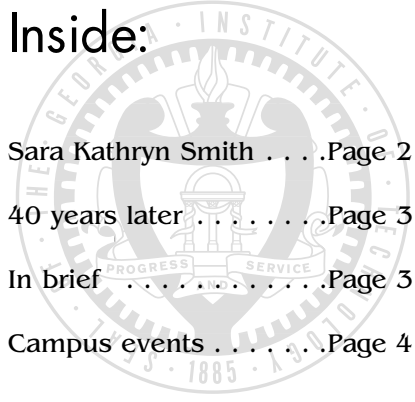


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THE WHISTLE

FACULTY/STAFF NEWSPAPER

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THE GEORGIA INSTITUTE OF TECHNOLOGY

Virtual reality finding niche in modern medicine

Overcoming phobias, training employees are just a few of many possible applications

Jane Sanders
 Research News and Publications

In today's age of cyberspace, it may not surprise some that people with mental health problems are finding help in a virtual world. But it was a decade ago when Larry Hodges first envisioned the potential of a computer-generated virtual world for treating people with anxiety disorders. Today Hodges, a professor in the College of Computing, is enjoying academic and business success with his collaborator Barbara Rothbaum, an Emory University psychiatry professor. Most important to them, they say, is helping real people deal with real

problems in a virtual world. "Virtual reality technology works well in treating a number of conditions," Hodges says. "We can use it when treatment is too difficult to handle logistically in reality, or it's too time consuming. Also, we ask whether it's too dangerous to treat something in a real environment."

For example, therapists have traditionally treated the fear of flying in an airplane by exposing the patient to a



Fear of public speaking is one of the several phobias clinicians can treat with virtual reality therapy. Virtual environments created by Tech and Emory researchers are being used in more than a dozen psychologists' offices across the country.

the patient wears a head-mounted display with earphones and separate screens for each eye. The display also includes a head-tracking device to provide location and orientation information to the therapist's computer in the room. The computer then provides visual images on the screen that are consistent with the direction in which the patient is looking in the virtual environment. Though the virtual reality (VR) graphics are simple, they combine with the auditory and tactile stimuli to create an environment real enough to immerse patients in their surroundings.

"It gave me an impression of the environment of the airplane cabin and the window view," says Shannon, a 38-year-old who was successfully treated at Virtually Better in 1999. "At first I was disappointed that it was not more realistic. But then the chair began to vibrate, and I buckled the seatbelt.... So eventually the entire environment combined to set me up for a representative experience."

VR therapy promises to be an effective treatment, particularly for the fear of flying, the researchers say. Their controlled study of patients undergoing VR therapy for a fear of flying showed the virtual method works as well as traditional exposure therapy. The researchers reported

real aircraft and eventually a flight. Logistically, it is difficult to arrange such exposure. Emotionally, it is difficult on the patient because of potential embarrassment. So only a small percentage of people with a fear of flying have sought treatment.

In the privacy and convenience of a therapist's office, however, they can face their fear on a virtual airplane — one of six virtual therapy environments created by Hodges and Rothbaum and marketed by their Atlanta company, Virtually Better Inc. In a darkened treatment room,

VR continued, page 3

Human Resources plans new benefits options for upcoming open enrollment

Michael Hagearty
 Institute Communications and Public Affairs

Open enrollment is more than a month away, but Human Resources is announcing several new benefit options that will create more complete insurance plans and provide additional savings opportunities.

Short-term disability

The most anticipated of these new choices is a short-term disability program, designed to fill the existing 60-day coverage gap between sick leave and long-term disability payouts. The company, Unum, currently provides long-term disability at Tech.

As a voluntary benefit option, Staff Benefits Manager John Grovenstein said that this latest insurance option addresses a significant need.

"This plan was implemented to allow employees to cover the gap in income upon expiration of their sick leave," he said, noting that the offering will be particularly effective in offsetting unfunded maternity leave. "Under the short-term plan, there's only a 30-day elimination period (before the benefit kicks in)." Under the current long-term plan, a claimant must be out of work for 90 days before receiving payments.

Personal insurance coverage

For employees who seek to extend their personal insurance, Tech has contracted with AFLAC to provide three popular protection programs — cancer, hospital intensive care and accident. Because these programs were negotiated by Tech, Grovenstein said, customers will see cheaper rates.

"They're going to get a discount

Benefits continued, page 2

Narrowing Tech Parkway



Due to the increased construction around campus and the preparations for the groundbreaking at Technology Square, finding parking can be a part-time job. One recent effort to improve conditions occurred last week, as crews began lining Tech Parkway and Hemphill Avenue with roughly 300 additional parking spaces. The spaces will be classified for R03 and A04 permits, and should give students unable to find off-campus parking a measure of relief.

