Rehabilitation device may offer therapeutic alternative for stroke patients

David Terraso
Institute Communications and Public Affairs

As the most common cause of adult disability in the United States, a stroke leaves many survivors unable to perform tasks that were once part of their daily routine. Most of the time the disabilities are treatable, but the high cost of rehabilitation therapy leaves many patients to cope on their own.

Now, a new device has the potential to reduce the cost of therapy. After a pre-trial participant, he slips his arm into the Mentor, resting his fingers on the hand grip. His therapist punches a pre-trial participant, he slips his arm into the Mentor, resting his fingers on the hand grip. His therapist punches

Ellen Frick works with patient Herbert Brooks during a pre-trial test of the Hand Mentor.

Rehab continued, page 2

FACES helps keep Tech among top schools for minority Ph.D.s

Matt Nagel
Institute Communications and Public Affairs

Georgia Tech continues to be a national leader in awarding minority doctoral degrees, according to the latest National Science Foundation Alliances for Graduate Education and the Professors. Though several critical programs play a role in attracting minorities to Tech for graduate degrees, Facilitating Academic Careers in Engineering and Science (FACES) is one of the programs responsible for helping minority students earn their doctorates. The program is an alliance between Tech, Emory University, Morehouse College and Spelman College.

The FACES alliance is designed to increase the number of African-American students receiving doctoral degrees in engineering and science fields as well as the number of these individuals entering the professorate. The 53 doctoral degrees awarded by FACES institutions during the 2003-2004 school year represented 12 percent of the national total. Georgia Tech had 35 graduates, 19 of which were African-American. One student graduated from Emory.

FACES Project Director Gary May said the program is unique “in that it addresses each critical step along the career path of a candidate. Also, African-American faculty members are fully involved in all aspects of the program.”

The program consists of three elements: recruitment and student preparation, retention and mentoring, and future faculty development. Undergraduate students are given opportunities to partner with faculty for research as part of the recruitment. Once in the program, students are given a fellowship to help with retention. May believes the last element may be one of the most crucial.

“It is a grant that we give the students to help with their first job. We don’t attach any conditions to it,” says May. “They can use it for research equipment or anything that will help them get started in an academic or research career.”

Georgia Tech currently has about 60 fellows in the FACES program. Thirty-one have petitioned to graduate this year.

May also attributes the success of the program to the support it has received among faculty and the administration. The Institute’s dedication to FACES starts at the top, where President Wayne Clough is the principal investigator. “The Georgia Tech administration and faculty have done everything from advising students to putting on programs. I think Georgia Tech takes a lot of pride and satisfaction in these types of university efforts and I think that is crucial to the success that we’ve enjoyed,” said May.

‘Towers’ of carbon nanotubes could provide more efficient solar power

John Toon
Research News

When residents of New York’s Manhattan Island ran out of real estate for new construction, they expanded vertically — using multi-story buildings to get more living space on their compact island.

Scientists at the Georgia Tech Research Institute (GTRI) hope to follow their example, but on a nanometer scale — building carbon nanotube towers atop photovoltaic (PV) cells to extract more power from the sun.

The nanometer-scale towers, which would be coated by the special semiconductor junction materials used to generate electrical current, would increase the surface area available to produce electricity.

Reflections off the towers would provide more opportunity for each photon of sunlight to interact with the semiconductor junction of the cell. That would increase the power output from PV cells of a given size, or allow cells to be made smaller while producing the same amount of power.

“You will typically get low voltages from the sun, but it generates a steady-state supply — like a fuel cell — but without the need for a consumable fuel,” explained Jud Ready, a research engineer in GTRI’s Electro-optics, Environment and Materials Laboratory who is the project’s principal investigator. “It would certainly be viable for recharging and for supplying power to a base where people are stationed long-term. This could have significant benefits from a supply logistics standpoint.”

The three-dimensional cells could be useful in space applications.

Towers continued, page 2

GTRI scientists have demonstrated an ability to precisely grow “towers” composed of carbon nanotubes atop silicon wafers. The work could be the basis for more efficient solar power. This image was taken at a 20 microm — or 20,000 nanometer — scale.
Alumni gift supports both academics and campus life

Dan Treadaway
Institute Communications
and Public Affairs

Most gifts from alumni to their alma mater tend to support either the academic side or the campus life side of the university. David Flanagan, has made a major gift to Georgia Tech that will enrich both immeasurably.

Flanagan’s generous gift will both establish the David D. Flanagan/Georgia Research Alliance (GRA) Eminent Scholar in Biological Systems as well as provide unprecedented support for the Outdoor Recreation Georgia Tech (ORGT) program, part of the Campus Recreation Center.

The new Biological Systems Chair is housed in the Department of Biomedical Engineering. “Biological systems is truly at the forefront of research at the intersection of engineering with the life sciences,” said Don Giddens, dean of the College of Engineering. “This new chair will have an extremely tremendous impact on this exciting area of research.”

