

Part One: IB2 Vision

Thanks, Bob. I am pleased to participate in the Dedication Dinner of the Institute for Bioengineering and Bioscience. Tonight we share in the celebration of a special event in the unfolding history of the Georgia Institute of Technology.

Although our history has been filled with success story after success story, we still have an upward course to chart. Our future rests upon the success we make of the present and the plans we make for the future.

The ideal of success for a university is for the name of the university to become well recognized. This is hard to do, as I'll illustrate through the following story.

It seems that a young man from (the country?) (the University of Georgia?) was talking to another young man, who happened to be a well-recognized scholar. The young man from (the country?) (UGA?) was impressed by the young scholar and said, "You talk real good. Where'd you get your education."

The young scholar yawned and said succinctly, "Yale."

The young man from (the country) (UGA) looked puzzled then replied, "Well, okay... WHERE'D YOU GET YOUR EDUCATION?"

As you can see, name recognition in every sector of the population is a difficult feat for any university. Continued success is perhaps just as difficult.

At Georgia Tech, as with any university, there are many endeavors that could be central to our future achievement. Finding those that will be dominant in solving the major future problems of society will mean the difference. The easiest course and path of least resistance is to assume that what was good in the past will be good for the future. However, this is dangerous since the past is filled with relics that no longer are relevant. On a small scale, the slide rule is one particular instrument that comes to mind.

At Georgia Tech the process of choosing future directions is actually ongoing at all times in an ad hoc way. Good faculty are continually choosing to use new materials and to revise what they teach and pursue in the way of research. Over time when this evolution reaches a critical state, the names of some of our most traditional schools have to be changed. E.g., Civil Engineering is now known as Civil and Environmental Engineering; Electrical Engineering is now known as

Electrical and Computer Engineering.

Outside of the evolutionary process, more sweeping developments can occur. An example of this was the development of the computer. I was a student at Georgia Tech when it became practical for many universities to have a central computer. Georgia Tech was so well suited to use this technology, it was rapidly adopted and in time, computer science became an established discipline, ultimately followed by the creation of the College of Computing. This development might be seen as "revolutionary evolution."

Revolutions alone rarely succeed at universities.

On a more fundamental level, another sweeping development is occurring in this nation and the world. What it boils down to in essence is teamwork between the best engineers and scientists of the world, including a breakdown between pure and applied research.

To illustrate the powers of teamwork, let me tell you a quick story.

A firm needed a researcher. Applicants were a scientist, an engineer, and a recent college graduate. Each applicant was given a stone, a piece of string, and a stopwatch to determine a certain building's height. The scientist promptly went to the rooftop, tied the stone to the string, and lowered it to the ground. Then he swung it, timing its fall with the watch. With the pendulum, he estimated the building's height at 200 feet give or take 12 inches.

The engineer threw away the string and dropped the stone from the roof, timing its fall with the watch. Applying the law of gravity, he estimated the building's height at 200 feet, give or take six inches.

When it was the recent graduate's turn, she entered the building, leaving the string and stone outside. She soon returned to report the height at exactly 196 feet. How did she do that? Teamwork! She gave the janitor the stopwatch in exchange for the building plans and she got the job.

In the previous story, the scientist and engineer rely exclusively on their own speciality to achieve success. Although the story is a humorous one, it does point out a substantial weakness in the past relationship between scientists and engineers. Previously it was thought that scientists did pure research that generated a cornucopia of odds and ends of elegant outcomes. This knowledge was stored in weighty journals, the equivalent of "Aunty's Attic" of antiques and

knickknacks. Engineers were then were allowed to peruse this storehouse, find something of value to their work, and apply it to generate a solution to a real problem. The parties in this play rarely talked to each other, and the end result was often an innovative idea becoming lost in the dust. Fortunately, this quaint notion is rapidly disappearing—and the change plays right into the hands of Georgia Tech, assuming we are willing to grasp the opportunity.

One group which has already demonstrated how Georgia Tech can use the power of reducing barriers between science and engineering is the Insitute for Bioengineering and Biosciences. IB2 is our vanguard in Georgia Tech's initiative in the biotechnology area.

It would be preaching to the choir for this group tonight to say that biotechnology is important to the future of our society and our world.

I'll say it anyway.

In my own field of geotechnical engineering in the course of only 20 years, environmental technology, which has close, and growing links to biotechnology, has radically changed what we do and how we do it. 20 years ago, only a few companies in geotechnical engineering had any efforts underway that used biotechnology. Today, major geotechnical firms have upwards of 70% of their business centered on use of environmental and biotechnology. Many other examples of this type can be cited.

The importance of biotechnology to the future, particularly here in Georgia, was reinforced by the adoption of this field as one of the three areas deemed essential for future investment by the Georgia Research Alliance. Thanks to the wise leadership of Bill Todd, President of the Research Alliance, choices for the investment of funds from this agency were based on a careful study of national and international trends by McKenzie and Associates. Biotechnology was one of the three chosen in this strategic process.

