



# **University Research Parks: 21<sup>st</sup> Century Directions**

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# Research Parks as Drivers of Economic Development



Universities, federal labs, non-profit R&D institutions

- Research partners
- Flow of talent
- Exchange of ideas
- Access to labs and specialized equipment

Private Companies

## Research Parks

Communities generating innovation, technology and knowledge

Growth of existing companies

Creation of new companies

Commercialization of Intellectual Property

Generation of Jobs and Income

# Battelle/AURP Partnership



- **Project Objectives**

- Provide a picture of the university research park industry as it exists today
- Identify trends in research park development
- Measure the economic impact of university research parks
- Describe new emerging research park model

- **Project Team**

- Battelle Technology Partnership Practice
- AURP
- Insightrix

# Methodology



- **Surveyed 174 university research parks in Canada and the U.S.**
  - 77% (134) parks responded
  - 81% of respondents were in the U.S., 19% in Canada
- **Conducted interviews with research park managers to identify trends**
- **Collected case study information on selected parks**
- **Analyzed data, estimated economic impact and prepared report**

# The University Research Park Industry



Size Metric	Total for All Parks	Average	Median
Total acreage	47,274	358	114
Acreage currently developed	21,961	179	30
Total number of buildings open	1,833	16	6
Total square footage of open buildings	123.9 million	1.09 million	314,410
Estimated percentage of space currently occupied		86%	95%
Projected acreage at full buildout	35,354	283	114
Estimated total square feet at full buildout	274.8 million	2.43 million	1.10 million

Room to expand: Only 62% of the acres and 45% of the square footage projected to be developed at full build out is currently developed

# Profile of the Typical Research Park



Typical Research Park	
Size	<ul style="list-style-type: none"> <li>• 114 acres</li> <li>• 6 buildings</li> <li>• 314,400 sq. ft. of space, 95% occupied</li> <li>• Only 30% of total estimated sq. ft at build out currently developed</li> <li>• 30,000 sq. ft. of incubator space</li> </ul>
Location	<ul style="list-style-type: none"> <li>• Suburban community</li> <li>• Less than 500,000 population</li> </ul>
Governance	<ul style="list-style-type: none"> <li>• Operated by the university or university-affiliated non-profit</li> </ul>
Tenants	<ul style="list-style-type: none"> <li>• 72% are for-profit companies</li> <li>• 14% are university facilities</li> <li>• 5 % are governmental agencies</li> </ul>
Employment	<ul style="list-style-type: none"> <li>• Typical park employ 750</li> <li>• Major industry sectors: IT, drugs and pharmaceuticals, and scientific and engineering service providers</li> </ul>
Finances	<ul style="list-style-type: none"> <li>• Less than \$1 million per year operating budget</li> <li>• Revenues primarily from park operations but funds also come from universities and state, local and federal government</li> <li>• Limited or no profitability; more than 75% of the parks have no retained earnings or retained earnings of less than 10% of the park's operating budget</li> </ul>
Services	<ul style="list-style-type: none"> <li>• Provide a range of business and commercialization assistance services, including                             <ul style="list-style-type: none"> <li>○ Help accessing state and other public programs</li> <li>○ Linking to or providing sources of capital</li> <li>○ Business planning</li> <li>○ Marketing and sales strategy advice</li> <li>○ Technology and market assessment</li> </ul> </li> </ul>

