



Centers of Excellence

North Dakota's New Vision for the Future

Mark Nisbet
Chairman, Centers of Excellence Commission
Principal Manager, Xcel Energy - North Dakota

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COE Commission

Economic Foundation Members:

Mark Nisbet – Xcel Energy
Kathy Gaddie – Ryan Chevrolet
Tim Hennessy – US Bank

State Board of Higher Education Members:

John Q. Paulsen
Bev Clayburgh
Pam Kostelecky

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Higher Education

“The partnerships and cooperation have been impressive and encouraging.”

“The flexibility that the legislature has provided in authorizing Centers of Excellence has been effective. Higher Education is aware of the fact that we need to be responsible with this level of flexibility.”

- Eddie Dunn, Chancellor



Reporting Requirements

Shall report to the legislative council on the status of the Centers of Excellence program. The report must include information regarding:

- approved and rejected applications;
- funding;
- private sector participation;
- accomplishments of each Center, including information regarding how each Center is meeting, or will meet, the criteria;
- potential changes that could be made to improve the centers of excellence program.



Approved Centers

- UND EERC National Center for Hydrogen Technology - \$2.5 million
- NDSU Center for Advanced Electronics Design and Manufacturing - \$3 million
- BSC Energy Center of Excellence - \$3 million
- LRSC Dakota Center for Technology Optimized Agriculture - \$450,000
- UND Research Foundation's Center of Excellence in Life Sciences and Advanced Technologies - \$3.5 million



Approved Centers

- NDSU's Center in Surface Protection - \$2 million
- NDSU's Center for Agbiotechnology: Oilseed Development - \$2 million
- UND's Center of Excellence for UAV and Simulation Applications - \$1 million
- WSC's Petroleum Safety and Technology Center - \$400,000
- VCSU's Institute for Customized Business Solutions - \$1 million
- DSU's Center for Entrepreneurship and Rural Revitalization – Institute for Technology and Business

Applications Submitted but Not Approved



- MaSU's Center for Security and Protection Applications and Research
- MiSU's Center for Creativity
- MiSU - Bottineau's Entrepreneurial Center for Horticulture
- NDSCS's Nanoscience Technician Center of Excellence
- UND's Center of Excellence for Aerospace Applied to Earth System Science
- UND's Center of Excellence in Aviation Software Development
- UND's Center for Rural Service Delivery

Accomplishments



- As the Centers have only received funding in the past few months, there hasn't been adequate time for major accomplishments.
- The greatest accomplishment thus far has been the ability of the Centers to leverage resources.
- Centers have held groundbreakings, hired personnel, and started working on specific projects with private sector partners.
- NDSU Research and Technology Park has received the Economic Development Administration's award for Excellence in Technology-led Economic Development

UND EERC National Center for Hydrogen Technology



Designated as the National Center for Hydrogen Technology by the Department of Energy, this Center will work with private sector partners to develop and commercialize hydrogen technology such as wind to hydrogen and coal to hydrogen.

- **Amount of Match: \$8,875,900 at time of approval, now over \$20 million in Hydrogen contracts in place**
- **Private Sector Partners: ePower, Kraus Global Inc., Basin Electric, Phoenix Industries, Xcel Energy**
- **Job Creation: 100**



NDSU Center for Advanced Electronics Design & Manufacturing



Will conduct research on highly-marketable products identified by established private sector partners leading to commercialization. Products from these projects can be made in ND by companies such as Killdeer Mountain Manufacturing, Pemstar Turtle Mountain, and Phoenix International.

- **Amount of Match: \$6,000,000**
- **Private Sector Partners: Alien Technology Corporation, Crane Aerospace and Electronics, Clinical Services Management**
- **Job Creation: Successful outcome of research will lead to dozens of new high paying jobs.**



BSC National Energy Technology Training & Education Center

This world-class facility will combine energy workforce training with environmental research while advancing the use of coal combustion products.

- **Amount of Match: Up to \$12,232,000**
- **Private Sector Partners: Great River Energy, Basin Electric, Reliant Energy, MDU, North American Coal, Westmoreland Coal, Minnesota Power/BNI Coal**
- **Job Creation: Energy industry anticipates 3,350 new construction jobs and 728 new technician jobs will be created as a result of new plants being constructed.**



LRSC Dakota Center for Technology Optimized Agriculture

This Center's mission is to birth technology-optimized products which increase net margins of North Dakota's farmer/ranchers, respond to the need for technological inputs which preserve fragile ecosystems, and create an entrepreneurial platform.

- **Amount of Match: \$1,317,650**
- **Private Sector Partners: Agri ImaGIS, Total-Crop Farming Systems, Summers Manufacturing**
- **Job Creation: Jobs will be created through product development work at partnering technology companies; testing and evaluation work at the farm and experiment station sites; and expanded manufacturing jobs resulting from new product enhancements.**

UND Research Foundation Life Sciences and Advanced Technologies



The Center of Excellence in Life Sciences and Advanced Technologies (COELSAT) will create new jobs through the commercialization of research innovations into high-value products that are developed and made in North Dakota. COELSAT, a 60,000 sq ft state-of-the-art secured facility, will reside on the 80 acre Research Enterprise and Commercialization Park (REAC).

