Inner strength
College of Architecture elevates programs to schools

TERI NAGEL
COLLEGE OF ARCHITECTURE

After the College of Architecture recently celebrated its centennial, the Institute announces the college’s academic programs will be re-established as five schools.

The schools of Architecture, Construction, City and Regional Planning, Industrial Design and Music will constitute the College of Architecture’s momentum to strengthen its disciplines, improve its graduate and undergraduate student experiences, and fortify its research agenda.

“The timing is auspicious and I am convinced the move to schools supports our ambitions to clarify and strengthen the character of the College,” said Dean Alan Balfour.

“It matches the scale and reputation of our disciplines and solidifies their identities within the designed and built environment professions. And it is appropriate to make this move now as we participate in the Institute’s strategic planning process and envision what the College will look like in 25 years.”

About the Schools
The School of Architecture is one of the top three producers of architectural research in the nation. Its unique strengths in urban design and design computing frequently win students and faculty top spots in national and international design competitions.

The School of Construction is a leading force of innovation in facility management, project delivery and construction development. It is the fastest growing among Schools in the College of Architecture, almost doubling in size in the last decade.

With the support of two preeminent research centers, the Center for Quality Development and the Center for Geographic Information Systems, the School of City and Regional Planning is consistently ranked among the nation’s top programs in city planning.

The School of Industrial Design is in an exciting period of renewal, with an active search for the Chair and for an endowed professorship linking Industrial Design with Mechanical Engineering. This leadership will be charged with charting a course for the newly established School, taking full advantage of its natural and existing alliances with Georgia Tech programs in engineering, management, and technology.

Digital security
OIT publishes computer security tips for the Winter Break

SECURE, continued on page 3

COMMUNICATIONS & MARKETING

Semester breaks are a time when the Tech community vacates campus offices and residence halls, leaving thousands of desktop computers unattended.

The Office of Information Technology offers the following tips to take appropriate measures to keep your computer, your files and our network safe.

If you own a laptop, please be mindful of where it is at all times. Do not walk away and leave it unattended in a public place. This includes leaving it in a locked automobile. Laptops are a thief’s prime targets this time of year.

If you choose to leave your GT-provided computer ON, please make sure that your office/work area is physically locked, all accounts are logged off, and any peripherals (monitors, printers, scanners) are turned off.

If your machine must be taken home during the break, please turn off your GT-provided computer during the break. Personal computers should be taken home during the break.

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The Furniture is arranged in groups, for 27 total students,” Patel said. “In the CULC, the classrooms will be re-established as five schools. The schools of Architecture, Construction, City and Regional Planning, Industrial Design and Music will constitute the College of Architecture’s momentum to strengthen its disciplines, improve its graduate and undergraduate student experiences, and fortify its research agenda. “The timing is auspicious and I am convinced the move to schools supports our ambitions to clarify and strengthen the character of the College,” said Dean Alan Balfour. “It matches the scale and reputation of our disciplines and solidifies their identities within the designed and built environment professions. And it is appropriate to make this move now as we participate in the Institute’s strategic planning process and envision what the College will look like in 25 years.”

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Research

Scraping the sky

‘Towers’ on solar cells could provide significant boost in energy production

JOHN TOON

RESEARCH NEWS

A three-dimensional solar cell design developed at the Georgia Tech Research Institute that uses micron-scale “towers” to capture nearly three times as much light as flat solar cells made from the same materials has been awarded broad patent protection in both China and Australia.

The “three-dimensional multi-junction photovoltaic device” uses its 3-D surface structure to increase the likelihood that every photon striking it will produce energy. Modeling suggests that the 3-D cell could boost power production by as much as 300 percent compared to conventional solar cells.

The 3-D solar cells were developed in the laboratory of Jud Handy, a GTRI senior research engineer. Tests comparing the 3-D solar cells produced in Handy’s lab with traditional solar cells produced from the same materials showed an increase in power generation, said Tom Smith, president of 3-D Solar LLC, a company formed to commercialize the cells.

The researchers chose to make their prototype cells from cadmium materials because they were familiar with them from other research. However, a broad range of photovoltaic materials could also be used, and selecting the best material for specific applications will be the goal of future research.

Fabrication of the cells begins with a silicon wafer, which also serves as the solar cell’s bottom junction. The researchers first coat the wafer with a thin layer of iron using a photolithography process that can create a wide variety of patterns. The patterned wafer is then placed into a furnace heated to approximately 700 degrees Celsius.

Hydrocarbon gases are then flown into the furnace and the carbon and hydrogen separate. In a process known as chemical vapor deposition, the carbon grows arrays of multi-walled carbon nanotubes atop the patterns created by the iron particles.