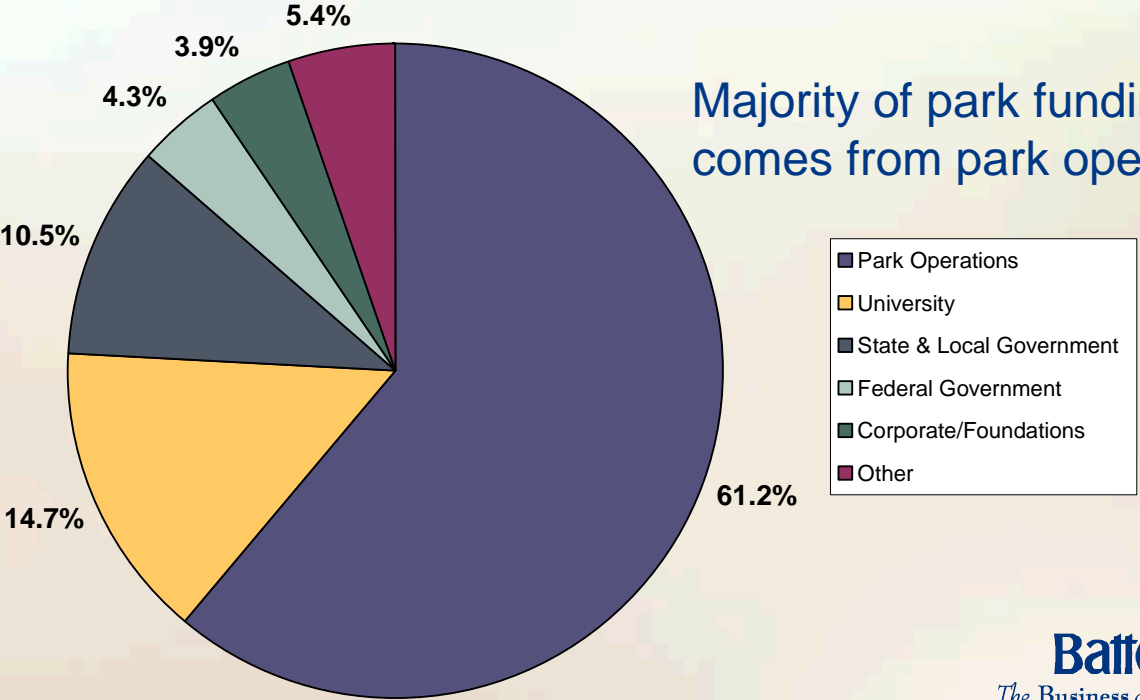


# Research Park Funding



Current Annual Operating Budget	Number of Parks	Percentage of Total
Less than \$500,000	49	40%
\$500,000 to \$999,999	20	16%
\$1,000,000 to \$2,999,999	26	21%
\$3,000,000 to \$4,999,999	10	9%
\$5,000,000 to \$9,999,999	9	7%
\$10,000,000 to \$14,999,999	4	3%
\$15,000,000 or more	4	4%

More than half of all research parks have an annual operating budget of less than \$1 million