Professor Eberhard Voit has been appointed to the new Biological Systems Chair. His research has focused on the areas of biomedical systems metabolic pathways and biochemical systems theory. Applications of his research include developing drug treatments with minimal side effects, improved food production processes for the agriculture industry, and more cost-effective production of various substances of interest to industry such as alcohol, penicillin and dietary supplements.

“This gift underlines the importance of systems biology and Georgia Tech’s strong commitment to it,” said Voit. “Only a few years ago, systems biology was living in the shadow of molecular biology, because its potential was not generally recognized. By dedicating a chair to this field, Mr. Flanagan and Georgia Tech are telling the world that systems biology is one of the really worthwhile enterprises of the twenty-first century. This will certainly be noticed by the scientific community and attract superb students.”

ORGT gift breaks new ground

In making the ORGT portion of his gift, Flanagan, a material and industrial engineering degree in 1976, recalled the enjoyment of kayaking with fellow students as one of his most cherished Tech memories. “We alumni talk a lot about how tough the academic experience at Tech was,” said Flanagan, president of Emf Street Development in McLean, Va. “But for the majority of us, being involved in student organizations was just as important as the academics. My passion was ORGT, especially kayaking. Not only was the physical sensation of kayaking a fun and exciting challenge, but sharing that experience with other ORGT members also created fantastic memories that all of us will have for a lifetime. We really learned how to work as a team in ORGT.”

To ensure that future generations of Tech students have the same opportunities he had, Flanagan has designated a substantial portion of his overall gift to ORGT in honor of Miller Templeton, retired director of the Office of International Education, who was and continues to be a constant and passionate advocate for ORGT.

“I made it a point over the years to ask students who participated in ORGT events that I led about the value they felt the program had for them,” Templeton recalled. “They would all say that after meeting the huge challenge of outdoor activities such as backpacking 150 miles through the backcountry of Yellowstone Park or the Grand Canyon or running the Colorado River rapids, they believed they could handle whatever challenges came their way in life. I think that’s a pretty powerful endorsement.”

That emotion is shared by Michael Edwards, director of the Campus Recreation Center, who administers ORGT. “David Flanagan’s expression of support for ORGT’s mission and his belief in the program’s value for Tech students is nothing short of incredible,” said Edwards. “This unprecedented gift has the power to help ORGT grow and serve Tech students in ways that perhaps none of us has ever imagined before.”

“My wife Ann and I are so pleased to be able to make this gift to Georgia Tech,” said Flanagan. “We are especially grateful to Don Giddens and many others at Tech who helped us find a creative way to support two very different, but very important, aspects of the Georgia Tech experience.”
Symposium looks at the ‘monstrous’ in the arts

Michael Hagearty
Institute Communications and Public Affairs

As an assistant professor in the School of Literature, Communication and Culture (LCC), Lisa Yaszek’s specialty is science fiction. This week, she has planned multiple events and symposia that involve vampires, cyborgs and cyberpunks, introducing art and film exhibits as well as presentations from local scholars, science fiction writers and artists from Cartoon Network’s “Adult Swim.”

“We specifically chose the theme of ‘Monstrous Bodies in Science, Fiction and Culture’ because it allowed us to demonstrate how the research we do in LCC connects with Georgia Tech’s dedication to scientific and technological development,” she said. "We tend to think about bodies as autonomous, self-contained entities. However, new sciences and technologies both challenge and transform our experiences with all kinds of bodies on a daily basis. As humanities scholars, LCC faculty and students are interested in demonstrating how artists think about and represent the kinds of scientific and technological issues that our colleagues elsewhere at Georgia Tech grapple with on a daily basis."

Yaszek also oversees a research lab centered around the Bud Foote Science Fiction Collection, named for the emeritus professor who donated his personal science fiction collection — some 8,000 items — to the Institute following his retirement in 1999.

“The mission of the Science Fiction Lab is twofold,” she said. “First, the Lab provides students with an opportunity to conduct independent research in one of Tech’s most unique resources. Second, students who work in the Lab aim to heighten public awareness about the Collection by publishing their research results online after a rigorous process of peer review and revision. We hope that this research portal will demonstrate Georgia Tech’s ongoing commitment to science fiction studies, and that it will be a useful resource for everyone interested in learning more about science fiction.”

Foote’s death earlier this month, she said, will most certainly cast a shadow over some of the events, but his spirit will remain forever present in the legacy he left behind.

“I’m particularly saddened by this because we originally conceived of the ‘Monstrous Bodies’ Symposium as a way to showcase the kind of scholarly work Bud began twenty-five years ago when he established the first science fiction class at Georgia Tech. This was one of the first accredited college-level courses on science fiction, and in many ways it was the cornerstone of my department’s ongoing commitment to the study of the fantastic in the arts. I’m sorry Bud won’t be there in body to witness the fruit of all his labors, but we are determined to make this symposium a real celebration of his life nonetheless.”

