Discovery Learning Research

February 22, 2011 • Richard Buckius, Vice President for Research
• Trends
  • Purdue research
  • Partnerships
  • National trends

• NSF’s Broader Impacts Criterion
  • Components
  • Examples

• DLRC Connections
Award Trends

Purdue System-Wide Awards

FY00
FY01
FY02
FY03
FY04
FY05
FY06
FY07
FY08
FY09
FY10

Millions

$0
$50
$100
$150
$200
$250
$300
$350
$400
$450

Purdue University
Total Research Support Expenditures

EXPENDITURE TRENDS

FY00 | FY01 | FY02 | FY03 | FY04 | FY05 | FY06 | FY07 | FY08 | FY09 | FY10

Millions

$0 | $100 | $200 | $300 | $400 | $500 | $600 | $700 | $800 | $900 | $1000

PURDUE UNIVERSITY
AWARDS BY AGENCY

FY09

- National Science Foundation: 24%
- Dept of Health & Human Services (NIH): 15%
- Industrials and Foundations: 13%
- Other Federal <$10M & Foreign Govts: 11%
- Dept of Defense: 9%
- Dept of Energy: 8%
- State/Local Govts: 7%
- Dept of Ag: 4%
- PRF/PU: 3%
- Other: 10%

FY10

- National Science Foundation: 25%
- Dept of Health & Human Services (NIH): 18%
- Industrials and Foundations: 13%
- Other Federal <$10M &Foreign Govts: 11%
- Dept of Defense: 8%
- Dept of Energy: 12%
- State/Local Govts: 6%
- Dept of Ag: 5%
- PRF/PU: 2%
- Other: 10%
FY10 AWARDS - $418M
West Lafayette Campus

Note: Areas of pie charts are proportional to award amounts.
FY10 University Partners
PARTNERSHIPS

FY10 Non-University Partners
• There has been a significant growth in team publications.
• Also, 99.4% of the 171 subfields have seen increased teamwork.
- The size of those teams has markedly increased.
“… Addressing these challenges [economic growth and job creation, health care, clean energy future, global climate change, ecosystem management, national security] will require strengthening …

… science, technology, engineering and mathematics (STEM) education and advanced learning technologies at every level, from early childhood to lifelong learning, and for all segment of societies.”
• FY12 Agency requests

  • Department of Education - 9.7% increase over FY10

    • ARPA – ED seeks to correct what an Administration official calls the country’s massive “underinvestment” in educational technologies that could improve student learning.

  • Department of Energy, Office of Science - 9.1% increase

    • Workforce Development for Teachers and Scientists program seeks a 72 percent increase to $35.6 million.
• FY12 Agency requests
  • NSF - 13.0% increase
    • Widening Implementation and Demonstration of Evidence-based Reforms (WIDER) – promote the widespread adoption of improved undergraduate instructional practices in STEM courses.
    • Teacher Learning for the Future (TLF) – improve the training of pre-service, in-service, and future generations of teachers.
    • Transforming Broadening Participation through STEM (TBPS) – forge partnerships among scientific research centers and entities with institutions committed to broadening participation.
  • Even though the FY12 request was “dead on arrival,” this is an important statement about future directions.
• Broader impacts
  • Promoting teaching, training, and learning
  • Participation of under-represented groups
  • Enhancing infrastructure for research and education
  • Dissemination to enhance scientific and technological understanding
  • Benefits to society
• Examples
  • Establish special mentoring programs for high school students, undergraduates, graduate students, and technicians conducting research
  • Establish research and education collaborations with students and faculty from non-Ph.D.-granting institutions and those serving underrepresented groups.
  • Maintain, operate and modernize shared research and education infrastructure, including facilities and science and technology centers and engineering research centers.
  • Partner with museums, nature centers, science centers, and similar institutions to develop exhibits in science, math, and engineering.
  • Partner with academic scientists, staff at federal agencies and with the private sector on both technological and scientific projects to integrate research into broader programs and activities of national interest.
DLRC Collaborative Awards

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Awards</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>FY08</td>
<td>6 Awards</td>
<td>$4.3M</td>
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<tr>
<td>FY09</td>
<td>16 Awards</td>
<td>$8.6M</td>
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<tr>
<td>FY10</td>
<td>24 Awards</td>
<td>$23.0M</td>
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Questions?