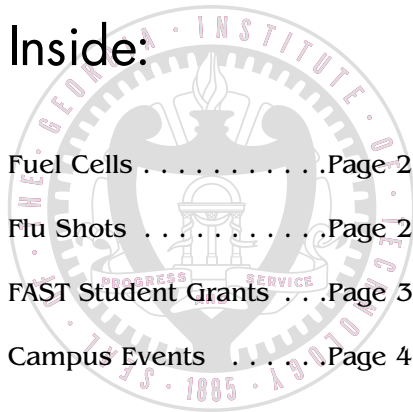


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THE WHISTLE

FACULTY/STAFF NEWSPAPER

VOLUME 25, NUMBER 39 • NOVEMBER 26, 2001

THE GEORGIA INSTITUTE OF TECHNOLOGY

IPST and Georgia Tech consider joining forces

Bob Harty
Institute Communications
and Public Affairs

A little over a decade ago, the Institute of Paper Science and Technology (IPST) with the support of Georgia Tech, the Board of Regents of the University System of Georgia and the state of Georgia, moved from Appleton, Wisc. to its present location on Tenth Street. It was agreed that this move would benefit both IPST and Georgia Tech in assisting their joint efforts in education and research related to the world-wide paper industry. The state of Georgia was enthusiastic given the importance of the health of the industry to its economy. IPST brought with it a rich history of innovation, long-standing degree programs at the master's and doctoral levels, and strong industry support.

Over time, IPST faculty, staff and students have worked closely with their counterparts at Georgia Tech in both the academic and support services areas. IPST President Jim Ferris has served on the GTRC Board and worked on other initiatives with Georgia Tech faculty, key staff and administrators, including a recent successful effort that led to the awarding of a \$3 million grant from the Sloan Foundation to IPST and Georgia Tech. Since 1996, President Wayne Clough has served as a member of the Board of Trustees of IPST.

The growing relationships between IPST and Georgia Tech and changes within the paper industry recently led to discussions about the wisdom of considering an alternative structure for the relationship between the two institutions. These discussions have been sanctioned by the Chancellor of the University System of Georgia and the Board of Trustees of IPST and have involved key staff and administrators for both institutions. The discussions concluded that a merger of IPST into Georgia Tech could benefit both institutions and facilitate the goal of better support for the state's paper industry. At its meeting on October 25, the IPST Board of Trustees passed a resolution instructing its administration to work with Georgia Tech to explore in more detail the potential for integrating its operations with Georgia Tech.

In response to this directive, President Clough has appointed a Georgia Tech task force to study the merger option, consider issues that would have to be resolved, and recommend a proposed framework that would lead to long-term success for an IPST within Georgia Tech. Chaired by Charles Liotta, vice provost for Research and dean of Graduate Studies, the task force will include faculty and administrators. A comparable task force will be appointed by President Jim Ferris of IPST. Both groups will work with a coordinating group from the Chancellor's Office



Institute of Paper Science and Technology

photo by Michael Hagearty

headed by Dan Papp, the senior vice chancellor for Academic Affairs.

"No decision has been made at this point," said Liotta. "There are numerous issues to consider in this potential arrangement. Our goal is to understand if it makes sense from an academic and financial point of view and make a recommendation to both presidents on whether or not to proceed. If the recommendation is to proceed, we must also make a recommendation on timing."

Ronald Rousseau, chair of the School of Chemical Engineering and member of the committee, added, "The task force is considering a wide range of options involving the

academic, research and other missions of IPST. Should there be a merger, it should benefit the immediate parties, the paper industry, and the state of Georgia."

Liotta will be joined on the task force by Rousseau; Professor Charles Eckert from the School of Chemical Engineering; Jilda Garton, associate vice provost for Research and general manager of GTRC; Randy Nordin, chief legal advisor for Georgia Tech; Joel Hercik, associate vice president of Financial Services; and Charles Duffy, director of Accounting for Grants and Contracts. The group hopes to conclude its work by early 2002.

More hardhats on campus as work on stadium expansion begins

Michael Hagearty
Institute Communications
and Public Affairs

The clock is ticking... Only a few days after Georgia Tech's final home football game, construction crews are already beginning to erect fencing around Bobby Dodd Stadium as the two-year renovation and expansion of the Flats gets underway.

Apart from the noise levels associated with any construction zone, the only perceptible change for the campus will be the flow of traffic along Techwood Drive.

