- *Plant Pathology*
- *Plant Sciences*
- *School of Natural Resource Sciences*

AG HUB
(https://www.ndsu.edu/agriculture/ag-hub)

The Ag Hub is a one-stop source for research, information, and tools, from N.D. Agricultural Experiment Station and NDSU Extension, to help farmers and ranchers make informed decisions that positively impact their business.

Agriculture Topics:

- *Crop Production*
- *Farm Management*
- *Livestock*
- *Farm Safety & Health*
- *Ag Technology*
- *Disasters*
- *Natural Resources & Facilities*

Research Extension Centers
(https://www.ndsu.edu/agriculture/ag-hub/research-extension-centers-recs)

- *Agronomy Seed Farm*
- *Carrington REC*
- *Central Grasslands REC (Streeter)*
- *Dickinson REC*
- *Hettinger REC*
- *Langdon REC*
- *North Central REC (Minot)*
- *Williston REC*

County Extension Offices
(https://www.ndsu.edu/agriculture/extension/county-extension-offices)

EXTENSION
(https://www.ndsu.edu/agriculture/extension)

Extending education to North Dakota residents of all ages and walks of life.

Extension Topics:

- *Ag Hub*
- *Gardening & Horticulture*
- *North Dakota 4-H Youth Development*
- *Home & Family*
- *Food & Nutrition*
- *Leadership & Civic Engagement*

Extension Events (https://www.ndsu.edu/agriculture/ag-home/events)

PLANNING BUILDING CONDITION SURVEY

2/2/2022

Campus: North Dakota State University

Date: 1/25/2022

For internal use only

Condition Rating:	Meters:
1= Excellent	1= Has meter
2= Fair	3= No meter
3= Poor	
n/a= not applicable	

Avg Bldg Rating:	Building Condition:
1.00 - 1.40	Excellent
1.41 - 1.80	Good
1.81 - 2.20	Average
2.21 - 2.60	Poor
2.61 - 3.00	Very Poor

