Growing the State of North Dakota’s Entrepreneurship & Innovation Ecosystem
WHY IS COMMERCE INTERESTED IN UNIVERSITY INTELLECTUAL PROPERTY?

- Not jobs, jobs, jobs….
- Cutting edge IP leads to higher margins and better paying jobs.
- Better opportunities for faculty
- Increased private research revenue for our Universities
- Ability to give back to the communities and Universities
MY INTELLECTUAL PROPERTY JOURNEY

Dr. Gerhardt 'Gary' Fick
SIGCO Research

• NDSU – Research Geneticist
• Graduate student
• I.P. was in Dr. Fick’s head
• Started a business
• Created good high-paying jobs
MY INTELLECTUAL PROPERTY JOURNEY

- Improved products
- Happy customers
- Better margins
- Hire more people at increased salaries
The GIANTS IP Story

UND Connection
INTELLECTUAL PROPERTY GIVE BACK

- UND
  - Entrepreneur in residence
- NDSU
  - President Bresciani
- Silos – resistant
THE #1 STATE IN THE NATION TO CALL HOME

#1 Best-Run State
#1 Housing growth per capita
#1 Growth Performer State
#1 Best States for Young Adults
#1 Best States for Entrepreneurship
#1 Best States for Millennials
#1 Highest Growth of Young Adults

www.NDCommerce.com
A TRIP TO AN I-Corps UNIVERSITY

Barry Batcheller

Kevin Melicher
Tim Mahoney
Fargo Mayor

Ron Bergan
Owner
Fargo Assembly

Scott Beaulier
Dean for the College of Business

Terri Fiez
Vice Chancellor for Research & Innovation

Janelle Hartford
Start Bismarck

James Burgum
Arthur Ventures

Kelvin Hullet
Bank of North Dakota

Photo by Greg Tehven
Emerging Prairie
TRIP TO ARIZONA STATE UNIVERSITY

- In 2001, Playboy ranked ASU as the best party school in the nation (Graduation rate was 16 percent)
- Received top ranking from Princeton Review Party School in 2012, 2010, 2009 and 2008
- 2017 – Ranked #1 in Innovation
- Grew private corporate investment to record levels
• Started at the top

• **Michael Crow** became the 16th president of Arizona State University on July 1, 2002.

• Crow was previously executive vice provost of Columbia University.
WHERE ARE WE TODAY?

Source: Higher Education Research and Development Survey 2014
Summary of College Funding Sources

Current college funding levels with background information by source.

College of Agricultural Sciences
Estimated 2014/2015
Total All Sources = $187,041,926
• Serial entrepreneur, early stage investor, academic researcher, and repeat inventor with a track record of success in several industries.

• Pam led the *University of Iowa*’s technology commercialization foundation, where she was brought in to increase commercialization and startup formation.

• Co-founder and General Partner of Capita3, an early stage venture capital group focused on companies founded by women in health-related fields, with an emphasis on the rapidly growing Midwest startup ecosystem.

• Adjunct faculty at the *University of Minnesota*, teaching NSF I-Corps™ programs and an MBA-level startup course, and she was previously an invited Senior Fellow in the *College of Engineering Technological Leadership Institute*. 
Analysis & Recommendations for The State of North Dakota University Technology Commercialization

June 2018
Universities Benefit from Technology Commercialization

Technology transfer - along with other parts of the innovation management enterprise - help the university achieve its engagement goals. - *Association of Public & Land Grant Universities, Nov. 2017*

- Expanded research funding and revenue
  - Increased competitiveness in federal research funding
  - Increase in industry sponsored research funding
  - Increased STTR/SBIR funding for commercialization
  - Increased revenue from technology commercialization

- Recruit and retain faculty (a growing trend)
- Increased innovation, societal impact, stature
- Increase in local startup, global industry engagement
University Technology Commercialization Yields Significant Economic & Societal Benefit

Regional economies benefit the most from the knowledge spillovers from universities. Technology-based clusters develop based upon their unique ecosystems.

