

Dr. Peterson

Dalton Alumni Network Luncheon

Wednesday, Feb. 19, 2014, Dalton Country Club

Georgia Tech Update: A Time of Positive Momentum

It's wonderful to be in Dalton, also known as the "Carpet Capital of the World." And, it is a special privilege to be among friends. Many times when I address a Rotary Club or other organizations throughout the state, I first want to get the "lay of the land" by asking how many are Georgia Tech graduates. I'm very excited that just about all of you here today are Tech alumni.

Dalton has long been a dynamic employment center, but like virtually every corner of our country, it has shouldered its share of the economic downturn we've faced the past few years. But the good news is that we're emerging from the recession, and Dalton, with its typical enthusiasm and civic spirit, is bouncing back as well. Just as at Georgia Tech, this is a time of great momentum in Dalton and Whitfield County.

The Southeast is becoming the center of new manufacturing in the U.S., which is creating an historic opportunity particularly for small-and medium-sized enterprises, or SMEs. There are more than 9,100 manufacturing SMEs in Georgia, and tens of thousands of SMEs in the Southeast.

Georgia Tech is committed to supporting a long-term manufacturing renaissance. Earlier this month Georgia Tech hosted the first of several Advanced Manufacturing Partnership, or AMP regional meetings to be held throughout the nation. President Obama announced the second phase of AMP this past fall, which builds on a renewed national focus on U.S. leadership in emerging technologies that will fuel job creation and boost global competitiveness.

It has been my privilege to serve on the AMP steering committee, along with other leaders from business, industry and higher education. At our AMP regional meeting on

the Tech campus, we brought together leaders in industry, government and universities from throughout the U.S. to explore the challenges and identify solutions for supporting advanced manufacturing activities in small and medium-sized enterprises.

At Georgia Tech we're in the midst of, and enabling, a true manufacturing innovation ecosystem. The Georgia Tech Manufacturing Institute and GaMEP are providing leading-edge research and education coupled with support to manufacturers across the state. We have partnership programs with business and technical colleges to ensure an educated workforce. Georgia Tech will soon build a 25,000 square-foot pilot manufacturing facility to assist companies of all sizes, especially new startups with an advanced manufacturing focus.

In the future, continued growth in manufacturing will require people trained in science, technology, engineering and math (or STEM) fields. One example is that of an increased reliance on software, robotics and automation. Additive manufacturing, or 3D printing, allows you to design a product and then at the press of a button, move the product design from a remote terminal to the fabrication process. Another example is the "*Internet of Things*," or IoT. IoT includes agile, intelligent and seamless processes, systems or other smart tools that are changing the way businesses operate.

The job outlook is tremendously promising. A recent Department of Commerce estimate predicts that STEM occupations will grow at nearly twice the rate of non-STEM opportunities between 2008 and 2018. Today, there are approximately two STEM-related job openings for every unemployed person, compared to one job available for every four unemployed individuals in non-STEM fields.

Each fall Georgia Tech holds a career fair on campus, and hundreds of employers sent representatives. Each year more than 8,500 students participate in a program by

career services, and we have more than 800 on-campus visits by employers and almost 9,000 interviews. Seventy percent of Tech's students have jobs by the day they graduate. The average starting salary for all graduates is \$63,000, and that goes up to \$65,000 for STEM fields.

Georgia Tech continues to be a big draw for the brightest students. During the past five years, we've had a 70 percent increase in applicants. This year alone our applications for early decision were up by 37 percent. The "early admits" that we accepted in January have an average 1485 math and verbal SAT, and hold an "A" average. We received 25,000 applications, or a 46 percent increase in one year. And, our freshman class is 37 percent women.

I'm not sure how much of that can be attributed to the fact that we went to the "common app," or whether it is due to Nick Selby's inspirational speech at freshman convocation that went viral on the internet, with five million views across multiple platforms. How many of you saw that? In December, YouTube included Nick in a pre-produced video called the 2013 YouTube Rewind. *Time* magazine also listed Nick's speech on its Top 10 List of Viral Videos of 2013. Nick is a sophomore Mechanical Engineering major, and he has handled what he calls his "15 minutes of fame" beautifully. He has had numerous national interviews, but the one that made me the most proud was when a TV reporter asked if he ever considered going into motivational speaking. Nick said he likes to give speeches, but what he really wants to do is to be an engineer.

When we were in the "green room" getting ready for freshman convocation last August, Nick was off to the side, being very quiet and holding a jar of honey. I asked someone if he was going to be OK, and they assured me that he was. I think he was just getting in his "zone." And, he's a hard act to follow.