According to Sterling Brown, associate athletic director, the fencing will bisect the section of the street

running parallel with the stadium. In order to keep cars moving in both directions, the parking spaces along Techwood will be removed, shifting traffic accordingly.

Despite a double-shift work schedule, Brown said every effort has been made to minimize noise levels during off-peak hours.

"We have asked them to be concerned about the students' co-existence," Brown said. "They are aware of exam dates and other quiet times and have built that into their calendar." He added that should any problems arise, they would be addressed during periodic meetings between the construction managers, administration and athletic officials.

In the late '80s, there were

substantial renovations to the western portion of the football stadium — the oldest on-campus facility at a Division I-A institution. Tech plans to rebuild the other parts of the stadium.

According to Brown, once the perimeter of the site is secured, the lower east stands and the north end zone seating will be demolished and removed. New seating will then be erected in front of the Wardlaw Center in the south end zone, enclosing the stadium. Construction of this lower seating will gradually wrap around the field, moving from the southwest corner to the east sideline and ending in the northwest corner. Twenty new suites will line the east stands, while the upper section will

receive cosmetic improvements.

In order to accommodate the new design, the field itself will have to be moved 30 feet north and closer to the west stands. When the season opens in 2002, Brown said, stadium capacity will remain at 46,000.

Following the completion of the 2002 season, construction crews will return to continue work on the north end zone stands. By the start of the 2003 season, the stadium will have an additional 9,000 seats.

Brown added that the area within the stadium will be a "hardhat area," and that access will be restricted to essential personnel.

But they'll need to work quickly — the 2002 football season is only nine months away.

“QUOTE—
UNQUOTE”

“A good approximation of reality is just as powerful as reality itself.”
—Larry Hodges, an associate professor in the College of Computing, on using virtual reality programs to treat psychological phobias. (Los Angeles Times)

“Americans tend to turn to technology to solve their problems. It helped us in the Cold War. It has helped us in a lot of places.”
—Tom Bevan, a research associate in GTRI, on his work in developing a low-cost, portable toxin detector. (TechTV)

“The U.S. economy is in the throes of a major new investment wave that started in security. That’s because there are so many areas where we are vulnerable (to terrorists).”
—Fred Allvine, a professor in the DuPree College of Management, on the growth potential of the security industry. (Atlanta Journal-Constitution)



THE
WHISTLE

Editor: Michael Hagearty

Published by Institute Communications and Public Affairs.

Publication is weekly throughout the academic year and biweekly throughout the summer.

The Whistle can be accessed electronically through the Georgia Tech web page, or directly at www.whistle.gatech.edu.

E-mail Whistle submissions to michael.hagearty@icpa.gatech.edu, or fax to Michael at 404-894-7214 at least 10 days prior to desired publication date. For more information, call 404-894-8324.

Cost/\$675

Copies/5,200

Institute Communications and Public Affairs
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Atlanta, Georgia 30332-0181

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

Getting off the grid by building a better fuel cell

Cost, mass production still major hurdles

Larry Bowie
Institute Communications and Public Affairs

Researchers at Tech imagine a time in the near future when home electricity isn’t supplied by a far-flung, gigantic power plant. Rather, they envision each house equipped with a personal generator about the size of an air-conditioning unit. The same technology, they believe, could replace the fuel and batteries that power cars, too.

Working to make this technology a reality, a Georgia Tech team is developing advanced power generator units for homes and cars that use fuel cells to produce longer-lasting power for lower costs than most generators currently on the market.

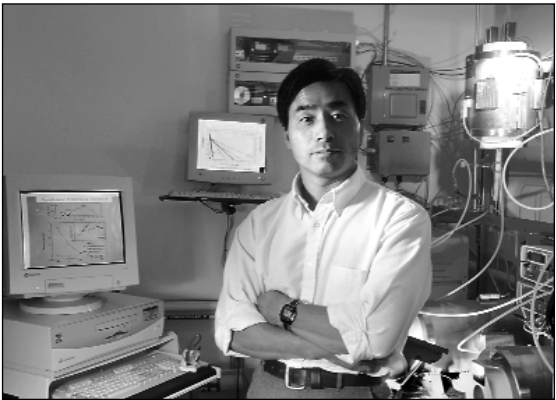
Research and development for fuel cell cogeneration units — which convert various fuels into electricity and heat — are booming now more than ever in light of the nation’s surging energy demands. Though still a relatively young technology, massive 200-kilowatt fuel-cell units are being installed commercially today, mostly in large businesses and industries, but high costs have largely kept the technology from entering residential markets.

