State of the Institute reflects on Georgia Tech’s vision

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President Wayne Clough devoted his annual State of the Institute address, entitled “Defining the Future,” to taking stock of the Institute’s progress toward achieving its vision statement of defining the technological university of the 21st century.

Speaking to faculty and staff last Tuesday, Clough said, “The phrase ‘define the technological university of the 21st century’ recognizes that what succeeded in the past is not necessarily relevant to the future, and that we are going to help define the path forward by being at the forefront ourselves.”

Georgia Tech’s efforts to change the paradigm come at the same time that education, research and innovation have become the pillars of prosperity and productivity, Clough said. The world also faces growing global problems from clean water to greenhouse gases that cry out for technological solutions. In short, society is looking to technological universities for help facing its challenges and maintaining its standard of living.

Clough described how the Institute is responding by reshaping its dual missions of research and technology transfer, and education.

Evolving disciplines
As a measure of the Institute’s success in its research mission, Clough pointed out that fields in which Georgia Tech has strengthened its expertise are coming into alignment with the pressing needs of the nation and the world. “From energy to nanotechnology, from innovation to technology transfer, I believe Georgia Tech has chosen well,” he said.

He described several evolving interdisciplinary fields in which Tech is emerging as a leader. The arrival of Professor Jeffrey Skolnick and 19 colleagues enabled Georgia Tech to start the Center for the Study of Systems Biology, which will take novel approaches to the development of drugs and engineering pathways for their delivery.

Another new center, the Center for Biologically Inspired Design, provides an opportunity for leadership in biomimetics, a new field that studies nature’s design solutions for clues to complex engineering challenges.

Georgia Tech is also much edgier than the typical college or university in using technology as an artistic medium. Clough cited Haile, the Music Department’s robotic drummer, which uses artificial intelligence to recognize and adjust to rhythms in real time. Similarly, the School of Literature, Communication and Culture has joined forces with the College of Computing to move out on the edge of digital media.

Georgia Tech is also creative in forming partnerships that enable it to leverage its strengths. The Georgia Tech-Emory partnership in biomedical engineering, for example, has grown into one of the nation’s foremost programs. Together, Tech and Emory are among the top institutions in attracting nanomedicine funding from the National Institutes of Health, and now have three centers of excellence in nanomedicine.

The proposal was adopted unanimously. Because the proposal requires a change to the Faculty Handbook’s statutes section, it will require two readings and two votes of approval by the faculty. The second vote is expected at the Academic Senate’s Nov. 28 meeting.

The faculty approved other changes that fall under the Faculty Handbook’s policies and procedures section, meaning they require only one reading and one vote. Those changes include:

- Faculty hiring with tenure: While institute units already have the ability to hire new faculty and simultaneously grant tenure in exceptional cases, additions made by the Statutes Committee’s proposal specify procedures that should be followed in the process. This includes the school chair or dean making a case for hiring with tenure, and a faculty committee reviewing the candidate’s qualifications and making a recommendation.

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Faculty groups move toward adding archivists to their ranks

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The membership of the General Faculty and Academic Faculty is set to expand soon, thanks to a proposal initiated by the Library and Information Center.

At the Oct. 10 joint meeting of the General Faculty and Academic Senate, the General Faculty’s Statutes Committee put forward a proposal to extend general faculty status to staff holding the Archivist I title and to extend academic faculty status to staff holding Archivist II, III and IV titles.

“The archivists have the same professional credentials and qualifications as the librarians, who have enjoyed faculty status for many years,” said Ron Bohlander, chair of the Statutes Committee. “The Committee members felt very comfortable placing them in the faculty categories that correspond with the librarians.”
Research that dots the globe
Georgia Tech’s research partnerships extend around the globe. During the past year, a new research unit was announced at Georgia Tech Lorraine in France. It is GT Lorraine’s second collaborative effort with the French National Center for Scientific Research, and will focus on telecommunications and new materials.

The Georgia Tech Research Institute, Tech’s applied research arm, opened its first international center in Ireland last June, working in collaboration with the Irish Industrial Development Agency. Over the next five years, the center will grow to 50 researchers and a portfolio of about $25 million.

Clough also led a Tech delegation to China last winter to sign a dual-degree agreement with Shanghai Jiao Tong University. “We already had a successful student exchange program, and I expect our relationship will continue to expand in the future,” he said.

In other cases, fields in which Tech has built strength over the years are now coming into the national and international spotlight. Tech’s considerable expertise in a variety of alternative energy sources now offers the Institute an opportunity to step forward with new technologies and solutions. The Institute is also a long-time center of expertise in robotics, for which the demand is expected to grow significantly. As a result, RIM@Georgia Tech – the Robotics and Intelligent Machine Center – has been created to coordinate Tech’s endeavors and promote technology transfer.