Building Information					Structural										Electrical						Mechanical							Plumbing					Building Average	
Building #	Building Name	Sq. Ft.	Year Built	Type*	Painting	Insulation	Brick Work	Caulking	Windows	Roof	External Doors	Elevator	Handic Access	Floor/Ceiling	Service	Transformer	Elec. Panel	Lighting	Fire Alarm	Motor Controls	Air Handling	Controls	Humidified	Air Conditioning	Heating	Ventilation	Fixtures	Water Piping	Drain Piping	Hand Faucets	Piping Insulation	Average Rating	Condition
A005	Ladd Hall	58,862	1909	I	3	3	2	2	3	1	1	1	1	3	1	1	3	1	1	3	1	2	na	1	2	1	2	3	3	3	3	1.96	Average
A007	E. Morrow Lebedeff Hall	34,812	1953	I	2	3	2	2	1	1	1	1	2	2	1	1	1	1	2	3	2	2	na	2	3	2	2	2	2	2	2	1.84	Average
A010	Alba Bales House	3,941	1922	I	3	3	3	3	1	2	1	n/a	3	1	1	1	1	1	1	1	2	2	n/a	2	2	2	1	1	1	1	1	1.64	Good
A011	Putnam Hall	12,169	1905	I	2	2	2	3	2	1	1	2	2	2	3	1	2	1	2	2	3	3	na	3	2	2	2	2	2	2	2	2.04	Average
A012	Library	98,976	1949	I	2	2	3	3	2	2	1	2	2	2	2	1	2	2	2	3	3	2	na	2	3	3	2	2	2	2	2	2.16	Average
A013	South Engineering	33,545	1907	I	2	3	2	3	2	1	1	2	2	3	1	1	2	2	2	1	3	3	n/a	2	3	2	3	3	3	3	3	2.23	Poor
A014	Agricultural & Biosystems Engineering	24,322	1938	I	3	3	2	3	1	1	1	n/a	3	3	2	1	3	2	3	2	3	3	na	3	3	3	2	3	3	2	2	2.4	Poor
A016	Music Education	96,886	1982	I	1	1	1	1	2	1	1	1	2	2	3	1	2	2	1	1	3	2	na	2	3	3	2	2	2	2	2	1.8	Good
A018	Dolve Hall	49,486	1951	I	1	2	2	3	1	2	1	1	2	2	2	1	2	1	3	2	3	3	na	2	2	3	2	3	3	2	3	2.08	Average
A020	Bentson-Bunker Field House	66,115	1931	I	1	3	1	1	2	1	2	2	3	2	2	1	2	2	1	2	2	2	na	2	2	3	2	2	2	2	2	1.88	Average
A021	Minard Hall	142,037	1901	I	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	na	1	1	1	1	1	1	1	1	1.08	Excellent
A023	Morrill Hall	68,125	1922	I	2	3	2	3	2	2	3	1	2	2	3	1	2	1	2	2	3	2	na	2	3	2	3	3	3	3	2	2.32	Poor
A025	Quentin Burdick Building	108,721	1992	I	2	1	2	1	2	1	1	2	1	2	2	1	1	1	2	2	2	2	2	2	3	2	2	2	2	2	1	1.7	Good
A026	Hultz Hall	56,754	1978	I	2	1	2	2	2	2	2	2	2	2	2	1	2	2	3	3	2	2	na	2	2	3	3	2	3	3	2	2.15	Average
A028	Harris Hall	39,909	1953	I	3	3	2	3	2	1	3	2	3	3	3	1	3	3	2	3	3	3	na	3	3	3	3	3	3	3	3	2.69	Very Poor
A029	Lord & Burnham Greenhouse (South)	31,499	1950	I	3	3	3	3	3	3	3	n/a	3	3	3	1	3	1	3	2	3	3	na	3	3	3	3	3	3	3	3	2.8	Very Poor
A034	Shepperd Arena	33,216	1951	I	3	3	2	2	1	3	1	2	3	3	3	1	3	3	2	3	3	3	na	3	3	3	3	3	3	3	3	2.62	Very Poor
