Research, Technology Transfer and Entrepreneurship: Collaborative Efforts to Promote Technology-based Economic Development in the Bluegrass

Taunya Phillips Walker
Assistant Vice President
Commercialization & Economic Development

Bluegrass Business Development Partnership
Outline

State Initiatives

The University of Kentucky

The Bluegrass Business Development Partnership

Impact
State initiatives have spurred high-tech company growth

<table>
<thead>
<tr>
<th>Initiative</th>
<th>State Invested*</th>
<th>Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>KY EPSCoR</td>
<td>$25,249,541</td>
<td>$927,670,000</td>
</tr>
<tr>
<td>KY Science &amp; Engineering Fund (KSEF)</td>
<td>$16,404,708</td>
<td>$211,127,000</td>
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<tr>
<td>KY Commercialization Fund (KCF)</td>
<td>$5,848,405</td>
<td>$13,750,000</td>
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<tr>
<td>KY Enterprise Fund (KEF)</td>
<td>$31,865,039</td>
<td>$3,090,000</td>
</tr>
<tr>
<td>Innovation Network (ICCs)</td>
<td>$15,968,402</td>
<td></td>
</tr>
<tr>
<td>KY New Energy Ventures (KNEV)</td>
<td>$3,190,000</td>
<td>$16,484,000</td>
</tr>
<tr>
<td>Total</td>
<td>$98,762,095</td>
<td>$1,714,441,000</td>
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</tbody>
</table>

*Program inception through 2011

Source: www.kyepscor.org

• KY EPSCoR
• KSTC
• State government
• KY’s state colleges and universities
• Private sector

1999 Kentucky Science & Technology Strategy

2000 Kentucky Innovation Act (KIA)
The SBIR-STTR Matching Program has become the most well-known of the KIA initiatives.

Up to $150K for Phase 1 SBIR-STTR grants
Up to $500K for Phase 2 SBIR-STTR grants
The SBIR-STTR Matching Program has become the most well-known of the KIA initiatives.

Up to $150K for Phase 1 SBIR-STTR grants
Up to $500K for Phase 2 SBIR-STTR grants

Through 2012

• $41,424,685 in awards
• 172 grants
• 20 companies relocated
The University of Kentucky has been an economic engine for high-tech company growth in the Bluegrass

- University Research
- Technology Transfer
- Campus Incubator
- Research Campus
- Business Development
The University of Kentucky has been an economic engine for high-tech company growth in the Bluegrass

- University Research
- Technology Transfer
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University of Kentucky Research 2013

University of Kentucky
Research Funding Sources
FY 13 Grant & Contract Awards $265.9 million

Federal
$137.4 million

State
$62.9 million

Other
$49.5 million includes foundations and non-profits

Industry
$16.1 million
University of Kentucky Research 2013

University of Kentucky
Research Funding Sources
FY 13 Grant & Contract Awards $265.9 million

- Federal $137.4 million
- State $62.9 million
- Other $49.5 million includes foundations and non-profits
- Industry $16.1 million

University of Kentucky
Federal Grant & Contract Awards
FY 13 $137.4 million

- National Institutes of Health $73 million
- DHHS non-NIH $16.9 million
- National Science Foundation $14.1 million
- U.S. Dept. of Agriculture $14 million
- Dept. of Energy $4.3 million
- Dept. of Education $3.8 million
- NASA $2.4 million
- Other $2.3 million
- Dept. of State $1.9 million
- Small Business Admin. $1.4 million
- Dept. of Defense $1.3 million
Research Focus Areas

- Agricultural biotech
- Biomedical engineering
- Diagnostics and therapeutics
- Drug design, development, and delivery
- Plant-made pharmaceuticals
- Biofuels
- Energy generation and storage
- Environmental sustainability
- Renewable energy
- Visualization and imaging
- Equine Health
Key Research Centers

- Markey Cancer Center
  - *NCI-designated*
- Sanders-Brown Center on Aging
  - *Federally funded Alzheimer’s research*
- Center for Clinical & Translational Science
  - *Federally funded*
- Center for Applied Energy Research
  - *Energy Research*
- Kentucky-Argonne Center
  - *Battery Manufacturing Research & Development*
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2013 Technology Transfer Stats

- $4.8M Licensing Revenue
- 58 Disclosures
- 30 Patents Issued
- 9 New License Agreements (3 startups)
- 313 Active Patents
- 17 patent applications
The University of Kentucky has been an economic engine for high-tech company growth in the Bluegrass.
Advanced Science & Technology Commercialization Center