This year, the U.S. Department of Energy announced a 10-year, \$500 million initiative to create innovative fuel cells that will cut current cost barriers and move the advanced, low-polluting technology into mainstream energy markets.

As part of the initiative, two professors at Tech’s Center for Innovative Fuel Cell and Battery Technologies were selected to take the technology used to create the high-powered fuel cell generator

systems and miniaturize it for use in an average home or automobile.

Professor Meilin Liu in the School of Materials Science and Engineering and Professor Emeritus Jack Winnick of the School of Chemical Engineering are part of a team led by Siemens Westinghouse Power Corporation charged with developing Solid Oxide Fuel Cells (SOFC) for residential and automotive use.



Professor Meilin Liu is part of a corporate team developing fuel cells for automotive and residential use.

Specifically, the team will develop a 7- to 10-kilowatt heat and power system for residential use and a 3- to 10-kilowatt auxiliary power unit for use in cars.

“Fuel cells are the cleanest, most efficient and versatile technologies for converting chemical energy directly to electricity,” Liu said. “This type of technology would basically replace the furnace in your house and supply all the power needed at a cheaper cost, with higher fuel efficiency and no emissions.”

Liu said the residential application could be introduced to the market as auxiliary units. Ultimately the fuel cell units will be the sole power supply for homes, he said, making them independent of power plants.

‘The technology is there’
The same technology could replace the fuel and batteries powering cars.

“In the car, this type of technology would significantly increase

energy efficiency while dramatically reducing pollutant emission,” Liu said.

Fuel cells are considered among the most innovative technologies for powering advanced vehicles because water is their only emission. They were cited in President Bush’s National Energy Policy earlier this year as cleaner and more efficient, with the ability to reduce urban air pollution, decrease oil imports and provide an uninterrupted flow of energy.

“For the most part, the technology is there,” Liu said. “It’s just the matter of reducing costs so it would be economically competitive. To dramatically reduce the cost, the operating temperature of SOFCs has to be sufficiently low so that (internal) components may be fabricated from relatively inexpensive metallic materials. Further, the cost of fabrication has to be significantly reduced as well.”

Because fuel cells don’t rely on combustion and operate much more efficiently than traditional power plants, they release 25 to 50 percent less heat-trapping carbon dioxide than today’s natural gas or coal-fired power generators.

Why isn’t fuel cell technology used more widely? Industry experts agree that for fuel cells to become commercially viable, they must reliably operate for a minimum of five years and must also be cost effective and competitive with other types of electric power generation equipment.

“While the existing fuel cell technologies have demonstrated much higher energy efficiency with minimal pollutant emission over conventional energy technologies, the cost of the current fuel cell systems is still prohibitive for wide commercial applications,” Liu said. “Fuel cells are about 10 times more expensive than conventional energy technologies, such as today’s natural gas or coal-fired power generators or power plants.”

State asks Health Services to monitor influenza cases

Barbara Wilson
Auxiliary Services

This winter, Georgia Tech Health Services will be assisting the state’s Department of Public Health in keeping tabs on the spread of influenza.

William Manns, a staff physician in Health Services, said he and Health Services have been selected as a screening site for outbreaks in the course of this flu season. The Georgia Division of Public Health tracks cases of influenza throughout the state with the help of 35 volunteer sentinel physicians.

According to Catherine Bryant, influenza surveillance coordinator with the Georgia Department of Human Resources, the sentinel

physicians are asked to provide weekly reports of the total number of cases the department has seen, designating which patients exhibited “flu-like” symptoms.

Research materials are forwarded to a central health department location where the tests, via a swab culture from the throat, are analyzed on both viral and bacterial properties. From the examined cultures that are received at the state public health lab, results from a given week are either labeled “sporadic,” “regional” or “widespread.”

“The tests are done to get a picture of what’s going around in the state,” Bryant said. The patient’s identity is kept anonymous, but the information is used as a tracking vehicle for Human Resources’ efforts

in containment. Flu-like symptoms include a fever of more than 100 degrees Fahrenheit in addition to a cough or sore throat, according to Department of Public Health guidelines.

