Building a Better North Dakota

A Strategic Plan for Intellectual Property Commercialization and Economic Development
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Office of Intellectual Property Commercialization and Economic Development

The Office of Intellectual Property Commercialization and Economic Development (IPCED) is responsible for the protection and commercialization of University research innovations including those arising from the aerospace sciences, computer sciences, medicine and health sciences, engineering and physical sciences. We will coordinate the drafting, filing and prosecution of patent applications for University inventions. We will work with inventors to define and market technology portfolios of inventions, to promote new business ventures and to build business alliances that will accelerate the transition of inventions to the marketplace. IPCED is also responsible for drafting and negotiating all of the University’s legal intellectual property agreements, such as confidentiality, material transfer and licensing agreements.

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“Plans are of little importance, but planning is essential.”
— Winston Churchill
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The University of North Dakota is an equal opportunity/affirmative action institution.
One can measure an exceptional university by its products — products such as:

- Students prepared to help North Dakota and the world
- New knowledge emanating from the university’s research
- Service to the community and region

The strategic plan for intellectual property commercialization and economic development at the University of North Dakota supports the introduction of additional products developed within its research enterprise to the marketplace. These products include a University that realizes the value of intellectual property and its commercialization, a deeper understanding of the integral role the University plays in the local, regional and state economies, and the impact the University can have on these same economies through entrepreneurship and collaboration. The IPCED Strategic Planning Committee has developed this plan with producing another valuable University-based product in mind. In conjunction with the Strategic Plan on Research, Creative and Scholarly Activity from the Vice President for Research and Economic Development, Phyllis E. Johnson, Ph.D., a roadmap for translating the research program at UND into assets for the state is now in place. I invite you to join us as we explore a plan to help build a better North Dakota through the activities of the Office of Intellectual Property Commercialization and Economic Development at UND.

Michael F. Moore, CLP
Associate Vice President, IP Commercialization & Economic Development
Vision Statement

Five-Year Horizon

Embrace an effective technology transfer culture that encourages innovation by faculty, staff and students, resulting in economic development and public benefit.

Mission Statement

IPCED proactively supports UND in its mission of education, research, and public service.

IPCED serves the faculty, staff, students, and administration of the University and the public by:

- Fostering a culture that promotes invention and innovation at UND,
- Protecting UND generated intellectual property by patent, copyright, or other means, and
- Introducing technology for practical use for public benefit through collaborative research, licensing of intellectual property, and companies specifically interested in commercializing intellectual property.
Goal No. 1: Develop a Campus-Wide Culture that Supports Technology Transfer and Economic Development Activities

The research enterprise at UND is relatively young, and as such a culture throughout the campus that appreciates and supports the disclosure and commercialization of intellectual property, including economic development activities, is also not well developed. In order to be the type of University that we aspire to be and to develop the type of culture we need to contribute to the economy of North Dakota, we will take several steps to nurture faculty and to show them that participation in the development of intellectual property and economic development is a valued activity at the University of North Dakota.\textsuperscript{1,2} It is also appreciated that development of an entrepreneurial culture will take partnerships with many outside the walls of UND.\textsuperscript{3}

In order to realize a campus culture that supports this type of innovative activities, IPCED will:

1. Establish a mentoring program to develop and encourage new faculty with an interest in tech transfer. Participants would each be paired with a more experienced faculty member. The group would meet regularly over the course of a semester to develop their ideas. (Similar to the existing Proposal Writing Fellowship program held each spring).

2. Strengthen ties between IPCED and faculty by designating a liaison in each of several key areas: Life Sciences, Engineering & Physical Sciences, and Software. This person would become familiar with the research being conducted in that area, identify potential IP at an early stage, and work with faculty to ensure IP is protected.

3. Encourage all academic units to recognize tech transfer activities as measures of productivity for the purposes of tenure and promotion.

“Investment in intellectual property enables high-technology business creation and development. This fosters a collaborative environment in which both UND and partnering companies can flourish.”

