Emory and Georgia Tech: Making Atlanta a hot spot in the innovation economy

James Wagner, President Emory University
Wayne Clough, President Georgia Tech

Metro Atlanta Chamber of Commerce
May 18, 2006
## Emory’s economic impact

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student enrollment</td>
<td>11,500</td>
</tr>
<tr>
<td>Students’ nondiscretionary spending annually</td>
<td>$40 million</td>
</tr>
<tr>
<td>Employees (including Emory Healthcare)</td>
<td>22,000</td>
</tr>
<tr>
<td>Day visitors to University &amp; hospitals (annually)</td>
<td>1.6 million</td>
</tr>
<tr>
<td>Overnight visitors</td>
<td>700,000</td>
</tr>
<tr>
<td>Local spending by visitors</td>
<td>$110 million</td>
</tr>
<tr>
<td>Direct economic impact</td>
<td>$2.45 billion</td>
</tr>
<tr>
<td>Indirect economic impact</td>
<td>$1.75 billion</td>
</tr>
<tr>
<td><strong>Total economic impact</strong></td>
<td><strong>$4.2 billion</strong></td>
</tr>
</tbody>
</table>
### Georgia Tech’s economic impact

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student enrollment</td>
<td>17,135</td>
</tr>
<tr>
<td>Employees</td>
<td>13,700</td>
</tr>
<tr>
<td>Annual research expenditures (FY 2005)</td>
<td>$425 million</td>
</tr>
<tr>
<td>Invention disclosures (FY 2005)</td>
<td>324</td>
</tr>
<tr>
<td>US patents issued (FY 2005)</td>
<td>43</td>
</tr>
<tr>
<td>New companies created in last 5 years</td>
<td>52</td>
</tr>
<tr>
<td>Direct economic impact (FY 2004)</td>
<td>$2.2 billion</td>
</tr>
<tr>
<td>Indirect economic impact</td>
<td>$1.7 billion</td>
</tr>
<tr>
<td><strong>Total economic impact</strong></td>
<td><strong>$3.9 billion</strong></td>
</tr>
</tbody>
</table>
... Emory and Georgia Tech are Atlanta’s largest business.

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student enrollments</td>
<td>28,635</td>
</tr>
<tr>
<td>Employees</td>
<td>35,700</td>
</tr>
<tr>
<td>Payroll and benefits</td>
<td>$1.8 billion</td>
</tr>
<tr>
<td>Operating budgets</td>
<td>$3.2 billion</td>
</tr>
<tr>
<td>Construction expenditures</td>
<td>$378 million</td>
</tr>
<tr>
<td>Direct economic impact</td>
<td>$4.65 billion</td>
</tr>
<tr>
<td>Indirect economic impact</td>
<td>$3.45 billion</td>
</tr>
<tr>
<td><strong>Total annual economic impact</strong></td>
<td><strong>$8.1 billion</strong></td>
</tr>
</tbody>
</table>
Emory generates “brain gain” for metropolitan Atlanta.
• 20% of students from Georgia; 33% of Emory live in metro Atlanta.
• 1/3 of MBA students from Georgia; 2/3 begin career in Atlanta.

The Vaccine Research Center at the fore of antiviral research.
• Antiviral therapies – market size projected at $34 billion by 2010.
• Georgia has top-ten potential as producer of antivirals and vaccines.
• 2005 royalties from Emtriva brought $540 million to Atlanta for scientific research and education.
Emory helps Atlanta be the “public health capital of the world.”
- Shares Clifton Corridor with CDC, American Cancer Society.
- Rollins School of Public Health: unique international role.
- Carter Center: unique, strong role in public health in Africa.
- Developed Emtriva, leading HIV therapy in the world.

Emory Healthcare makes Atlanta a healthcare destination.
- Provided $66.5 million in charity care in 2005.
- Hospital admissions: 123,658
- Plans $1+ billion in hospital and clinic upgrades over ten years.
Did you know that... 

Consistent stable growth in bioscience represents real progress & opportunity

Number of biotech companies in 2005

GA’s Previous Rankings

- 2004 – 8th
- 2002 – 11th
- 2000 – 12th
- 1995 – Not ranked

Source: Ernst & Young 2006 Annual Report
Did you know that...