A036	Wiidakas Laboratory	9,964	1949	I	3	3	3	3	3	1	1	3	3	2	3	1	3	3	2	3	3	3	na	3	3	3	3	3	3	3	3	2.69	Very Poor
A037	Waldron Hall	58,384	1958	I	3	2	2	3	3	2	2	3	3	3	3	1	2	2	2	3	3	2	na	3	2	3	2	2	2	2	2	2.38	Poor
A046	Animal Nutrition & Physiology Center	54,073	1960	I	2	2	2	2	2	2	2	n/a	1	1	1	1	1	2	2	2	2	2	n/a	2	2	2	1	1	2	1	1	1.64	Good
A052	Sudro Hall	62,294	1959	I	1	2	2	2	1	2	2	2	2	2	1	1	2	1	1	2	2	2	n/a	2	2	2	2	2	2	2	1	1.73	Good
A053	Walster Hall	48,393	1959	I	2	2	2	3	3	1	3	3	3	3	2	2	2	2	2	3	3	3	n/a	2	2	3	2	3	3	2	2	2.4	Poor
A063	Engineering Administration	7,522	1965	I	2	3	3	3	3	3	3	n/a	3	2	3	1	2	2	3	3	2	3	n/a	3	2	2	3	3	3	3	3	2.64	Very Poor
A064	Engineering	19,867	1965	I	1	1	2	2	1	2	1	n/a	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1.12	Excellent
A065	Electrical Engineering	30,874	1965	I	1	2	2	3	3	2	1	n/a	3	1	1	1	2	1	1	2	2	3	n/a	3	2	3	1	2	2	1	2	1.88	Average
A066	Civil & Industrial Engineering	32,546	1965	I	1	2	2	3	3	2	1	n/a	3	1	1	1	2	2	1	2	2	2	n/a	3	2	2	1	1	2	1	1	1.76	Good
A069	Askanase Hall	28,713	1966	I	2	3	2	3	2	2	2	n/a	3	2	2	1	2	2	2	2	3	3	n/a	3	3	3	2	3	3	3	2	2.4	Poor
A070	Stevens Hall	49,470	1966	I	1	2	2	2	1	2	3	1	1	2	2	1	2	2	2	3	3	2	n/a	2	3	3	3	3	3	3	3	2.19	Average
A071	Potato Research/Pesticide Storage	10,798	1966	I	3	3	3	3	3	1	3	n/a	3	2	3	1	2	2	3	2	3	3	n/a	3	3	3	3	3	3	3	3	2.68	Very Poor
A072	SHAC (Partial)	173,832	1971	I	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1.04	Excellent
A078	Loftsgard Hall	85,560	1991	I	1	1	2	3	2	1	2	1	1	2	2	1	1	2	2	1	2	2	n/a	2	2	2	2	2	2	2	2	1.76	Good
A081	Sugar Beet Research Facility	5,197	1971	I	3	3	3	3	n/a	3	3	n/a	3	3	3	2	3	3	3	3	3	3	n/a	3	2	3	2	2	2	2	2	2.71	Very Poor
A082	Van Es Hall	40,693	1976	I	2	1	2	2	2	1	2	n/a	3	2	2	1	2	1	3	2	2	2	n/a	2	2	2	2	2	2	2	2	1.92	Average
A083	KKB Family Life Center	67,784	1974	I	1	2	2	2	2	1	2	2	2	3	2	1	2	1	1	2	2	2	n/a	2	2	2	1	1	1	1	1	1.65	Good
A084	Ehly Hall	19,640	2000	I	1	1	2	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1.2	Excellent
A085	Robinson Hall	16,620	1976	I	2	2	2	3	2	2	3	n/a	3	3	2	1	2	2	2	2	3	2	n/a	2	2	3	2	1	2	3	2	2.2	Average
A093	Northern Crops Insitute	19,632	1983	I	2	2	2	3	2	1	2	2	2	1	2	1	2	2	2	2	2	3	na	3	2	2	2	2	2	3	1	2	Average
