Technology Transfer and Economic Development

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S&T’s Center Focus/Expertise

• Technology Commercialization/Transfer
• Entrepreneurship – faculty/student
  – Lean Launch Pad/Business Model Canvas
  – Entrepreneurial Co-op and Internship Program
  – Technology Scoping and Venture Packaging
• Intellectual property
  – patents, copyrights, trade mark
• Financing – Debt, Equity
• Communications, Social Media & Marketing
• Contract Support - OSP
Results: Technology Transfer & Economic Development

**2017**
- **15** Patents Issued
- **31** Patent Applications Filed
- **44** Average Annual Disclosures

**Royalty Income (000s)**
- 2013: $220
- 2014: $368
- 2015: $483
- 2016: $468
- 2017: $520

<table>
<thead>
<tr>
<th>Licenses &amp; Options Signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017: 8</td>
</tr>
<tr>
<td>2016: 9</td>
</tr>
<tr>
<td>2015: 38</td>
</tr>
<tr>
<td>2014: 22</td>
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<tr>
<td>2013: 16</td>
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</tbody>
</table>
### TTO Comparable Schools

2016 last year available from AUTM (Based on 3 year 2014-2016 average)

<table>
<thead>
<tr>
<th>Metric</th>
<th>S&amp;T</th>
<th>S&amp;T Rank</th>
<th>Colorado School of Mines</th>
<th>Michigan Tech</th>
<th>New Jersey Tech</th>
<th>Stevens (DNR 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invention disclosures (3 year ave)</td>
<td>45</td>
<td>3</td>
<td>48</td>
<td>37</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td>Disclosure/million in research (3 year ave)</td>
<td>1.21</td>
<td>2</td>
<td>0.80</td>
<td>0.53</td>
<td>0.36</td>
<td>1.78</td>
</tr>
<tr>
<td>Gross license income (3 year ave)</td>
<td>$439,667.00</td>
<td>1</td>
<td>$106,106.00</td>
<td>$251,814.00</td>
<td>$101,548.00</td>
<td>$262,333.00</td>
</tr>
<tr>
<td>License income/million research (3 year ave)</td>
<td>$11,995.00</td>
<td>1</td>
<td>$1,786.00</td>
<td>$3,588.00</td>
<td>$881.00</td>
<td>$9,058.00</td>
</tr>
</tbody>
</table>
License Income
Received to date: $590,819

Global market for wound care is $4 Billion

FDA approved and launched in April 2017

22 US and Foreign patent applications
15 issued patents (12 US, 3 foreign)
7 pending (1 US, 6 foreign)

License to mo-sci for human use
License to RediHeal for Veterinary use

mo-sci direct market Mirragen™ Advanced Wound Matrix
Sublicense to Ultradent for dental care
Sublicense to Prosidyan for bone repair

Initial
7 Days
127 Days
6.6cm L x 7.5cm W x 2.5cm D
6.0cm x 6.75cm x 1.5cm
~50% decrease in volume
Resolved
Innovation and Entrepreneurship

- New Emerging Innovations
  - Underwater cellular communication
  - Detonation synthesis of nanomaterials
  - Detection of counterfeit computer chips
  - Advance manufacturing, processes and software
  - Catalytic Ink
  - Solid State NMR Spectroscopy/Imaging In Situ Measuring Devices

- Faculty startups formed
  - Smart Health Beacons LLC – cognitive health assessment and monitoring
  - Innocit LLC – power convertors for alternative energy sources
  - Froberg Aerospace LLC – micro-sat propulsion
  - Clear Signal Technologies – software for EMC

- Undergraduate Student Startup:
  - Victory Pieces LLC, next day delivery service business for local companies to compete with big box stores, launched in St. Louis early 2017
  - Engineered Terrain, autonomous commercial lawn mowing system
Don't Let Your Business Get Hacked

Speakers Include:
- [Name], [Title], [Company]
- [Name], [Title], [Company]
- [Name], [Title], [Company]
- [Name], [Title], [Company]

Hear from experts about the risk to your business.

Learn steps to safeguard your business.

Access resources and connect to professionals.

Programing and Training

Women's Entrepreneurship Seminar

Business 101

1-Page Business Plan
August 8
Develop your own 1-page business plan during this working session. Come prepared to work and brainstorm with each other.
Location: 900 Innovation Drive, Room 403, Rolla

1-Page Marketing Plan
August 15
Develop your own 1-page marketing plan during this working session. Come prepared to work and brainstorm with each other.
Location: 900 Innovation Drive, Room 403, Rolla

Money In, Money Out
August 22
Gain a better understanding of your cash flow, balance sheet, and other accounting areas. Come prepared to ask questions.
Location: 900 Innovation Drive, Room 403, Rolla

Business Resource Panel
August 29
Learn and ask questions about some of the many free and low-cost business resources available.
Location: Columbia College Auditorium, 550 Blues Lake Parkway, Rolla

Intellectual Property for Scientist and Engineers

National Center for Economic Gardening
SBTDC Results

**Statewide SBTDC & PTAC 2014-2016**

- $900M sales increase
- 23,927 jobs created or retained

**Nationwide 2015**

- 98,660 new jobs created
- A new job every 5 minutes

**Missouri S&T Service Area 2016**

- 369 training participants
- 2012-2016
- $7.1M loans & investments
- 310 jobs created
- 61 business starts

**Public House Brewing Co. - Rolla, St. James**

- Named SBA Person of the Year
- 4x greater than the national average sales

17.6% average SBDC client
1.8% national average

16.8% average SBDC client annual sales growth
Venture Lab - Business Incubator

Services Provided:
• Professional work space
• Use of building conference room
• Mentoring and business assistance
• Access to venture financing
• Rapid Prototyping, 3D printing
Incubator Start Ups: Dual Cases, LLC, Huffle Health Intercept Research, Off Kilter Studios, O’Rigional Solutions, SoloBuy, VirtuSchools, Zimmerman Technology, Victory Pieces, ProtoQ,

EICP Participants: Bhanu Baddipadiga, James Brizendine, George Holmes, Ganthum Hullikunte, John Schnoberle