Upon my arrival at Georgia Tech I was pleased to find that the Insitute had followed an astute path in pursuing its strategy to create its bioengineering and biosciences programs, one for which the credit lies with many farsighted individuals. Our efforts found a wonderful ally in Emory University and the two institutions formed the powerful joint Emory/Ga Tech biotechnological partnership, a collaboration that sets a standard for others to follow. The Georgia Research Alliance provided key seed funding for collaborative efforts between the Emory and Ga Tech as well as the other four research unversities in Georgia. Mr.

Pete Petit, a loyal Ga Tech alumnus, provided funding for a chair that allowed us to recruit one Bob Nerem, who brought the leadership and vision for our bioengineering programs, and helped build immediate credibility for them. Finally, our academic leadership team at Tech consisting of our Provost, our Deans and Chairs, moved to lower barriers to interdisciplinary research on campus. My job in the past two years has been mainly to see to it that this enterprise continued unimpeded, and to provide for a crucial investment here and there.

The results are there for all to see. Within the context of the Institute for Bioengineering and Bioscience our scientists are conducting innovative, ground-breaking research. Examples include study relating to building a bioartificial pancreas so that diabetics will no longer have to take daily insulin; research aimed at alleviating blood flow blockage in patients with sickle cell anemia; and studies designed to destroy cancer and the HIV virus.

Quickly receiving national recognition, our bioengineering program is already ranked among the top ten nationally.

Given our progress to date, one might presume our success is assured.

It is not.

We have overtaken the slower competitors and are now competing at the highest levels, there is much work to be done. Players at this elevation do not inherently welcome newcomers or lack the will to invest major resources to distance themselves from the pack. Each day it seems there is news of yet another institutional decision to undertake a biotechnical initiative.

How then will Georgia Tech succeed in the future? First, we need to be prepared to invest strategically to support a Georgia Tech vision of the future in this area. Second, our science base needs to improve, while maintaining a clear focus that is consistent with our vision and stays close to our strengths in engineering and computing. Third, we must continue to work in a collaborative mode with our fellow GRA universities, Emory in particular, and take advantage of the strength this provides vis a vis those universities who mistakenly believe they can do it on their own. Fourth, we must see to it that we provide for curricula initiatives that link our research with teaching. Finally, we need to help the state of Georgia and the City of Atlanta bring governmental agencies like the CDC and biotechnological companies to our state and city. A vibrant corporate infrastructure is important to a first rank academic culture.

The challenges we face are not small. But we at Georgia Tech have a history of accepting jobs others would consider impossible. In the year's to come, biotechnology will continue to be vital to humankind's health and welfare, and Georgia Tech's efforts in bioengineering and biosciences will be central to continued biotechnical progress.

To our supporters, I say, sit back and enjoy the ride. To our competitors, I will say nothing. Instead, listen to those footsteps approaching ever closer. Our progress is real. A gold medal performer is beginning to distance itself from the pack.

Part Two: Acknowledgement of Gift, Recognition of Parker H. Petit, and Announcement of Naming of the Institute

It is now my great pleasure to announce a very important and vital gift to the Institute for Bioengineering and Bioscience. It is a gift that invests in the successful future of both the Institute for Bioengineering and Bioscience and the Georgia Institute of Technology. The gift is for \$5 million and will be used to endow the Institute for Bioengineering and Bioscience, therefore providing greater flexibility to promote the Institute and move it forward. Preliminary indications are that funds may be used for diverse projects including scholarships for graduate students, seed grants to promote joint research, workshops, and short courses.

The endowment is a gift of Parker H. Petit, a man who has already vastly contributed to the Institute for Bioengineering and Bioscience. A few years back, Pete was instrumental in beginning the bioengineering and bioscience trajectory. His gift of \$1.245 million was used to endow the Parker H. Petit Chair for Engineering in Medicine and helped attract Dr. Robert Nerem, who is now the Petit Chair to Georgia Tech. Dr. Nerem, an internationally recognized biotechnology scholar, has recruited exceptional junior faculty members and highly promising graduate students and is the current director and guiding force of the Institute for Bioengineering and Bioscience.

Pete Petit's contributions to Georgia Tech extend far beyond his monetary donations. He is a valued alumnus, whose advice is frequently solicited. Petit serves or has served in the past on the Georgia Tech Foundation, the Mechanical Engineering Advisory Board, the Georgia Tech Advisory Board, and the Council of Fellows for the Georgia Tech/Emory Biomedical Engineering Council. In addition, he has been honored as a member of the Academy of Distinguished Engineering Alumni.

For all of Pete's many contributions, it is my pleasure tonight to announce that from now on the official name of the Institute for Bioengineering and Bioscience will be the Parker H. Petit Institute for Bioscience and Bioengineering. (Lead applause)

Pete, on behalf of Georgia Tech, I would like to thank you for your vision and your support of Georgia Tech. You are a true "hell of an engineer," and GeorgiaTech is proud to count you among our faithful alumni.

Pete, could you please come up here and say a few words...