Dr. Peterson  
Midtown Rotary  
Tuesday, August 27, 2013

Creating a Climate for Innovation

It is a pleasure to be here at the Midtown Rotary and share with you some of the exciting things happening at Georgia Tech. I always like to test the waters. How many of you are Georgia Tech alumni? Good. I’m among some friends!

This has been an eventful week for Georgia Tech. Our new Online Master of Science in Computer Science was featured on the front page of the *New York Times*, and it was mentioned by President Obama in his speech on education. On Thursday I was interviewed by CNN for a segment on *Anderson Cooper 360* about the importance of STEM education. On Friday Secretary of Commerce Penny Pritzker toured the Global Center for Medical Innovation, a state-of-the-art product development center affiliated with Georgia Tech. Right after this, I’m headed to the opening of the AT&T Foundry innovation center in Tech Square.

A little over a week ago I welcomed about 2,800 new freshmen in our annual convocation held in the new McCamish Pavilion on campus. You could feel the excitement as they sat there wearing their gold RAT caps.

I shared some statistics with them that you might find interesting as well. Ninety-five percent of them will return as sophomores. Fifty one percent will take a foreign language, even though it is not required. Thirty five percent will participate in our cooperative education program, the largest voluntary program in the nation and one of the best. It provides a wonderful opportunity to help pay college expenses and gain valuable on-the-job experience while in school. In six years, more than 80 percent of them will have graduated from Tech. Their average starting salary will be about $65,000, and at least 70 percent will have a job at graduation.
I doubt many of them will remember anything that I said, but they will remember the Georgia Tech student who gave the traditional sophomore welcome. Only it wasn’t traditional. His name is Nick Selby, and he’s a president’s scholar majoring in Mechanical Engineering. Have any of you seen it? His presentation got picked up on YouTube, and has had 2.5 million hits. He’s done at least 10 national media interviews.

In his welcome, Nick shared some traditional advice like call your mother, take classes from the most difficult professors for your major courses, do laundry often, get sleep and try to get internships. None of that got picked up by YouTube. He shared that he has always wanted to be an inventor, and that he’s going to make an ironman suit. His cadence changed dramatically and the soundtrack from 2001 A Space Odyssey began playing in the background. He said “If you want to change the world, you’re at Georgia Tech; you can do that.”

He got the idea for the dramatic style and music from his high school speech teacher, and got permission to use some of the phrases and the style. That just shows you the impact of a teacher. People keep e-mailing me telling me how outstanding he is, and that is true. I’ve met Nick, and I think I’m even more impressed the calm, humble manner in which he is handling what he calls “his 15 minutes of fame.” We have quite a few people like Nick. Google “Corbin Klett” to view his outstanding student commencement address entitled “We are the hero generation.” He spoke about friends, who, while at Tech, developed a device to improve open heart surgery and built a business to bring water to disaster areas throughout the world.

Today I would like to focus on

- how we are preparing our students to be leaders and innovators,
- The growth of an innovation ecosystem here in the Atlanta area, and
- how innovation is changing the role of our universities and the way we teach.
At Georgia Tech, we are working to create a climate of innovation across all areas of study. While you would expect a focus on innovation in one of the nation’s largest and best engineering programs, innovation is also much a part of our outstanding programs in computing, architecture, liberal arts, sciences, and business. Georgia Tech embeds industry funded innovation and competitions throughout its problem-based learning curriculum. More than 40 percent of Georgia Tech inventors are either graduate or undergraduate students, and more than 70 percent of invention disclosures list at least one student as an inventor.

One of our industry-sponsored competitions for students is “Ideas to Serve,” part of our Institute for Leadership and Entrepreneurship in the Scheller College of Business. It is a competition for current students and recent alumni who have early-stage product ideas or venture concepts geared towards creating a better world. The winner this past spring was Anemo Check, technology to improve the accuracy and affordability for testing of anemia, which is experienced by thirty percent of the world at some point. The team included an interdisciplinary group of Biomedical Engineering students, Emory University Law students, and Scheller College of Business students. The lead student expects FDA approval in two years. She plans to focus first on generating profits in the U.S., and then using some of that revenue to make this testing affordably accessible in developing countries.

AnemoCheck was also the runner up in our InVenture Prize competition in March, which creates incentives for undergraduate student innovation in a fun, high-profile event. This year 164 inventors participated. Finalists presented a brief overview of their inventions and answered questions from a panel of judges. The first place winner developed a line of fully automated robotic dog toys. The first place winner receives a $20,000 cash prize, sponsored by Google, and second place receives $10,000, along with a free U.S. patent filing by Georgia Tech’s Office of Technology Licensing, valued
at $20,000. Winners were automatically accepted into the Summer 2013 class of Flashpoint, Georgia Tech’s startup accelerator program.

At Tech we are committed to helping not only our students, faculty and staff be innovative, but also people from all across the state. Georgia Tech is taking a leading role in creating an Innovation Zone in Midtown. We are helping people transform their intellectual property to drive innovation, attract and create new business and transition ideas from the concept stage to the marketplace.

Technology Square, which celebrates its 10th anniversary this fall, is a high-energy hub, creating an exciting environment in which innovation can flourish. What was a blighted location just ten years ago is now fast becoming the center of the entrepreneurial community in the Southeast. The mixed-use area is a testament to what is possible through a partnership between higher education, the state, business and industry.

Enterprise Innovation Institute, or El2, is Georgia Tech’s primary business outreach organization, providing a comprehensive program of assistance to business, industry, entrepreneurs, and economic developers. It accelerates start-up formation through education programs, assists start-ups through incubators, and amplifies commercialization impact through support programs. Today there are more than 40 start-ups in the Centergy One building in Tech Square.