By knowing which influenza strains are affecting Georgians, doctors can make better informed treatment decisions for their patients. Each week, the Georgia Division of Public Health posts information on circulating influenza strains, based on testing conducted at the Georgia Public Health Laboratory website. In addition, the data entered is also used to help determine which strains will be included in next year’s influenza vaccine. All data is

Flu continued, page 3

NSF grant to help undergraduates succeed at Tech

Komerath: ‘This is not just a scholarship’

Dan Treadaway
Institute Communications
and Public Affairs

Growing up in a large suburban school system with the latest in educational technology is a given for some Tech students, but certainly not all.

The fundamental ability to succeed academically is a common bond uniting all Tech freshmen. The main challenge for a sizable number of them, however, is becoming acclimated to a more sophisticated urban setting where technology is all but ubiquitous.

Beginning in January, many of these students will be getting some help in this arena, along with substantial financial assistance, thanks to a \$100,000 grant from the National Science Foundation (NSF). Funded under NSF’s Computer Science, Engineering and Mathematics Scholarship program, the FAST grant (Financial Aid for Success in Technology) will be open to undergraduates in nearly all engineering majors as well as mathematics and computer science majors. The minimum GPA required to receive a FAST scholarship is 2.0 for freshmen, 2.3 for sophomores, 2.4 for juniors, and 2.6 for seniors. Both prospective and current Tech undergraduates are eligible to apply.

The program will initially consist of a \$100,000 grant that can be renewed annually for

four years. Tech administrators are hoping that the FAST grant will become a permanent part of the Institute’s financial aid programming beyond the anticipated four years of the original program. The grant will provide annual funding for 32 full individual awards of \$3,125 each, but some will be partial awards in order to increase the number of students receiving assistance.

Aerospace Engineering Professor Narayanan Komerath is the principal investigator for the grant, along with a group of co-principal investigators that includes faculty members Marilyn Smith and Erian Armanios (aerospace engineering) and Gary May (electrical and computer engineering) as well as Mahera Philobos, director of Women in Engineering; Jane Weyant, assistant dean in the College of Engineering; Joseph Hoey of the Institute Assessment Office; and Jerry McTier, director of Student Financial Planning and Services.

“This program is aimed not only at students who might have trouble financing their education, but also students who might be at risk academically their first year because they’re not used to a big-school environment or living in a large city,” Komerath said. “This is not just a scholarship, though. The students will be required to participate in mentoring, research and seminar activities as well.”

Elements of the FAST scholarship other than financial assistance include:

- Access to Technology

Leadership (ATL) seminars, which will be given by faculty, industry leaders, Tech alumni, student competition teams, and FAST program alumni. The seminars will give students a clear perspective on the array of opportunities available to them as well as guidance on how to become technology leaders.

- A mentoring program in which FAST students work with a faculty mentor to develop academic and career plans, and informally help with advising other FAST awardees.

- Program assessment activities, where all FAST participants help to assess, document and improve the program’s success.

McTier says the FAST scholarship will give Tech’s undergraduate financial aid program a tremendous boost. “Faculty-solicited research grants that fund graduate assistantships tend to dominate the external funding picture at national research universities,” McTier said. “The uniqueness of the FAST scholarship is that a faculty member submitted a proposal for funding targeted to undergraduate students. That is certainly pleasing to us, because it’s the only scholarship of its kind I know of that’s intended for undergraduates. It’s an especially good thing for our undergraduates and their parents in these challenging economic times.”

For more information...

NSF-FAST
hardy.success.gatech.edu/finaid/nsf-fast.html

Come pull the plug on SAC
Student Affairs and the Department of Campus Recreation invite all faculty, staff and students to join President Clough poolside for the SAC II groundbreaking ceremony on Wednesday, November 28. The ceremony is scheduled to begin at 1 p.m. on the GT Aquatic Center deck.

Flu, continued from page 2

also sent to the U.S. Centers for Disease Control and Prevention (CDC) for inclusion in the nationwide network.

Cindy Smith, director of the Health Center, said she is happy to participate in a program that can have such far-reaching effects.

