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# THE WHISTLE

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## Georgia Tech hosts RoboCup 2007



From now until July 10, more than 1,700 students and faculty from 37 countries will participate in the 11th Annual RoboCup 2007 Atlanta. Georgia Tech is the first university campus to play host to this global competition.

RoboCup is an international joint project to promote artificial intelligence, robotics and related fields. Competitions will feature robots playing soccer (above), performing rescue operations and offering human assistance. To track the progress of the event, visit [www.robocup-us.org](http://www.robocup-us.org).

## Coulter Foundation supports new Georgia Tech-Shanghai program

Dan Treadaway  
Institute Communications  
and Public Affairs

While the China of today is globally recognized as an economic powerhouse, the China that Wallace Coulter, class of 1934, experienced back in the 1930s couldn't be more different from the contemporary version.

When Coulter was working as an X-ray equipment salesman based in Shanghai in the late 1930s, much of China was impoverished and the Japanese were waging a long, bitter war in the north. Despite these problems, his experience in the international crossroads city of Shanghai led to a profound, lifelong interest in and fondness for Chinese art, culture and society. He realized early on that China would be not only a market of the future, but also a future center for manufacturing. Throughout his life, Coulter followed the social evolution that was taking place in China.

Continuing that tradition of embracing the Chinese people and their culture, the Wallace H. Coulter Foundation has pledged \$1 million to support an innovative Georgia Tech graduate program in Shanghai over the next five years. The dual master's degree program between Georgia Tech and its partner, Shanghai Jiao Tong University (SJTU), enables SJTU students to earn a non-thesis master's degree from Tech's School of Electrical and Computer Engineering (ECE) and a thesis master's degree in a closely related discipline from SJTU. The same Georgia Tech graduate admission and degree requirements apply to students in the Georgia Tech-Shanghai Program.

The Coulter grant will support Chinese students to pursue the dual master's degree. Some of the criteria of the fellowship include being from a low-income family and being the first

*Shanghai continued, page 3*

## New initiatives address graduate research ethics

*A preparation for real world issues*

With myriad types of ethical issues that arise in the research environment, a new graduate course in research ethics is being offered this August. PST 8000: Responsible Conduct of Research will be an intensive two-day course open to students from any graduate department.

The one-credit course graded on a pass/fail basis is the latest in a series of developments concerning research ethics training for graduate students. As the director of Graduate Research Ethics Programs, a joint appointment between the Office of the Vice Provost for Research and the School of Public Policy, Jason Borenstein develops resources and courses that help to meet the ethics educational needs of graduate students.

*Ethics continued, page 3*

## Students spend the summer building energy-efficient home

Matt Nagel  
Institute Communications  
and Public Affairs

The pace may slow during the summer months on some college campuses, but the competition is heating up for the members of Georgia Tech's Solar Decathlon team as they build an energy-efficient house for this fall's national competition.

Tech's team is in the construction phase of its house, and the competition has brought out the best from around campus. The College of Architecture is leading the effort, but it is the collaboration between all of the colleges involved (College of Engineering, College of Management, and the College of Sciences) as well as numerous research centers that have this project pulling Georgia Tech resources together.

"No matter how many cross-listed courses, joint appointments, dual-degree programs, minors and certificates we have, nothing creates true interdisciplinary collaboration better than a project like this," said College

of Architecture Interim Dean Doug Allen. "No single discipline carries all the knowledge necessary to undertake and successfully complete such a project. The diverse backgrounds of the students have to work together in ways that cannot be duplicated by any other means."

Sponsored by the U.S. Department of Energy, the third Solar Decathlon competition will be held on the National Mall in Washington, D.C., in October. But the process of constructing the house and learning to work together is laying the foundation for future projects.

Allen is fond of using an analogy that he tells his students. "The Renaissance did not build the Duomo in Florence, Italy. The Duomo built the Renaissance. Once you have organized yourselves to undertake such a project, the question is what you do for a second act."