– The Milken Institute 2015

6400 Licenses
1000 Startups
$2.5B License Revenue

Industry-University collaborations increased 17%
70% stay in the region

JUNE 2018
University Startups Stimulate Success

University Startups - have a proven track record of creating economic development and superior performance.
- $33 billion economic value creation from ’80-’99
- 280,000 jobs in the same period
- 75% of University startup stay in the state
- are the most effective means for disruptive technologies
- are important for attracting and retaining faculty

<table>
<thead>
<tr>
<th></th>
<th>Non-University Start-ups</th>
<th>University Start-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Rate</td>
<td>0.07%</td>
<td>8%</td>
</tr>
<tr>
<td>Raise Venture Capital</td>
<td>1%</td>
<td>25%</td>
</tr>
<tr>
<td>Ten Year Survival Rate</td>
<td>&lt;20%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Source: Scott Shane, “Academic Entrepreneurship” 2004
Industry Partnerships Stimulate Collaboration, Research Funding, and Knowledge Transfer

Letter to Commerce Secretary Locke, endorsed by 135 University Presidents (April 2011): “To facilitate university-industry collaboration, we will... develop ways to incentivize and support industry ...to collaborate with universities.”

Industry is a major untapped research partner:

Federal R&D = $111B
Universities receive 7.8% = $36B

Industry R&D = $265B
Universities receive 1% = $2.8B
Successful Commercialization Requires A Focused Process by Skilled Professionals

Faculty Inventions
Evaluation IP Protection
Marketing Strategy
License Negotiation
Startup Formation

University Technology
Commercialization Process
Top U.S. Expert Sources Were Used for this Report

• National Science Foundation (NSF) & the NSF Innovation Corps (I-Corps™) Program
• AUTM- Association for University Technology Managers
• The Milken Institute
• AURP- Association for University Research Parks
• UIDP – University & Industry Demonstration Partnerships
• National Research Council of the National Academies
University Commercialization Performance is Measured by Experts

The Association for University Technology Managers (AUTM) collects key performance indicators from U.S. universities in technology transfer activities:

- **Research**: total research dollars, % industry sponsored
- **Outputs**: Patents, licenses, licensing revenue, startups

The Milken Institute calculates the Milken Index, a weighted algorithm using AUTM output data over a 4 year period - raw data and data normalized by research dollars - to yield:

- **Effectiveness ratings**: a technology commercialization effectiveness score that enables broad comparisons between U.S. universities

Universities can be compared to each other using these sources.
These Expert Sources Were Used for Evaluating NDSU’s Performance:

For technology commercialization effectiveness, NDSU is compared to:

- 225 universities in the Milken study
  - using the 2017 Milken Index for commercialization effectiveness
- 5 selected higher performing universities in that study with:
  - No medical school
  - Total research dollars under $250M
  - Some in smaller metropolitan areas

For industry sponsored research, NDSU is compared to:

- 68 universities listed in the AUTM database that do not have a medical school
- The same 5 selected universities as above
NDSU’s Rank Among 225 Research Universities

2017 Milken Index = Commercialization Effectiveness Ranking

NDSU is ranked 114th out of 225

<table>
<thead>
<tr>
<th>Comparing NDSU to Selected Higher Ranked Universities</th>
<th>Rank</th>
<th>Research ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brigham Young University</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Oregon State</td>
<td>47</td>
<td>245</td>
</tr>
<tr>
<td>University of Akron</td>
<td>61</td>
<td>59</td>
</tr>
<tr>
<td>Washington State</td>
<td>73</td>
<td>194</td>
</tr>
<tr>
<td>Louisiana Tech</td>
<td>91</td>
<td>24</td>
</tr>
<tr>
<td><strong>NDSU</strong></td>
<td><strong>114</strong></td>
<td><strong>153</strong></td>
</tr>
</tbody>
</table>
NDSU Overall Commercialization Effectiveness Score is 74 out of 100
- 2017 Milken Scoring Index -
Using 4 years of averaged and normalized AUTM data
Highest possible score = 100

