Georgia Tech Foundation

President G. Wayne Clough
September 9, 2004
Incoming freshmen

- 2,600 students (+18%)
  - 782 women (+28%)
  - 153 African Americans (+21%)
  - 105 Hispanics (+48%)
  - 116 international (+35%)
- 1337 average SAT
- 8 perfect SATs, 1 perfect ACT
- 5 sets of twins
Students shine

GT Motorsports wins Formula SAE in Australia

Goldwater Scholarships:
- Thomas Oliver
- Mark Callaghan

Monique Gupta, Churchill Scholarship

Jia Xu, Marshall Scholarship

Laurence Ralph, Mellon Fellowship in Humanistic Studies

Gabe Brostow, Marshall Sherfield Fellowship
Faculty honored

National Medal of Technology: Russell Dupuis, elec and comp engineering

Presidential Early Career Award for Scientists and Engineers: Julia Kubanek, biology

National Academy of Engineering: Fred Juang, elec and computer eng, and Jeff Wu, industrial/systems eng

Presidential Green Chemistry Challenge Award: Charles Eckert, chemical & biomolecular engineering, and Charles Liotta, chemistry
Rankings remain high

- Georgia Tech remains among top ten public universities
  - Peer assessment score in top 25 of all universities, tied with Emory and Georgetown
- College of Management moves up to #34
  - 3 programs in the nation’s top 15
- All engineering programs in the top 15
  - 4 engineering programs in the top 5
- Co-op program among 11 “Academic programs to look for”
- #1 among publics in % of alumni who contribute

U.S. News & World Report 2005 Undergraduate rankings
Research: New milestones

- Expenditures: ~$425 million
- Invention disclosures: 277
- NIH: $17.2 million (doubled in past 2 years)
- Interdisciplinary research: $106.8 million in active contracts
- Ovarian Cancer Center opened
Tech’s national presence

- National Innovation Initiative
- Sam Nunn Policy Forum on Bioterrorism
- National Lambda Rail
- National Nanotech Infrastructure Network
Construction continues

Campus Rec Center

Student Center Commons

Klaus Advanced Computing Building

Molecular Science and Engineering Building
It can be done

5 teams in the top 10 for their sport.
15 of 17 teams in post-season play.
Lacrosse, rowing clubs go national.

First basketball team from Georgia to play in national championship game.

Volleyball team finished its season ranked 8th in the nation.

Baseball team won 20 straight, became NCAA Atlanta Region Champs.
Budgets – not a pretty picture

- Governor recalls “payroll shift.”
- Leaves $170 m budget hole; USG “share” is $68 m; Tech “share” $7.3 m.
- Timing – not good.
- Midyear tuition increase?
- Layoffs expected; enrollments capped?
- Total GT budget cuts to date, $45 m.
- FY06, formula funding restricted
Vision and mission

Georgia Tech will define the technological research university of the 21st century and educate the leaders of a technologically driven world.
Strategic goals

- Student-focused Education
- Diverse Community
- Enhance Research Enterprise
- Expanded Outreach
- Intelligent Development of Technology
- Supportive Administrative Infrastructure
- Facilities Improvement and Expansion
Student-focused education

• Appropriate student:faculty ratio
• Full faculty involvement in instruction and research
• Comprehensive curricular and co-curricular programs for student leadership
• Diverse learning experiences (i.e., study abroad, undergraduate research, co-op, drama, recreation, art, athletics, etc.)
Over 650 students are at other campuses or online.
Average SAT scores
Incoming freshman class

Georgia Tech
SAT Scores

Retention improves

Percent still enrolled or graduated

Year enrolled as freshmen

- 1996
- 1999
- 2001
- 2003
Enhanced research enterprise

- Continue developing research initiatives – especially in microelectronics, nanoscience and technology, bioscience and technology, manufacturing, entrepreneurship, sustainability, and telecommunications
- Diversified research base (i.e., industry, state, etc.)
- Commercialization support
- Opportunities for interdisciplinary collaboration
## Faculty honors

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endowed chairs</strong></td>
<td>36</td>
<td>114</td>
</tr>
<tr>
<td><strong>Academy members</strong></td>
<td>13</td>
<td>30</td>
</tr>
</tbody>
</table>
Research awards
(in millions)
NIH research awards

(in millions)
Total Research and Development Expenditures
Top 35 Colleges & Universities
Fiscal Year 2002

R&D Expenditures (Millions)
- $600 +
- $500 - $599
- $400 - $499
- $300 - $399
- $200 - $299

*Source: NSF Survey of Academic R&D Expenditures
Expanded local and global outreach

- Economic development activities
- Advanced Technology Development Center
- Global Learning Center
- Technology transfer
- Research/technology park
Economic Development and Technology Ventures

- Advanced Technology Development Center
- Economic Development Institute
- VentureLab
- Industry-University Relations
- Technology Transfer
- Georgia Tech Office of Sponsored Programs
- Georgia Tech Office of Technology Licensing
- Georgia Tech Office of Real Estate Development
“Virtually every combination of industry relationship or economic development activity can be found at Georgia Tech, and in a very real sense the school is an operating partner with Georgia state government. Perhaps more than any other research university in North America, economic development is an integral, critical component of the mission of the Georgia Institute of Technology, and this has been true from its very inception.”