The arrays of towers on the 3-D solar cell can increase the surface area by several thousand percent, depending on the size and density of the structures.

“One problem with conventional flat solar cells is that the sunlight hits a flat surface and can bounce off, so the light only has one chance to be absorbed and turned into electricity,” said John Bacon, president of IP2Biz, an Atlanta company that has licensed the technology. “In the GTRI 3-D solar cell, we build a nanometer-scale version of Manhattan, with streets and avenues of tiny light-capturing structures similar to tall buildings. The sunlight bounces from building to building and produces more electricity.”

The structure also means that the cells don’t have to be aimed directly at the sun to capture sunlight efficiently. Bacon added. Conventional solar cells work best when the sunlight hits them at a narrow range of angles, but the new 3-D system remains efficient regardless of the angle at which the light hits.

The tower structures on the GTRI solar cells are about 100 microns tall, 40 microns by 40 microns square. 50 microns apart — and grown from arrays containing millions of vertically aligned carbon nanotubes. The nanotubes primarily serve as the structure on which current-generating photovoltaic p/n coatings are applied.

“The carbon nanotubes are like the framing inside of buildings, and the photovoltaic materials are like the outer skin of the buildings,” Smith said. “Within the three-dimensional structures, multiple materials could be used to create the physical framing. Carbon nanotubes were used in the original solar cells, but they are not required for the technology to work.”

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CLASSIFIEDS

AUTOMOBILES/ MOTORCYCLES

1994 Vulcan 750 motorcycle. $2,700. OBO. E-mail elmnt414.1@hotmail.com for pics and info.

2007 Toyota Corolla. Burgundy, tan/wood grain interior. 38K miles. Airbags, esp. maintenance history. $13,100. OBO. Pic avail. E-mail walterdrd@gmail.com.

Seeking a small reliable car for a college student in the price range of $1,000-$1,500. E-mail photos44@yahoo.com.

1997 Subaru Outback Wagon, red 5-speed, 133K miles, exc. cond., $4,000. E-mail whinmail@aol.com.

REAL ESTATE/ ROOMMATES

1891/B18A, 8th floor unit of Windsor Over Peachtree. $1,190 a month, incl. utilities. Close to restaurants and night clubs. Walk to Tech or Piedmont Park. Easy access to interstate, and MARTA is only a block away. Spectacular views of the Fox, midtown and pond. 24-hour concierge, gated parking areas available. Call Rich at 770-386-4714.

38R/20A 8 brick ranch with HW floors. Large backyard in back yard w/woods. Finished daylight basement, 2-car garage with garage door. Briarcliff school district and convenient to Emory/CDC, I-85.

For a more comprehensive listing of classifieds, please visit www.gatech.edu/calendar.

EVENTS

Ongoing (continued)

The “Defining Customer Service” certiﬁcate program provides campus groups and employees with the foundation for offering exemplary service to those both on and off the campus. Four required courses and two electives are offered. More information can be found at www.ongdev.gatech.edu

MISCELLANEOUS

December 12–16

The Georgia Tech Department of Housing is collecting items for the Marine Toys for Tots Foundation during the holiday season. More information can be found at www.renew.gatech.edu

December 11—January 6

Junior’s Grill will be closed through the Winter Break. The restaurant reopening for breakfast on Thursday, Jan. 7.

For more comprehensive listing of classifieds, please visit www.gatech.edu/calendar.

THE TEAL Project, Massachusetts Institute of Technology

Two classrooms in the Clough Undergraduate Learning Commons will utilize the SCALE-UP classroom model (example above), developed at the North Carolina State University. A prototype classroom will be used during spring semester in the Engineering Science and Mechanics Building.
**SECURE**, continued from page 1

either enable a screensaver with password protection or LOCK your computer when you leave. Windows users can select a password-protected screensaver enacted from Control Panel > Display > Screensaver. Windows users can LOCK their computers by pressing the Windows Key + L. Apple users should log out and then lock their computer. If you have a device that supports both screensavers and sleep mode, use screensavers and set the computer to sleep mode after a little while. If you have a device that supports both screensavers and sleep mode, use screensavers and set the computer to sleep mode after a little while. If you have a device that supports both screensavers and sleep mode, use screensavers and set the computer to sleep mode after a little while.

Check with the CSR (technical lead) to make sure that a company backs up the security updates and has the necessary security software installed (i.e. antivirus). On personal computers, users should be sure that they have the GT-provided antivirus software suite (McAfee) installed. If not, download it for free from the OIT software distribution site: www.oit.gatech.edu/software/

For additional protection, users can optionally back up their workstations or servers and verify their ability to restore backups prior to leaving campus. This will be valuable in case of any type of system malfunction or failure that may occur during the break.