<table>
<thead>
<tr>
<th></th>
<th>NDSU</th>
<th>Louisiana Tech</th>
<th>Washington State</th>
<th>University of Akron</th>
<th>Oregon State</th>
<th>Brigham Young University</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Milken Score</td>
<td>2015 AUTM #</td>
<td>Milken Score</td>
<td>2015 AUTM #</td>
<td>Milken Score</td>
<td>2015 AUTM #</td>
</tr>
<tr>
<td>New Patent Apps</td>
<td>65</td>
<td>44</td>
<td>73</td>
<td>7</td>
<td>82</td>
<td>19</td>
</tr>
<tr>
<td>Active Licenses</td>
<td>92</td>
<td>431</td>
<td>60</td>
<td>17</td>
<td>57</td>
<td>41</td>
</tr>
<tr>
<td>Revenue ($M)</td>
<td>84</td>
<td>2.5</td>
<td>78</td>
<td>0.2</td>
<td>78</td>
<td>0.2</td>
</tr>
<tr>
<td>Cum Startups</td>
<td>43</td>
<td>8</td>
<td>70</td>
<td>14</td>
<td>76</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td><strong>74</strong></td>
<td></td>
<td><strong>77</strong></td>
<td></td>
<td><strong>80</strong></td>
<td></td>
</tr>
<tr>
<td># Staff</td>
<td>3</td>
<td></td>
<td>NA</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Research ($M)</td>
<td>153</td>
<td></td>
<td>24</td>
<td></td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>NSF I-Corps™</td>
<td>NO / Limited</td>
<td></td>
<td>NO</td>
<td></td>
<td>YES</td>
<td></td>
</tr>
</tbody>
</table>

Universities with less than $250M research expenditures and no medical school
2017 “Milken Score”; “2015 AUTM #”

JUNE 2018
NDSU is Ranked #56 of 68 Universities in Industry Sponsored Research

<table>
<thead>
<tr>
<th>2015</th>
<th>Industry Research ($)</th>
<th>Total Research ($)</th>
<th>Industry Research (%)</th>
<th>Rank*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brigham Young University</td>
<td>Not reported</td>
<td>$32,177,342</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Oregon State University</td>
<td>$9,792,000</td>
<td>$245,317,000</td>
<td>4%</td>
<td>35</td>
</tr>
<tr>
<td>Washington State University</td>
<td>$6,291,818</td>
<td>$193,774,515</td>
<td>3%</td>
<td>44</td>
</tr>
<tr>
<td>University of Akron</td>
<td>$5,283,969</td>
<td>$58,512,485</td>
<td>9%</td>
<td>17</td>
</tr>
<tr>
<td>North Dakota State Univ.</td>
<td>$1,761,000</td>
<td>$153,542,000</td>
<td>1%</td>
<td>56</td>
</tr>
<tr>
<td>Louisiana Tech University</td>
<td>$708,252</td>
<td>$23,826,668</td>
<td>3%</td>
<td>47</td>
</tr>
</tbody>
</table>

*Number rank out of 68 US research universities that do not have a medical school. Source: AUTM 2015
NDSU Findings

*Ranked 50th percentile overall in tech transfer*
*Ranked 16th percentile in industry sponsored research*

- Low staffing numbers
- Low key activity numbers (invention disclosures, patent filings, startups)
- Lowest score in startup formation.
- Highest score in licensing, with strong execution on Ag technologies
  - A majority of NDSU’s licenses and revenue are in Ag*
  - Effectiveness in non-Ag areas could be low or under-performing.
  - Without Ag licenses, NDSU rank would likely be much lower
- Low industry sponsored research
  - Strong potential match between local industry and university research.
- Absence of coordinating and promoting startup formation across academic units and organizations

*NDSU FY16 Annual Report*
These Expert Sources Were Used for Evaluating UND’s Performance:

For technology commercialization effectiveness, UND is compared to:

– 225 universities in the Milken study
  • using the 2017 Milken Index for commercialization effectiveness
– 5 selected higher performing universities in that study with:
  • With a medical school
  • Total research dollars under $150M
  • Some in smaller metropolitan areas

For industry sponsored research, UND is compared to:

– 89 universities listed in the AUTM database that have a medical school
– The same 5 selected universities as above
UND’s Rank Among 225 Research Universities