Southern Growth Policies Board *Innovation U* study
Intelligent development of effective information and educational technology

- Wireless campus
- Incorporation of technology into the classroom (Technology Square)
- Enhance faculty effectiveness through technology (CETL)
- Internet 2, National Lambda Rail
National LambdaRail infrastructure

- Phase 1: completed Aug 2004
- Phase 2: planned 2005
- ORNL's UltraNet

Operational site
Pass-through site for amplification/regeneration
Future site
Supportive, collaborative, and effective administrative infrastructure

- Seamless administrative systems and processes
- Training for GT administrative and customer services
- Communication
- Keep pace with demand for services
- Provide budget and facilities to support aspirations
Budget expenditures

(in millions)


State funds = 34%
State funds = 25%

12,900 students
16,813 students

Total
State
Facilities improvement, expansion

- Leading-edge competitive facilities
- Interactive learning centers
- Research neighborhoods
- Live/work/play environment
- Accommodate GT growth
- Sustainability
Campus square footage

17% of construction costs since 1994 funded by the state
Four campuses on three continents

Georgia Tech-Atlanta
Georgia Tech-Lorraine
Georgia Tech-Singapore
Georgia Tech-Savannah
Georgia Tech Savannah (GTS)
Goals and objectives

- Produce more engineers to meet regional needs
- Enhance access to engineering education with innovative programs that utilize distance learning
- Build a sponsored research and technology transfer environment to stimulate regional economic development
Cross-cutting themes and resources

- Not an engineering school, but a leading technological university
- Instead of following, LEAD
  - Nanoscience
  - Bioinformatics
  - Centers of excellence
  - $$ for emerging ideas
- Multidisciplinary programs and laboratories = recurring “one-time” needs
Cross-cutting themes and resources

A major research university must be a model for undergraduate education
Cross-cutting themes and resources

- Global flavor to education and research
  - International opportunities for students
  - Strategic partnerships

- Entrepreneurship and economic development
Cross-cutting themes and resources

• Students
  – Compete for the best
  – Aggressively pursue unusual ones
  – Student community and life
  – Development and placement

• Faculty: depth and succession
  – Increase in targeted areas
  – Senior “institutional” leaders
  – Creation of elite teams
  – Faculty development and life
Cross-cutting themes and resources

• Competing with the best is good; winning requires the level of resources available to the best.

• “Georgia Tech is a jewel, and jewels need polishing.”

Senator Sam Nunn
Benchmarking
Our private peers

Carnegie Mellon

CALTECH

NORTHWESTERN UNIVERSITY

MIT

ELI AND STANFORD JUNIOR UNIVERSITY

JOHNS HOPKINS UNIVERSITY
Our public peers

- Illinois
- Michigan
- Penn State
- UCLA
- Purdue
- University of Florida
- Berkeley
- University of California
- Virginia Tech
- Texas A&M
## Peers by reputation

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
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<tbody>
<tr>
<td>MIT</td>
<td>1</td>
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<tr>
<td>Stanford</td>
<td>1</td>
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<tr>
<td>Cal Tech</td>
<td>7</td>
</tr>
<tr>
<td>Cornell</td>
<td>9</td>
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<tr>
<td>Johns Hopkins</td>
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<tr>
<td>Michigan</td>
<td>9</td>
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<tr>
<td>Northwestern</td>
<td>16</td>
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<tr>
<td>Carnegie Mellon</td>
<td>18</td>
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<tr>
<td>UCLA</td>
<td>18</td>
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<tr>
<td>UT-Austin</td>
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<tr>
<td>Georgia Tech</td>
<td>27</td>
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<tr>
<td>Illinois</td>
<td>27</td>
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<tr>
<td>Washington</td>
<td>31</td>
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<tr>
<td>Penn State</td>
<td>33</td>
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<tr>
<td>Purdue</td>
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<tr>
<td>Minnesota</td>
<td>33</td>
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<tr>
<td>Florida</td>
<td>44</td>
</tr>
<tr>
<td>Texas A&amp;M</td>
<td>50</td>
</tr>
<tr>
<td>Virginia Tech</td>
<td>57</td>
</tr>
<tr>
<td>NC State</td>
<td>78</td>
</tr>
</tbody>
</table>

* = tie

Universities with no medical schools
(by research expenditures)

1. University of California-Berkeley (13)
2. Massachusetts Institute of Technology (15)
3. University of Illinois-Urbana (19)
4. Georgia Institute of Technology (31)
5. University of Maryland-College Park (32)
6. University of Texas-Austin (33)
7. North Carolina State University (35)
8. Mississippi State University (36)
9. University of Georgia (40)
10. Rutgers, State University of New Jersey (48)