"I hope and I believe that this will be true here as well," said Allen. "For the first time in my 30 years at Tech, I have seen civil engineering,

*Solar continued, page 2*



Undergraduate architecture students Felipe Escudero and Amelia Mendez survey some of the infrastructure of Georgia Tech's entry in the Solar Decathlon. The international competition will be in October on the National Mall in Washington, D.C.

## QUOTE UNQUOTE

"The aquarium plays an important role in bringing people into contact with marine life. We should all help strengthen these efforts instead of focusing solely on two tragic whale shark deaths while ignoring millions of other deaths in a polluted, over-harvested ocean that we are all doing too little to preserve because of our inadequate understanding, exposure, and personal connection with its animals ... The notion that sharks will prosper if they are left in peace in the wild instead of being exhibited is a fallacy."

—Biology Professors Mark Hay and Terry Snell, in a guest editorial on the education value of aquariums. (*Atlanta Journal-Constitution*)

# Emissions monitoring validates vehicle inspection program

Jane Sanders  
Research News

The numbers tell the story: 25 Georgia counties, about 420,000 vehicles assessed for emissions each year at more than 60 monitoring sites, data gathered for at least 100 days a year in the field. Fifteen years of systematic data collection along the roadside, now with a fourth generation of equipment.

It's all to see if the \$80 million to \$100 million Georgians pay for vehicle emissions inspections and repairs each year is well spent.

These numbers describe the scope and impact of a long-term research study on vehicle emissions and air quality in 21 metro Atlanta counties, plus four more in Macon and Augusta. The study, conducted by Georgia Tech researchers, is meeting the monitoring needs of state government and offering significant insights that help direct both research and policy, says Michael Rodgers, associate director of the Georgia Tech Research Institute's (GTRI) Aerospace, Transportation and Advanced Systems Laboratory and group leader of air quality research.

Rodgers and his team began monitoring vehicle emissions in 1991 with a pilot program that began in the Georgia Tech School of Earth and Atmospheric Sciences. With funding from the Georgia Department of Natural Resources, he and his staff designed the Continuous Atlanta Fleet Evaluation (CAFÉ) study and have systematically collected this data using remote sensing technology since the spring of 1993.

The study continues to validate the effectiveness of the state's vehicle emissions inspection program in 13 metro Atlanta counties that are part of a federal ozone level non-attainment area, Rodgers says.

"Georgians spend a major chunk of change on inspections and repairs, so you want to make sure the



Georgia Tech researchers use remote sensing equipment to monitor emissions from vehicles in the metropolitan Atlanta area. Their long-term work has validated the effectiveness of emissions control strategies.

inspections program is working," Rodgers said. "We've found that it is indeed reducing vehicle emissions in the region. The state is investing less than 1 percent of the cost of the program to monitor it. So that's a cost-effective solution."

CAFÉ is noted among environmental monitoring programs for the length and depth of the study, Rodgers adds. "When you gather systematic data over a long period of time, you can better understand how things change," he explained. "Over time, you can gradually see how the vehicle fleet changes, how its operation changes and how emissions change."

The vehicle emissions database has revealed some interesting trends, Rodgers notes. In comparison with the late 1970s, for example, total emissions have declined in the 20-county metro area CAFÉ tracks. This measure peaked in the early 1980s and has declined since then, despite a doubling of the Atlanta fleet size.

Newer, cleaner-burning fuels have also had a very positive effect — comparable to the inspections program — in reducing vehicle emissions.

The Mobile Emission Assessment System for Urban and Regional Evaluation (MEASURE) model he helped develop estimates vehicle production of carbon monoxide, volatile organic compounds and oxides of nitrogen in space and time. MEASURE differs from previous models in that it estimates vehicle emissions as a function of vehicle operating modes — such as cruise and idle — rather than average vehicle speeds. Because it is a modal model, researchers believe MEASURE more accurately reflects on-road emissions.

For more information...

**Georgia Tech Solar Decathlon**  
[www.solar.gatech.edu](http://www.solar.gatech.edu)

**Georgia Tech**



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mechanical engineering, architecture, and building construction students working together in a sustained relationship. The lasting impact, however, will come from the collaborations developed among the many faculty members across all these disciplines."