- Built in 1994
- 80,000 s.f.
- 18 Startups
- 13 Faculty labs
- 42 graduates since 1994

- Access to shared resources
- Houses the Tech Transfer Office
The University of Kentucky has been an economic engine for high-tech company growth in the Bluegrass
Coldstream Research Campus

- 735 acres
- 10 minutes from UK
- 62 organizations
- 20 buildings
- 2,000+ employees
- $115 million annual payroll
- $860,000 in property taxes
- Ideal location at I-75/I-64
The University of Kentucky has been an economic engine for high-tech company growth in the Bluegrass Region

- University Research
- Technology Transfer
- Campus Incubator
- Research Campus
- Business Development
The Bluegrass Business Development Partnership links entrepreneurs and businesses to resources

- Business Planning
- Connections to resources
- Connections to funding
- Entrepreneurial culture
  - Lexington Venture Club
  - Who Got The Money?
  - 5 Across
  - Geeks Night Out
The Bluegrass Business Development Partnership links entrepreneurs and businesses to resources

Typical BBDP-Client Meeting Topics

- Registering as a KY company
- Locating lab or office space
- Tax incentives
- Grant programs
- Connections to UK services and/or researchers
- Connections to angel investors and venture capital
- Local entrepreneurial activities
The Bluegrass Business Development Partnership links entrepreneurs and businesses to resources

2013 Excellence in Economic Development Award for rent subsidy incentive Program

2010 EDA Innovation Award for collaborative efforts to promote economic development in the region
Collaborative efforts have had a positive impact on startup companies and the Bluegrass Region

- Successful Startups
- Economic Indicators
Brockman Hastings, LLC

Implantable optical intraocular pressure sensors for improved glaucoma treatment that reduce vision loss for glaucoma sufferers by creating a simple, accurate and clinically acceptable sensor for monitoring intraocular pressure.

$435,186+ in non-diluted funds

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>2010</td>
<td>EPSCoR funds to file patent application</td>
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<tr>
<td>2010</td>
<td>$4000 KY SBIR-STTR Phase 0 grant</td>
</tr>
<tr>
<td>2011</td>
<td>$75,000 KY Commercialization Fund Award</td>
</tr>
<tr>
<td>2012</td>
<td>$206,786 NIH SBIR Phase 1 grant</td>
</tr>
<tr>
<td>2012</td>
<td>$150,000 KY SBIR-STTR Match for Phase 1</td>
</tr>
<tr>
<td>2012</td>
<td>Leased space in ASTeCC</td>
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</table>
3D scanners that use proprietary optics and algorithms to make real-time 3-D measurements faster, cheaper and more accessible. Applications in dental imaging, medical, security, and industrial.

- 2007 $48,746 KY Commercialization Fund
- 2010 Leased space in ASTeCC
- 2010 Licensed technology from the UK
- 2011 Closed Series A funding round.
  - Led by Mitsubishi Venture Capital, with the Bluegrass Angels, Commonwealth Seed Capital, and the KSTC
- 2011 Hired two graduate students
- 2012 Closed a funding round through a convertible note
  - (same investors)
- 2012 Raised first tranche of Series B financing,
  - Led by Mitsubishi Venture Capital, with the Bluegrass Angels, the BGA Fund II, and Commonwealth Seed Capital
Precision tooling for the micro-manufacturing field, focused on precision-molded components for the telecommunications, biotechnology, aerospace, energy and defense industries

$487,150 in non-diluted funds

- $300,000 grant from NSF and the Department of Education
- 2000-2007 developed a new manufacturing system
- 2007-2012 developed and commercialized under AMT Nano
- 2011 $3,150 Phase 0 SBIR
- 2011 $90,000 Phase 1 SBIR
- 2012 Became Hummingbird Nano
- 2012 $90,000 Phase 1 NIST SBIR matching grant
- 2012 $4,000 Phase 00 SBIR
- 2012 Leased space at Coldstream Research Center
Collaborative efforts have had a positive impact on startup companies and the Bluegrass Region

- Successful Startups
- Economic Indicators
Collaborative efforts have had a positive impact on the Bluegrass Region economy.

![Funding ($M) vs. Years](image1)

![Revenues Produced ($M) vs. Years](image2)
Collaborative efforts have had a positive impact on the Bluegrass Region economy

Average salary in 2012 - $68,067
QUESTIONS?

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