For more information...

Monstrous Bodies in Science, Fiction and Culture
www.monstrousbodies.lcc.gatech.edu
Bud Foote Science Fiction Collection
www.sf.lcc.gatech.edu
Science Fiction Lab
sciencefictionlab.lcc.gatech.edu

IN BRIEF:

A Web site for lost passwords

Earlier this month, the Office of Information Technology (OIT) launched a new, expanded password Web site. The new site offers several new features that make it easier for users to manage their GT Account and GT Active Directory passwords.

GT Accounts are used to access Spectrum e-mail, BuzzPort, TechWorks, the LAWN, OIT Software Distribution and other OIT-supported computing resources. GT Active Directory is a Windows account management service that is used by a number of departments and campus computing labs.

Along with changing account passwords, the new GT Account Password Change and Account Management Web site allows users to view password information, including the last date a password was changed and the date it’s due to expire.

Another feature on the site is the ability to reset passwords. To be able to use this feature, users log in to the new password Web site and create three password hints. Then if a password is forgotten or expired, it can be reset without contacting IT support.

The Web site is www.password.gatech.edu.

For more information, contact the OIT Support Center at 894-7175 or e-mail support@oit.gatech.edu.

Women's tennis #6 in the nation

Georgia Tech’s women’s tennis team climbed to No. 6 in the polls released last week by the Intercollegiate Tennis Association (ITA), marking the highest ranking ever for any Georgia Tech tennis team in history.

The Yellow Jackets also become just the second women’s team in Georgia Tech history to crack the top 10. The volleyball team climbed as high as No. 4 in the rankings a season ago.

The Yellow Jackets have already recorded victories over one top-10 team (University of Georgia) and three more top-25 teams (Clemson University, Baylor University and the University of Alabama) this season, and still have home matches to play against No. 11 Miami (Apr. 10), No. 7 Duke (Apr. 16) and No. 10 UNC (Apr. 17).

The team’s record is 11-2 for the season, including a 4-0 mark in ACC play. Under current head coach Bryan Shelton, the Yellow Jackets are 77-50 and own a 22-20 record in conference matches.

Pi Mile Road Race

Online registration has begun for the 33rd Pi Mile Road Race to be held Saturday, Apr. 16 on the Georgia Tech campus.

The 5K route, which was trimmed from the traditional 3.14-mile length in 2002, will wind through campus and will be followed by a post-race celebration on the Tech Tower lawn with food, drinks and an awards ceremony.

Registration begins at 7 a.m., with the race starting at 8 a.m. Race T-shirts will be distributed to the first 500 registrants.

Awards will be presented to the top male finisher, top female finisher, top male and female student finishers, top male and female faculty/staff finishers, top alumnus and alumnna and the top three male and female finishers in age categories from under 14 to over 60.

For information and to register online, visit www.gfalonumi.org/pimile.
C A M P U S  E V E N T S

Arts & Culture

Apr. 1
The Frist Center for the Arts welcomes South African jazz guitarist Jonathan Butler for an 8 p.m. performance. For tickets, call 894-9600.

Apr. 7
The Poetry at Tech series continues with poets Robert Dyl and Heather McHugh, at 7 p.m. in the College of Management’s LeCraw Auditorium.

Apr. 9
The American Museum of Papermaking hosts “Paper from Plants: A Handmade Paper Workshop,” from noon to 5 p.m. at the Institute of Paper Science and Technology. For more information, visit www.ipst.gatech.edu/amp.

Brown Bags/Conferences/Lectures

Mar. 29
The Library and Information Center’s Tuesday Talks Lecture features College of Computing Associate Professor Irfan Essa, on “Aware Home: Sensing, Interpretation and Recognition of Everyday Activities,” at 2:30 p.m. in the Wilby Room. Students, faculty and staff are welcome.

Mar. 30
The School of Biology welcomes Nicole Lopanik, a research fellow at the University of Michigan, on “Emergent Team Cognition (or What Was Wrong with the U.S. Olympic Basketball Team?”) at 5 p.m. in the J.S. Coon Building.

Mar. 30
The College of Management’s IMPACT Speaker Series welcomes Gary Betty, president and CEO of Earthlink, at 4:30 p.m. in the LeCraw Auditorium.

Mar. 30
The Architecture Program’s lecture series features Harrison Design Associates Visiting Scholar Gregory Saldana, at 5 p.m. in the College of Architecture Auditorium.

Mar. 31
The School of Mechanical Engineering’s Woodruff Colloquia Series welcomes UCLA Professor Vijay Dhir on “Nucleate Boiling in Reduced Gravity: Numerical Simulations and Experiments,” at 11 a.m. in the NAE Auditorium.

