Georgia Tech: Why is good leadership essential?

President G. Wayne Clough
Administrative Retreat
August 19, 2004
Looking back one year
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
Serving students

SpeakUp survey:
Students value the rigor and challenge of Tech’s academic programs, but would like faculty to be more consistent in adhering to the “best practices” of teaching.
Students shine

GT Motorsports wins Formula SAE in Australia

Goldwater Scholarships:
- Thomas Oliver
- Mark Callaghan

Monique Gupta, Churchill Scholarship

Laurence Ralph, Mellon Fellowship in Humanistic Studies

Gabe Brostow, Marshall Sherfield Fellowship

Jia Xu, Marshall Scholarship
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

⇒ Engineering holds at #5
  → Industrial/systems engineering #1 for 14\textsuperscript{th} consecutive year
  → Biomedical engineering jumps up to #2
  → Aerospace, civil, electrical, environmental and mechanical engineering also in top 10

⇒ College of Management climbs to #42, tied with UGA’s Terry School of Business

⇒ Public Policy’s information and technology management program ranks #8
Research: New milestones

- Awards: $342 million
- Expenditures: ~$425 million
- Invention disclosures: 277
- NIH: $17.2 million (doubled in past 2 years)
- Interdisciplinary research: $106.8 million in active contracts with interdisciplinary centers
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.
SACS accreditation: Review under way

Jack Lohmann, associate provost, College of Engineering, is coordinating the large-scale Institute-wide effort to renew accreditation. Preparations have been under way for more than a year.
Looking back 10 years
First-year retention
Faculty honors

<table>
<thead>
<tr>
<th></th>
<th>1995:</th>
<th>2004:</th>
</tr>
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<tbody>
<tr>
<td>Endowed chairs</td>
<td>36</td>
<td>114</td>
</tr>
<tr>
<td>Academy members</td>
<td>13</td>
<td>30</td>
</tr>
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Research expenditures

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure (in millions)</th>
</tr>
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<tbody>
<tr>
<td>'94-'95</td>
<td>$0</td>
</tr>
<tr>
<td>'95-'96</td>
<td>$50</td>
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<tr>
<td>'96-'97</td>
<td>$100</td>
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<td>'97-'98</td>
<td>$150</td>
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<td>'98-'99</td>
<td>$200</td>
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<td>'99-'00</td>
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<td>'01-'02</td>
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<tr>
<td>'02-'03</td>
<td>$400</td>
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<tr>
<td>'03-'04</td>
<td>$450</td>
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</tbody>
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Square footage


Square footage:
- 0
- 2,000,000
- 4,000,000
- 6,000,000
- 8,000,000
- 10,000,000
- 12,000,000

Graph showing the increase in square footage from 1994 to 2003.
Looking back 20 years

- First megabit chip made
- PCs, CDs are the hot new technology
- AIDS newly diagnosed
- Major competitor: Japan
- No commercial Internet
- No cell phones
- No dot-com economy to boom or bust
- No terrorism threats
Looking back to the future

“We construct the future by some kind of extrapolation in which the past is prologue, and the approach to the future is backward-looking.”

O.A. El Sawy
quoted in Exemplary Leadership
Looking ahead 20 years

- 2 billion more people
- Fresh water shortages
- Rising energy demands
- Global warming
- New diseases?
- Increasing terrorism?
- A biotech revolution?
- A nanotech revolution?
Future world trends

- Aging population in developed world vs. “youth bulge” in Africa, Asia
- Growing strength of universities, workforce in India and China
- Globally dispersed “round the clock” teams of employees
Expecting the unexpected

“It is difficult to predict which fringe elements will remain in obscurity and which will change the world.”

Peter Schwartz, futurist

The Art of the Long View

Characteristics of ground-breaking innovations:

- Global
- Multidisciplinary
- Transformational
- Spark other innovations
- Emergence / openness
- National Innovation Initiative

Draft report
Future GT challenges

⇒ Declining % of budget from the state; growing alternative sources of funding

⇒ Strengthening non-engineering programs while maintaining prominence in engineering

⇒ Addressing growing competition with other universities for best students

⇒ Improving retention/graduation

⇒ Need to improve diversity at all levels
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 (ORNL, NLR)
- Leadership in diversity
Why is leadership especially important for GT?

- New competitor in the major leagues with others who have been there a long time
- Competitors are not standing still – they expect newcomers to fade
- Times are more complex, changing more rapidly
- Sustaining positive momentum in an environment of lean resources
Core values for leadership

**Exemplary Leadership:**

- Model the way
- Enable others to act
- Inspire a shared vision
- Encourage the heart
- Challenge the process
- Context is everything
  - Local
  - Regional
  - National
  - International

4 more for Tech:

- Integrity
- Innovation
- Diversity as a strength
Introducing a great leader

Jack Guynn
President and CEO,
Federal Reserve Bank of Atlanta
Member,
Federal Open Market Committee
Georgia Tech alumnus

Community activities:
- Oglethorpe University
- Atlanta Midtown Alliance
- Piedmont Park Conservancy

Carter Center
- Atlanta Rotary Club
- Boy Scouts
- United Way