2017 Milken Index - Commercialization Effectiveness Ranking

UND is ranked 191st out of 225

<table>
<thead>
<tr>
<th>University</th>
<th>Ranking</th>
<th>Research ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Toledo</td>
<td>66</td>
<td>52</td>
</tr>
<tr>
<td>Southern Illinois University</td>
<td>76</td>
<td>63</td>
</tr>
<tr>
<td>Tulane</td>
<td>96</td>
<td>122</td>
</tr>
<tr>
<td>Ohio University</td>
<td>113</td>
<td>61</td>
</tr>
<tr>
<td>Oklahoma State</td>
<td>121</td>
<td>141</td>
</tr>
<tr>
<td>University of North Dakota</td>
<td>191</td>
<td>91</td>
</tr>
</tbody>
</table>
## UND Overall Commercialization Effectiveness Score is 48 out of 100

- **2017 Milken Scoring Index** -

Using 4 years of averaged and normalized AUTM data

Highest possible score = 100

<table>
<thead>
<tr>
<th></th>
<th>UND</th>
<th>Oklahoma State</th>
<th>Ohio University</th>
<th>Tulane University</th>
<th>Southern Illinois University</th>
<th>University of Toledo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue ($M)</td>
<td>Milken Score: 75</td>
<td>2015 AUTM #: 0.2</td>
<td>Milken Score: 84</td>
<td>2015 AUTM #: 2.7</td>
<td>Milken Score: 92</td>
<td>2015 AUTM #: 11</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td>Milken Score: <strong>48</strong></td>
<td>2015 AUTM #:</td>
<td>Milken Score: <strong>73</strong></td>
<td>2015 AUTM #:</td>
<td>Milken Score: <strong>74</strong></td>
<td>2015 AUTM #:</td>
</tr>
</tbody>
</table>

*Universities with less than $150M research expenditures and a medical school
2017 “Milken Score”; “2015 AUTM #”*
**UND is Ranked #9 of 89 Universities in Industry Sponsored Research**

<table>
<thead>
<tr>
<th>2015</th>
<th>Industry Research ($)</th>
<th>Total Research ($)</th>
<th>Industry Research (%)</th>
<th>Rank*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tulane University</td>
<td>$15,079,509</td>
<td>$122,042,024</td>
<td>12%</td>
<td>15</td>
</tr>
<tr>
<td><strong>University of North Dakota</strong></td>
<td><strong>$12,648,225</strong></td>
<td><strong>$90,930,023</strong></td>
<td><strong>14%</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>Oklahoma State University</td>
<td>$10,377,180</td>
<td>$140,642,907</td>
<td>7%</td>
<td>34</td>
</tr>
<tr>
<td>Ohio University</td>
<td>$6,118,000</td>
<td>$61,078,000</td>
<td>10%</td>
<td>20</td>
</tr>
<tr>
<td>University of Toledo</td>
<td>$3,453,000</td>
<td>$52,354,000</td>
<td>7%</td>
<td>40</td>
</tr>
<tr>
<td>Southern Illinois University</td>
<td><em>Not reported</em></td>
<td><em>Not reported</em></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Number rank out of 89 US research universities that have a medical school. Source: AUTM 2015*
UND Findings

*Ranked 15th percentile overall in tech transfer*

*Ranked 89th percentile in industry sponsored research*

- Low staffing numbers
- Low key activity numbers (invention disclosures, patent filings, startups)
- Low overall ranking
  - Medical, health, engineering schools
- One of the lowest scores for startup formation of all 225 universities
- Strong execution in Aerospace related industry sponsored research
  - Aerospace Foundation
  - Not apparently producing significant commercialization activity
- Absence of coordinating and promoting technology commercialization and startup formation across academic units and organizations
NDSU & UND Tech Transfer Programs Require Resourcing & Reinforcing Environment

• **SMALL STAFF** difficult to engage in the time-intensive activities:
  • Faculty engagement
  • New patent filings
  • Startup formation