Mar. 31
The School of Mechanical Engineering’s Woodruff Colloquia Series welcomes Eloy Saldana, at 5 p.m. in the College of Computing.

Mar. 31
President Wayne Clough will give the keynote presentation during Emory University’s two-day symposium “Water in Our Lives,” at 6:30 p.m. in Emory’s Cox Hall Ballroom. The symposium is free and open to the public. For more information, visit www.emory.edu/water.

Miscellaneous

Apr. 8
The deadline for students to apply for the President’s Undergraduate Research Award (PURA). Applications are available online. For more information, visit www.undergradresearch.gatech.edu/institute-wide.htm.

Ongoing

Techmasters — Tech’s chapter of Toastmasters International for faculty, staff, students, alumni and spouses — meets every Thursday at 7:30 a.m. in room 102, Microelectronics Research Center. For more information, visit www.techmasters.gatech.edu.

C L A S S I F I E D S

APPLICATIONS

Brand new white refrigerator, model number TBB1518RSW1, serial number Z2948225. Came with house, $175 OBO. Call Annette, 678-467-6732.

Roper washing machine, excellent condition. $125 OBO. Call 894-5633.

AUTOMOBILES

1995 GMC Suburban. Teal, cloth interior, good condition, 110K miles. OBO. Call 404-248-9579 evenings or email ken.cunefare@me.gatech.edu.

1995 Mazda MX-6. White with tan interior, 158K miles. Never had problems with engine at all, runs well. $1,000 OBO. Call 404-4675.

1999 Dodge Dakota RT regular cab, Beltech suspension, tonneau bed cover, fully loaded, Infinity stereo system, CD, cassette, amethyst color, 9,450 miles. Asking $14,500. Call 404-432-3122.

2001 Toyota Sienna LE minivan, Champagne, seven passenger, captain’s chairs, tape/C/D player, dual climate, remote entry, 71K miles, $12,500. Extended warranty through Sept. 2005. Call 770-365-6445 or e-mail hopekco82@bellsouth.net.


FURNITURE

Light blue padded rocker with padded rocker ottoman with light oak wood frame. Paid $150, sell for $40. E-mail jeanette.collins@gti.gatech.edu or call 404-9245.

Wood queen-size bed with wood frame. Matching dresser w/mirror, chest of drawers and 2 night stands. Original owner. White with dark gray interior, $300. E-mail chris.hamlin@oit.gatech.edu for pictures.

REAL ESTATE/ROOMMATES

Approx. one-acre lot at Lake Jackson in Turtle Cove (Eagle Lot 10). Direct common property access to the lake, underground utilities, 2005 taxes and fees paid. $15,500. E-mail demonti.kelly@ei.gatech.edu or call 478-829-5504.

2BR/1.5BA brick townhouse. Complete renovation in 2000, including new appliances. 2 blocks to 30th Street Village Green, 30 minutes to GT. Asking $132,000. E-mail eileen.gram@juno.com or call 894-0065.

1BR/1BA condo at Peachtree St. and North Ave. Large balcony, hardwoods, floor-to-ceiling windows. Gym, pool, billiards, parking. 24-hour concierge. $139,900 Call Randy at 404-271-1578 or e-mail randybrazee@x.com.

1BR/1BA condo in Midtown. Located on Ponce de Leon Avenue. Perfect for those who love an older, more classic architectural style, but still want modern amenities and a central location. $950/month OBO. Call 404-663-6291.

Rent or rent-to-own 3BR/2.5BA home in Stone Mountain. Great master suite, cul-de-sac, close to shopping, schools, medical. $1,200/month. Call 404-432-3122.

3BR/2BA ranch home in Snellville: Shiloh school district, sunroom, 2-car garage, huge front ft fenced back yard, new appliances. $975/month. Call 404-432-3122.

Vacation rental in Grayton Beach, Florida. 3BR/2BA with 2 porches available weekly or nightly. On Gulf Coast between Panama City and Destin. E-mail hgdentroy@springs.com or call 404-636-3146.


SPORTS/FITNESS/RECREATION


Rent or rent-to-own 3BR/2.5 BA home in Stone Mountain. Great master suite, cul-de-sac, close to shopping, schools, medical. $1,200/month. Call 404-432-3122.

MISCELLANEOUS

XM SkyFi receiver. car kit and boom box. Cost new $220 + tax, sell for $95. Call 894-8728 or email gary.phillips@facilities.gatech.edu.

Graduate or Ph.D. married internationa couple with no children or pets wanted to house/dog sit in Buckhead home, 10 minutes from campus. Daily rate. References required. Call 404-355-2030.

To submit an ad, email the text to editor@icpa.gatech.edu.