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THE WHISTLE

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THE GEORGIA INSTITUTE OF TECHNOLOGY

Tech erasing traditional boundaries

Robert Nesmith
 Institute Communications
 and Public Affairs

Georgia Tech continues its sojourn into the 21st century as a university that is actively breaking down the barriers usually associated with educational institutions, said President Wayne Clough as he delivered his State of the Institute address to faculty and staff last week.

Cooperation among its member schools and colleges, along with local and foreign governments and leaders, serve to make Tech's students better prepared to undertake their studies in a broader context, both interdisciplinary and international, due in part to a university that is



President Wayne Clough addresses faculty and staff members Oct. 16 as he delivers his State of the Institute address. Previously given to students, the address was presented to alumni Oct. 19.

"collaborative in its nature."

"As the 21st century unfolds around us, the future shape of that new technological research university is becoming clear," Clough said. "It is innovative, continually reshaping its educational experience and refocusing its research thrusts to produce the talent and the discoveries the future demands. It embraces the challenge of creating solutions to the world's seemingly intractable problems and shaping the way in which technology is used."

No limits

Themed "Vanishing Boundaries," the address used everyday examples on how Tech is successfully extending beyond established boundaries and limitations of education, from location to the melding of traditional courses of study. He highlighted the Horizon Wimba Live Classroom—from Tech's Center for the Enhancement of Teaching and Learning—and the "Halo" high-definition virtual classroom

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Faculty members share in Nobel

Former Vice President Al Gore's winning of the Nobel Peace Prize has also boosted the résumés of three Tech faculty members.

Announced two weeks ago, the prize is shared by both Gore and the Intergovernmental Panel on Climate Change (IPCC) for their contributions to the research of global warming and climate change. Tech faculty members involved with the IPCC, established in 1988, are School of Public Policy Professor Marilyn Brown, School of Earth and Atmospheric Sciences Professor (EAS) Robert Dickinson and EAS Associate Professor Rong Fu.

"This award is not just for those who worked so hard to complete the Fourth Assessment report, but also for those who contributed to earlier IPCC (Working Group III) reports ... This work has provided the foundation for the current recognition of IPCC as an authoritative voice on the climate system, the impacts of climate change and ways to avoid it. You can all be proud of this achievement," stated a letter from the co-chairs of IPCC Working Group III to all who had worked on its reports.

Brown, with Tech since last year, contributed to the 2007 Fourth Assessment Report for Working Group III, which investigated aviation, emission scenarios, technology transfer, ozone and climate and carbon dioxide capture and storage, among others.

"I contributed in that role to 'Climate Change 2001' and 'Climate Change 2007,'" Brown said. "In both cases I was a contributing author of the chapter on Residential and Commercial Buildings in the volume 'Mitigation of Climate Change.'" Formerly at the U.S.

Nobel continued, page 3

Registrar's Office reorganization implemented

Robert Nesmith
 Institute Communications
 and Public Affairs

Some unfamiliar faces may greet faculty in the Registrar's Office as a result of its recent reorganization.

After requesting an evaluation by the Office of Organizational Development in the spring, Registrar Reta Pikowsky says OOD's results—along with her own observations and that of other consultants—resulted in the office's recent overhaul, which started Oct. 10.

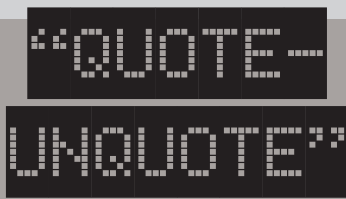
"We asked for a complete assessment, and they were very thorough," Pikowsky said. "They did some benchmarking, they looked at other institutions and conducted interviews with other registrars. They did some surveys, both internal and external, and one of the things we were looking at was 'what changes do we need to make to become the registrar's office of the 21st century?'"

"OOD also looked at other institutions—how they are structured, what kinds of positions

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On the road

Sting Racing's autonomous Porsche Cayenne was packed for travel to Victorville, Calif., last Wednesday to qualify for the Defense Advanced Research Projects Agency's (DARPA) Urban Challenge, to be held Nov. 3. A joint project between Science Applications International Corporation (SAIC) and Robotics and Intelligent Machines @ Georgia Tech, the driver-less vehicle must successfully navigate 60 miles in an urban setting in six hours or less, all while reacting to obstacles and adhering to the rules of traffic. For more information, visit www.sting-racing.org.



"Your device can be extremely small, but your power source is big. You are able to work independently, remotely and wirelessly."

