Georgia Institute of Technology

Bio–Z Building

At the leading edge of biological and health systems education and research

President G. Wayne Clough

Board of Regents
University System of Georgia

June 7, 2005
Proposal: Bio–Z Building

250,000 gsf facility for multidisciplinary education and research in:

- **Fundamentals of biological systems:** genomics, proteomics, metabolomics
- **Measurements and devices:** nanomedicine, nanoscale imaging, bio-sensing
- **Complexity of biological processes:** computational biology, bio-informatics
- **Large-scale phenomena:** energy production, environment, complex diseases
Growing the biosciences industry...

- Georgia ranks 8th in the number of biotech companies (Ernst & Young).

- Georgia Cancer Coalition is focused on research, prevention, detection, and treatment of cancer.

- Commission for a New Georgia has identified biosciences as a “strategic industry” for economic development.

- Major “thrust area” of the Georgia Research Alliance.
Metro Atlanta Strategic Imperative...

Growing the biosciences industry...

- Metro area biosciences sector has grown more than 150% in the past decade.
- Atlanta is home to over 200 bioscience companies with 20,000+ employees.
- Metro Chamber’s Bioscience 2010 goal is to double the number of companies.
- Mayor’s “New Century Economic Development Plan” emphasizes the biosciences sector.
Georgia Tech Strategic Imperative…

• Build on Georgia Tech’s unique strengths in engineering and computing to develop biology and biotechnology programs in the emerging “Age of Biology.”

• Since Fall of 2001…
  • Undergraduate enrollment up 42% to 1,500
  • Graduate enrollment up 60% to 755
  • PhD degrees awarded up 100% to 18
Expanding degree base...

- Biomedical Engineering – bachelors, masters, PhD
- Bioinformatics – masters, PhD
- Bioengineering – masters, PhD
- Applied Physiology – masters, PhD
- Medical Physics – masters
- Chemical & Biomolecular Engineering – bachelors
- Health Systems – masters
- Applied Biology – bachelors, masters and PhD
Emerging bioscience–related programs…

- NSF Center of Excellence in the Engineering of Living Tissues
- Parker H. Petit Institute for Bioengineering and Bioscience
- Center for Behavioral Neuroscience
- Ovarian Cancer Institute
- Southeast Collaborative for Biomolecular NMR (Imaging)
- MURI Center on Genetically Engineered Materials and Micro/Nano Devices
Georgia Tech
Strategic Imperative...

Growth in bioscience–related faculty and research...

- **Faculty** up 94% to 128 positions since FY 2000.
- **Research awards** up from $7 million in FY 2000 to more than $38 million in FY 2005.
- **Faculty quality**:
  - 5 GRA Eminent Scholars
  - 17 NSF Career Awards
Innovative new directions for research:

Nanomedicine: Joint GIT/Emory research pioneers this new field, leads the nation in attracting NIH funding.

Predictive medicine: GIT/Emory research in human genome and molecular-level diagnostics aims at disease prevention.
“We understand perhaps 10 percent or less of the human biology necessary for the prevention, diagnosis, and treatment of disease and injury. Our understanding of the molecular underpinnings of cells and other aspects of human biology offers promising applications for medical treatment.”

Elias Zerhouni
Director, NIH
“Georgia Tech brings a unique quantitative, interdisciplinary approach to life science investigation. Their ability to combine fundamental studies in biology and physiology, critically important for understanding cancer, with modern computational modeling of complex systems in a problem-solving engineering environment provides a context for success that is not found anywhere else in the state and has few peers in the nation.”

Bill Todd, president
Georgia Cancer Coalition
Recent investment in Biotechnology Campus

<table>
<thead>
<tr>
<th>Year</th>
<th>GIT Donor/other</th>
<th>State</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Petit IBB</td>
<td>$35 m</td>
<td>$35 m</td>
</tr>
<tr>
<td>2002</td>
<td>Ford ES&amp;T</td>
<td>$15 m</td>
<td>$58 m</td>
</tr>
<tr>
<td>2003</td>
<td>Whittaker BME</td>
<td>$21 m</td>
<td>$21 m</td>
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<tr>
<td>2006</td>
<td>Molecular S&amp;E</td>
<td>$66 m</td>
<td>$66 m</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>$136 m</td>
<td>$180 m</td>
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</table>
More space, modern space

Cherry Emerson Building
- Biology “home” built in 1959, 16,000 gsf.
- Antiquated electrical and HVAC systems.
- Inadequate lab and computing infrastructure.

Proposed Bio-Z Building
- 250,000 gsf.
- Modern systems and labs.
- Addresses new fields.
This building will...

• Bring together a multi-disciplinary group of faculty and students for instruction and research in:
  - Biology
  - Bio-engineering
  - Bio-physics

• Bio-chemistry
• Bio-materials
• Health systems

• Provide an anchor for the School of Biology.
# Bio–Z Building

## Project Scope

<table>
<thead>
<tr>
<th>Description</th>
<th>Square Feet</th>
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<tbody>
<tr>
<td>Gross square feet</td>
<td>250,000+</td>
</tr>
<tr>
<td>Assignable square feet</td>
<td>155,000</td>
</tr>
<tr>
<td>Research Laboratories (Including specialized BSL’s)</td>
<td>80,000</td>
</tr>
<tr>
<td>Faculty &amp; graduate student offices</td>
<td>30,000</td>
</tr>
<tr>
<td>Specialized Research Support</td>
<td>45,000</td>
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</table>
## Bio–Z Building

### Project Budget

<table>
<thead>
<tr>
<th>Total project cost:</th>
<th>$80 million</th>
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<tbody>
<tr>
<td><strong>Construction</strong></td>
<td>$60 million</td>
</tr>
<tr>
<td><strong>Special Costs, Soft Costs</strong></td>
<td>$12 million</td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td>$8 million</td>
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</table>

<table>
<thead>
<tr>
<th>Proposed source of funds:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>State Funds</strong></td>
<td>$60 million</td>
</tr>
<tr>
<td><strong>GT/Private</strong></td>
<td>$20 million</td>
</tr>
</tbody>
</table>
Campus Master Plan
Project Site
Consistent with BOR Strategic Plan

- **Develop graduates**... with defined skills and knowledge, capable of leadership, creative endeavors, and contributing citizenship.

- **Improve continuously the quality** of curricula, research activities, and international opportunities.

- **Emphasize the recruitment, hiring, and retention** of the best possible faculty, staff and administration.

- **Accelerate economic development** by providing needed graduates, appropriate academic programs, and expanding marketing of the System...as an economic asset of the state.

- Provide and maintain **superior facilities**, funded by innovative mechanisms which increase the speed with which they are usable.

- **Maximize cooperation** with other state agencies, etc.
Summary – This Facility Will. . .

- Extend university and state initiatives farther into *molecular-scale* activities; support growing *bio-molecular research* enterprise.
- Support research and laboratory instruction of up to 85 *faculty* members, 425 *graduate students*, and several hundred *undergraduates*.
- Be a catalyst for *university–industry collaboration*.
- Contribute to the *economic development* of Georgia.
- Build on earlier investments to *enhance Tech’s capabilities* in key emerging research areas critical to Georgia’s economic development.
Questions?