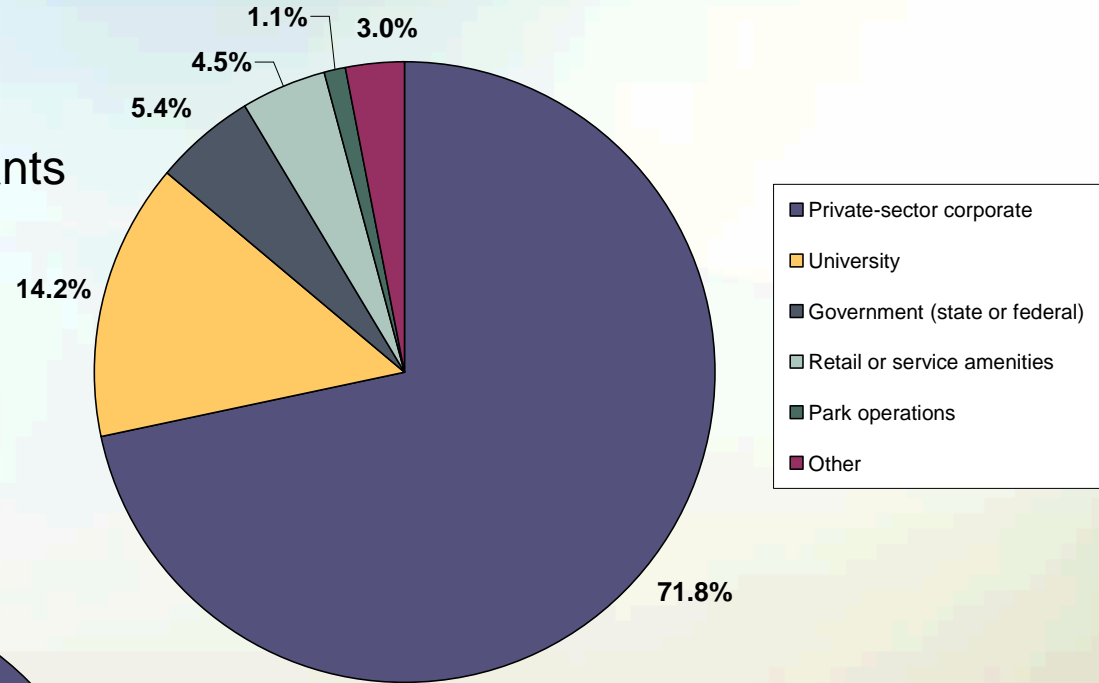


Majority of park funding comes from park operations

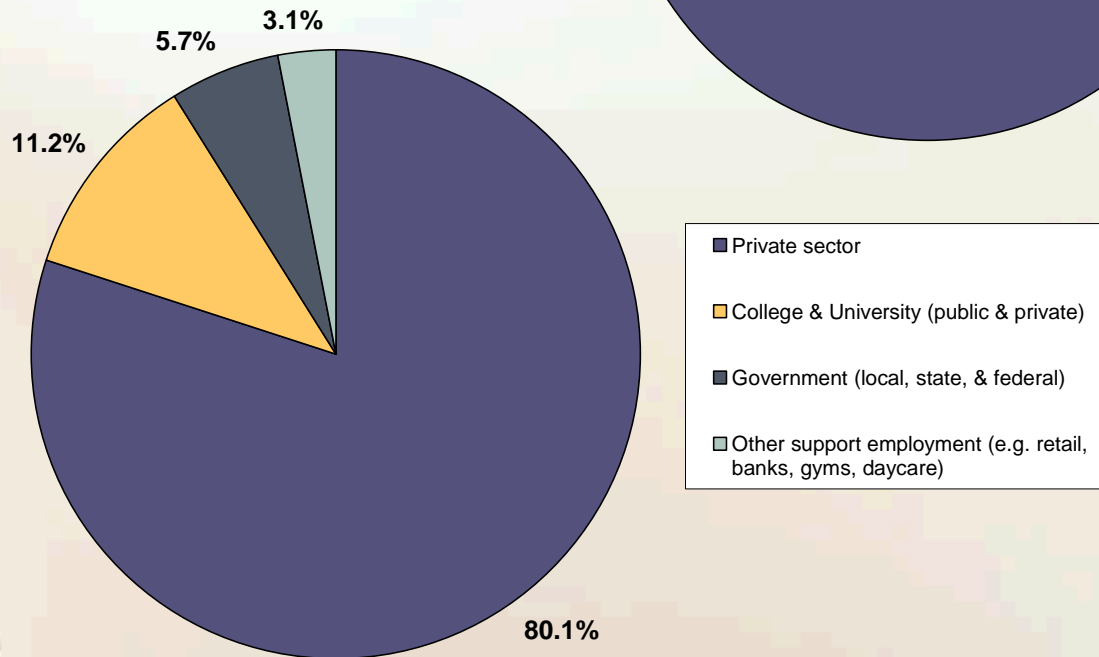
# 72% of Research Park Tenants and 80% of Employees are in the Private Sector



Tenants



Employment





# University Research Parks Employ Workers Across a Variety of Tech-based Industrial Sectors



- IT, drugs and pharmaceuticals, and scientific and engineering services account for 45% of all university research park jobs
- Almost half of the workers in university research parks work in companies that engage primarily in R&D

Industry	Percent of total core employment	R&D employment as percent of core
<b>Total core park employment</b>	<b>100.0%</b>	<b>47%</b>
Software	13.5%	61%
Computers & Related Hardware	11.0%	86%
Drugs/Pharmaceuticals/Diagnostics	10.6%	90%
Scientific & Engineering Services	9.7%	78%

# Key Findings



- Research parks have grown at a steady pace during the past three decades
- The majority of parks continue to be developed in suburban areas, although activity is increasing in urban areas
- Research parks are considered an effective tool to spur homegrown business retention and expansion
- Research parks are placing greater emphasis on incubation and entrepreneurship
- Research parks are focusing on targeted industry clusters
- Research parks are being viewed as commitment to economic development

# Most Research Parks Offer a Range of Business and Commercialization Services



Service Offerings	Number of Parks Providing the Service	Percentage of Total Parks
Help access state and other public programs	94	81%
Link to or provide sources of capital	87	76%
Business planning	77	68%
Marketing and sales strategy advice	70	64%
Technology and market assessments	69	62%
Assist with human resource issues	48	45%
Provide proof-of-concept funding	40	38%

Three-quarters of the parks reported helping entrepreneurs and start-up companies access public and private sources of financing

