

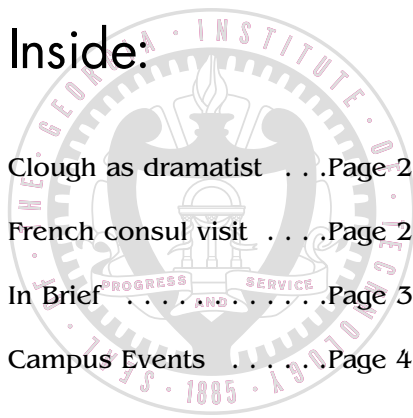
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THE WHISTLE

FACULTY/STAFF NEWSPAPER

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THE GEORGIA INSTITUTE OF TECHNOLOGY

Regents approve master's program in Information Security

Advanced degree will be first in the state

Bruce Brooks
College of Computing

Meeting earlier this month, the Board of Regents of the University System of Georgia (BOR) approved a new master of science degree program in Information Security (InfoSec) that will be housed in the College of Computing at Georgia Tech starting this fall.

The degree is the only graduate program of its kind in Georgia, according to Mike McCracken, master's program coordinator and principal research scientist in the College of Computing. The 32-hour interdisciplinary program will be offered in coordination with the School of International Affairs, the DuPree College of Management and the Georgia State University Management Information Systems program.

The objective of the program is to

provide students with practical skills and a theoretical understanding of information security. Students can focus on either the technical aspects of InfoSec or on the policy issues. Technically, students will examine ways to provide secure information processing systems, including secure operating systems and applications, network security, cryptography and security protocols. Approximately 25 students are expected to enter the program in the fall.

"There is a high demand for individuals with advanced knowledge of information security," McCracken said, "and we anticipate that graduates of the program will be highly recruited by both the corporate and government sector." He added that last year's terrorist attacks only served to heighten the awareness for the increased need for information security, though the program was in the planning stages well before September 11.

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GTRI using aerospace technology to improve dentistry

For patients, it means less time in the chair

Renee Twombly
Research News

The marriage of dentistry and aerospace engineering will soon yield new "virtual mouth" technology to help orthodontists and dentists accurately calibrate movement of teeth, and help precisely design and speed manufacturing of restorations and replacement teeth.

Experts in aerospace engineering at the Georgia Tech Research Institute (GTRI) collaborated with dentist Randy Muecke of Atlanta and orthodontist David Leever of Tampa, Fla., to enhance the practitioners' patented DentAART Inc. technology.

Dentists have long needed an exact anatomic capture of their patients' tooth position and form. DentAART precisely captures that anatomic relationship and creates a unique prescription for use in planning and delivery of facial procedures — restorative, orthodontic or surgical.

Muecke and Leever brought DentAART to GTRI researchers to confirm Leever's mathematical proof of the technology. Then they contracted with GTRI to develop a digital version of DentAART, including individualized patient functional movement. Jeffrey Sitterle, GTRI's chief scientist and an expert in sensing systems and computer simulation, led the research and development efforts.

He and other GTRI experts took the idea further and offered a way to computerize the method and create a system for multiple applications. Measurements made from at least three high-resolution X-rays or a computerized tomography (CT) scan are fed into a computer. Specialized software generates a precise 3D digital image of a patient's mouth.

Based on this 360-degree image, dentists can design a complete treatment plan to help them know exactly how they need to move and restore teeth. Then, improvements in materials processing and fabrication can rapidly produce a crown or restoration that dentists simply glue in

place. Restorations can be precisely calibrated to the bite pattern of the tooth to be replaced.

The use of this enhanced technology, for which GTRI is seeking several patents, will allow dentists, orthodontists, technicians and dental labs to design and test treatments virtually in a computer. This will result in treatments that are accurate, fit correctly the first time, and move patients in and out of the chair quickly — a blessing for both the patient and the dentist, Sitterle said.



photo by Stanley Leary

From right, GTRI research engineer Shayne Kondor and graduate student Paul Lowe work on a digital version of DentAART's technology.