A094	Construction Management Engineering	5,535	1981	I	1	2	2	3	2	2	1	n/a	1	2	2	1	2	2	1	2	3	2	na	2	2	3	n/a	n/a	n/a	n/a	n/a	1.9	Average
A129	Equine Science Center	83,445	2002	I	2	1	n/a	2	n/a	2	2	n/a	1	1	1	1	1	2	2	1	2	2	n/a	2	2	2	1	1	1	1	1	1.48	Good
A145	Glenn Hill Center	121,103	2014	I	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	na	1	1	1	1	1	1	1	1	1	Excellent
A147	Lord & Burnham Greenhouse (North)	33,469	1950	I	3	3	3	3	3	3	3	n/a	3	3	3	3	3	1	3	3	3	3	n/a	3	3	3	3	3	3	3	3	2.92	Very Poor
A162	Sugihara Hall	104,813	2022	I	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Excellent
A163	Aldevron Tower	74,186		I	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1	Excellent
	Total Type I - 43*	2,223,782																															
A001	Administration	40,485	1891	II	1	3	1	2	1	1	1	2	1	3	2	1	2	2	2	2	2	2	na	2	2	2	2	2	2	2	2	1.81	Average
A003	Ceres Hall	71,328	1910	II	1	3	1	1	1	1	1	2	2	2	1	1	2	2	2	2	2	3	na	2	3	3	2	2	3	2	2	1.88	Average
A006	Memorial Union (Partial)	147,385	1952	II	2	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	na	1	1	2	1	1	1	1	1	1.23	Excellent
A022	Heating Plant	32,942	1904	II	3	3	2	2	3	2	1	n/a	3	2	1	1	1	2	3	2	2	2	n/a	2	2	2	2	2	2	2	2	2.04	Average
A024	Ag Quonset	4,041	1949	II	3	3	n/a	3	n/a	2	2	n/a	3	3	2	1	2	3	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.5	Poor
A031	Thorson Maintenance Center	23,138	1949	II	1	2	1	1	2	2	1	n/a	2	1	2	1	3	2	3	2	2	2	na	2	2	2	1	2	2	1	2	1.76	Good
A032	Maintenance Butler Building	4,936	1949	II	3	3	n/a	3	n/a	1	3	n/a	3	2	3	1	3	1	3	2	n/a	n/a	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	2.36	Poor
A035	RSO/Chemical Storage Facility	560	1948	II	3	3	n/a	3	n/a	3	3	n/a	3	3	3	1	2	3	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.75	Very Poor
A041	Maintenance Quonset	6,505	1949	II	3	3	n/a	3	n/a	3	2	n/a	3	3	2	1	2	2	3	n/a	n/a	n/a	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	2.46	Poor
A045	North Stands	14,143	1954	II	3	3	3	3	3	2	3	n/a	3	3	3	1	3	3	n/a	3	3	3	n/a	n/a	3	3	3	3	3	3	3	2.87	Very Poor
A047	Longwell Building	2,630	1949	II	3	3	n/a	3	3	3	3	n/a	3	3	3	1	2	3	n/a	n/a	n/a	n/a	n/a	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	2.69	Very Poor
A060	Residence Life Facility Service	3,251	1967	II	1	2	1	2	1	2	1	n/a	2	1	1	1	1	2	n/a	2	2	2	n/a	2	2	2	2	2	2	2	2	1.67	Good