- Georgia Tech ranks among nation’s top 10 public universities and among the nation’s top 5 engineering schools.
- Georgia Tech is among the nation’s top 5 universities in research with industry.
- Tech graduates more engineers than any other university in the nation, is a national leader in producing minority and female engineers.
- 43% of Tech undergrads participate in structured research; 33% study abroad.
Did you know that…

• Tech has 4 campuses on 3 continents.
• Tech has 10 research facilities around the nation.
• Tech is home to 16 National Centers of Excellence.
• Tech faculty have won 107 NSF CAREER Awards, 2nd in the nation.
• Tech funds 82% of its own construction and has done $1 billion in improvements to its campus in the past decade.
• Georgia Tech is featured in Tom Friedman’s new, expanded edition of *The World is Flat*. 
Living in the flat world

• By 2010, 90 percent of the world’s scientists and engineers will live in Asia.

• The US has increased nanotechnology research funding to $1 billion a year, but Western Europe and Japan have kept pace, and other nations are also making significant investments.

• 6 of the world’s 25 most competitive IT companies are headquartered in the US; 14 are headquartered in Asia.
The United States must learn to compete in a world in which…

- The largest technological workforces reside in other nations.
- We generate only one of four or five major inventions.
- Our wages and health care costs are higher than our global competitors.
- The domestic market we offer is very small compared to Asia.
“Innovation fosters new ideas, technologies, and processes that lead to better jobs, higher wages, and a higher standard of living. For advanced industrial nations no longer able to compete on cost, the capacity to innovate is the most critical element in sustaining competitiveness.”

InnovateAmerica
National Innovation Initiative report
Georgia Tech: Driving innovation

- Sustainable technology
- Nanotechnology
- Biotechnology/nanomedicine
- Photonics/optics
- Microelectronics/telecommunications
- Logistics
- Manufacturing
- Manufacturing
Meeting future energy challenges

- Efficient, inexpensive, flexible solar cells
- Flameless combustion
- Usable wind power
- Biofuels to ease reliance on oil
- Technology to make cell phones, PDAs and MP3 players more efficient
Computing the future

“Gesture pendant” at GT’s Aware Home allows control of household appliances

The “free-digiter” and a computerized system for sign language

The Razor at the Institute for Systems Biology is the world’s 41st fastest computer

Biomedical modeling
Water for life

Improving water quality in Angola

Engineering our campus for water sustainability

Designing a water management system for the Nile River

Mapping a water line to a remote Honduran village

Providing expertise for Atlanta’s sewer improvement plan.
Growing new companies

Enterprise Innovation Institute

- Industry Services
- Commercialization Services
- Entrepreneur Services
- Community Policy & Research
- Strategic Partners Office: A bridge to connect companies to a broad range of Georgia Tech resources and experts

Advanced Technology Development Center

Technology Enterprise Park
The critical role of partnerships

• Of universities with industry
• Through like the organizations the Georgia Research Alliance and the Georgia Cancer Coalition
• Between universities like Georgia Tech and Emory

“What the Georgia Tech model recognizes is that the world is increasingly going to be operating off the flat-world program, with its tools for all kinds of horizontal collaboration.”

Thomas L. Friedman
The World is Flat, 2006 edition
1987  Emory and Georgia Tech form joint research center
1992  Joint M.S. degree in bioengineering
1993  Institute for Bioengineering and Bioscience is created
1994  Joint Ph.D. degree program in bioengineering
1996  Institute for Bioengineering and Bioscience named for Parker H. Petit.
1997  Georgia Tech and Emory create the joint BME Department.
1998  Emory purchases the Briarcliff Campus to develop a biotechnology incubation center in collaboration with Georgia Tech.

Research awards to BME in Fiscal Year 2005: $23.36 million, mostly from NIH ($17.75) and NSF ($1.99), with $1 Million other federal.
Planning for the future

Understanding Religions and the Human Spirit

Understanding Race and Difference

Predictive Health and Society

Implementing Pathways to Global Health

Computational and Life Sciences

Neuroscience, Human Nature, and Society
Making Atlanta a hot spot

- Create structure for public universities that facilitates responsiveness, agility, and ability to create and support partnerships.
- Interact with industry (push/pull)
- Emphasize partnerships, collaboration, alignment of strategic initiatives
- Investment: Other states have caught up
  - CA: $3 billion for stem cell research, $500 million biotech seed fund
  - FL: $510 million for Scripps Research Institute branch
  - CT: $100 million for stem cell research
  - NC: $650 million investment in NC Biotechnology Center
  - TX: $100 million for Emerging Technologies Fund