Communicating R&D impact resulting from Technology Transfer

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About TechLink

• The DoD’s nationally focused partnership intermediary for technology transfer since 1999

• PIA between OSD, the Air Force, and Montana State University-Funded in DoD budget since 2004

• Over 1,425 technology-transfer agreements or projects for DoD

• 12 National Economic Impact Studies (EIS)
Communicating R&D Impact

• Prove the value of licensing intellectual property
  ✓ Conduct recurring economic impact research
  ✓ Establish and follow the right methodology
  ✓ Apply well-established Nobel Prize-winning economic research IMPLAN model for studying changes in economy

• Tell the story
  ✓ Publish and widely promote results
  ✓ Highlight success by creating success stories and videos
<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies surveyed</td>
<td>915</td>
</tr>
<tr>
<td>License agreements</td>
<td>1,137</td>
</tr>
<tr>
<td>Response rate</td>
<td>95%</td>
</tr>
<tr>
<td>Total sales</td>
<td>$27 billion</td>
</tr>
<tr>
<td>New products &amp; services</td>
<td></td>
</tr>
<tr>
<td>Total economic output</td>
<td>$58.2 billion</td>
</tr>
<tr>
<td>New jobs created</td>
<td>214,791</td>
</tr>
<tr>
<td>Average salary of jobs created</td>
<td>$74,762</td>
</tr>
</tbody>
</table>
Progress and Growth

DoD Total
Economic Impacts from License Agreements

Fig. 1. Growth in Economic Impacts from DoD License Agreements
Gain Agency Advocacy

• Technology **licensing** plays a major role in **transitioning DoD technology to the U.S. Warfighter**
  ✓ $4.5 billion in sales of products based on DoD lab inventions
  ✓ **Success stories** of innovations directly impacting requirements

• Provides researchers with **transition** pathways

• **Connects DoD research** with the National Security Innovation Base, including traditional and non-traditional defense partners
Prove Industrial Base Connections

Fig. 4. Revised Sales Results by DoD Technology Sector (excluding Synagis)
Open Doors to Industry

• Industry partnerships
  ✔ Create marketing outreach strategies
  ✔ Promote success stories
  ✔ Lower risk perceptions
Three Main Points

• Prove the value of R&D via the power of Technology Transfer to meet strategic goals
• Promote the impact to wide-ranging stakeholder base, in and out of Government
• Demonstrate how licensing provides innovative pathways for development to fielding
Questions

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Backup Slides
# Sales by Category

Table 2. Sales from DoD license agreements, by sales category, 2000-2017

<table>
<thead>
<tr>
<th>Sales Category</th>
<th>Total Sales</th>
<th>Total Sales (excluding Synagis)</th>
<th>Percent of Total</th>
<th>Percent of Total (excluding Synagis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Product or Service Sales</td>
<td>$20.55 Billion</td>
<td>--</td>
<td>76%</td>
<td>--</td>
</tr>
<tr>
<td>Commercial Product or Service Sales (excluding Synagis)</td>
<td>--</td>
<td>$4.45 Billion</td>
<td>17%</td>
<td>41%</td>
</tr>
<tr>
<td>U.S. Military Product or Service Sales</td>
<td>$4.55 Billion</td>
<td>$4.55 Billion</td>
<td>--</td>
<td>42%</td>
</tr>
<tr>
<td>R&amp;D Contracts</td>
<td>$1.06 Billion</td>
<td>$1.06 Billion</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Royalties or Licensee Sales</td>
<td>$806 Million</td>
<td>$806 Million</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Sales by Spin-out Companies</td>
<td>$17 Million</td>
<td>$17 Million</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>Total Combined Sales</strong></td>
<td><strong>$26.98 Billion</strong></td>
<td><strong>$10.89 Billion</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: TechLink Survey, 2018  
*Note: Totals may not tally due to rounding*
TechLink’s Methodologies

- A team of researchers attempt to contact every company
- Official letter of authorization from the government agency
- Extensive experience using databases to track personnel
- Pledge confidentiality and only report aggregate findings
- Use IMPLAN to estimate economic outputs
About IMPLAN

• Well-established model for studying changes in economy
  ✓ Based on Nobel Prize-winning economic research

• Widely used by governments, academics, and practitioners to study economic impacts

• Enables highly detailed and nuanced analysis
  ✓ Distinguishes between 536 industry sectors
  ✓ Each sector has distinct multipliers, based on industry patterns
  ✓ IMPLAN updated annually with U.S. government data
IMPLAN Outputs

• Economic impacts derived from IMPLAN modeling:
  ✓ Total economic output
  ✓ Value added (new wealth added to economy)
  ✓ Employment
  ✓ Labor income (including average income per job created)
  ✓ Tax revenues (federal and state)
Key Terms Defined

• Economic Output: The total value of production, including intermediate goods and services

• Value Added: The contribution to total GDP, which equals output minus the intermediate input costs

• Employment: Expressed in "job years"—equal to one job in one year

• Labor Income: Total compensation of employees (wages and benefits) and proprietors (profits)
Key Terms Defined, cont.

- **Direct Impact**
  
  *Initial economic activity* (e.g., SBIR R&D expenditures, sales of resulting technology products)

- **Indirect Impact**
  
  *Inter-industry purchases* of machinery, components, and supplies needed to manufacture products

- **Induced Impact**
  
  *Payroll spending* by workers, spending their earnings on goods and services in the economy