PLANNING BUILDING CONDITION SURVEY

Campus: North Dakota State University

Date: 1/25/2022

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Building Information					Structural										Electrical						Mechanical						Plumbing					Building Average	
Building #	Building Name	Sq. Ft.	Year Built	Type*	Painting	Insulation	Brick Work	Caulking	Windows	Roof	External Doors	Elevator	Handic Access	Floor/Ceiling	Service	Transformer	Elec. Panel	Lighting	Fire Alarm	Motor Controls	Air Handling	Controls	Humidified	Air Conditioning	Heating	Ventilation	Fixtures	Water Piping	Drain Piping	Hand Faucets	Piping Insulation	Average Rating	Condition
A062	Pharmacy Radiation Lab	1,714	1963	II	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3	1	3	3	3	3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.67	Very Poor
A075	University Police and Safety Office	25,133	1971	II	1	1	n/a	2	2	2	2	n/a	2	1	3	1	2	2	3	2	3	3	n/a	3	2	2	2	2	2	2	2	2.04	Average
A086	Service Center/Pilot Plant	17,377	1991	II	2	2	n/a	1	1	1	2	n/a	3	2	2	1	2	2	2	1	2	2	n/a	2	2	2	2	2	2	2	2	1.83	Average
A087	Hastings Hall	9,879	1955	II	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1.12	Excellent
A095	Parking Office	2,900	1960	II	1	2	2	3	2	2	2	n/a	2	1	2	1	2	2	3	2	2	2	na	2	2	2	1	1	2	1	1	1.8	Good
A097	Physical Plant Storage Facility	2,430	2007	II	1	1	n/a	1	n/a	2	1	n/a	1	1	2	2	2	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.45	Good
A100	President's House	14,340	2009	II	1	1	1	2	1	1	2	n/a	2	1	1	1	1	1	1	1	2	2	3	2	2	2	1	1	1	1	1	1.38	Excellent
A103	Material Handling & Storage Facility	9,624	2009	II	1	1	n/a	2	n/a	2	1	n/a	1	1	1	1	1	1	1	1	2	2	n/a	2	1	2	1	1	1	1	1	1.26	Excellent
	Total Type II = 20**	434,741																															
A006	Memorial Union (Partial)	73,693	1952	III	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A008	Churchill Hall	47,841	1931	III	1	3	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	na	1	1	1	1	1	1	1	1	1.19	Excellent
A009	Dinan Hall	35,008	1953	III	1	3	2	2	2	2	1	n/a	3	1	1	1	1	2	1	2	3	3	na	n/a	2	3	1	1	1	1	1	1.71	Good
A042	Stockbridge Hall	58,795	1956	III	2	2	2	3	2	2	1	1	1	2	2	1	3	2	2	2	3	na	n/a	n/a	3	3	1	1	1	1	1	1.83	Average
A043	Bison Court East	60,582	2005	III	1	1	2	3	2	2	2	1	1	1	1	1	1	1	2	1	2	2	n/a	1	2	1	1	1	2	1	1	1.44	Good
A044	Bison Court West	32,827	2005	III	1	1	2	3	2	2	2	1	1	1	1	1	1	1	2	1	2	2	n/a	1	2	1	1	1	2	1	1	1.44	Good
A050	Wallman Wellness Center	140,978	2001	III	1	1	1	2	1	2	2	1	1	1	2	1	1	2	1	1	2	2	n/a	2	2	2	1	1	1	1	1	1.4	Excellent
A055	Reed Hall	59,754	1961	III	1	2	2	3	3	2	1	1	1	3	1	2	1	2	2	3	3	3	n/a	n/a	3	3	1	1	1	1	1	1.88	Average
A056	Burgum Hall	44,121	1961	III	1	2	2	3	3	2	3	3	3	3	1	1	3	2	2	3	3	2	n/a	1	3	3	3	3	3	3	3	2.44	Poor
A057	North Weible Hall	44,283	1963	III	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3	3	n/a	n/a	2	3	1	1	1	1	1	1.4	Excellent
A058	Johnson Hall	53,740	1963	III	1	2	2	2	3	1	1	1	1	1	1	1	1	2	2	3	3	3	n/a	n/a	3	3	1	1	1	1	1	1.68	Good