# Tenants Locate in Research Parks to Access Talent



Access to skilled workforce including students

Quality of buildings

Prestige of being located in research park

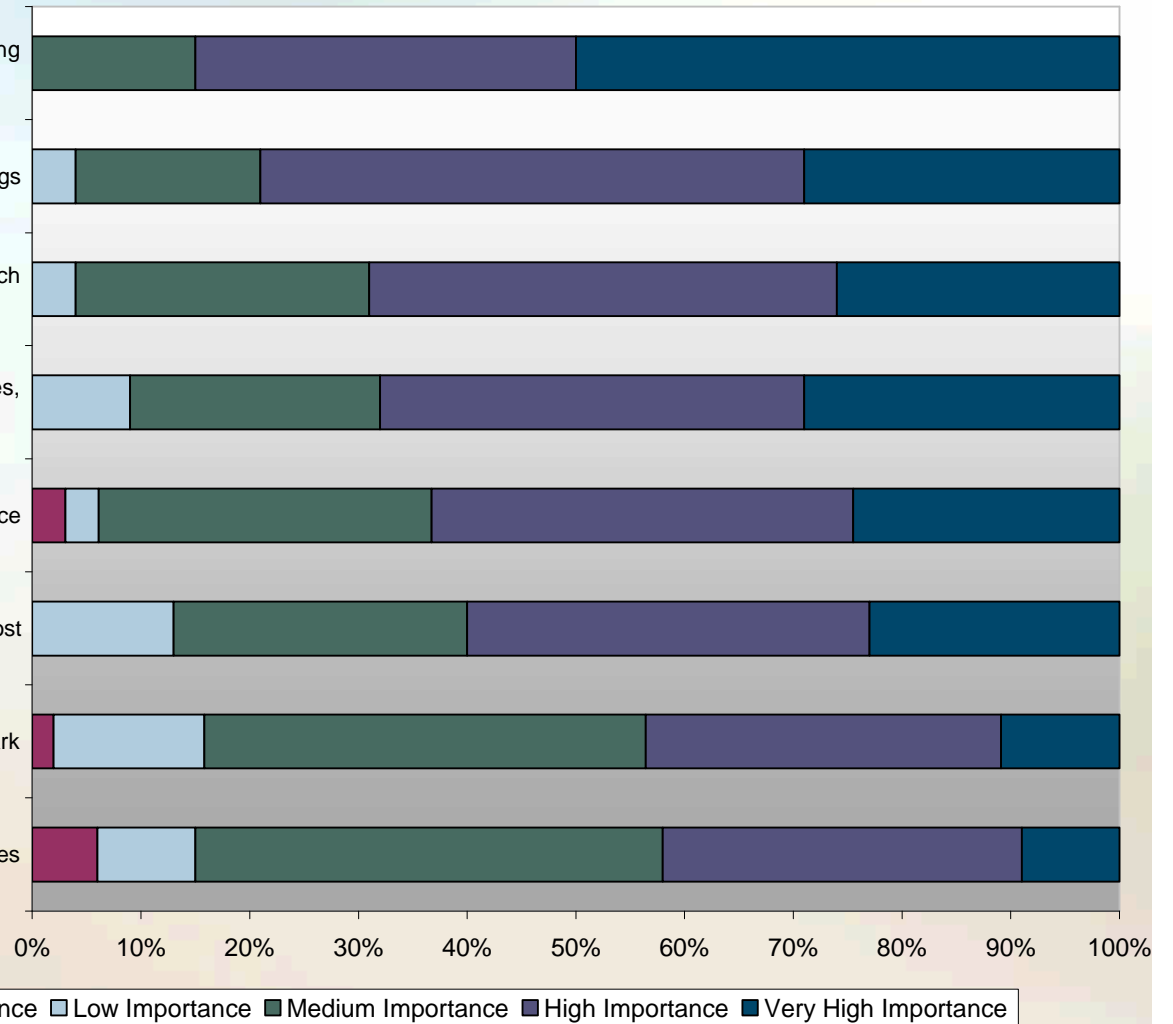
Access to university faculty, facilities, and equipment

Flexible leasing space

Cost

Interaction with other firms in the park

Business-related support services



# Research Parks Use Many University-Industry Partnership Mechanisms



Partnership-developer staff charged with "relationship building" between industry and departments

University core user facilities (e.g., analytical, instrumentation) open to industry