Identity theft is highest during this time of year. Many of these frauds will be perpetrated by e-mail. Do not disclose any personal or sensitive information over e-mail. As a matter of fact, OIT highly recommends not storing (or at least limiting) personal information on laptops.

Many passwords are due to expire during the break. Be sure to change your password before it expires so you do not have any service interruption. If you forget your password, you can reset it by having security questions defined in Passport. To set up questions or reset your password, go to http://passport.gatech.edu.

In addition to these security tips from OIT’s Information Security team and the ResNet Office, the IT support staff for each department or office may provide security-related services, such as software security patches or security patch updates. If so, check with each department’s local IT support staff.

For more information

www.oit.gatech.edu

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**CLASSIFIEDS**

1-285, Puts OK with approval. $1,300 rent with first month’s deposit. E-mail richard. cabrhomine@psych.gatech.edu

Rent or sell: Maricopa 3BR/BA ranch, 2-car garage, central heat, tiled kitchen and baths. 1.5 miles from Tech. Approx. 2,000 sq. ft. Perfect for family. $1,350/month. Conveniences to 175, $1,150/mo., $1,200 deposit, 1-yr lease. Call Mickey Register at 404-948-6178 or e-mail mickeyregister@comcast.net.

For rent: 2BR/1BA in Hixton Station, west of Tech, 1,300 sq.-ft. townhouse, large office or bonus room, fully furnished, two car garages and separate dining rooms. Off-street parking. Pets included. P.O.

Free yellow jacket nest removal. Nests can be picked up from Midtown location. Call Chuck at 404-610-9090 or e-mail chuck@gettysburgbrush.com.

Rental home, 2 BR/1 BA, 1,200 sq. ft. Rental office, 3 BR/2 BA, 2,100 sq. ft. Rent or sell: Marietta 3BR/2BA ranch, I-285. Pets OK with approval. $1,300 rent. E-mail michael.goodisman@oit.gatech.edu.

Free newspaper for more information

E-mail submissions to registration@whistle.gatech.edu

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**THE WHISTLE**

**Working out for the best**

Panel discussion highlights students presenting Computing For Good projects

ROBERT NESMITH

COMMUNICATIONS & MARKETING

Students in the Computing For Good (C4G) class recently presented their semester-long projects, in which they put their computing skills to work in finding philanthropic solutions to present challenges.

Self-sustaining wireless networks for disaster-stricken and developing regions, a system that monitors the amount and quality of donated blood in developing areas, and enhancements that improve sustainability and streamline the Web-based Homeless Shelter Occupancy system of United Way of Metropolitan Atlanta and being used at some level by four more are in [the] CDC [Centers for Disease Control and Prevention], the United Way of Metropolitan Atlanta and [of Metropolitan Atlanta] and Operation PEACE, all of whom were eager to contribute projects,” said Ellen Zegura, Science Chair Ellen Zegura and Vempala, School of Computer Science Chair.

Santosh Vempala is chief of the CDC’s Global AIDS Program’s International Laboratory Branch. The panelists spoke on their motivations for helping others and answered questions from those in attendance. Overall, the four spoke on the need for present-day computing’s power to aid in creating databases for realizing and quantifying problems and the advent of social networking, as well as stating how important it is to make programs such as “C4G” available. “The nature of philanthro- nism should be institutional,” Hardin said.

“These are hard problems, and we don’t know how to solve them yet,” Vempala said. “[This semester] the students have made some tremendous progress.”

For more information

www.cc.gatech.edu

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**www.whistle.gatech.edu**

Set up a password-protected LOCK their computers by pressing the Windows Key + L. Apple users should log out and then lock their computer. If you have a device that supports both screensavers and sleep mode, use screensavers and set the computer to sleep mode after a little while.

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For more information

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**FURNITURE/APPLIANCES**

Office refrigerator, white, 14.4 cubic ft. Purchased March 2008 for minimal office use. $300 or reasonable offer. Call Barbara at 404-385-2360 or e-mail barbara.miller@gatech.edu.

Hardwood furo w/ mattress. $350 ($800 new). Frame is solid hardwood with mission-style detailing. Mattress is 8” thick foam. Firm. Handsome sofa, also makes perfectly functional bed for less than $200. Red microfiber couch. E-mail rnmast@wiklid. loc.gatech.edu for pics. Cash only, must be picked up in Midtown location.

Dining room table. Glass top with cast iron support. Asking $100 OBO. E-mail beverly.brown@cox.net for pics.