A059	Residence Dining Center	38,870	1964	III	1	2	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1.19	Excellent
A061	South Weible Hall	45,394	1965	III	1	2	2	2	3	1	1	3	1	1	1	1	1	1	1	1	3	3	n/a	n/a	3	2	1	1	1	1	1	1.5	Good
A067	Sevrinson Hall	68,589	1966	III	1	2	2	3	2	1	1	3	3	3	2	1	2	2	3	2	3	3	n/a	n/a	2	3	3	3	3	3	3	2.36	Poor
A068	Thompson Hall	68,589	1966	III	1	2	2	2	2	1	3	3	3	3	2	1	2	2	3	2	3	3	n/a	n/a	2	3	3	3	3	3	3	2.4	Poor
A072	SHAC (Partial)	104,962	1971	III	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
A073	University Village Service & Repair Shop	3,799	1995	III	1	1	n/a	2	1	2	2	n/a	3	3	1	1	1	1	n/a	1	1	2	n/a	1	1	2	1	1	1	1	1	1.39	Excellent
A074	University Village	177,933	1968	III	3	3	n/a	3	3	3	3	n/a	3	3	3	1	2	3	n/a	n/a	1	1	n/a	n/a	1	1	3	3	3	3	3	2.48	Poor
A076	Seim Hall	68,854	1972	III	1	2	1	1	2	1	3	2	3	3	3	1	2	2	3	3	3	3	n/a	3	2	3	3	3	3	3	3	2.4	Poor
A077	Pavek Hall	68,368	1987	III	1	2	2	2	2	2	3	2	3	3	2	1	2	2	3	3	3	3	n/a	3	3	3	3	3	3	3	3	2.52	Poor
A079	Ellig Sports Complex	868	1994	III	3	3	2	3	n/a	1	3	n/a	3	2	2	1	2	2	2	2	2	2	n/a	na	2	2	2	2	2	2	2	2.13	Average
A080	West Dining Center	54,385	1972	III	1	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	2	2	n/a	2	2	2	1	1	1	1	1	1.38	Excellent
A088	Niskanen 30 Plex [C]	34,603	2003	III	1	2	1	3	2	2	2	1	1	2	1	1	1	1	1	1	1	2	n/a	na	1	2	1	1	1	1	1	1.38	Excellent
A092	Niskanen North [B]	14,437	1983	III	1	2	n/a	3	2	2	2	n/a	2	2	3	1	3	3	2	3	na	2	n/a	na	1	2	2	2	2	2	2	2.09	Average
A098	Niskanen South [A]	14,437	1982	III	1	2	n/a	3	2	2	2	n/a	2	2	3	1	3	3	2	3	na	2	na	n/a	1	2	2	2	2	2	2	2.09	Average
A101	Living Learning Center East	68,654	2003	III	1	1	2	3	2	2	2	2	1	1	1	1	1	1	1	1	2	2	n/a	2	2	2	1	1	2	1	1	1.5	Good
A104	Living Learning Center West	73,176	2008	III	1	1	2	3	2	2	2	2	1	1	1	1	1	1	1	1	2	2	n/a	2	2	2	1	1	1	1	1	1.46	Good
A114	Niskanen D	87,225	2010	III	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	na	2	n/a	3	1	3	1	1	1	1	1	1.28	Excellent
A115	Niskanen E	87,225	2010	III	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	na	2	n/a	3	1	3	1	1	1	1	1	1.28	Excellent
A116	Niskanen F	55,500	2010	III	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	na	2	n/a	3	1	3	1	1	1	1	1	1.28	Excellent
A136	Shelly Ellig Track and Field Building	79,368		III	1	1	n/a	2	n/a	2	1	n/a	1	1	1	1	1	1	1	1	1	1	n/a	n/a	1	1	1	1	1	1	1	1.09	Excellent
A137	R1A	33,891		III	1	1	n/a	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Excellent
A159	Cater Hall	148,715		III	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1	Excellent
A160	Apartment 1701	88,266		III	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	n/a	1	1	1	1	1	1	1	1	1	Excellent
	Total Type III = 32 *, **	2,137,730																															
	Component Average				1.6	2.0	1.9	2.3	1.8	1.7	1.7	1.6	1.9	1.8	1.8	1.1	1.7	1.7	1.8	1.8	2.2	2.2	1.8	2.0	2.0	2.2	1.7	1.8	1.9	1.8	1.7	1.83	
	Category Average				1.8										1.7						2.0						1.8					1.83	Average