Internship or co-op programs, mechanisms for student and postdoc hiring

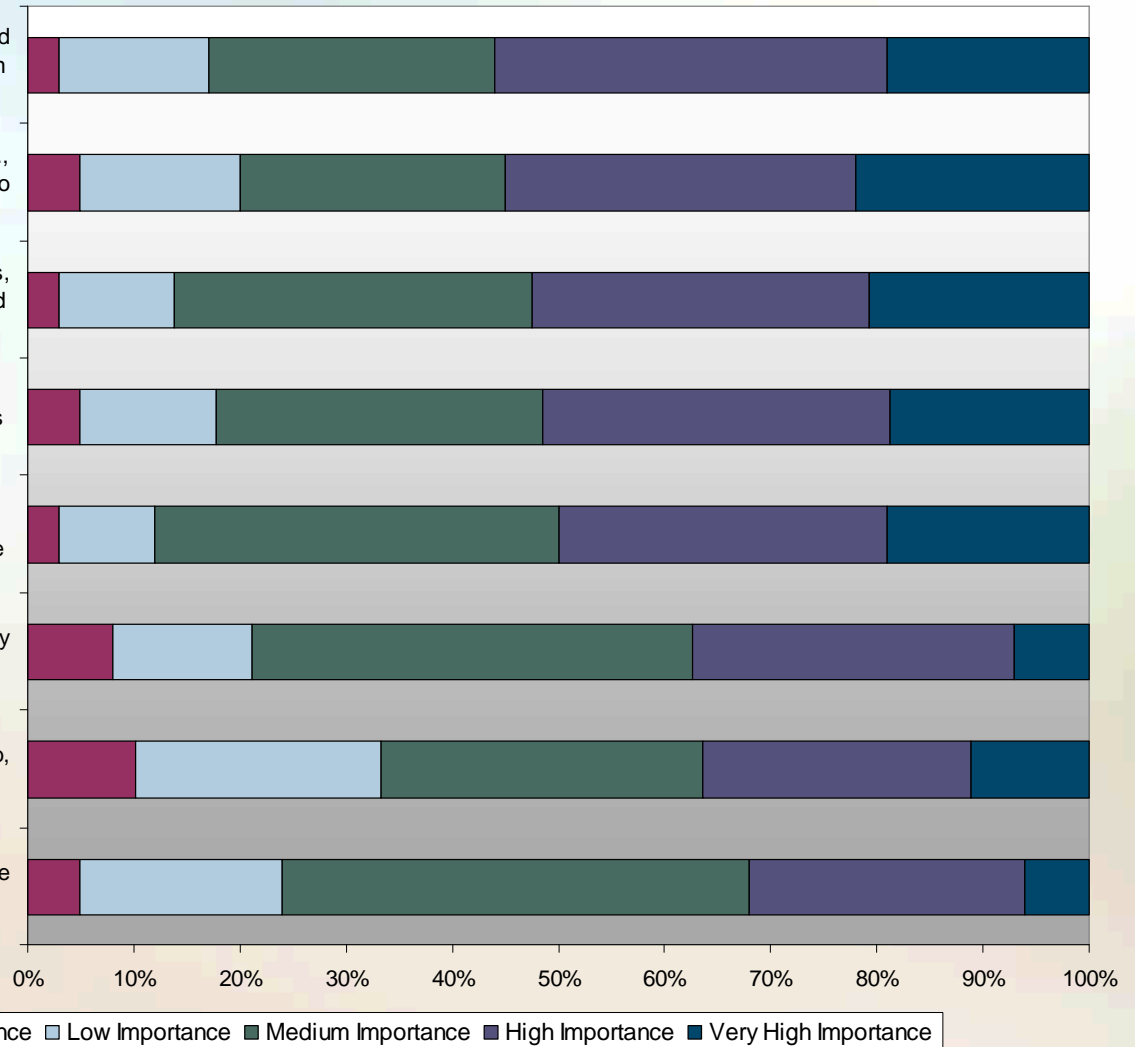
University research laboratories