“QUOTE— UNQUOTE”

“Students, like the population in general, have become more sophisticated in their understanding that you don’t need a degree in computer science or computer engineering in order to do interesting things with computers.”
—Peter Freeman, dean of the College of Computing, speculating on the recent tapering off of students enrolled in the computing-based academic programs. (Atlanta Business Chronicle)

“When I went into this, I thought it would be a straightforward women’s history. I found if you look at men’s letters instead of just women’s letters or diaries, you see that men often had just as much expertise and certainly as much interest in the process of controlling fertility as women.”
—Andrea Tone, associate professor in the School of History, Technology and Society, on researching her latest book, “Devices and Desires: A History of Contraceptives in America”. (New York Times)

True ‘survivor’ returns to campus after transplants

Sean Selman
Institute Communications
and Public Affairs

Sara Kathryn Smith, a 22-year-old sophomore in Georgia Tech’s School of Psychology, returns to the Institute this fall after multiple surgeries, including liver, kidney, stomach, intestine and pancreas transplants.

Smith, a native of Evans, Ga., was diagnosed in 1996 as having autoimmune hepatitis, a condition in which a person’s own immune system attacks the liver. Shortly after she came to Georgia Tech in 1997, Smith fell ill due to her condition. In November 1998, she required a liver transplant and left the Institute to undergo surgery. Further complications developed, leading to a second liver transplant a month later and a multiple-organ transplant the following August.

“I had never been sick and it was a real shock when I became suddenly very ill,” Smith said. “Unfortunately, liver disease can be like that. You might never know you are ill until it has done its damage.”

After being at Tech for only a week, Smith spent two weeks in the intensive care unit at Emory University Hospital. She was put on a liver-transplant waiting list and returned to Georgia Tech to complete her freshman year. While attending one of her sorority’s semi-formal dances in 1998, she got the call that a liver was available for her transplant.

Smith underwent a second liver transplant in December 1998. However, her intestines were affected by complications and she was flown to the University of Miami’s Jackson Memorial Hospital Medical Center in January 1999 for further treatment.

The ongoing complications eventually led to a multiple-organ transplant for Smith. During this operation, she received a liver, kidney, stomach, intestine and pancreas in August 1999, followed by eight months in an intensive care unit, where she breathed through a ventilator, endured several more bouts of infection and underwent additional operations.

“Every day I am very grateful to my donors,” Smith said. “I do not have any information about them. Their identity is not revealed to us. I just know they and their families were very gracious, wonderful

Dean of Students Gail DiSabatino said there will be ongoing challenges as Smith returns to her studies at the Institute but that she knows the young woman will address them with a positive attitude and perseverance.

“All Tech students have their own special story, have overcome their own personal odds and have their own personal triumphs,” DiSabatino said. “With Kathryn’s story, odds and triumphs are most extraordinary, and we will all benefit from her return as we learn from her.”

Rebecca Gross, a close friend of Smith’s at Georgia Tech, said she is excited about Smith’s plan to return to campus this fall.

“There were plenty of ups and downs that caused us some scares throughout her recovery,” Gross said. “But she’s a strong girl who has overcome some incredible odds. Seeing her pull through and return so strong inspires me and makes me respect and love her that much more.”

Scott Browne, a friend of Smith’s since their freshman year at Tech, was with Smith when she first learned that a liver was available for transplantation.

“She has gone through trying times, and her persistence and determination in fighting her disease will serve

her well in the future,” Browne said. “I can’t wait to see her back on campus, and I hope the school recognizes her for her love of Georgia Tech and the enthusiasm she has for this community.”

Smith said she intends to continue her psychology studies at Georgia Tech and one day hopes to attend medical school.



Sara Kathryn Smith, a 22-year-old sophomore in the School of Psychology, returns this fall after recovering from multiple organ transplants. She plans to launch a campus group that promotes organ-donor awareness.

people who in their time of grief thought about others.”

About every three months, Smith must travel to Miami for check-ups at the hospital where she had most of her surgeries. She also takes a regimen of immune-suppression drugs and has blood drawn regularly to monitor her condition. But after a lengthy recuperation, Smith decided to return to Tech, where she is a member of Alpha Xi Delta sorority. She also plans to launch a campus group that promotes organ-donor awareness, a continuation of her work as an active member of LifeLink, a non-profit organ and tissue recovery organization dedicated to serving patients in need of transplant therapy.