Thomas Holmberg, Ph.D.
Vice President,
Corporate Development
NovaDigm Therapeutics, LLC
Goal No. 2: Contribute to the Public Benefit

A cornerstone of the Bayh Dole Act, the foundational legislation that created university and other not-for-profit based technology transfer, is the undertaking of commercialization actions to get developments out of the lab and into the marketplace for the benefit of the public. We believe there is value in recording activities that ensure that our commercialization activities are in the best interest of the citizens of North Dakota, the United States and the world. To ensure that the technology commercialization activities at UND contribute to the public benefit, IPCED will:

1. Assure regular communication with faculty, with the objective of providing at least monthly updates of research collaborations that may move research forward or find a practical use of university research for public benefit.

2. Engage in both passive and active marketing efforts to solicit potential licensees of the University’s intellectual property. Track web site hits, trade shows attended, inquiry letters, and contacts made.

3. Actively support the protection of intellectual property that is contributing to the public benefit regardless of the potential financial return on investment.

4. Institute a means for measuring the number of agreements and execution dates during each fiscal year. The agreements to be tracked include letters of intent, tech transfer agreements, IP disclosures, provisional patents, patent applications, copyrights, trademarks, licensing agreements, option agreements, bailments, Material Transfer Agreements (MTA) (in and out), inter-institutional agreements, Memorandums of Understanding (MOU), Non-disclosure Agreements (NDA), and public/private collaborative projects.
5. Track the number of business start-ups and expansions over the fiscal year including location of businesses. Track by categories including start-up companies by university personnel or students, start-up companies utilizing university IP, business expansions related to private/public collaborations, out-of-state expansions of companies into North Dakota due to interactions with the University.

6. Promote the University’s contributions to the public benefit, at least annually, by notifying University personnel, stakeholders, and the public of the activities of the IPCED office in aggregate or individual activities as appropriate.

7. Track the number of products on the market utilizing University IP.

**Goal No. 3: Provide Service to Faculty**

If we are to be successful in our endeavor to Build a Better North Dakota, we must recognize those who are doing research and assist them in disseminating knowledge, solving problems, and providing our University with intellectual property for the benefit of our citizens. These developers are our faculty as well as our students and staff. Our office must provide adequate support services so that we may efficiently capitalize on technology transfer opportunities.\(^5\) Achievement of this goal is heavily dependent on improved communication. In addition to improved communication, providing opportunities with outside entities will be seen as important. We will also strive to maintain our resources, both people and operating money, at levels that ensure that the service to faculty is commensurate with our desire to commercialize more technology. In order to be successful, IPCED must provide first class service to faculty and will:

1. Assure regular face-to-face interactions with Deans and Department Chairs, particularly those in the life sciences, physical sciences, aerospace and engineering fields, with the objective of having at least one such interaction
with each such individual per calendar year. One purpose will be to promote economic development and to assess the levels of awareness and satisfaction among faculty in order to design and deliver appropriate intellectual property education and address perceived shortcomings.

2. Assure regular communication with faculty, with the objective of providing at least two local-level (i.e., college or department) intellectual property education sessions per year, and institute means for measuring disclosure activity as a result of the same, to include separately tracking first-time and repeat disclosers.

3. Engage in meaningful market analysis and actively market the University’s existing intellectual property to prospective licensees; ensure that faculty inventors are kept informed of and invited to participate in such efforts; and institute means for measuring marketing activities.

4. Support relationships with external entities by diligently seeking out fruitful contacts with prospective collaborators and other external funding sources and helping faculty to do the same, and institute a means for measuring the number of such contacts as well as the number of resulting agreements. One purpose is to assist faculty in identifying funding opportunities from non-government and private sources.

5. In conjunction with Grants & Contracts Administration and the Office of General Counsel, expedite whenever possible the review of agreements resulting from contacts with prospective licensees, collaborators, and other external funding sources, with the objective of facilitating, contracting and removing unnecessary impediments to faculty activity.