Earlier this month, the Georgia Tech Research Corporation signed a licensing agreement with DentAART Inc. for marketing the enhanced technology. The improvements will help dentists and physicians working with the human face, to "completely capture a patient's anatomy, producing the required diagnostic information and utilize this for the patient's best interest as never before possible," Muecke said.

The collaboration with Tech may help revolutionize dentistry, he added. "It's exciting, because the same knowledge utilized in other

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Housing registration moves online

Barbara Wilson
Auxiliary Services

In an effort to streamline paper processes and facilitate further uses of technology, a group of cross-campus colleagues are working to make traditional housing registration a thing of the past.

"Auxiliary Services' goal is to use technology for efficiency's sake," said Dan Morrison, the associate director of Housing. "We know that students are becoming more comfortable with online application processes," he said, citing the Department of Parking and Transportation Services' successful permit assignment system as an example.

"The idea was to create a simple process that mimicked the Parking online registration process," added Glenn Boyett, director of information technology for Auxiliary Services. The site is set to go live this week.

The first step was to approach the groups that have the most input in the housing application process:

Financial Aid, Admissions, the Bursar's Office and the Registrar's Office. Once the project was given the go-ahead, a collaborative link was established between the Office of Information Technology Enterprise Information Systems Directive (EIS) and a technical team within the Department of Housing.

Wanda Norwood, assistant director of Housing for Assignments, said the new process would be more conducive to the students' needs. Additional features allow for students to designate building and room preferences, as well as selection of roommates.

The most important feature of the project is the online housing contract, which will improve the efficiency of the registration process.

"By eliminating the paper contract, the process is easier for international students who no longer have to worry about slow or lost mail," said Norwood. "Current status is always

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“QUOTE—
UNQUOTE”

“I judge the health of the industry by the number of IT jobs. It used to be two, three, four or five pages of ads in 2000. Now they’re down to a few columns. There’s not that many jobs available.”
—*Thomas Pilsch, assistant dean for Continuing Education in the College of Computing, adding that he believes information security will play an integral part in the sector’s recovery.*
(*Atlanta Journal-Constitution*)

“I can play on the PGA Tour until I’m 50, 60. I’ve got 30, 40 years of playing professional golf. I only had two more years to be a college kid. And I didn’t want to be that guy five years down the road saying, ‘God, I wish I had those two years over.’”
—*Matt Kuchar (MGT ’01), an All-American golfer at Tech, on his decision to stay in college.*
(*Dallas Morning News*)

President Clough pursues career in playwriting

Pens play for March benefit

*Julie Rhame
Institute Communications
and Public Affairs*

He’s designed underground tunnels, raised \$700 million dollars for the future of Georgia Tech, and continues to lead one of the world’s top research universities — but can he write a play?

The city will find out when President Wayne Clough pens a play for “Atlanta Stories 2002,” the fourth annual gala fund-raiser for Horizon Theatre Company. The evening includes the world-premiere performances of four short plays written by guest playwrights, a silent and live auction, plus a seated dinner.

“I was very flattered to be invited to participate in Atlanta Stories and have this opportunity to help the arts community,” said Clough. “Writing this play was harder than the writing I do in academia, because it had to be entertaining and personable.”

Although Clough’s play, “A Half-Day in the Life of a University President,” is a comedy, it is based on a very serious subject — the

real-life decisions university presidents face every day. Based on his own experience, Clough portrays the university president as an intermediary of sorts, constantly being pulled in different directions by people with opposing agendas.

“From disgruntled alumni to meetings with students and parents, Clough’s play is a fascinating take on the trials and joys of a university president,” Atlanta Stories chairperson Donna Smythe said. “His tongue-in-cheek portrayal will be one of the highlights of Atlanta Stories 2002.”

The guest playwrights joining Clough at this year’s event are Monica Kaufman, an anchor for Atlanta’s WSB-TV Action 2 News; Bob Edge, a partner with the firm of Alston & Bird in Atlanta; and Maria Saporta, a business and civic columnist for the Atlanta Journal-Constitution. Mindspring Founder Charles Brewer and his wife, Ginny, are the event’s honorary chairs, and comedian Rob Cleveland and WSB-TV political reporter Bill Nigut will emcee.