Source: NSF Survey of Academic R&D Expenditures, 2002
Peer endowments
(in millions)

- Stanford
- MIT
- Michigan
- Northwes
- Texas A&M
- Cornell
- Berkeley
- Johns-Hopk
- UT-Austin
- Minnesota
- UCLA
- Cal Tech
- Purdue
- Ga Tech
- Washington
- Penn St
- Car-Mellon
- Florida
- Va Tech
- NC State

Source: Council for Aid to Education

NOTE: Illinois does not report its endowment value.
Graduate rankings: Engineering

- #5 Overall
- #1 Industrial/systems
- #2 Biomedical
- #4 Aerospace
- #5 Civil
- #7 Mechanical, electrical
- #8 Environmental
- #10 Materials
- #13 Chemical
Graduate rankings: Sciences

- #12 Computer science
- College of Sciences
  - #18 Applied math
  - #32 Chemistry
  - #32 Physics
  - #68 Biology
  - #80 Psychology
    - #10 Industrial psychology
Graduate rankings: Business

- #25 MBA programs *(Business 2.0)*
- #29 U.S. business schools *(Forbes)*
  - #9 among public universities
- #42 *U.S. News & World Report*
  - #14 Production/operations management
  - #29 Information systems
<table>
<thead>
<tr>
<th>Institution</th>
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<tr>
<td>MIT</td>
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</tr>
<tr>
<td>Florida</td>
<td>27/1</td>
</tr>
</tbody>
</table>

Source: Common Data Sets for each institution; 2003
Public Peer Institutions
In-State Undergraduate Tuition and Fees
2003-2004

Penn State
Michigan
Illinois
Minnesota
Purdue
Berkeley
UCLA
Washington
Virginia Tech
Texas A&M
UT-Austin
Georgia Tech
NC State
Florida

Peer Weighted 75th Percentile=$6,822
Peer Weighted Avg.= $5,805
Public Peer Institutions
Out-of-State Undergraduate Tuition and Fees
2003-2004

Michigan
Berkeley
UCLA
Penn State
Minnesota
Illinois
Purdue
Washington
Georgia Tech
NC State
Virginia Tech
Florida
Texas A&M
UT-Austin

Peer Weighted
Avg.=$17,144

Peer Weighted 75th Percentile=$19,328
Public Peer Institutions
In-State Graduate Tuition and Fees
2003-2004

Michigan
Penn State
Minnesota
Illinois
Washington
Virginia Tech
Berkeley
UCLA
Purdue
UT-Austin
Texas A&M
Florida
Georgia Tech
NC State

Peer Weighted Avg.=$7,057
Peer Weighted 75th Percentile=$7,800
Public Peer Institutions
Out-of-State Graduate Tuition and Fees
2003-2004

Michigan
Penn State
Illinois
Berkeley
UCLA
Florida
Purdue
Washington
Georgia Tech
NC State
Minnesota
UT-Austin
Texas A&M
Virginia Tech

Peer Weighted
Avg.=$17,034

Peer Weighted 75th
Percentile=$18,660
Thinking about future enrollments
University System of Georgia
Projected enrollment

University System of Georgia Enrollment
Fall 1994-Fall 2003 Actual
Fall 2004-Fall 2020 Projected

Source: System Capacity Study Presentation, November 2003
GT accounts for 6%-7% of USG enrollment

Fall 1994-Fall 2003 (Actual)
Fall 2004-Fall 2020 (Projected)
Land acquisition
GATV mission

To support commercialization and economic development activities at Georgia Tech
GATV governing board

• Nine-member board appointed by Georgia Tech president
• Four members from GT faculty and administration
• Five members from outside GT
Summary

Maintaining excellence in the new reality
Financial/administrative issues

- Diminishing support by State for base budget; unlikely to come back soon, if ever.
- Bureaucracy within present system.
- Lack of control over in-state tuition.
- With tuition rising, need for financial aid to help economically disadvantaged students.
- Acquiring land for long term Institute needs.
- Need to enhance endowment, particularly to drive excellence and new initiatives.
- Facilities: renovations, new buildings.
Other GT challenges

• Strengthening non-engineering programs while maintaining prominence in engineering
• Growing competition for best students
• Improving retention/graduation
• Improving diversity at all levels
• Choosing which battles to fight and which opportunities to pursue
New approaches – some examples

• Generate revenues (GATV, Exec Ed, Royalties, Ownership positions, etc.)
• Get agreement with state to delegate authority for operations, facilities.
• Agree on market value approach for tuition.
• Use 3rd party entities to acquire land.
• Work with state to create new approach to fund facilities critical to research and economic development.
• Continue to look for cost efficiencies.
Future GT opportunities

- Wave of new technologies
- Leadership position in interdisciplinary fields
- Leadership role in international platforms
- Potential for growth in biotechnology/biomedical arena
- High performance computing and networking (ORN, NLR)
- Leadership in diversity