6. Pursue, compete for, and maintain appropriate resources, including human resources, to achieve this goal.

“North Dakota’s Department of Commerce values its commercialization programs with UND such as the Centers of Excellence. The outcomes from our relationship, including the development and exploitation of intellectual property in North Dakota, are vital to our economic future.

Al Anderson
Commissioner
North Dakota Department of Commerce
Health care is an extremely important factor for the state and nation. While we have fantastic health care in North Dakota, we do face issues of access, quality, and cost. It is crucial for the School of Medicine and Health Sciences to demonstrate how it positively impacts the lives of citizens and contributes meaningfully to their health. One important way is to bring laboratory discoveries to patients at the bedside. UND’s Office of Intellectual Property Commercialization and Economic Development is a critically important facilitator of the technology transfer.

Joshua Wynne, M.D., M.B.A., M.P.H.,
Vice President for Health Affairs and Dean of the School of Medicine and Health Sciences
University of North Dakota

**Goal No. 4: Facilitate Economic Development**

Technology commercialization has become much more than a protecting and licensing exercise, although those activities are foundational to most versions of commercializing research output. The activities of a research University are now seen as one of many different important components of a vibrant regional economic development engine. The actions identified under this goal are designed to accentuate activities where an outward focus is used to foster economic development opportunities. To meet the goal of facilitating economic development, IPCED will:

1. Position the VPR & ED office as the central contact/entry point for UND’s economic development opportunities relating to commercialization of intellectual property.
   a. Track number of and contact with researcher inquiries for assistance with IP commercialization.
   b. Track number of and contact with business and industry inquiries for development and/or commercialization of intellectual property.
   c. Establish and maintain a publicly accessible web resource of available commercially ready technologies and track the demographics associated with the use of the site.

2. Operate on a principle of inclusion of both public and private partnerships.
   a. Track the investment in the VPR & ED office’s services by source.
   b. Track the investment in commercial technology development by source.
   c. Categorize the number and contact with public and private sources by company/organization status, (i.e.: business organization, defunct, merged or acquired, IPO, new or existing, etc.); geographic outreach, (i.e.: local, state, regional, national, international).
3. Concentrate on the creation, management and expansion of community, state, regional businesses and networks.
   a. Track business starts, expansions, mergers and IPOs.
   b. Track number of jobs created and retained by businesses applying research.
   c. Categorize business starts, expansions, mergers, IPOs, jobs created and retained by company/organization status measures, (i.e.: business organization, defunct, merged or acquired, IPO, new or existing, etc.); geographic outreach, (i.e.: local, state, regional, national, international).

4. Adopt a “regional-first” policy as it relates to technology commercialization.
   a. Conduct research presentation symposia specifically inviting regional partners with potential interest in acquiring rights through applicable licenses, patents and other services offered by the university.
   b. Report results of licensed and/or commercialized research annually.

5. Develop a strong understanding of the state and regional economy, its strengths, challenges and critical issues.
   a. Research state and regional economic conditions to identify trends and needs in the state and region for which there are commercially applicable research opportunities. Use this information in planning future projects.

Goal No. 5: License for Fair Value

Technology transfer offices are agents of public intellectual property assets. For that reason, they pursue fair compensation for their technologies while delivering service to all of the stakeholders involved in the technology transfer process, namely industry, university researchers, and the public. Proceeds
generated from UND’s technology transfer program are invested back into the University. The University views the collection of information related to income, equity, agreements generated, and reimbursement of intellectual property and/or legal fees as high value. It is reasonable for UND to expect to realize a fair return for licensing its intellectual property assets to third parties and in order to fulfill this goal, IPCED will focus on the following areas:

1. Royalty and fee income — Count the royalty and fee income received during the fiscal year from all technology transfer agreements, including copyright and bailment agreements. Exclude reimbursement of patent and/or legal costs.

