

“The Role of the Research University in Fostering Innovation”

Georgia Tech President G. Wayne Clough

Supporting National and Regional Innovation Panel

The Americas Competitiveness Forum, June 12, 2007

I think all of us are here because we recognize that a global economy driven by innovation is emerging around us, and we all want to compete and succeed in that economy. I’m pleased to have an opportunity to speak to the role of the research university in promoting competitiveness by fostering innovation at the regional and national level. My own university, Georgia Tech, is just about a mile north of here, and we invite you to visit our campus while you are here.

To be competitive in an innovation economy, you have to shift your focus away from producing physical goods as cheaply as possible, to generating economic development based on the discovery and application of knowledge. And when you make that transition in your region or nation, research universities become one of your most essential economic development tools.

An innovation economy requires a strong cadre of scientists and engineers with advanced degrees who drive the process of discovering new knowledge and inventing new technologies. And it requires a broad pool of skilled workers who can make something, literally, of those new ideas and inventions. Research universities are the source of the fundamental research that drives innovation, and of the cadre of scientists and engineers who conduct it. Together with other institutions of higher education, we also educate the skilled workforce that brings innovation to fruition in commercial markets.

The wide range of technologies that permeates our society today – from the Internet to sophisticated medical tests and treatments – emerged from exploratory research that was conducted in the laboratories of research universities. And it is now more critical than ever before to keep the fundamental research going that stokes the innovation process. Of course, many multinational corporations also have research labs, but most of the patent applications coming from industry research labs cite fundamental, exploratory research done at research universities as the basis for the technology they seek to patent. So, the university research of today is the seed corn that produces the innovations of tomorrow.

In the course of conducting the research and producing the scientists and engineers who drive innovation, research universities often become the physical nexus for innovation. Of course, the Internet has enabled knowledge to become much more broadly dispersed than ever before, extending economic opportunity around the globe by making location irrelevant for some kinds of tasks. But the process of creating new knowledge and new technologies is still a hands-on activity that tends to be concentrated in geographic “hot spots.”

“Hot spots” of innovation invariably have one or more research universities at their core, and the reasons for this are obvious: Research universities have a large concentration of very smart people. They spin off new high-tech companies from their research labs and attract other high-tech companies who want access to the talent and research that is focused there. Their graduates often stay nearby to work at the high-tech companies they have created and attracted.

But it takes more than a great research university to create a “hot spot” of innovation. Innovation requires an eco-system... a web of interconnected conversations and collaborations among universities, government, and industry. These relationships are essential to strengthen and align the resources, policies, and initiatives so that an innovation-friendly environment is created. For example, we are working to make Atlanta a “hot spot” for biotechnology innovation, and that effort involves the collaborative efforts of Georgia Tech and the other research universities of the city, local and state governments, the Georgia Research Alliance, the Chamber of Commerce, and the Georgia Cancer Coalition – just to name a few.

We also need broader-scale conversations like this forum, which spans a hemisphere, because innovation can make the world a better place for all of us. Innovation is what will enable us to cure disease... to assure plentiful sources of clean water... to develop environmentally friendly energy sources and technologies that enable us to grow both the economy and our quality of life at same time. All of us are stakeholders in these global challenges, and solving them will require research universities, governments, and industries around the world to collaborate in innovative ways to generate implement innovative strategies and technologies.

FOLLOW-UP QUESTION

Georgia Tech is widely recognized as being among the best in moving research discoveries from the university laboratory into the commercial marketplace. Can you describe briefly how that works at Tech?

Answer:

- Conduct \$450 million in research a year, targeted in broad areas where we have expertise and there is need and opportunity.
- VentureLab: Constantly evaluate what is going on in our research labs for potential commercialization. When a discovery or technology shows commercial potential, VL further evaluates the opportunities for commercialization, assigns an experienced entrepreneur to mentor the researcher, develops a commercialization strategy and plan, and provides seed funding to develop proof of concept or prototype needed to attract venture capital. 2006: evaluated 81 discoveries or technologies, had 18 new companies in formation.
- Georgia Tech Research Corporation: Works with VentureLab and faculty on IP protection, negotiating licenses and start-up agreements, performs “due diligence” on start-ups from legal perspective.
- Advanced Technology Development Center: Provides space, help start-up company get the services it needs, from business management to venture capital. 39 new companies presently in incubation.
- Technology Enterprise Park: Houses stage 2 companies.
- Result: 75 new companies in past 10 years; 10 in 2006. Over 100 “graduates.”