* - SHAC is listed as both Type I and Type II but for quantity of buildings is counted toward Type II

** - Memorial Union is listed as both Type II and Type III but for quantity of buildings is counted toward Type II

CAMPUS MAP NORTH DAKOTA STATE UNIVERSITY

R12	**145**	A. Glenn Hill Center
S9	**14**	Agricultural and Biosystems Engineering
S13	**10**	Alba Bales House
N10	**163**	Aldevron Tower
T13	**106**	Alumni Center, Harry D. McGovern
K2	**46**	Animal Nutrition and Physiology Center
E3	**139**	Appareo - Genesis Building
E3	**138**	Appareo - Horizon Building
V9	**69**	Askanase Hall
	142	**Barry, Richard H., Hall (811 2nd Ave N)**
P12	**20**	Bentson/Bunker Fieldhouse
I8	**105**	Biosciences Research Laboratory
D6	**146**	Candlewood Suites
T13	**3**	Ceres Hall
P10	**66**	Civil and Industrial Engineering
P10	**94**	Construction Management Engineering
I11	**49**	Dacotah Field
N2	**119**	Dalrymple Research Greenhouse
P11	**18**	Dolve Hall
R9	**15**	Dunbar Laboratories
R11	**7**	E. Morrow Lebedeff Hall
Q11	**84**	Ehly Hall
Q10	**65**	Electrical and Computer Engineering
J3	**79**	Ellig Sports Complex
Q11	**64**	Engineering
Q10	**63**	Engineering Administration
		Equine Center (3 miles west of campus on 19th Ave N)
E10	**122**	Fargodome
Q7	**70-A**	Gate City Bank Auditorium
V14	**140**	Graduate Center
S7	**28**	Harris Hall
R7	**87**	Hastings Hall
T8	**22**	Heating Plant
S8	**26**	Hultz Hall
R4	**118**	Johansen Hall
G4	**135**	John Deere Electronic Solutions
R11	**83**	Katherine Kilbourne Burgum Family Life, 4-H Center
	144	**Klai Hall (711 2nd Ave N)**
S9	**5**	Ladd Hall
V10	**12**	Library
P8	**78**	Loftsgard Hall
T7	**29**	Lord and Burnham Greenhouses
R14	**X10**	Lutheran Student Center
R6	**32**	Maintenance Buildings
S11	**6**	Memorial Union
U9	**21**	Minard Hall
S8	**23**	Morrill Hall
U8	**16**	Music Education Building
A12	**126**	NDSCS Fargo
K8	**123**	Newman Outdoor Field
T7	**93**	Northern Crops Institute
S5	**120**	Northern Crops Science Laboratory
U11	**1**	Old Main
L2	**95**	Parking Office
T5	**33**	Plant Sciences Greenhouse
U6	**71**	Potato Research-Pesticide Storage
W5	**128**	Prairie Hall
U13	**100**	President's House
U11	**11**	Putnam Hall
R8	**25**	Quentin Burdick Building
	127	**Renaissance Hall (650 NP Ave)**
G6	**131**	Research 1
G6	**137**	Research 1A
E6	**132**	Research 2
E4	**130**	Research and Technology Park
N9	**59**	Residence Dining Center
T7	**60**	Residence Life Facility Services
P5	**85**	Robinson Hall
I12	**72**	Sanford Health Athletic Complex/Scheels Center
O5	**86**	Service Center, Pilot Plant
A14	**117**	SGC Building
J10	**136**	Shelly Ellig Indoor Track and Field Facility
P8	**34**	Shepperd Arena
T10	**13**	South Engineering
Q7	**70**	Stevens Hall
W14	**X06**	St. Paul's Chapel
O9	**52**	Sudro Hall
T6	**81**	Sugar Beet Research
R9	**162**	Sugihara Hall
D1	**133**	Technology Incubator
R7	**31**	Thorson Maintenance Center
U6	**75**	University Police and Safety
Q6	**82**	Van Es Hall
		Veterinary Diagnostic Laboratory (4035 19th Ave N)
P7	**37**	Waldron Hall
Q4	**50**	Wallman Wellness Center
O8	**53**	Walster Hall
		West Building (3551 7th Ave N)
M8	**80**	West Dining Center
P7	**36**	Wiidakas Laboratory