University tech transfer/commercialization office

Workforce advanced-technology training facilities

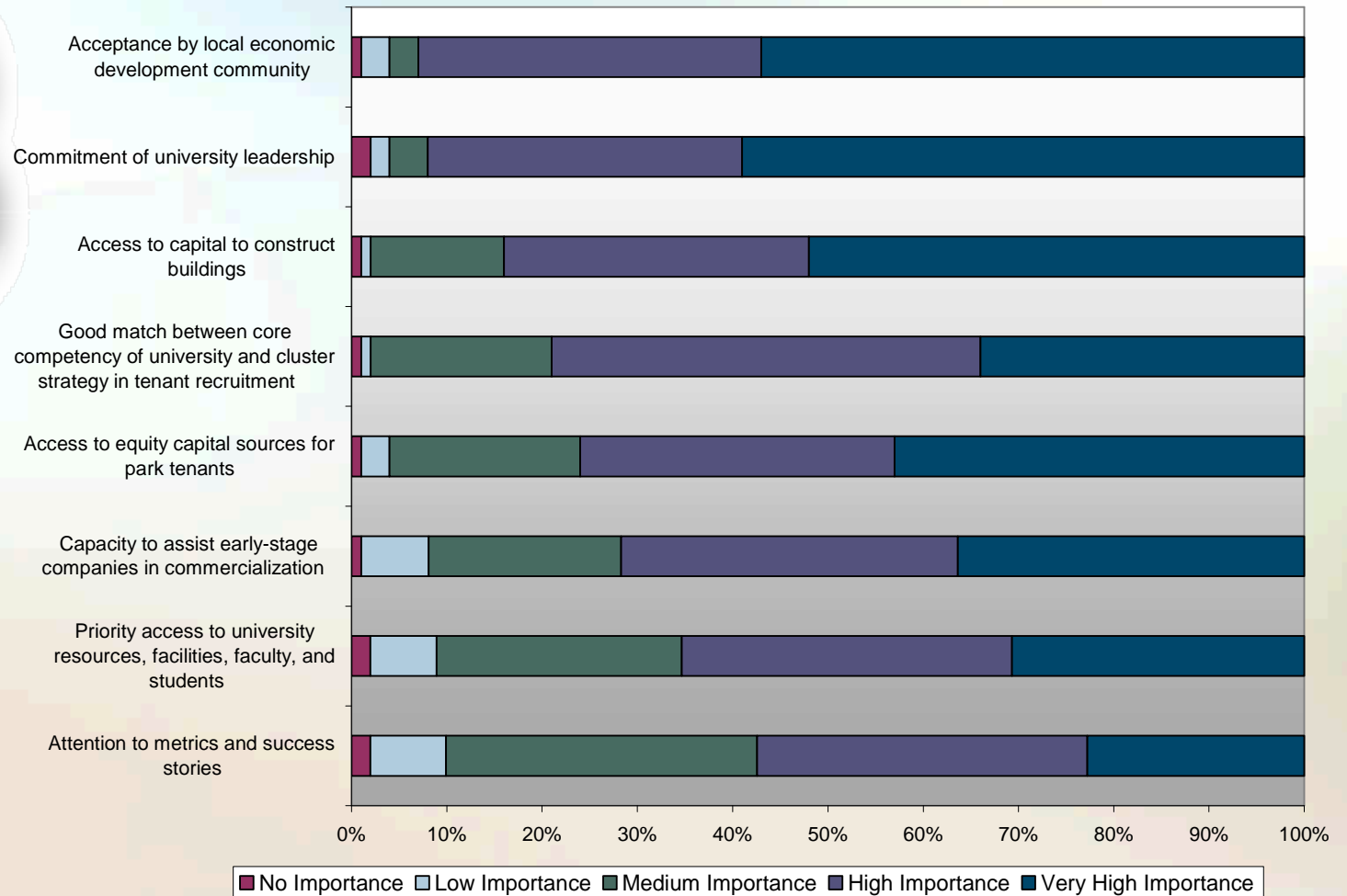
Pilot plants or demonstration lab, open to industry