Benefits, continued from page 1

because of Tech’s group rate that they couldn’t otherwise get as an individual,” he said. As opposed to the short-term disability package, premiums are paid with pre-tax dollars.

AFLAC’s automated claims processing and quick payment is another asset, Grovenstein said, with the benefit going directly to the individual “generally within one week” rather than the hospital or doctor.

Expanded retirement options

For those with an eye on retirement, Human Resources will also offer a new contribution option, known as section 457, which will allow employees of public employers to double their savings limits effective January 1.

Members of the 403(b) program will be able to increase their contributions to \$11,000, a maximum that will grow to \$15,000 by 2005.

“Employees who want to save more will be able to open a section 457 plan, which will allow them to shelter an additional \$11,000,” Grovenstein said. Employees over 50, he said, are permitted an extra \$1,000 for each program, raising the contribution ceiling to \$24,000 per year. He added that these programs, unlike those selected during open enrollment, may be amended at any time during the year.

Though the dates have yet to be finalized, it is anticipated that the period for open enrollment this year will be mid-October to mid-November, pending announcement from the Board of Regents.

For more information...

Lifeline

www.lifelinefound.org

Georgia Transplant Foundation

www.gatransplant.org

Georgia
Tech

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Tech quietly marks a 40-year milestone

Integration 'went like clockwork'

John Dunn
Alumni Publications

The racial barriers fell at Georgia Tech 40 years ago when three black students — Ford Greene, Ralph Long Jr. and Lawrence Williams — joined the ranks of 1,200 freshmen on Sept. 18, 1961. The crumbling walls of segregation at Tech hardly made a sound.

The silence was a testament to the leadership of Tech President Edwin Harrison, who resolutely determined that desegregation of the Institute would be handled as routinely as possible. In the tension-charged atmosphere of the times, when sparks of social change exploded in demonstrations and riots, it was a remarkable achievement.

Harrison didn't want it to be catastrophic. He asked James E. "Jim" Dull, then associate dean of students, to develop a strategy for Tech to peacefully integrate.

Dull, now vice president and dean of students emeritus, said Harrison told him, "It's the right thing to do."

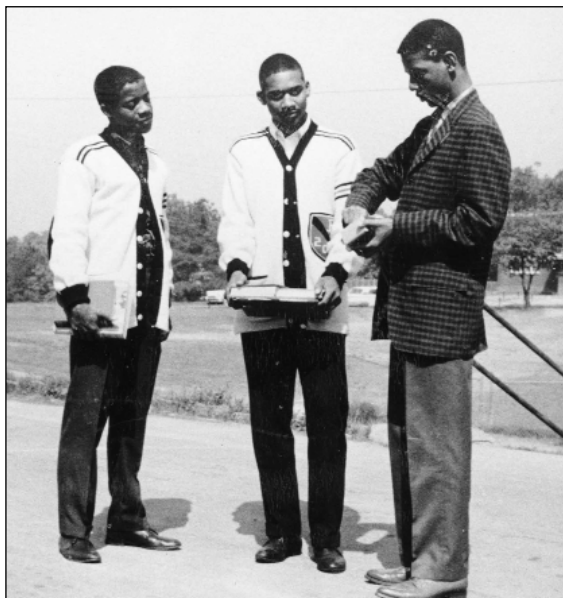
On May 11, 1961, Harrison announced that 13 black students had applied for admission to Tech and he had accepted three of them — Greene, Long and Williams.

Greene and Long were both outstanding students and athletes at Turner High School in Atlanta. Greene was a four-letter athlete with a 4.0 average who was president of the honor

society and a member of the symphony orchestra.

"To be honest with you, it was almost a responsibility," Greene said. "Regardless of my likes or dislikes or wants, it was a responsibility that was thrust upon me. How could I say no?"

On Friday, Sept. 15, 1961, Harrison had second thoughts about media arrangements and boldly decided to bar the press from campus during integration.



From left, Ralph Long Jr., Ford Greene and Lawrence Williams, attending classes at Tech in 1961.

The press was not permitted inside any campus building and television or radio coverage was not allowed on campus.

A front-page article in the next day's edition of The Atlanta Constitution, displayed discreetly beneath the fold, announced that Tech "became the first academic institution in the Deep South to desegregate without the pressure of a court order."

In an interview 40 years after the event, Dull said Tech was prepared for integration and he had expected it to go well.

"I personally didn't think our students would cause difficulties," Dull said. "That fall everything went like clockwork."

Greene, Long and Williams also praised the integration

process.

"I thought the first day was the best day because it was uneventful," Greene said. "We were obviously apprehensive, but the decision was made to approach it on a business-as-usual basis."