Zhong Lin Wang, director of the Center for Nanostructure Characterization, discussing the capabilities of using nanowire-sized solar cells, 200 times thinner than a human hair, in future electronic devices. (Bloomberg)

Address, cont'd from page 1

developed by Arbutus Learning Center researchers and HP engineers as examples of physical location no longer being an impediment to delivering a course of study.

"Originally developed for high-end, corporate video conferencing, the Arbutus systems will cost much less and work for large-sized classrooms. We are hoping to begin using it soon for classes that have students in Atlanta and Savannah, and we will demonstrate it for the Board of Regents in a few weeks," Clough said.

Diversity of students

Programs such as the Georgia Tech Promise program were touted as providing more economic diversity on campus. Students from Georgia in families earning less than \$30,000 a year can receive help from the endowment, along with work/study programs and additional grants.

And for the last three years, Tech has produced 10 percent of the nation's African-American doctoral degrees in engineering—even with 320 other accredited engineering programs across the country. While saying no one person can receive credit for this, Clough singled out Gary May, School of Electrical and Computer Engineering chair, who received the 2006 Mentor Award from the American Association for the Advancement of Science (AAAS).

The International House on East Campus, created to be a mix of students from many cultures and nationalities, houses 48 students. Through an Institute program, they are aided in their efforts to share their cultures with each other and the campus.

Clough also lauded students' volunteer efforts to reach out to communities, both locally and globally. Members of Tech's student body have helped Gulf Coast communities in the wake of Katrina and enhance Atlanta through TEAM Buzz.

"We seek to achieve both (economic and cultural diversity), and use them to create a vibrant community of learners," Clough said. "In short, we hope our graduates are educated for life, not just a job."

Interdepartmental collaboration

Clough illustrated how the barriers are breached beyond what one may think of as "technology" disciplines. While Tech is not typically thought of as a medical school, recent partnerships with Emory University and the Medical College of Georgia have led to new areas of nanomedical research, resulting from the marriage of computing, engineering and the sciences. No less than 125 interdisciplinary centers exist on campus, from nanomedicine to digital media.

"Each year my wife, Anne, and I host the new faculty at the President's House, and I ask

An interdisciplinary culture attracts faculty to Georgia Tech



The photonics group merges science with engineering.



Jay Bolter has advanced degrees in the classics and computer science.



Mostafa El-Sayed began the Laser Dynamics Lab

many of them what attracted them to Georgia Tech. The most common response is the opportunity to work in a genuinely interdisciplinary environment," Clough said. "Research is ongoing on our campus that will allow DNA to be repaired, that will allow nanoparticles to detect and destroy cancer cells before they spread and that will create diagnostic techniques for ovarian cancer."

Efforts by the music department and the growing arena of video games were cited as how technology and the liberal arts were encouraged to commingle, in an attempt to end centuries of separation.

"We are deliberately encouraging our campus to be a place where the arts and technology interact. The by-product is enormous, as it helps humanize and inform the end result," Clough said. "Our poet-in-residence, Tom Lux, is fond of saying that writing a great poem is not just an act of pure impulse, but is founded on structure as much as is the design of a bridge."

As a marker for the university's progress in this area, Clough pointed to the student-organized career fair held in September, where more than 400 companies (a new record) came to recruit. While he pointed out the "usual" companies—Boeing, Ford, Cisco Systems, IBM—others were new, including Medtronic, Goldman Sachs, Bloomberg and even Chick-fil-A, Wal-Mart and Walgreen's, reflecting the university's growing prominence not only in healthcare, but on Wall Street, in logistics and in marketing.

"We cannot assume we have completed the task of the lowering of our disciplinary boundaries, but I believe our culture is no longer tolerant of them," he said.

Energy awareness

Addressing another cross-disciplinary subject, Clough outlined Tech's research on the issues of energy and climate change with the university's partnerships with Oak Ridge National Lab in a new, \$125 million biofuels

research center and a \$12 million partnership with Chevron to help develop alternative fuels for transportation. He lauded the efforts of Peter Webster and Judy Curry in Earth and Atmospheric

Sciences, Strategic Energy Institute researchers Bill Koros and Ron Chance, and Public Policy professor Marilyn Brown.

Again showcasing the university's interdisciplinary nature, he also touted the team of faculty and students from the College of Architecture who were competing in the national Solar Decathlon, where colleges submit a full-scale, solar-powered house for competition.

A global perspective

While other institutions actively seek to send their students abroad, Tech seeks also to establish degree programs and campuses overseas, with initial efforts exploring new doctoral programs in Hyderabad, India, as the latest example. Other programs, such as the engineering program in Metz, France, allow Tech students to study abroad without "missing a beat" in their curriculum, as well as learn a broad range of other subjects.