The Advanced Technology Development Center (ATDC) is ranked by Forbes magazine as one of 12 business incubators that are changing the world. A unit of the Enterprise Innovation Institute, El2, ATDC has helped launch more than 140 companies that, together, have created thousands of jobs and attracted more than $2 billion in investment.
As another component of our innovation ecosystem, Georgia Tech partners with the Georgia Department of Economic Development to attract new business and industry to the state. Last November, Panasonic officially opened its new auto innovation center in Centergy One in Tech Square. Panasonic benefits from having access to Tech students and graduates who are helping to develop the next generation of in-vehicle multimedia infotainment systems. Penguin Computing recently opened a sales, support and engineering office in Centergy One. Other companies that we’ve partnered with include EY, or Ernst & Young, GM, Kimberly Clark, NCR and ThyssenKrupp.

Georgia Tech’s research, students, and educational resources are key assets for startups and established companies in markets spanning aerospace, biomedicine, entertainment, food/beverage, IT/telecom, logistics, manufacturing, and national security, among others.

The National Science Foundation (NSF) recognized Georgia Tech’s longstanding leadership role in commercializing new technologies by naming the university one of two founding nodes for its Innovation Corps, or I-Corps, network. I-Corps is designed to bring together the technological, entrepreneurial, and business know-how to quickly bring discoveries ripe for innovation out of the university lab and into the marketplace. Georgia Tech commercialization specialists taught 75 NSF teams from around the country in the program’s first year.

The Georgia Manufacturing Extension Partnership, supported by the U.S. Department of Commerce’s NIST MEP program and operated by Georgia Tech, has offices throughout the state of Georgia to help strengthen American manufacturers.
VentureLab identifies discoveries and technologies in Georgia Tech’s research labs that have commercial potential and helps move them quickly to market. It was ranked No. 2 globally by Stockholm-based UBI Index.

While Georgia Tech is innovative in its research and preparing students to be innovators, we are also working to be innovative in how we teach our students. Rather than focusing on traditional ways of teaching, we present students with realistic and complex problems and challenge them to develop solutions in self-directed learning.

Recent developments on technology-assisted learning may prove to be just as important as it is dramatically changing the way we educate our students. Online education not only enhances a traditional college education, but also helps people to participate in lifetime learning.

One of the ways we reach people throughout the world is through Massive Open Online Courses, or MOOCS. While we had some very smart people working on Tech’s strategic plan, nobody predicted the amazing rapidity with which ‘technology assisted instruction’ would be adopted. This is a new arena for higher education, and Georgia Tech is one of the leaders. We started offering MOOCS one year ago. We have had more than 400,000 students in 14 courses.

Our Online Master of Science in Computer Science announcement in partnership with AT&T in May received extensive national coverage, as well as interest from business and industry. It is the first professional Online Master of Science degree in Computer science that can be earned completely through the “massive online” format. The OMS CS could help address the nation’s growing shortage of qualified workers in STEM fields, one of the primary reasons AT&T decided to lend its financial support. It has the potential to double the number of trained computer professionals worldwide in as little as a decade. Courses related to the OMS CS will be available free of charge on the
Udacity site, but only those students granted admission to Georgia Tech will receive credit.

Students studying on campus are benefitting from Georgia Tech’s MOOCS. Faculty who have taught MOOCs have returned from the experience saying that it improved their classroom teaching, and they are integrating MOOCS into their on-campus classes. For example, Tucker Balch will take components from his online computational investing class and use them in his machine learning course this semester, and Magnus Egerstedt is doing the same with robotics. Students studying on campus are gaining more opportunities for interaction in class due to flipped classrooms where they view the lectures online and come to class for discussion. We’re exploring ways to use MOOCs as a way to help avoid the “bottleneck” students who study on campus experience many times as they near graduation. Some required courses not taught on campus that semester could be taken online.

Online education not only enhances a traditional college education, it helps people to participate in lifetime learning. Today, Georgia Tech’s Distance Learning offers 40 areas of study to students ages 16 to 85. Last year 17,000 individuals representing more than 3,500 corporations and government organizations took part in Georgia Tech Professional Education (GTPE) programs. They represented half of the world’s countries. We are well on our way to transforming it to a global operation.

Expectations for higher education in the U.S. are changing. Today, American institutions of higher learning are expected to:

- Ensure that graduates are both employable and prepared to adapt and lead in an ever-changing world that many times requires an interdisciplinary approach to developing solutions to grand challenges.
- Move our research from the bench top to the consumer quickly in order to enhance economic development of the region and nation to create more jobs.
- Be global in nature and to provide lifelong learning opportunities for the world using advanced technology.

While many institutions are scrambling to meet these expectations, Georgia Tech has a head start — of about 128 years! Georgia Tech was founded as a partnership with industry. Our graduates are in demand, innovation is entrenched in our culture, we are creating more new start-ups and jobs than ever before, and we serve a global community. Tech offers study abroad programs for all 36 undergraduate majors, and 43 percent of our undergraduates have an international experience before graduation. Over the past two decades, the Georgia Institute of Technology has grown into one of the most globalized universities in the world, with partnerships in more than 30 countries and campuses and operations in France, Ireland, Costa Rica, Panama and China.

And of course, partnerships in Atlanta. We’re proud to be a part of the exciting things that are happening in our city, our state, our region, and the U.S., and to prepare innovators and leaders for the next generation. Thank you.