A presentation given

to the Board of Regents
University System of Georgia

A Proposal for the
Advanced Computing Technology Building
Georgia Institute of Technology

by
President G. Wayne Clough
June 10, 1998
Thank you for the opportunity to present Georgia Tech's proposal for our Advanced Computing Technology Building. As with other projects you will hear about today, I am presenting a project to meet a campus need. In our case, ours relates to rapid growth in student demand for our programs in computer science and computer engineering. Twenty years ago these programs barely existed, but today they have combined enrollments of 1,550 undergraduate students and 600 graduate students. Twenty years ago, research in these areas was small, but today it involves 280 projects and $25 million in research expenditures.

What is different about our project is that it also meets a critical state need as well as a campus need. Graduates from these programs are highly sought after to fill jobs in the rapidly growing market segments in the "digital economy", information technology, telecommunications and computing. Accommodating the present, and future, growth in computer science and computer engineering is important if the State is to keep a competitive edge in a market place that offers no quarter. In the last two weeks, two articles in the Atlanta Journal Constitution pointed out the growing shortage of people with high level computing and computer engineering skills to meet the demands of Georgia's economy. You are certainly aware of this issue based on the briefings provided to you by the Chancellor and his staff. In your handouts you have excerpts from recent publications documenting the workforce challenges and opportunities in this area.

Commenting on one of these will suffice. Within the past month, the U.S. Department of Commerce issued a report titled The Emerging Digital Economy, in which it is cited that the information technology sector accounted for more than one-quarter of the growth of the U.S. economy over the past five years. The average annual salary of the workers in the field is $46,000—64% higher than that of the private sector average. The report also estimates that the computer and communications industries will grow at more than twice the rate of the economy as a whole. Georgia already has shortage of workers in this area and it must address this problem if it is to maintain its present share of the market, and do more if it has hopes to grow its share. It is my personal belief that one of Georgia's very real advantages lies in Tech's production of graduates from our top-ranked programs in computer science and computer engineering. I am here to recommend an important way for you to leverage this advantage.

The proposed Georgia Tech facility will house faculty, students and programs from our College of Computing and our program in Computer Engineering. Our computer science and computing engineering programs are both cited by U.S. News and World Report as among the top twenty in the nation. Both offer the full range of B.S., M.S. and Ph.D. degrees...and I don't believe there would be any debate that these would fall into the category of "useful degrees". Both of our programs are fully accredited.

The student and faculty quality in both areas is something we are proud of and I am sure you can share that with us. You saw an example of the students in the computer science program a year ago when Mr. Alex Snoren made a presentation to you. Alex recently graduated with his B.S. and M.S. in computer science, and a B.A. in mathematics, all in four years! He enrolled at MIT for Ph.D. studies where he is doing very well. From personal discussions with Alex I know he hopes to return to Georgia as soon as he can.

Let me try to explain these programs by telling you what the students learn to do. In computer engineering they learn to design and build computers - one exercise actually requires them to design and build their own operating personal computers; they design microelectronics, semiconductors, digital signal processing controls and telecommunications systems. Our computer science students create tools for computer visualization and simulation, Internet activities, high quality digitized images, and create computer codes used in electronic commerce, defense applications and engineering design.
Both computer science and computer engineering at Georgia Tech have strong interaction with industry through research, co-op student programs, advisory boards and a variety of continuing education efforts. You have in your handout information about these companies which represent a who's who of computing, telecommunications, and Internet commerce. Finally, I would note that our computing technology grads are also helping to create entirely new companies here in Georgia. You many have read recently of the company Internet Securities Systems that developed a new approach to protecting commerce transactions on the Internet. ISS was founded by three Tech alums. Their first public offering of stock generated $600 million from investors around the world. This company is expected to grow rapidly and provide high quality jobs in Atlanta and Georgia. These types of new spin-off companies can drive Georgia's economy in the next century, and the alumni of our computer science and computer engineering programs are the most likely people to create the next Microsoft right here in our state.

OVERHEAD ONE - Campus Figures

Let me now direct your attention to my first overhead, which addresses the recent and projected combined growth of student enrollments in computer science and computer engineering. As you can see from this diagram, enrollments have more than doubled since 1992. In addition, we have experienced a strong growth of students seeking service courses in the computer technology area. These other students, such as those in industrial and systems engineering or in our management track, are also vital to help meet the need for IT workers. To accommodate all this growth to date, our operations in computer science and computer engineering have spread into seven separate buildings.

If this were not enough, let me ask you to recall that you recently approved an enrollment growth plan for Georgia Tech that calls for us to add 2,000 students by the year 2005. We expect a significant percentage of these students to seek majors in computer technology (see overhead). All indications for the coming fall support this projection. Fall quarter deposits for freshman enrollments are up by 400, and the number of students in the Regents Engineering Transfer program coming this fall have doubled. The highest growth among these students is in those intending to major in computing technology.

OVERHEAD TWO - Meeting the State Need

I mentioned at the outset that this building will help the University System, and us meet a critical state need. On this overhead, quotes are cited from prominent business leaders in the state who are known to you. The quotes are taken from letters that are included in your handout package. They clearly show the support in the business community for the growth of our particular computing technology programs I could have obtained many more of these types of letters, but I felt the ones you have illustrate the point. The state has a critical need for IT workers, and of this need, Georgia Tech graduates meet a key subset of it.

OVERHEAD THREE - Overview of the Proposed Building

My last overhead provides you with an overview of our proposed building. It will include 170,000 square feet of gross space and cost $39.5 million. We are asking for $31.5 million in state funds and propose to raise $8 million from donors.

The building will include space for classrooms and labs, and these will have capabilities for teaching using advanced technology and distance learning. Also included will be offices for faculty and graduate students, laboratories, and space for interdisciplinary research centers. An example of the type of center we plan to include to our new center for Internet Security, which was announced at the recent Sam Nunn International Forum on Cybersecurity.
Beyond meeting enrollment expansion needs in computer science and computer engineering and
programmatic objectives, the new building will:

- Allow us to consolidate activities that have presently spread into seven buildings.
- Provide for innovative teaching research space.
- Bring together in one building our computer science and computer engineering activities, which will
  help us, integrate them in a way that maximizes their effectiveness.
- Provide a central building that will focus our activities in economic development in these crucial
  areas and assist the State of Georgia in competing for crucial high tech jobs.

In closing, I would point out that when I arrived at Georgia Tech our capital plan was completely re-
evaluated in terms of our needs, but also what we could do to meet the strategy set out by the Board, and
for the economic plans of the City of Atlanta and the State of Georgia. We arrived at two major priorities
in this way. First, Bio and Environmental Technology and second, Computing Technology. Both were
moved to the head of our list for state funding while other priorities were set back. We will meet the first
of these by the construction the proposed Environmental Sciences and Technology building that we
received design funding for this year.

The second priority will be addressed by the Advance Computing Technology building. Both of these
buildings include a significant component of private funding because we feel support can be developed
around the importance of the need that they represent.

Let me express my thanks to the Chancellor and his staff and the members of the Board of Regents for the
opportunity to present the case for our proposed Advanced Computing Technology Building. We believe
you will share our belief that this building is critical if we are to meet workforce and research needs in
computing technology as the State of Georgia seeks to compete with the best in the next century.

Thank you.