- **Amount of Match: \$10,258,000**
- **Private Sector Partners: Alion, Avianax, Agragen, BORDERS, Ideal Aerosmith, Intraglobal Biologics, MC Strategies, Prologic, Cangene, Cirrus, SEI, ImClone**
- **Job Creation: 100-150**

NDSU Center for Surface Protection



The NDSU Center for Surface Protection will perform market-driven research and development of surface protecting coatings that will enhance the durability of manufactured products and address industrial problems for companies located in North Dakota and elsewhere.

- **Amount of Match: \$4,000,000**
- **Private Sector Partners: Gremada Industries, Tecton, Gamry, AKZO-Nobel, and Marvin Windows & Doors**
- **Job Creation: 40-45**





NDSU Center for Agbiotechnology: Oilseed Development

The Agbiotechnology Center will make available conventional and/or deregulated biotechnology lines of soybeans and canola with unique oilseed traits that have potential as biofuels, specialty lubricants and health care products. The Center will develop and evaluate these lines for their use in biodiesel and special oils, conduct marketing, and new product strategies. Lines with commercial value will be released through suitable channels.

- **Amount of Match: \$10,750,000**
- **Private Sector Partners: Monsanto, Archers Daniels Midland, Dakota Skies Biodiesel**
- **Job Creation: potential for 2,472 jobs**




UND Center of Excellence for UAV and Simulation Applications

The Unmanned Aerial Vehicle (UAV) Center will provide the conduit for private industry to bring new UAV and related business ventures to North Dakota. The UAV Center of Excellence will provide 1) human factors flight performance research on UAVs and simulation applications; 2) research and development of UAV payload sensors and ground-based cockpits; 3) education and training development for the integration of UAVs into the civilian aviation industry.

- **Amount of Match: \$4,200,000**
- **Private Sector Partners: Lockheed Martin, Alion Science & Technology, Frasca International, and Cirrus Aircraft**
- **Job Creation: 15 private & 10 public**

WSC Petroleum Safety and Technology Center

The Center will co-develop and apply new oilfield technologies to meet the critical workforce and technological needs of the Oil and Gas industry in the Williston Basin. A new training site will offer hands-on experience with an actual rig and WSC's Workforce Training Division will advance methods and educate individuals on the latest technology needed in the oilfield industry.

- **Amount of Match: \$1,343,468**

- **Private Sector Partners:** Hess, Halliburton Energy Services, Sanjel, S & S Chemical, Baker Oil Tools, Nabors Well Service, Penkota Wireline Services, Sun Well Service, Schlumberger, Nabors Drilling, Natco, Encore, Tioga Gas Plant, Basint Tubin' Testin', Bear Paw Energy, Double EE, Enbridge Pipelines, Key Energy, Red River Supply, and SK & S Oilfield Services

- **Job Creation: 400 jobs per year / 1,600 jobs by 2010**

VCSU Institute for Customized Business Solutions

Institute for Customized Business Solutions (ICBS) is a public-private partnership that will co-develop new enterprise applications consulting jobs in North Dakota. The Enterprise Application Model (EAM) is a unique approach to high-end information technology services, jointly developed by a private company and VCSU. The ICBS will use the EAM to attract, grow, and create information technology businesses to meet spiraling national demand for high quality and reasonable cost in enterprise IT services.

- **Amount of Match: \$4,912,046**

- **Private Sector Partners:** Eagle Creek Software, Eide Bailly Technology Consulting, GEM Car, MeritCare

- **Job Creation: 200 by 2010**



DSU Center for Entrepreneurship and Rural Revitalization - Institute for Technology & Business

The mission of the Center for Entrepreneurship and Rural Revitalization is to promote economic development through entrepreneurial strategies. The Institute will support the Center's mission by focusing on the commercial application of technology to help businesses start or expand in rural communities. The Institute will seek to identify new technology-related opportunities and will provide technical assistance to help businesses adapt and implement new technologies. The Institute's initial project will help Killdeer Mountain Manufacturing expand its high-tech aerospace manufacturing.

- **Amount of Match: \$2,981,442**
- **Private Sector Partner: Killdeer Mountain Manufacturing**
- **Job Creation: up to 120 over 5 years**



Potential Changes

The COE Commission recommends the following changes to the program:

- **Allow the Commission to access COE funds (or provide additional funds) for the purpose of conducting technical review of applications as necessary.**
- **Designate Commerce as the primary agency to provide administrative staff support for the COE Commission, while continuing to have NDUS involvement.**
- **Allocate COE funds to Commerce for the purposes of conducting due-diligence reviews on proposals and assisting the Commission in continued follow-up and monitoring of approved Centers.**



Other Recommendations

The COE Commission recommends the following aspects of the program be maintained:

- **Allow non-cash types of private sector match.**
- **Flexibility to address a dynamic economy.**
- **Centers are demand driven by private sector partners who have a major influence in determining priority needs.**

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Commission Moving Forward

The COE Commission is moving forward with the responsibilities and flexibility that it has been granted:

- **Follow-up and monitoring of approved Centers with the help of Commerce.**
- **Looking at changes to the manner in which COE funds are distributed.**
- **Considering ways to improve the Commission's approval process.**

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Follow-up & Monitoring

The COE Commission has asked the Department of Commerce to assist in conducting annual reviews of each approved Center.

- **Linda Butts, Senior Advisor to the Commission, has been meeting with Center personnel to gather input for working papers that will be used for annual reviews of each Center.**
- **Once completed these working papers will be presented to the Commission for their approval.**
- **In addition to annual reviews being conducted, the Centers will also submit quarterly narrative reports.**



Thank you