"It was sort of a big adventure to be involved in something unusual," Williams said. "My biggest fear was after I started school and realized that I had to work harder than I had ever worked in my life. That probably scared me more than anything else."

"With the exception of my personal difficulties as a student, I thoroughly enjoyed Tech," Williams said. "It was the first chance to venture away from home — even though I didn't live on campus. If I had lived on campus, I would probably have been successful at Tech. But the idea of going back to the same environment, distractions, relatives and friends — that was taking too much away from me."

President Wayne Clough was a co-op student when the Institute integrated. "My recollections are that things were very calm and that all went well," Clough said.

Clough said a number of factors contributed to the peaceful process.

"Students of this time were taking courses and labs aplenty and did not have time to worry about too much else. The mindset of the large majority of Tech students was that if you could do the work you belonged, regardless of race or gender."

"Many of us, including myself, were deeply moved by the progress we saw in the civil rights movement and Dr. Martin Luther King's commitment and courage," Clough said. "This was taking place in our own city, and we could see it up close and personal."

VR, continued from page 1

their findings last year in the *Journal of Consulting and Clinical Psychology*.

Furthermore, patients seem to prefer virtual therapy over the traditional treatment, Hodges says.

VR therapy initially proved its effectiveness for treating fear of heights in 1993 when Hodges and Rothbaum conducted the first controlled study on the use of VR exposure for treating an anxiety disorder. They published their groundbreaking results in the April 1995 issue of the *American Journal of Psychiatry*.

VR technology has existed since the early 1970s, and it has come a long way, particularly because of advances in computing power. Still,

there are many technical hurdles for researchers to jump. For example, it is limited by tactile feedback, hand-eye coordination and the creation of smell, Hodges says.

He believes that as costs continue to decrease and the technology improves, and as more studies show success with VR therapy and other applications, VR technology will become more widely used.

For more information...

Larry Hodges
www.cc.gatech.edu/~hodges/

Virtually Better Inc.
www.virtuallybetter.com

IN BRIEF:

ATDC launches satellite

Georgia Tech's Advanced Technology Development Center (ATDC) will open a Savannah office in September.

Wayne Hodges, Georgia Tech's associate vice president for Economic Development and Technology Ventures, said the Savannah area is positioned for technology-based growth.

"Coastal Georgia — and the Savannah area in particular — possess all the ingredients for continued strong growth in technology-related industries," he said. "Besides being a great place for entrepreneurs to live and work, the area's technology base is significant and growing."

Hodges cited the three major universities in the region — Georgia Southern, Savannah State and Armstrong Atlantic State — as well as Georgia Tech's Regional Engineering Program and the advanced technologies being employed and developed at the Savannah College of Art and Design and the Skidaway Institute of Oceanography. He also noted the area's numerous high-tech companies, including Gulfstream Aerospace Corporation and H.O. Systems.

Initially, the staff of the Savannah ATDC will be located in offices adjacent to GTREP at the Chatham Center.

—John Toon, *Research News and Publications*

Information security

A web-based tutorial called SAFE, Security Awareness for Everyone, is available through OIT at www.security.gatech.edu/tutorial.html. The tutorial is designed to educate Tech students and staff on the issues of information and technology security. Some of the topics include phone fraud, physical security, personal computer security and software piracy.

New banking option for SECU members

The State Employee's Credit Union (SECU) has partnered with Lockheed Credit Union to permit SECU members to make deposits at an automated teller in the Student Center. The facility is located on the main level of the building in the area formerly occupied by the Lockheed/Student Credit Union. There is no ATM service charge to SECU members for cash withdrawals.

Janata named to prestigious society

Jiri Janata (School of Chemistry and Biochemistry), the Georgia Research Alliance Eminent Scholar in Sensors and Instrumentation, has been elected Honorary Foreign Member to the Learned Society of the Czech Republic for his contributions to the fields of environmental analytical chemistry and electrochemistry.

The Learned Society of the Czech Republic is the oldest honorary scientific society in central Europe, dating back to 1784.

Money talk

Setting up a long-term financial plan can be a complicated task, involving the evaluation of potential income sources, and factoring in the impact of taxes, inflation and the larger economic picture. To help, two upcoming financial planning sessions are available. From September 12-13, a TIAA-CREF individual consultant will be in the Office of Human Resources to conduct free individual counseling sessions. To sign up for a counseling session, refer to www.tiaa-cref.org/moc or call 800-842-2005.

On September 18, Fidelity Investments will be on-site for one-on-one consultation sessions regarding workplace retirement and/or savings plan(s). In order to schedule an appointment for a one-on-one consultation, call 800-642-7131.