HOUSING UNITS

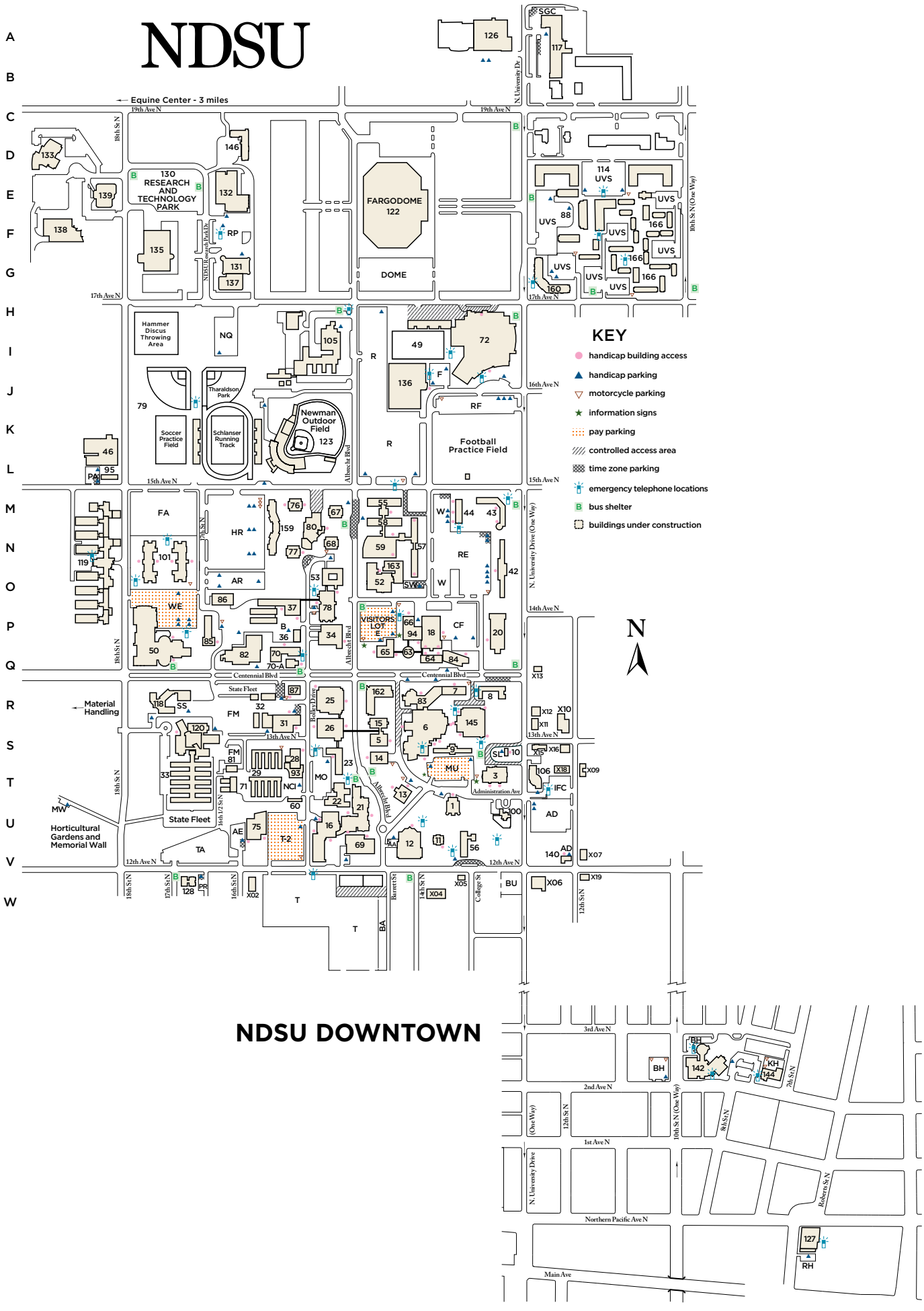
G14	**160**	Apartment 1701
M12	**43**	Bison Court (East)
M12	**44**	Bison Court (West)
V12	**56**	Burgum Hall
M7	**159**	Cater Hall
R12	**8**	Churchill Hall
S11	**9**	Dinan Hall
M10	**58**	Johnson Hall
N4	**101**	Mathew Living Learning Center
D15	**114**	Niskanen Expansion
E14	**88**	Niskanen Hall
N7	**77**	Pavek Hall
M10	**55**	Reed Hall
M7	**76**	Seim Hall
M8	**67**	Sevrinson Hall
N13	**42**	Stockbridge Hall
N8	**68**	Thompson Hall
F15	**166**	University Village
N10	**57**	Weible Hall (North and South)

FRATERNITY AND SORORITY HOUSES

T15	**X09**	Alpha Gamma Delta
R13	**X11**	Alpha Gamma Rho
V15	**X07**	Alpha Tau Omega
V12	**X05**	FarmHouse
S14	**X16**	Kappa Alpha Theta
S14	**X15**	Kappa Delta
Q14	**X13**	Kappa Psi Pharmaceutical Fraternity
W6	**X02**	Sigma Alpha Epsilon
T14	**X18**	Sigma Chi
V15	**X19**	Sigma Nu
W11	**X04**	Tau Kappa Epsilon
R13	**X12**	Theta Chi

SELECTED OFFICES

T13	**3**	Admission (Ceres Hall)
T13	**3**	Career and Advising Center (Ceres Hall)
T13	**3**	Counseling Center (Ceres Hall)
T13	**3**	Customer Account Services (Ceres Hall)
V10	**12**	Disability Services (Library)
T13	**3**	Financial Aid and Scholarships (Ceres Hall)
R7	**87**	Human Resources/Payroll (Hastings Hall)
S11	**6**	NDSU Bookstore (Memorial Union)
N9	**59**	NDSU Dining (Residence Dining Center)
S11	**6**	One Stop (Memorial Union)
L2	**95**	Parking Office
T13	**3**	Registration and Records (Ceres Hall)
M12	**44**	Residence Life (West Bison Court)
U11	**1**	Student Affairs (Old Main)
Q4	**50**	Student Health Service (Wallman Wellness Center)
M12	**43**	Student Loan Services (East Bison Court)
U6	**75**	University Police



NDSU DOWNTOWN