Established cooperative programs, as well as economic development activities, are in place in Ireland, France, Singapore and Shanghai, all used as examples of broadening the university's reach beyond our national

borders. As a result, relationships with business and government leaders are strengthened, cementing Tech's efforts to help shape the global economy.

This has led to unprecedented access to leaders in the highest levels of government internationally, as the campus has welcomed the president of Ireland, the president of Liberia and even a high-level official from North Korea.

"Georgia Tech is working hard to become a genuinely global university, and as I talk about the opportunities that are presented to us by vanishing boundaries, you are hearing these characteristics of a global university interwoven in all aspects of our efforts," Clough said.

These efforts also extend closer to home. The "natural" boundaries that have surrounded the campus in recent years have given way to business ventures and increased cooperation with area businesses, the city of Atlanta and the state of Georgia.

After years of becoming what Clough described as "an island-state," now the university works in tandem with the city to bring development and business opportunities to areas that once were in the midst of deterioration and blight. Technology Square on Fifth Street, as well as the North Avenue Research Area and Technology Enterprise Park, were cited as examples of Tech's continual eradication of the boundaries between campus and downtown.

"The new Georgia Tech is at once local, and also global, with 1,000 students on other campuses around the world or online," Clough said. "Taken together, (the programs and activities offered) are the building blocks in the process of defining the technological research university of the 21st century—also known as Georgia Tech."

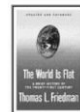


off of the flat-world platform, with its tools for all kinds of horizontal collaboration."

Tech has the "right stuff"

"What the Georgia Tech model recognizes is that the world is increasingly going to be operating

Thomas L. Friedman
The World is Flat



Georgia Tech



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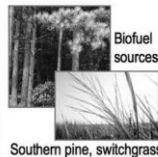
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Georgia Tech is a unit of the University System of Georgia.

Focus on energy

Tiny nanogenerator harvests energy from environmental sources like ultrasonic waves, mechanical vibrations, or blood flow.

New nanoparticle film may make energy storage in devices like cell phones more effective.



3-D solar cell captures almost all light that strikes it.

Provost names McLaughlin to International Initiatives

Michael Hagearty
Institute Communications
and Public Affairs

As the Institute continues implementing its ambitious plan for a "global Tech," the Office of the Provost has named School of Electrical and Computer Engineering Professor Steve McLaughlin as its first vice provost for International Initiatives.

Within the Office of the Provost, McLaughlin will oversee Tech's satellite campuses, study-abroad programs and its international student and faculty exchange programs.

In announcing the appointment, Senior Vice Provost for Academic Affairs Anderson Smith cited McLaughlin's intimate understanding of Tech's overseas operations and how those partnerships are fostered.

"Steve McLaughlin has served as deputy director of Georgia Tech Lorraine since 2004 and is aware of

how important research and economic development are in our international plans," Smith said. "We have outstanding opportunities for our students to be involved in international study and work, and we need to expand those opportunities. However, we also

have to support our international initiatives that involve research and graduate education at international sites.

"Steve will be Georgia Tech's point person on all our international activities. I look forward to working with him as we shape the global Georgia Tech."

During a public presentation in August, McLaughlin outlined his perspective on and vision for Tech's global initiatives. First and foremost,



he said, these programs are essential ingredients in making both students and faculty more competitive in the so-called "flat world" of globalization.

"If we accept the flattened world proposition, then it comes down to preparing individuals—not only to compete against others but also to work together—and I think that's what Tech's international programs are all about.

"At Georgia Tech Lorraine we have interaction with dozens of companies, and all of them want students with experience in multicultural, multilingual environments," that mesh with their own multinational business operations, he said.

McLaughlin also sees Tech's international initiatives as a key differentiator of its brand over the next several decades.

"We're already being recognized as a leader in some aspects of international education and research. I'm absolutely convinced that this should

be a major piece of our brand for the next generation or two." Moreover, this is an area "where we can be the clear leader, in a way that sets our nation's vision and defines policies and priorities for others."

Tech also has an obligation to foster partnerships that can have an impact on Georgia's economic development, he pointed out.

"As a state institution, we need to do things that are in line with what the state needs," he said. "The competition is primarily going to be in the technology space, and I think we're in a position to be the leading university in this area.

"I'm convinced that these international programs change people, sometimes in profound ways but also in ordinary ways."

For more information...

Provost's Office
www.provost.gatech.edu

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Department of Energy Oak Ridge National Laboratory, Brown has long been a voice in energy policy and technology forecasting.

Recently, she worked with the U.S. Climate Change Technology Program and in developing a national technology strategy regarding climate change. She serves on the board of directors with Southeast Energy Efficiency Alliance, the American Council for an Energy-Efficient Economy and the Alliance to Save Energy, and is a member of the National Commission on Energy Policy and the National Academies'

Board of Energy and Environmental Systems.