Georgia Tech students are preparing to be leaders and innovators. A good example is the InVenture Prize competition, now underway. Teams and individuals design something, develop a prototype and a business plan, and then present it at an event that is broadcast live on GPB. This year's event will be March 26. About 560 students signed up for the competition this year, and there will be six finalists. The contest rewards undergraduate students for innovation and creativity. The goal is to inspire students to pursue their own ideas, tackle problems and ideally create jobs in Georgia. First place gets \$20,000. Second place gets \$10,000. Both will get a free patent filing by our Office of Technology Licensing. There is also a \$5,000 People's Choice Award that is voted on during the event. The winner(s) is accepted into the summer 2014 class of Flashpoint to continue working on the project. (*explain Flashpoint*)

We are increasing economic opportunities both in our own backyard and in the world. Georgia Tech, in partnership with Atlanta, has created an innovation zone in Midtown. In fall 2013 Tech Square celebrated its 10th anniversary. Georgia Tech has helped attract numerous major companies to the Metro Atlanta area including AT&T Mobility, Ernst & Young (EY), GM, Kimberly Clark, Panasonic, Penguin Computing, NCR, and ThyssenKrupp.

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

Georgia Tech's 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, EI₂, ATDC has helped launch more than 140 companies that, together, have created thousands of jobs and attracted more than \$2 billion in investment.

We're experiencing increased national visibility. This past fall, Secretary of Commerce Penny Pritzker visited Georgia Tech, and toured the Global Center for Medical Innovation. This past week Secretary of Homeland Security Jeh Johnson met with students and others to discuss Tech's contributions to cybersecurity, and later this spring we're expecting a visit from Secretary of Energy Ernest Moniz.

This past fall, a feature on Tech's new Online Master of Science in Computer Science, or OMS-CS, appeared in the *New York Times*, and President Obama mentioned it in his speech on education.

It is one of Tech's 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. Our Online Master of Science in Computer Science degree in partnership with AT&T is the first professional Master of Science 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, which is 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.

In January Georgia Tech welcomed its first cohort of 385 students enrolled in the massive online delivery of its Master of Science Degree in Computer Science, offered in collaboration with Udacity and AT&T. The OMS-CS has received global attention,

and is part of Georgia Tech's commitment to exploring new approaches to education and incorporating innovative technologies into the curriculum. It is yet another way Georgia Tech Professional Education is meeting the needs of working professionals as they look to advance their skills without interrupting their careers. The average age of the new OMS-CS students is 35, about 11 years older than their on-campus counterparts in the same program. It is yet another way to help provide a lifetime of learning.

Much of the research that is being done at Georgia Tech is receiving national, and sometimes global attention. This week the BBC covered research on brain cancer that Ravi Bellamkonda, chair of the Wallace H. Coulter Department of Biomedical Engineering, is leading. One reason Glioblastoma multiforme cancer, or GBM, is such a deadly cancer is that the malignant cells from tumors spread throughout the brain by following nerve fibers and blood vessels to invade new locations. Now, researchers have learned to hijack this migratory mechanism, turning it against the cancer by using a film of nanofibers thinner than the human hair to lure the tumor cells away.

We are able to attract and retain talented faculty and students through Campaign Georgia Tech, which provides endowed chairs and professorships, scholarships and fellowships, and construction and renovations. It allows us to achieve a level of excellence not possible through state funding alone.

Our Georgia Tech Alumni Association's programs create an environment for students to learn from alumni and develop into Tech's future leaders.

The Georgia Tech Student Foundation provides students with invaluable experience managing a student-run endowment. This year they hit a milestone, reaching a million-dollar endowment. Members of the committee have been asked to appear on Fox Business News as experts on several occasions.

The Georgia Tech Student Alumni Association is one of the fastest-growing of Georgia Tech's 400 student organizations. It promotes the Georgia Tech spirit, traditions and pride, and provides opportunities for networking and leadership.

Georgia Tech is about changing lives. We're curing diseases. We're revolutionizing manufacturing processes, designing global solutions, and developing and implementing breakthroughs in dozens of other areas. We're influencing thinking in science, technology, and policy. We're preparing the next generation of leaders and innovators. Our 137,000 living alumni are serving as ambassadors in their communities and on their jobs. You are part of that group. Thank you for your commitment to Georgia Tech. We invite you to stay engaged, and come back to campus often.

Thank you.