• **LOW FUEL**: Invention disclosures are the “fuel.” Both have low levels relative to research funding. Beyond low staffing, this could result from:
  • University policies or culture
  • Low faculty engagement
  • Invention disclosure practices
  • Patent filing practices

• **ENVIRONMENT**: Both ranked low in startups, other potential factors:
  • University policies or culture
  • Insufficient supply of external startup CEO’s and investors, or lack of engagement
  • Lack of faculty startup education
  • Lack of grant funding mechanisms to reduce technical risk
## Top 7 Recommendations

<table>
<thead>
<tr>
<th>NDSU</th>
<th>UND</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minimum viable staff of experts (8)</td>
<td>Minimum viable staff of experts (6)</td>
</tr>
<tr>
<td>2. Address significant untapped potential outside of Ag research</td>
<td>Address significant untapped potential in health, engineering</td>
</tr>
<tr>
<td>3. Increase invention disclosure submission rate via regular onsite education and intake in each research department or group</td>
<td></td>
</tr>
<tr>
<td>4. Increase patent filings using provisional applications on 50% of received invention disclosures and provide budget for this activity</td>
<td></td>
</tr>
<tr>
<td>5. Use NSF I-Corps™ programs for faculty and graduate student startup training, and apply to become a site</td>
<td></td>
</tr>
<tr>
<td>6. Have a person dedicated to startup formation, integrate startup activities across relevant organizations, provide funding mechanisms</td>
<td></td>
</tr>
<tr>
<td>7. Have a person accountable for industry sponsored project engagement, streamline policies, reduce barriers to collaboration</td>
<td></td>
</tr>
</tbody>
</table>
Example Quick Wins

**Increasing Inventions & Patents**
- Invention disclosure training by research department
- Gated patent review process
- Adopt provisional patent application process

**Increasing Startups**
- NSF I-Corps™ startup training program & “Demo Day”
- SBIR/STTR startup support
- Startup Funnel graphic to visualize and share progress
- Startup Advisory Group
- Proof of concept funding for commercialization projects

**Increasing Industry Engagement**
- Adopt new streamlined best practices
Illustrate Startup Status to Engage Support from a University Startup Advisory Group

- Start-up Funnel Graphic Example -

Ring-based Drug Delivery Technology

Cell Processing Device

Healthy Food

MRI Software

Gastrointestinal Diagnostic for EE

Stage 2

GMR Point of Care Diagnostic System

APOBEC Bio-Technology

MRI Coils

Animal Cancer Vaccine

Chemical Separation Membrane

Life Science Simulation

GI Bacteriotherapy

Portable Surveillance Device

Cyanide Antidote

Stage 3

Driver Support System

Stage 4

CO2-Based Geothermal Power Plant

Stage 5

Early Learning Labs (IBU)

Stage 6

Commercialization

Parking Lot

- Sweat Gland Diagnostic (Dec 2011)
  - Cohn Prevention Center (Jan 2012)
  - Interventional Radiology (Jan 2012)
- Flash Volatilization of Biomass (end of option)
- Birch Bark Process Technology (end of option)
- FASCGT Agriculture Assessment Tool (end of option)
- Male Contraceptive Drug (Jan 2012)
- Non-rare Earth Magnets (June 2012)
- Therapy for Tinnitus (June 2012)
- Virtual Prototyping of Medical Devices Platform (June 2012)

Market Size

- < $100M
  - $100M - $18
  - > $18

Stage Descriptions

1. Seek and docket new ideas
2. Evaluate commercial potential & IP position
3. Develop market analysis & financial analysis
4. Develop business plan and presentation
5. Negotiate business and legal terms
6. Executed license to start-up

*Indicates inactive
Proof of Concept Funding Example -
University of Iowa - From Startup Obscurity to High Performing

• Status in 2005
  – $250M, med, eng schools
  – Strong negative bias
  – “Can’t be done”
  – No regional industry match
  – Few entrepreneurs, investors

• Status in 2015
  – $3.6M seed grant funding invested over 8 years into 58 faculty projects, produced 32 startups, $150M in financing, $200M in exits
- Industry Sponsored Research Example -