This year’s Atlanta Stories will be held 6:30 p.m. March 16 at the Swissôtel in Buckhead. To purchase tickets, contact the Horizon Theatre box office, 404-584-7450. Proceeds from the event benefit Horizon



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Wardlaw Center
177 North Avenue
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At left, René-Serge Marty, Consul Général of France, stands alongside Vicki Birchfield, assistant professor in the School of International Affairs, and Lionel Lemarchand, assistant professor in the School of Modern Languages during his visit to Georgia Tech to offer his perspective on relations between the two countries.

The visit by the French Consul Général was an opportunity for students and faculty to hear a diplomat’s perspectives on a range of issues confronting a changing and ever interdependent global society. Marty’s remarks emphasized the importance of “de changer de casquette” (to change hats) to fully understand and appreciate the richness and complexity of French-American relations, to learn from one another through the differences as well as the commonalities among the two societies.

Marty also spoke candidly about his concern of the United States’ tendency toward unilateralism in the war against terrorism, and charged the audience to think critically about the issues related to terrorism and the consequences they will provoke. The French and Europeans, he said, are opposed to the death penalty, were critical of the use of military tribunals and have been cautious about Bush’s use of the phrase “axis of evil” and his strategy in dealing with Iraq.

His lecture was in coordination with the undergraduate course on “French-American Relations,” part of the recently created bachelor of science in International Affairs and Modern Language degree jointly delivered by the two schools, focusing on subjects of international affairs, politics and culture instructed entirely in a foreign language.



photo by Michael Hagearty

Editor’s note: An article in the Feb. 18 issue regarding the College of Architecture’s national ranking failed to mention that the College offers a master’s degree in Building Construction and Integrated Facility Management.

Dentistry, cont'd from page 1

fields of science and industry are now being applied to dentistry. The approach is very exciting and has already produced some breakthroughs.”

Muecke has asked Sitterle to join the board of directors of Atlanta-based DentAART Inc., which is launching a program to make DentAART technology available throughout the dental industry.

Based on excitement generated by the virtual mouth project, GTRI launched the Dental Technology Center (known as DenTeC) in July 2001 with Sitterle heading the effort. Six faculty members are already involved, and plans are under way to invite a number of additional researchers to join. The center is focused on four broad

areas that draw research expertise from a number of disciplines — materials, applications of advanced manufacturing, automation of processes and instrumentation.

Among Sitterle’s proposed projects that have roots in aerospace engineering is an air



The technology uses a three-dimensional digital image to assist dentists in the planning and treatment of tooth restoration.

abrasion instrument that can erode minor tooth decay. By understanding how to control the flow of air, researchers can design a tool that uses the force of air to remove small spots of decay and then shoots in a spray of sealant. Such a device could be easily used in schools to help children who don’t see a dentist regularly.

Another tool under consideration is a multi-spectral sensor that can detect oral cancer. Sitterle’s research team may also design stronger, sleeker and quieter dental instruments, and ergonomic dental chairs.

Borrowing a little aerospace technology to improve dentistry will not only make its practitioners more efficient, Sitterle said, it will likely make a trip to the dentist “a lot more affordable to many more people.”

IN BRIEF:

Capital projects recognized

Last month, the **Department of Facilities** was honored with two **awards** of merit. The first was an Outstanding Achievement Award in the education category, given by the Georgia chapter of the American Concrete Institute. The project cited — the Structural Engineering and Materials Research Laboratory — was noted for its concrete strong floor, which involved a 12-hour continuous concrete pour, yielding a system which provides for testing of full-size steel girders, three-story building frames and large-scale model testing of multispan bridges and high-rise buildings under static and dynamic loads.

The second award resulted from the Georgia Tech Research Reactor Decommissioning Project, a four-year initiative that concluded in the fall of 2001. This project received one of five state awards on behalf of 2002 Engineering Excellence Awards Program, administered by the American Consulting Engineers Council.

