Our Mission

Promote and enable innovation and discovery.

Innovation and Industry Engagement (IIE) personnel strive to achieve this mission in support of the Michigan Tech Strategic Plan by fostering the following guiding principles:

- The development and application of the University’s intellectual and physical resources
- The creation and growth of partnerships in research, innovation, and education
- The expansion of dynamic experiential learning for students

What We Do

IIE reports to the Vice President for Research and is a primary interface between the University and industry. IIE is actively involved in many aspects of industry partnerships, technology innovation, discovery, entrepreneurship, and research on campus and throughout the region. Responsibilities and core activities include:

- Commercializing University intellectual property
- Negotiating and administering:
  - Industrial research contracts
  - Nondisclosure and material-transfer agreements
  - Restricted and unrestricted funding arrangements for Senior Design and Enterprise
  - Education and training on innovation and intellectual property, including seminars, for-credit courses, and certificate programs
- Supporting startup technology companies and inventors from campus and the community, including active support of student Senior Design and Enterprise teams
- Licensing, registration, and management of University trademarks
- Development and management of partnerships with industry designed to most effectively make connections with relevant campus resources, including talent recruitment, research and technology licensing, and educational opportunities
IIE continues to lead or participate in programs and activities that support the University’s strategic plan and goals. Here are some significant programs and accomplishments from 2016:

• **Innovation Center for Entrepreneurship**
  Michigan Tech established the Innovation Center for Entrepreneurship (ICE) in September 2015. ICE is co-directed by Jim Baker, executive director of Innovation and Industry Engagement and Mary Raber, assistant dean of Academic Programs for the Pavlis Honors College. It has been launched to advance the culture of innovation and entrepreneurship across campus from undergraduate students to faculty researchers by connecting start-up business development and commercialization experience within the Technology Commercialization Team of IIE with the curricular and extracurricular activities within the Pavlis Honors College and collaborating academic units across campus.

• **I-Corps Site Program**
  Michigan Tech was designated as an Innovation Corps (I-Corps) site program by the National Science Foundation in the spring of 2015 as a result of a collaborative proposal led by Mary Raber of the Pavlis Honors College with strong participation of IIE Technology Commercialization Team personnel. This prestigious designation follows Michigan Tech’s active participation in the national I-Corps training program and supports teams of commercially oriented students and faculty with training in the Lean Startup business model development method and funds for prototyping early-stage technologies.

• **Gap Funding**
  To support moving technologies from the earliest stages of development toward the commercial marketplace, the Office of Innovation and Industry Engagement has developed a series of gap funding resources including participation in the State funded Michigan Translational Research and Commercialization Program (MTRAC), and the internally supported Research Excellence Fund Technology Commercialization Milestone Grant Program. External to the University, we have participated in the founding of the private non-profit Michigan Tech Entrepreneurial Support Corporation (MTESC) and the associated for-profit Superior Innovations Corporation (SI). MTESC and SI have become a foundational component of the early-stage gap funding infrastructure which provide small amounts of funding at critical stages in the commercialization process that produce significant and critical outcomes. Since 2014, Superior Innovations has provided a total of $67,500 in support of six commercialization projects or companies. This modest investment has resulted in over $2.2 million in follow-on commercialization funding with an average return greater than 33 times the amount of funds invested.
• **Career Services**

A record number (371) recruiting organizations visited campus for the Fall Career Fair. This overwhelming amount of opportunities is awe-inspiring and perhaps a bit daunting for our students. To help students “find their fit” in organizations and careers, Career Services organized an entire month worth of informal networking and educational events called “CareerFEST.” The month of September featured a large tent on campus, networking opportunities, and hands-on activities. Our students got a chance to meet real professionals from companies and gain a much greater understanding of what they could do with their degrees. We know that 18 percent of first-year students change their majors and alumni will have multiple employers throughout their career. These events may help students find their first job, find their fit, or make a connection that will help them later in their career. Student surveys revealed that 68 percent of students said they discovered new careers, companies, or industries as a result of their participation. The Spring Career Fair was the 3rd largest spring fair ever, with 227 recruiting organizations on campus.

• **Enterprise Program**

The 2014-15 academic year marked the official launch of the Pavlis Honors College (PHC), the new academic ‘home’ for Michigan Tech’s signature and interdisciplinary Enterprise Program. Key accomplishments for 2014-15 included the creation of an innovative approach to honors education that measures student success by more than just GPA. This ‘Scholars and Leaders’ Program is open to ALL motivated students and specifically offers customizable pathways for Enterprise students whereby they can leverage their team-based experiences to further enhance their personal, professional, and early-career development. In parallel, the Enterprise Program enjoyed another successful year of external/industry support with more than 30 sponsors and nearly $500,000 in program support.
Benchmarking Data

FY16 Licenses Per $10 Million of Research
National Average = 1.39

FY16 Invention Disclosures Per $10 Million of Research
National Average = 4.45
Invention Disclosure & License Statistics

License/Option Agreements–Patents Filed and Patents Granted

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<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
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Proportion of Invention Disclosures Involving Faculty, Staff, Graduate Students, and Undergraduate Students

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<tr>
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<td>50%</td>
<td>60%</td>
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<td>80%</td>
<td>70%</td>
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<tr>
<td>Staff</td>
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Royalty Summary & Unit Activity

FY16 Proportion of Disclosures by Academic/Research Units

fy16 Royalty Disbursements by Academic/Research Units

Gross Royalty

Royalties Disbursed to Departments

Royalties Disbursed to Innovators
Patent Applications Filed in FY16

**Patent Title, Name, Filing Date**

Generating Electrospray from a Ferrofluid, Lyon King, 8/24/2015

BODIPY—Based Flourescent Probes for Sensing Protein Surface-Hydrophobicity, Ashuton Tiwari, Haiying Liu, Shilei Zhu, Nethaniah Dorh, 10/5/2015*


Tapered Polymer Waveguide, Christopher Middlebrook, Kevin Kruse, 11/13/2015

Vaccine Purification Methods, Ashish Saksule, Maria Gencogiu, Caryn Heldt, 11/11/2015*

PD-IR Core-Shell Nanostructure as Artificial Peroxidases, Xiaohu Xia, 12/11/2015*

RU Nanoframes with an FCC Structure and Enhanced Catalytic Properties, Xiaohu Xia, 3/7/2016*

Methods and Systems for Identifying a Particle Using Dielectrophoresis, Tayloria Adams, Kaela Leonard, Adrienne Minerick, 4/4/2016

Optimal Control of Wave Energy Converters, Ossama Abdelkhalik, Rush Robinette, Shangyah Zou, 4/14/2016*

Silicon Nanowire-Based Sensor Arrays, Paul Bergstrom, Thomas Daunais, 5/10/2016

* Denotes provisional patent applications

Patents Issued to Michigan Tech in FY16

**Patent Title, Patent Number, Issue Date**

Map-Aware Adaptive Automotive RADAR, 9,116,242, 8/25/2015

Compositions, Methods and Devices for Generating Nanotubes on a Surface, 9,243,023, 1/26/2016

Compositions, Methods and Devices for Generating Nanotubes on a Surface, 9,376,759, 6/28/2016

For a listing of all technologies available for licensing, go to techfinder.mtu.edu.
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