University educational course offerings



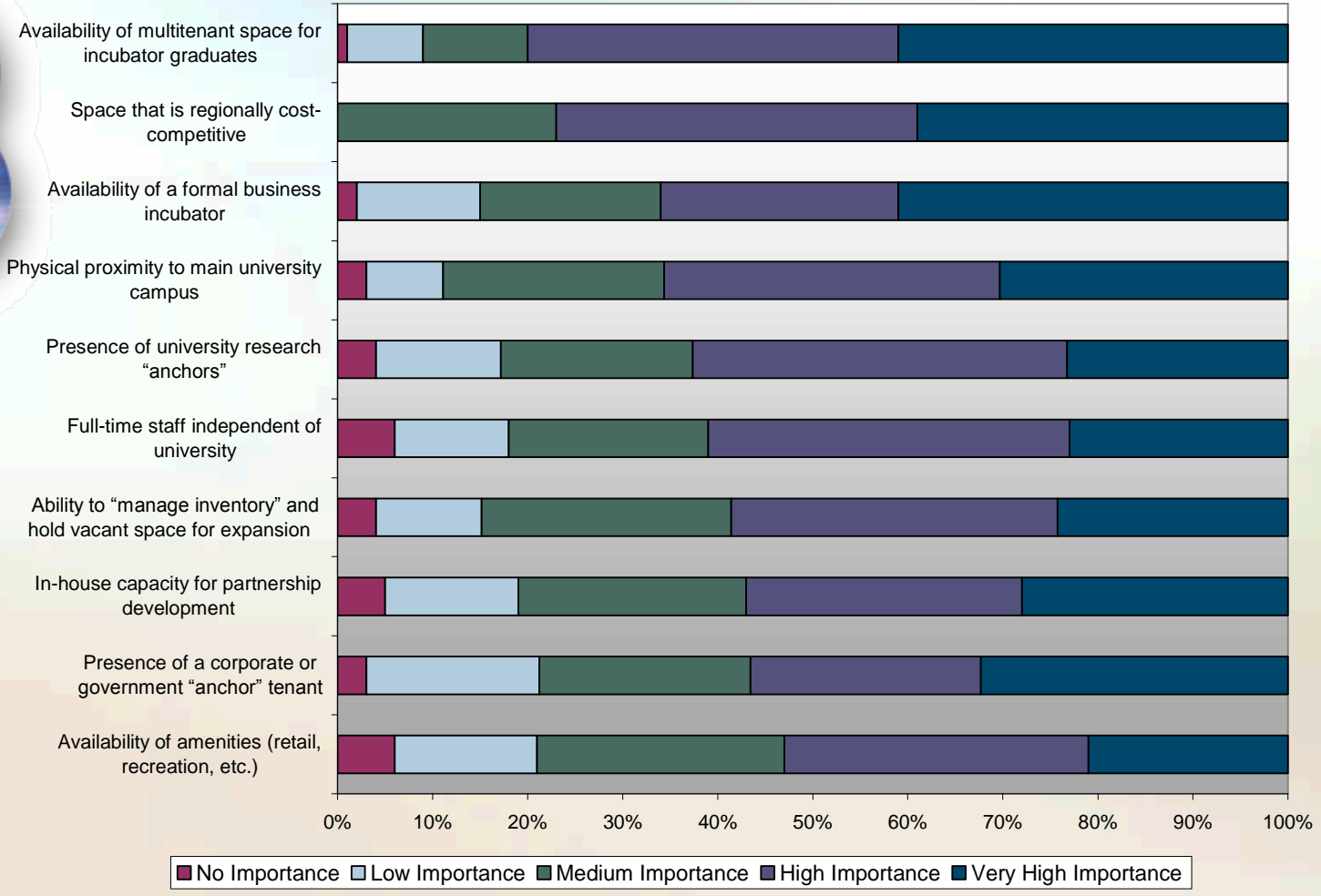


# Local Economic Development and University Leadership Critical to Success





# Success also Depends on Quality and Type of Space



# Research Parks Impact National and Regional Economies



- More than 300,000 workers in North America work in a university research park
- Every job in a research park generates an average of 2.57 jobs in the economy
- The total employment impact of university research parks in North America is more than 750,000 jobs

Number of Incubator Graduates Who	Number of Firms	Percentage of Total
Left the park but remain in the community	299	39.4%
Moved to multitenant space within the park	156	20.6%
Acquired or merged; and other outcomes	115	15.1%
Are no longer in business	97	12.8%
Left the region	73	9.6%
Moved to own building in the park	19	2.5%
<b>TOTAL</b>	<b>759</b>	<b>100.0%</b>