Clough also noted Georgia Tech’s progress in commercializing its research. The Enterprise Innovation Institute was created during the past year to bring Tech’s new and established programs together in an integrated initiative to help entrepreneurs, industries, and communities become more innovative and competitive.

The most recent acknowledgement of Tech’s talent for technology transfer came from the Milken Institute, which recognized the Institute’s success in commercializing its biotechnology discoveries. Another new area of focus for Tech’s commercialization efforts is “clean-tech” companies that bring environmentally sustainable technology to market.

Preparing student leaders
The second major focus of Georgia Tech’s efforts to define the technological university of the 21st century is reshaping the educational experience it provides. Clough noted that Tech’s tuition is among the lowest of its public peers, and the Institute offers an outstanding co-op program that gives students a way to pay for the education and explore their future careers at the same time.

The challenge is to be accessible and affordable while at the same time offering a relevant educational experience. Clough cited a long list of programs developed over the past several years to make education broader, deeper, richer, more flexible and more interdisciplinary.

The most recent is the Honors Program, begun this year for outstanding first- and second-year students who want an intense educational experience that extends beyond the classroom. “I met with the Honors Program students and parents last week,” Clough said, “and I realized that we had opened yet another door of opportunity for students to expand their talents and abilities.” He noted that several came to Georgia Tech because of this program.

Other programs cited by Clough are focused on providing students with opportunities for international experience, leadership experience, and research experience. Georgia Tech is also defining the curriculum of the 21st century, he said. The latest innovation is in the

College of Computing, which reorganized its undergraduate curriculum around “threads” and “roles.” Students choose from threads, which are focused on different areas that engage computing, and roles, which are slanted toward future career tracks. “The goal is to put things together horizontally in ways that make sense and produce graduates who are more than the basic, standard programmers who are available at lower cost in India,” Clough explained.

Clough noted that the Institute’s unique interdisciplinary culture is beginning to show itself, with management faculty winning National Science Foundation CAREER Awards and engineering faculty winning Fulbright Awards, which usually go to the liberal arts.

He also highlighted the new Library East Commons. “This facility is so cutting edge that when the Association of Research Libraries decided to explore digital roles for libraries last month, this is the only campus they visited,” he said.

Other Tech faculty and students develop technology for visually and hearing impaired persons, and participate in the Center for Global Safe Water — the newest Georgia Tech-Emory University collaboration to work on water and sanitation problems in developing countries.

Clough noted that the hard work of faculty, staff and students is lifting Georgia Tech to new levels of recognition in a broad array of measures from academic excellence to technology transfer, facilities and workplace environment.

“Defining the technological university of the 21st century is not a challenge for the slow or faint of heart, but requires courage, agility, hard work, perceptiveness and a willingness to take intelligent risks,” he said.

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Grant to fund research on wireless technologies for the disabled

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Wireless technologies add flexibility and mobility to most users’ lives, but often disabled people find access to these new technologies beyond their grasp. To address these challenges, Georgia Tech’s Center for Advanced Communications Policy (CACP) and the Shepherd Center, a catastrophic care hospital in Atlanta, have been awarded a $4.75 million Rehabilitation Engineering Research Center (RERC) grant on wireless technologies aimed at enhancing the lives of people with disabilities.

“Our partnerships within Georgia Tech, the Shepherd Center, the wireless industry and other researchers, both domestically and abroad, have always promoted equitable access to wireless technologies for people with disabilities,” says Helena Mitchell, CACP executive director and Wireless RERC principal investigator and co-director. “We look forward to the research and development of the RERC’s new initiatives which also address this important field of study.”

We are very excited that continued funding has been awarded for the Wireless RERC,” added Michael Jones, Shepherd Center’s vice president for research and technology. “This award affirms the growing importance of wireless technologies for disabled and non-disabled users alike.”

The grant will provide for research and development of new wireless technology applications, as well as continue its work on legislative, policy and regulatory monitoring and analysis. Mitchell pointed out that the Center’s policy activities have contributed to regulatory changes at the Federal Communications Commission regarding advanced technologies and emergency communications.

Areas of new technology development include emergency communications, location-based services, advanced auditory interfaces for handheld electronic devices, and universal remote control systems that allow a cell phone to seamlessly operate other electronic devices and appliances.

The Wireless RERC is one of 25 in the United States. Other RERCs are devoted to fields such as aging, hearing or vision-related disabilities, public transportation, workplace accommodations, universal design, wheeled mobility and information technology access.

Georgia Tech participants in the Wireless RERC include the Center for Assistive Technology and Environmental Access, College of Computing, Georgia Tech Research Institute, Interactive Media Technology Center, School of Psychology, School of Public Policy and the Southeast Disability and Business Technical Assistance Center.

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