Teachers wanted

The first semester can be a critical time in the success or failure of a freshman. To help these students adjust to the rigors of Tech, plan successful careers and become better leaders, Tech staffers, alumni and corporate friends **volunteer** to teach a section of **Psychology 1000**, the Freshman Seminar.

According to Bill Osher, director of Success Programs, the class also delves into discussions pertaining to academic and professional success such as time management, learning skills and teamwork, giving students a chance to get acquainted with their new environment.

The class meets for one hour per week, with instructors receiving additional support from Team Leaders — facilitators who are trained to help freshmen succeed. Many teachers meet regularly with their Team Leaders to help plan a successful class. Success Programs provide manuals with lesson plans and learning resources, as well as two full days of training during the summer.

The ideal volunteer teacher has a minimum of a bachelor’s degree, loves to help students, and has good communication skills. Osher emphasized that previous volunteers have come from all over campus: from GTRI to Student Affairs to Auxiliary Services. For more information, contact Paddy Kennington at 894-1970 or Bill Osher at 894-1951.

Architecture conference bridges cultures

Last week, the College of Architecture recently hosted **“Odysseys: Worlds on the Move,”** a meeting of the Association of Collegiate Schools of Architecture (ACSA) for the Southeast Region.

Associate Professor Sabir Khan said, “The papers and projects presented at the conference addressed the ways in which ideas, people, artifacts and architecture translate across — and slip between — cultures.”

Associate Professor Ellen Dunham-Jones, director of the Architecture Program within the College of Architecture, said ACSA conferences are an excellent opportunity to bring together those involved in the education of architects.

“This year’s conference was particularly exciting because of its international, interdisciplinary and cross-cultural theme,” Dunham-Jones said. “Professor Sabir Khan did a great job of bringing in speakers from a variety of countries as well as a variety of disciplines that should help further broaden the perspectives of architectural educators. It was quite an honor for us to be able to host this extraordinary event.”

Degree, cont'd from page 1

Tech already has received positive feedback from the corporate sector for the program as well as from the U.S. Department of Justice, said Peter Freeman, dean of the College of Computing and acting director of the Georgia Tech Information Security Center, (GTISC) a center that will be heavily involved with the master’s program.

“Our corporate partners have expressed great interest in hiring employees who have the level of education in information security that this degree will offer graduates and are delighted that the Board has

granted approval for the College to offer this very much needed program,” he said.

GTISC, a National Security Agency Center of Excellence in Information Assurance Education, recently developed a broad and comprehensive curriculum for the information security sector, noted Mustaque Ahamad, co-director of GTISC for technology and professor of computing. “Our significant number of knowledgeable faculty and research emphasis in information security allow us to offer this unique program in this important area,” he said.

The BOR approval follows on the heels of an announcement by the College of Computing Continuing Education Program

to offer a new continuing education certificate titled “Managing Information Security” beginning March 1 at the Georgia Tech Computer Training Facility. The 15-day program is offered on a recurring two-month cycle and is designed for managers at all levels who are charged with protecting digital data.

For more information...

College of Computing
www.cc.gatech.edu

College of Computing
Certificate Programs
www.gtcoc.com

Housing, cont'd from page 1

available online, and students can also cancel at anytime.”

The resulting project is a website students can access anywhere, anytime, Morrison said. Returning students can gauge where they are in the process of selection lottery, and whether or not they should choose to keep the apartment they have. Last year, the

Department of Housing processed more than 1,000 paper room change request forms.

Other web-based features for students will include the option of online deposits that go straight to the housing deposit table. Currently, the deposit can be made online, but the Bursar’s Office must move it manually to the housing deposits table. Additional future enhancements will also include

new and transfer students, according to Edson.

EIS has worked closely with Auxiliary Services on several projects including the parking registration process and yearly enhancements. Future projects under development include online meal plan sign-up.

For more information...

Department of Housing
www.applyhousing.gatech.edu