**MISCELLANEOUS**

Dell XPS M2010 Mobile PC. $2,000. Intel Core 2 Duo processor (2GHz), 20-inch display, SoundMaster-ready, built-in speakers w/ subwoofer, slot-loading DVD burner, Bluetooth, wireless keyboard and mouse. Two 160 GB SATA drives (RAID 1), 2GB RAM, eda Center remote con- trol, Web camera, 256MB ATI Radon X1800 graphics card, Vista Ultimate (SP2). Office 2007 small business edition. Call Chuck at 404-810-9090 or e-mail chucks@moysfamamily.com.

Free jacket. Yellow jacket nest removal. Nests can be picked up from Midtown location. Call Chuck at 404-610-9090 or e-mail chuck@gettysburgbrush.com.

Check out more ads at www.whistle.gatech.edu
EVP for Research search committee named

As part of the senior academic leadership restructuring announced last month, President Bud Peterson has formed a search committee to identify the individual who will oversee Georgia Tech's substantial research enterprise.

The newly created executive vice president for research (EVP) will report directly to the president and serve as a member of the president's cabinet.

I want to thank each member of the committee for serving the Institute in this capacity,” Houston said. “The executive vice president will be entrusted with managing Georgia Tech’s research enterprise and will benefit from broad-based support within our research community.”

In order for this individual to be in place prior to interviews with candidates for the provost position, the committee intends to conduct an internal search for the EVP position, with the goal of having someone in place by March 2010.

The committee includes:
- Ron Arkin, professor and associate dean, College of Computing
- Barbara Boyan, professor and associate dean, College of Engineering
- Steve French, professor and associate dean, College of Architecture
- Dennis Folds, principal research scientist, Georgia Tech Research Institute
- Steve French, professor and associate dean, College of Architecture
- Jilda Garton, associate vice provost, Research
- Joel Herrick, associate vice president, Financial Services
- Diana Hicks, professor and chair, School of Public Policy
- Robert Knotts, director, Federal Relations
- Seth Marder, professor, School of Chemistry and Biochemistry
- Bill Melvin, director, Sensors and Electromagnetic Applications Lab
- Sandra Slaughter, professor, College of Management
- Vigor Yang, professor and chair, School of Aerospace Engineering
- Chuck Donbaugh, associate vice president, Human Resources (ex officio)

Any nominations, recommendations or comments may be directed to Houston.

For more information:
www.gatech.edu/president/EVP.html

What are the benefits of the reorganization?

For an ombudsman program to be effective for all Institute constituencies, it must report to the highest office.

How does the ombudsman process start?

Any individual may contact us through any means and can make an appointment to see us. They can come at any point [in the process] they want. They can come when they initially have a problem, when they’re in the middle of trying to get something done or toward the end. We allow them to basically vent, to say whatever they want to say. We’re nonjudgmental. We listen and we present options to them on how to resolve their issues.

If indeed they want our direct intervention, we will inform them that they may lose their anonymity. However, none of us acts on their behalf until they are comfortable with what we intend to do. We try to empower them to get their supervisors involved because we can’t actually fix their problem for them.

Specifically, what I normally do when employees come to me [is to] listen to them and try and empower them to do something for themselves. If not, I will tell them I need to get the person with whom they have the issue—their supervisor, co-worker, or other employee—involved. If they say OK, then I will approach the person from the standpoint “This person came to see me, they presented some concerns and I really would like to get your side of the story.” This is especially effective in an employee and supervisor issue because I know there are, at least, two sides to every story and I want to maintain my role as an advocate for fair and right vs. the employee or management advocate.

After getting the other side of the story, and if I feel it would help, I will suggest we either mediate or allow me to facilitate a conversation or discussion between the two.

Can you talk about your caseload?

The four ombuds just presented our annual report to Provost Gary Schuster and Executive Vice President Steven Swant. From June 2008 through August 2009, we had about 165 cases total, but the majority were staff-related. Most of the staff cases deal with workplace disputes between supervisors and employees, and administrator/administrative counseling.

What are some caveats?

We are not an office of first notice. For example, if a young lady came to me and said she was being sexually harassed, we would listen to what she had to say, but if she really wanted it handled or resolved, or she wanted to put the Institute on formal notice, we would direct her to go to someone in Employee Relations Services.

If they don’t follow our direction or guidance, they cannot come back and say ‘We put Georgia Tech on notice because we told the ombudsman.’ We’ll tell them that we instructed them where to go to file a complaint but did not officially receive the complaint.

This is in an effort to keep confidentiality, because that is so tantamount to this whole process. Once you lose that, you really lose your effectiveness—people won’t trust you. The biggest publicity we receive is by word-of-mouth.

For more of the conversation with Classified Staff Ombudsman John Schultz, visit the Georgia Tech News Room at www.gatech.edu/newsroom. Visit The Ombuds Program’s Web site at www.provost.gatech.edu/units/ombuds.