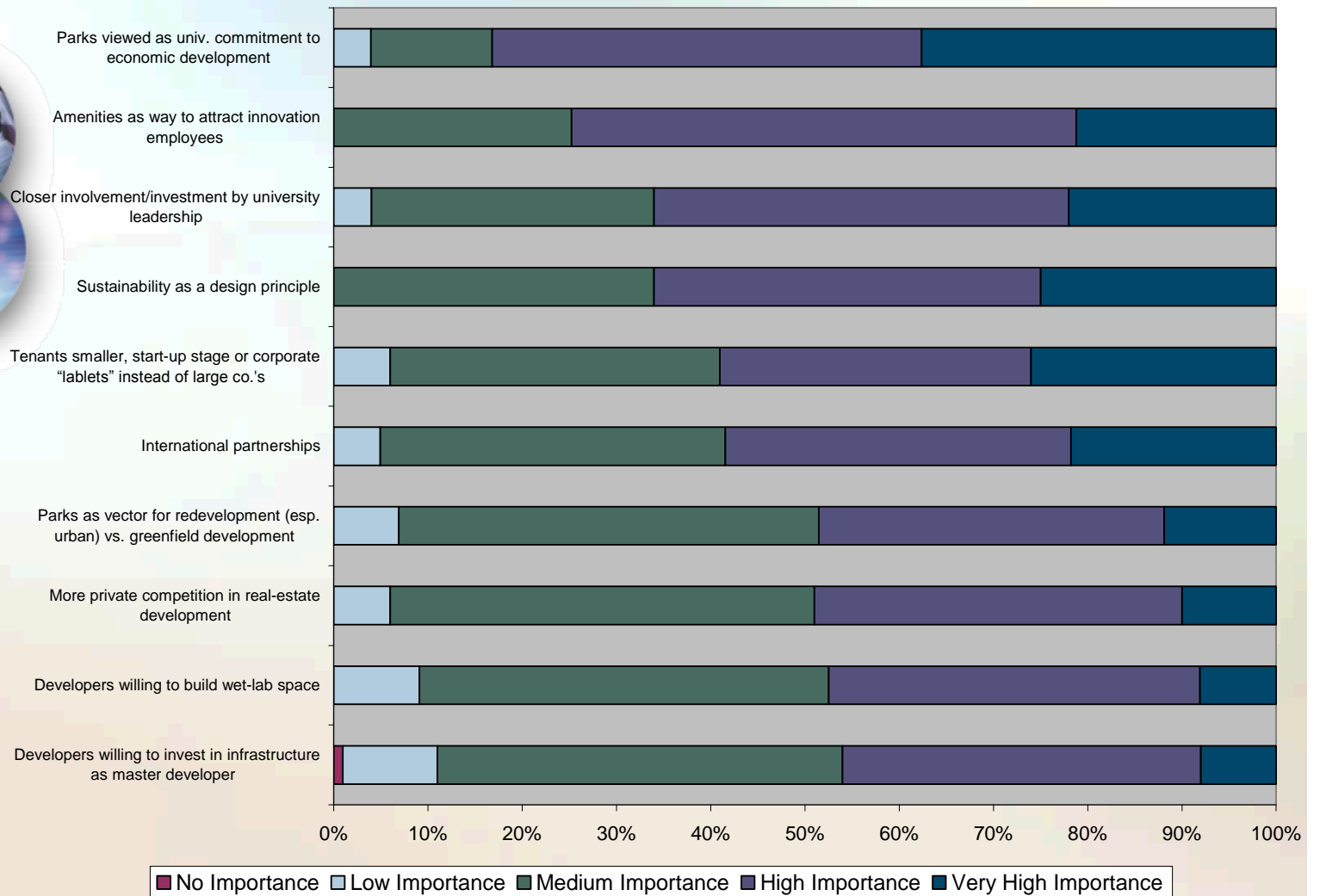
# Challenges Facing Research Parks



## Challenges

- Overcoming commercialization challenges
- Bridging cultural barriers between the academic and business communities
- Achieving integration with the university
- Obtaining funding for operations and buildings
- Responding to increased competition owing to globalization and the changing nature of corporate R&D

# The Changing Environment for Research Parks



# Evolution of Research Park Model



**Early Parks:  
Stand Alone Physical Space**

**1990s:  
Connections**

**2000 and Beyond:  
Economic Driver for the Region**

## Research Parks are key to growing today's knowledge economy but there is an unfinished agenda



- **Research parks will need to devote attention to:**
  - Expanding and deepening industry-university partnership
  - Retaining and attracting talent
  - Addressing need for flexible space able to accommodate rapidly growing tech companies
  - Offering value-added tenant services
  - Providing access to commercialization funding
  - Diversifying funding sources



# The 21<sup>st</sup> Century Research Park



- A new model—strategically planned mixed-use campus expansions that include space for academic and industrial uses—is emerging
- Increased focus on entrepreneurship and start-up and emerging companies
- Parks as a tool for business expansion and retention with less focus on recruitment
- Parks enhance regional competitiveness as they serve to retain and attract talent
- Parks create an environment that fosters collaboration and innovation and leverages the talent and expertise of universities to drive technology-based economic development

# Contacts



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