University Minnesota “MN-IP” Creates a New U.S. Standard for University-Industry Engagement

MN-IP program reduces barriers to industry sponsored research by decreasing risk, simplifying terms, and speeding up the contract process:

• Industry sponsored research doubled over 6 years since the program was introduced
• Numerous other universities now adopting various versions of this program
- Startup Formation Example -

_Utah – A Top Performing State_

• University of Utah:
  – #2 in the 2015 AUTM survey with 189 cumulative operational startups
  – #1 in the 2017 Milken Index

• A prolific coordinated focus on entrepreneurship in the state, region, universities, and communities

• Key factors:
  – _Universities_: strong emphasis on entrepreneurship
  – _Community_: collaboration between industry, state and economic development leaders; a commitment to building an on-going culture of entrepreneurship
  – _State_: USTAR, pro business policies
“It takes a village”

Economic ecosystem must all work in concert

*Universities are only one of several key elements*

- Availability of seed & nondilutive capital
- Experienced entrepreneurial management with proven track record of success
- Entrepreneurially focused policies & supportive infrastructure

North Dakota

NDSU UND

*Entrepreneurially focused policies & supportive infrastructure*
Appendix
# Excel Through a Shared Vision and Approach

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance &amp; Vision (6 - 12 MOS)</td>
<td>Funding &amp; Policy (YR 1-2)</td>
<td>Sustainability (YR 3+)</td>
</tr>
<tr>
<td>- Champions</td>
<td>- Operationalize</td>
<td>- Secure long term funding</td>
</tr>
<tr>
<td>- Advisory Board</td>
<td>- 3 year plan</td>
<td>- Complete teams and incentives</td>
</tr>
<tr>
<td>- Vision, goals</td>
<td>- 3 year funding</td>
<td>- Establish business financial management and reporting</td>
</tr>
<tr>
<td>- Low hanging fruit</td>
<td>- Team expansion</td>
<td>-</td>
</tr>
<tr>
<td>- Short term funding</td>
<td>- Longer term funding plans</td>
<td>-</td>
</tr>
<tr>
<td>- Progress reporting</td>
<td>- Assess policies and procedure</td>
<td>-</td>
</tr>
</tbody>
</table>

- 43
How is a High Performing University Technology Commercialization Office Structured?

Office for Technology Commercialization (OTC)

- Intellectual Property Commitment Team
- Licensing Center
  - Marketing and Licensing of technologies
- Venture Center
  - Helping startups form, bring on management, and raise financing.

- Industry Outreach
- Technology Strategy Managers
- University Researchers
- Licensing Candidates
- Start-Up Candidates
- Further Development

Licenses
Startups

JUNE 2018
## Technology Commercialization
### Roles & Team Size

<table>
<thead>
<tr>
<th>Role</th>
<th>NDSU</th>
<th>UND</th>
<th>Min $100M</th>
<th>Adequate $100M</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP or Executive Director</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Associate or Business Dev Director</td>
<td>Vacant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Startup Manager</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Industry Sponsored Research Manager</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Licensing Manager</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Licensing Associate</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology Manager</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Contracts Manager</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Marketing Manager</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Intellectual Property Manager</td>
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<td>Data Manager</td>
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<tr>
<td>Office Manager- Ops, HR, Admin</td>
<td>✓</td>
<td></td>
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<tr>
<td>Other</td>
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**JUNE 2018**
WHERE NORTH DAKOTA SHINES

- Agriculture crops
  - NDSU
- EERC
  - UND
- Innovation Challenge
- Incubator – full at NDSU
TECHNOLOGY TRANSFER EVOLUTION:
DRIVING ECONOMIC PROSPERITY

Report of the Technology Transfer Evolution Working
Group of APLU’s Commission on Innovation,
Competitiveness & Economic Prosperity (CICEP)

NOVEMBER 2017
“The definition of insanity is doing the same thing over and over and expecting different results.”

Albert Einstein
MOVING FORWARD

• Support from business community and legislative body

• Suggestions:

  *Five person committee to map out strategy*
  
  • Two legislators
  • UND representative
  • NDSU representative
  • Commerce representative