2. Income from the sale of equity — Calculate the income received during the fiscal year from the sale of equity for all technology transfer agreements.

3. Number of technology transfer agreements — Calculate the technology transfer agreements active at the end of the current fiscal year regardless of the date of execution and count the total number of agreements with and without royalty and/or fee income. Provide this information as an absolute number and as a percentage of the total number of active agreements.

4. Number of disclosures/patents — Calculate the number of invention disclosures filed, the number of patents filed, the number of provisional patents filed, copyrights obtained, and trademarks obtained during the fiscal year.

5. Reimbursement/recovery of intellectual property costs — Calculate the income from the reimbursement/recovery of intellectual property and/or legal fees received during the fiscal year from all technology transfer agreements. Report as total dollar amount and as percentage of intellectual property and/or legal fees paid during the fiscal year.
The citizens of Grand Forks and the State of North Dakota look to UND to provide talented graduates, useful research discovery, and intellectual property. These all keep our state in a strong position and provide the impetus for economic growth.

Ray Holmberg  
Senator, District 17  
North Dakota Legislative Assembly
Members of the IPCED Strategic Planning Committee

- Michael F. Moore, CLP, Associate Vice President, IPCED
- Colin Combs, Ph.D., Associate Professor of Pharmacology, Physiology, and Therapeutics
- Jason Jenkins, Esq., Assistant General Counsel, UND General Counsel's Office
- Tara Kopplin, M.S., Licensing Assistant, IPCED
- Jenya Kozliak, Ph.D., Professor of Chemistry
- Ronald Marsh, Ph.D., Associate Professor of Computer Science
- Barry Milavetz, Ph.D., Associate Vice President for Research and Economic Development
- Brian Tande, Ph.D., Assistant Professor of Chemical Engineering
- Klaus Thiessen, President, Grand Forks Region Economic Development Corp.
- JoLynne Tschetter, Ph.D., Manager for Science and Technology, Division of Economic Development and Finance, North Dakota Department of Commerce
- Eric Veidel, Small Business Innovation Research (SBIR) Coordinator and Entrepreneur Consultant, UND Center for Innovation
- Bon Wickenheiser, State Director, North Dakota Small Business Development Center (SBDC)
- Barry Wilfahrt, President and CEO, The Chamber, Grand Forks/East Grand Forks
- Dale Zetocha, Executive Director, North Dakota State University Research Foundation
The University of North Dakota has a $1 billion economic impact on the state, in part because of $115.5 million in external funding (fiscal year 2011) and an expansion in research activity fueled by a rapidly growing Graduate School. Many projects blend cutting-edge technologies with the state’s agricultural heritage and economy. For example, faculty and students in the School of Engineering and Mines are developing biofuel from soybeans.

UND had approximately $116.95 million in sponsored research program expenditures in fiscal year 2011. The impact on Grand Forks County, the State of North Dakota and the North Central Census Region was $239 million in economic output, 2,021 jobs, and more than $23.6 million in local, state and federal tax revenues.

While reaching across and beyond our nation’s borders, research at UND has a direct impact on the quality of life for North Dakotans. Among these focus areas are:

- Addiction and addictive behaviors
- Agricultural remote sensing: crop health and yield evaluations
- Aging
- American Indian culture and history
- Aviation, aerospace, and unmanned aerial systems
- Biofuels
- Cancer
- Communication disorders
- Community engagement
- Community health
- Election results and voting trends
- Energy and Sustainable Energy
- Environmental cleanup and protection
- Infectious disease and immunology
- Invasive species
- Life sciences
- Maternal and child health
- Mental health
- Neurological disease, including Alzheimer’s and Parkinson’s
- North Dakota and Great Plains history
- Nursing
- Petroleum geology and engineering, and geothermal energy
- Prairie ecosystems
- Rural health care delivery
- Rural sociology
- Technologies for education and teaching
- Weather
- Wind energy

**UND’s Growth in Grants and Contracts**

*Millions of Dollars*