Joining the Tech faculty in 1999, Dickinson has been the Endowed Chair of the Georgia Power/Georgia Research Alliance since 2000. For more than 40 years, he has researched the fields of climate modeling and global change. Through the modeling of land, vegetation and radiative processes, he currently is working to improve the understanding of global and regional climate and earth change. His work for the IPCC included contributing results and discussion to the 2007 report on climate change for IPCC Working Group I.

Fu has been with Tech for

eight years. Her current research strives to understand the processes controlling climate variability of tropical terrains' atmospheric water cycle and the transport of pollutants along with water vapor to the upper troposphere and the lower stratosphere.

She worked with Dickinson on the IPCC Working Group I's 2007 report on climate change, and is continuing her research into projected rainfall changes over the Amazon for the 21st century, as well as the reliability of current climate models. "I have been working on understanding what controls rainfall over the Amazon for the past 10 years," she said.

Registrar, cont'd from page 1

do they have, what kinds of things are they doing in terms of technology—and how this office will need to evolve to meet future needs."

The new groups, serving to make the office more "customer-centric and not registrar office-centric," consist of technology, academic services, administration and records, and athletic certification. Most immediately, faculty members dealing with the Registrar's Office can expect some "new faces," Pikowsky said.

"We will put on the Web site a list of services we provide with names and contacts," Pikowsky said. "Obviously, as we implement new procedures and new technologies, we'll be working with the faculty and talking with them. Things will primarily change in how they are getting information to and from the office." Pikowsky says she hopes that within the next six months faculty members will be able to change grades through OSCAR.

A Web site redesign will be next, Pikowsky says, since the present one supplies a lot of information but "is not organized very well." Future projects include possibly integrating EasyREG, a registration-related program favored by students, and degree-auditing software to work together.

As a result of the reorganization, the office altered some positions, and eliminated five current employees (two additional positions were

already vacant). The search is on for seven new employees, with the majority going to the technology and academic eligibility groups. "This is pretty sophisticated stuff, so that gets back to the technology area and the systems analyst we're trying to hire," she said.

"It was a really difficult thing, but you have to ask, 'what are the organizational needs, and what do we need to do,'" Pikowsky said about the dismissals. "If you don't have an area adequately staffed, if you don't have an area adequately focused, you run a risk." Pikowsky added other factors made the situation even more difficult.

"Some misinformation has been circulating, saying staff members were escorted out by police officers. It's simply not true. With guidance and assistance from OHR, we handled this in a very business-like manner, in the best way we could."

Pikowsky said the new structure will be in place for a few years, evaluating services along the way.

"We want a structure and a view to the future that's flexible, becoming an adaptable organization, as new technologies come on board," she said. "If you make incremental adjustments, you stay current, and it's less disruptive over time."

For more information...

Registrar's Office
www.registrar.gatech.edu

IN BRIEF:

New softball complex approved

At its Oct. 10 meeting, the Board of Regents approved a new women's softball complex for Georgia Tech, to be located on the parking lot adjacent to the O'Keefe Building. The cost will be roughly \$5 million, funded from the Georgia Tech Foundation. Located off-campus on 14th Street, the current women's softball field is on property that is under contract for sale.

Construction on the new a regulation field, dugouts, batting cages and seating for 500 spectators, will begin the first of the year at the earliest, according to Facilities Project Manager Gary Petherick, with a planned completion in time for the 2009 season. Staff who currently park at O'Keefe will be relocated to the Alexander Memorial Coliseum lot.

Energy leaders meet at Tech

The Strategic Energy Institute presents "Energy Balance: The Intersection of Technology, Policy and Economics," Oct. 25, from 8 a.m. to 5 p.m. in the Global Learning Center. Comprised of industry leaders, panels will discuss energy-related issues such as biofuels, carbon management and power generation, as well as current policies and real-world applications. For more information, visit www.energy.gatech.edu.

Street closure dated

Fifth Street will be closed Nov. 5–7 from Cherry Street to Fowler Street, as contractors will install the conduit and communications vault beneath the road.

This construction is part of the ongoing Fifth Street Streetscape project. The Klaus parking deck can be accessed while driving east on Ferst Drive from Atlantic Drive.

Take your shot

Flu shots will be available to faculty and staff for \$15 at Stamps Health Services Oct. 30 and 31. Either pre-pay in person or call 404-894-1420 from 10 a.m. to noon through Oct. 25 to schedule an appointment. For more information, visit www.health.gatech.edu.