Research Funding and Commercialization at UNC Chapel Hill: New Metrics

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Vice Chancellor for Research
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**IMPLICATIONS AND PRIORITIES**

**Research & Development:**
*North Carolina excels at academic research & development*, but the total level of the state’s research & development, particularly that performed by business, is insufficient to fuel and sustain strong economic growth.

**Commercialization:**
North Carolina organizations, particularly its academic institutions, generate significant intellectual property, but the level of the state’s commercialization activities must be stronger to realize the full economic and social benefits of that intellectual property.

Character of UNC Chapel Hill Research

Organization of Research Efforts: UNC Chapel Hill
FY11 R&D $869,174

- Biological Sciences: 24%
- Medical Sciences: 37%
- Social & Behavioral Sciences: 13%
- Other Life Sciences: 12%
- Other Sciences: 4%
- All non-S&E fields: 3%
- Engineering: 0%
- Math, Computer, & Physical Sciences: 7%
- Agricultural Sciences: 0%
Research Portfolios Have Different Commercialization Opportunities

- Medical Sciences: 37%
- Biological Sciences: 24%
- Other Life Sciences: 12%
- Social & Behavioral Sciences: 13%
- Other Sciences: 4%
- Agricultural Sciences: 7%
- Math, Computer & Physical Sciences: 7%
- Engineering: 0%
- All non-S&E fields: 3%

Legend:
- Traditionally Patentable
- Mixed
- Not Traditionally Patentable
Research at UNC Chapel Hill Has Broad Impacts

A few examples:
- Traumatic brain injury
- HIV prevention
- Storm surge modeling
- Bio (disease) surveillance
- Solar energy
- Obesity
Research Portfolios Have Different Commercialization Opportunities

R&D disciplines consistently producing **traditionally patentable IP** (FY11, $millions)

<table>
<thead>
<tr>
<th></th>
<th>UNC-CH</th>
<th>NCSU</th>
<th>Duke</th>
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<tbody>
<tr>
<td>Traditionally Patentable (FY11, $millions)</td>
<td>$62.427</td>
<td>$247.538</td>
<td>$92.068</td>
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<tr>
<td>Engineering</td>
<td>2.545</td>
<td>113.678</td>
<td>56.074</td>
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<tr>
<td>Agricultural Science</td>
<td>0</td>
<td>86.820</td>
<td>0</td>
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<tr>
<td>Physical Science, Math, Computer Science</td>
<td>59.882</td>
<td>47.040</td>
<td>35.994</td>
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Research Portfolios Have Different Commercialization Opportunities

R&D disciplines that are **mixed: they can produce patentable IP**, but also offer other valuable impacts (FY11, $millions)

<table>
<thead>
<tr>
<th>Discipline</th>
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<tr>
<td>Mixed</td>
<td>$561.983</td>
<td>$99.363</td>
<td>$862.889</td>
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<tr>
<td>Medical Science</td>
<td>318.310</td>
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<td>594.380</td>
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<tr>
<td>Biological Science</td>
<td>210.864</td>
<td>80.767</td>
<td>238.561</td>
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<tr>
<td>Other Science</td>
<td>32.809</td>
<td>18.596</td>
<td>29.948</td>
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Research Portfolios Have Different Commercialization Opportunities

R&D disciplines that can rarely produce patentable IP (FY11, $millions)

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<tr>
<td>Not Traditionally Patentable</td>
<td>$244.764</td>
<td>$30.180</td>
<td>$76.250</td>
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<tr>
<td>Social and Behavioral Science</td>
<td>116.317</td>
<td>13.147</td>
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<tr>
<td>Other Life Science</td>
<td>105.772</td>
<td>13.325</td>
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<tr>
<td>Non S&amp;E Fields</td>
<td>22.675</td>
<td>3.708</td>
<td>3.966</td>
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Research Portfolios Have Different Commercialization Opportunities

Differences in Portfolio Composition

UNC-Chapel Hill

NC State

Duke

Traditionally Patentable

Mixed

Not Traditionally Patentable

7%

9%

7%

26%

65%

65%

10%

83%
Metrics Reflecting Research Portfolio Mix

Per $100M in *traditionally patentable and mixed* R&D (FY11)

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<tr>
<td>Invention Disclosures</td>
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<td>26</td>
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<tr>
<td>Total US Patents Filed</td>
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<td>28</td>
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<td>US Patents Issued</td>
<td>5</td>
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Metrics Reflecting Research Portfolio Mix

Per $100M in *traditionally patentable R&D* (FY11)

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<tr>
<td>Invention Disclosures</td>
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<td>Total US Patents Filed</td>
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<tr>
<td>US Patents Issued</td>
<td>53</td>
<td>21</td>
<td>56</td>
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Conclusion

• External funding: $2.3B of research funding to Triangle universities

• Understanding the differences and complements among these institutions will enhance capacity to intensify commercialization opportunities and performance across the region.

• UNC Chapel Hill comparable to other Triangle universities when account is taken of its unique research portfolio

• UNC Chapel Hill’s broad-focused research portfolio is providing unique benefits to the state, region, and global marketplace.