



**NDSU** NORTH DAKOTA  
STATE UNIVERSITY

## NEW HORIZON: NDSU 2035

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NDSU, the state's 1862 land-grant institution, was founded to expand access to higher education, provide practical education, and drive economic development. Amid evolving societal and economic challenges, NDSU continues to adapt to meet modern needs.

Nearly three years into NDSU Transform, the university's bold strategic vision to advance the institution, NDSU is well-positioned to think differently about its future and transform its traditional land-grant mission toward a compelling new vision over the next decade.

The following funding request is driven by recommendations from the NDSU Industry and Workforce Ad Hoc Committee about current and future workforce needs.



## » OBJECTIVES

- 1. Ensure successful pathways for workforce impact, industry connection and affordability. (\$5M)**
- 2. Grow North Dakota's competitive edge through advancement of agriculture, engineering, energy, and manufacturing, leveraging our expertise in engineering, ag technology, and robotics. (\$15M)**
- 3. Improve North Dakota's quality of life by expanding, modernizing and meeting workforce demands in nursing, pharmacy, clinical trials, and health science programs. (\$15M)**



## STRATEGIC TACTICS TO ACHIEVE OBJECTIVES

- Develop new programs in ag, engineering, nursing, pharmacy and health sciences
- Reform curricula, informed by industry and ensure clear career progression pathways
- Increase AI application in programs to educate an AI-literate workforce
- Establish year-round curricula to decrease time to degree
- Create and expand stackable certificates
- Pilot 90 student credit hour degrees in appropriate disciplines
- Launch new apprenticeship and "Earn and Learn" models
- Expand internships with start-ups and tribal communities
- Invest in faculty-industry exchange program
- Locate outreach engineers for rural support
- 2+2 pathways for in-person degree completion
- Continue building military partnerships to provide pathways to careers for this critical population
- Develop strong K-12 pathways with dual credit options in high-demand programs



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## **NEW HORIZON: NDSU 2035**

PATHWAYS FOR WORKFORCE IMPACT



### » **OBJECTIVE:**

Ensure successful pathways for workforce impact, industry connection and affordability.

**INVESTMENT: \$5 MILLION**

## **IMPLEMENTATION**

### **INCREASE GRADUATES**

- » **Maintain professional advising for all first- and second-year students through FTE previously hired**
  - ▶ Improve retention, shorten time to degree, lower student costs, better align degree to career
- » **Recruit students to degrees aligned with high-need occupations, support degree completion program**
  - ▶ Increase enrollment and graduates who enter workforce, upskill existing workforce
- » **Continue student support initiatives: learning assistants, online tutoring, Bison Bridge, AI advising**
  - ▶ Provide essential resources for students to complete their degree promptly so they may enter the workforce sooner

### **CAREER-READY GRADUATES**

- » **Enhance career coaching with industry connections and support industry engagement for students (e.g. Bison to the Bakken)**
  - ▶ Faster pathway to career, credit for prior learning, hiring success
- » **Launch internships with start-ups and tribal communities, create flexible pathways to a degree through industry-informed curricular revisions**
  - ▶ Ensure student skills match needs of industry
- » **AI literacy for workforce and degrees**
  - ▶ Training for individuals in ND for AI literacy in the workforce



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# NEW HORIZON: NDSU 2035

GROW ND'S COMPETITIVE EDGE



## » OBJECTIVE:

Grow North Dakota's competitive edge through advancement of agriculture, engineering, energy, and manufacturing.

**INVESTMENT: \$15 MILLION**

## IMPLEMENTATION

### ENGINEERING AND AGRICULTURE

- » **Bachelor of Science in Robotics and Automation**
  - ▶ Fill critical skilled positions in energy, ag, manufacturing, and healthcare, 468 job postings in ND
- » **Bachelor of Science in Material Science and Engineering**
  - ▶ Interdisciplinary program that builds on existing coursework and strengths, 33 job postings in ND
- » **Bachelor of Science in Agriculture Technology**
  - ▶ Meet needs for expertise in machine learning and AI related to precision ag including livestock production, 269 job postings in ND
- » **Energy Engineering certificates, including certificate in Nuclear Engineering**
  - ▶ Ensure expertise in the generation, conversion, transmission, storage and use of energy, energy efficiency, and next generation nuclear reactor technology
- » **AI and Machine Learning certificates**
  - ▶ Attract new students into existing programs, prepare grads to be AI literate when entering the workforce

### OUTREACH AND INDUSTRY ENGAGEMENT

- » **Outreach Engineers**
  - ▶ Industry support and educational programming across the state in areas like automation, control systems, ag tech, and energy production
- » **K-12 STEM Outreach Coordinator**
  - ▶ Grow STEM enrollments and graduates, provide educational programming across the state
- » **Faculty-Industry Exchange Program**
  - ▶ Industry-informed curricular improvements, allows industry practitioners to teach at NDSU and faculty to intern at companies
- » **2+2 Pathways**
  - ▶ Partnerships with 2-year schools to develop pathways to earn engineering degrees, 2,607 job postings in engineering in ND
- » **Industry-Faculty In-Residence**

*\*Job postings data is from calendar year 2024 (Jan-Dec) via Lightcast (<https://lightcast.io>).*



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# NEW HORIZON: NDSU 2035

IMPROVE ND'S QUALITY OF LIFE



## » OBJECTIVE:

Improve North Dakota's quality of life by expanding, modernizing, and meeting workforce demands in nursing, pharmacy, clinical trials, and health science programs.

**INVESTMENT: \$15 MILLION**

## IMPLEMENTATION

### ENHANCING NURSING

- » **Bachelor of Science in Nursing expansion**
  - ▶ #1 in job openings in ND, with 9,169 job postings
- » **Doctor of Nurse Practitioner certificates (Acute Care, Mental Health)**
  - ▶ Need for mental health and acute providers is at crisis levels, 578 job postings in ND
- » **Doctor of Nurse Anesthesia Practice**
  - ▶ Sanford has expanded surgical facilities and independent surgical centers have entered market due to demand, 68 job postings in ND

### ENHANCING PHARMACY AND HEALTHCARE MANAGEMENT

- » **Master of Healthcare Administration and Informatics**
  - ▶ Supports industry at magnet status hospitals and community pharmacies, 915 job postings in ND
- » **Master of Science in Clinical Trials Management and Regulatory Affairs**
  - ▶ Supports an evolving economy in ND, draws on existing faculty expertise

### ENHANCING ALLIED HEALTH

- » **Bachelor of Science in the following: Respiratory Care, Radiologic Science, and Medical Lab Science**
  - ▶ Expand existing programs with healthcare partners, 609 respiratory care job postings, 745 radiologic job postings, 538 clinical lab job postings in ND
- » **Doctor of Physical Therapy with Sports Medicine residency**
  - ▶ Aging population and growing sports industry with competitive and recreational athletes driving demand, 977 job postings in ND
- » **Master of Science in Occupational Therapy**
  - ▶ Aging population and children with disabilities driving demand, 470 job postings in ND
- » **Clinical Outreach and Bioskills Center**
  - ▶ Lab to support pharmacy, nursing, and new programs, equipment for virtual/rural education

### ENHANCING OPPORTUNITIES IN HEALTHCARE

- » **K-12 Outreach Coordinator and Family Life Specialist**
  - ▶ Grow enrollments and graduates in health-related fields

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