“We are always glad to be a part of assisting our state agencies in tracking and identifying potential public health

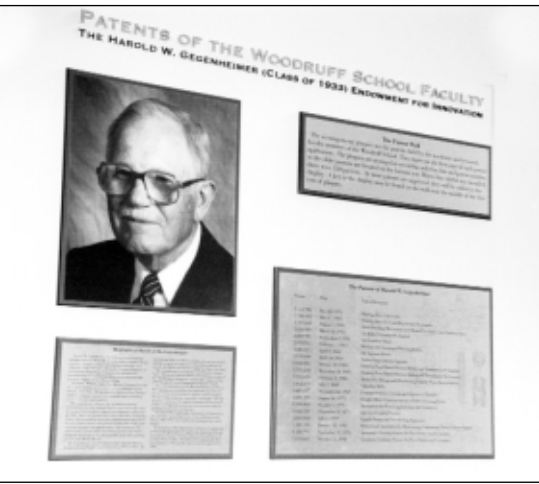
research,” said Smith.

At Tech, demand for flu shots this season has been high. The Health Center’s initial supply was exhausted in less than 48 hours, and a waiting list has formed in the interim.

For more information...

Influenza Sentinel Project
www.ph.dhr.state.ga.us/

Student Health Services
www.health.gatech.edu/



Georgia Tech is known worldwide for its inventions and innovations, and the Woodruff School of Mechanical Engineering has the patents to prove it.

Earlier this month, the School unveiled a new exhibit featuring the patents held by current academic and research faculty at the school. Each patent is represented with a plaque that shows the first page of the patent application. The patents line a wall in the MRDC building, and the School plans to update the wall each year as new patents are granted. The wall was inaugurated with 137 patents.

The exhibit was dedicated in conjunction with the annual Harold W. Gegenheimer Lecture on Innovation. The lecture series was established in 1995 through an endowment from Gegenheimer to support student programs that encourage creativity, innovation and design. The featured speaker was Leo Beranek, who discussed concert halls of the world and their design.

IN BRIEF:

Getting down with OPC

After assessing the current Office Professional Certificate Program, the Office of Organizational Development recently implemented a few changes to better reflect the effort and hard work that is required to complete the program.

Though there are no new requirements to earn **Office Professional Certification**, it will no longer include Microsoft Office User Specialist (MOUS) Examinations. Instead, MOUS Certification will be offered as a separate, optional track open to everyone on campus.

The classroom training part of the Office Professional Certificate, however, will remain unchanged. This consists of three levels — OPC Level I, OPC Level II and OPC Level III — with certificates awarded upon completion of all classes after a participant has completed a curriculum of instructor-led training. Any completed courses and MOUS exams will continue to count toward the respective certificates.

Up to now there has been a MOUS requirement for each Office Professional Certificate level. Now the MOUS requirement will enable each participant to earn an extra certificate — Georgia Tech Software User Expert — upon successful completion of the required MOUS exams, in addition to the certificate awarded by Microsoft.

Clough examines deregulation

Earlier this month, in an effort to assess the state of Georgia’s controversial **natural gas deregulation system**, Gov. Roy Barnes appointed a special 18-member **task force** charged with proposing long-term solutions for problems brought on by the 1997 law. Chairing the committee will be President Wayne Clough.

Professor receives two career awards

October was a good month for **Ray Flannery**, Regents’ professor in the School of Physics. First he was named recipient of the **2001 Sir David Bates Prize**, awarded by the UK Institute of Physics. The award is named in honor of the renowned physicist and came as a surprise to Flannery since he was unaware of his nomination and since Professor Bates was his longtime mentor. Ronald Fox, chair of the School of Physics, said, “Together with his Will Allis prize from the American Physics Society (in 1998), Ray has both sides of the Atlantic covered.”

Flannery also received the 2001 Alumnus Illustrissimus Award from his former high school, St. Columb’s College in Ireland. Of the seven previous recipients, two are Nobel Laureates— Seamus Heaney and John Hume — and another is playwright Brian Friel. The award is given to a past pupil “who has achieved something of significance or has made an outstanding contribution” to his or her chosen field of endeavor.

Note to faculty

The IEEE Georgia Tech Student Chapter reminds the faculty of the recognition and **funding opportunities** available from the Institute of Electrical and Electronic Engineers (IEEE), a forum for professional discussion and research in many interrelated fields of engineering. IEEE also supports the furthering of progress through recognition of outstanding scientists. Numerous awards and scholarships are available to undergraduate, graduate and faculty IEEE members, as well as nonmembers. For further information, contact IEEE Region 3 awards committee chair John Twitchell at j.twitchell@ieee.org or visit ewh.ieee.org/reg/3/awards/.