## Seeking support

The competition grades each house on a variety of elements in construction, marketing and planning. One of Georgia Tech's biggest challenges, however, has been the competition for dollars.

"We are still looking for partners to

help underwrite the project," said Associate Professor Chris Jarrett, who is one of Tech's project managers for the Solar Decathlon. "Our partners are truly investing in Georgia Tech when they invest in this project. By doing so, it strengthens the bond between the four colleges toward future collaboration and potentially new creative research and innovation."

The U.S. Department of Energy provided each Solar Decathlon team with \$100,000 to get started. The actual project cost typically exceeds \$600,000 per school. Each school must raise the remaining funds, with either cash or in-kind gifts.

"Team sponsorship means everything," said Jarrett. "It enables

Georgia Tech's team to get the job done, to be creative and competitive; it enables them to pursue state-of-the-art sustainable design and technology integration."

The team's construction phase will take on a new life this month as the house walls are erected and the shape of the house begins to become visually apparent. However, it's the shape of the team that organizers hope will continue to heat up throughout the summer in the form of new sponsors joining the team.

For more information...

**Georgia Tech Solar Decathlon**  
[www.solar.gatech.edu](http://www.solar.gatech.edu)



## Donor offers CEE students access to global experiences

*\$4 million endowment will provide opportunity for scholarship, service*

*Dan Treadaway  
Institute Communications  
and Public Affairs*

Georgia Tech has truly gone global. With campuses in France and Singapore, a new and growing joint degree program in China and thousands of students studying and working abroad every year, Tech students and faculty are engaged with countless counterparts around the world.

As advanced as they are, Tech's internationalization initiatives are taking a giant leap forward thanks to a recent \$4 million commitment from an anonymous donor. The commitment, to be paid over a five-year period, will create an endowment fund whose income will be used to support the international activities of undergraduate students in the School of Civil and Environmental Engineering (CEE).

"The impact of this program will be nothing short of huge," said Joseph Hughes, professor and chair of the School of Civil and Environmental Engineering. "This very generous donor and I both believe that as important as international academic experiences are now, they are going to become even more important in the future as our students consider how to maximize their competitiveness in the global marketplace."

"Beyond that," he continued, "I think this program will also have an immeasurable impact on the School's reputation and truly distinguish us from our peers."

The importance of international academic experience is something the donor came to appreciate long ago.



**Civil Engineering students participating in international research projects (such as this one in Honduras to help ensure a safe water supply for a rural village) could be eligible for international study awards.**

"My husband was always disappointed that our children didn't have the experience of studying abroad," said the donor, the widow of a prominent Tech alumnus. "When I met recently with (CEE Chair) Joe Hughes and heard him talk about the fact that American college students just don't have a good grasp of the global competition they'll be facing, it made me think immediately of what my husband had said years before about studying abroad. I thought about it and decided that I wanted to provide an incentive for Civil Engineering students to get international experience, which is going to be so important for their futures. I hope the experiences the students have as a result of this program will give them a real competitive edge that will last a lifetime."

*Shanghai, cont'd from page 1*

in the family to attend college. Fellowship recipients will be required to commit to providing community service during each year they are pursuing their degrees.

Tong Zhou, director of the Georgia Tech-Shanghai Program and an ECE professor, has played a substantial role in establishing Georgia Tech's presence in Shanghai.

"Georgia Tech, SJTU and the Coulter Foundation are a wonderful partnership," said Zhou. "SJTU is a top university in China with particular strengths in engineering. An excellent

match exists between Georgia Tech and SJTU's engineering programs. The perspectives of Georgia Tech faculty coupled with the resources of SJTU and the Coulter Foundation add up to a unique educational experience for Chinese and American students alike."

The Coulter grant funds are being augmented by ongoing support from the Georgia Tech Provost's Office. "We consider our collaboration with Shanghai Jiao Tong University to be one of our strongest international partnerships, with great promise for long-term success," said Provost Gary Schuster. "This confidence is due in large part to Dr. Tong Zhou's commitment and leadership."

*Ethics, cont'd from page 1*

"Every graduate student, whether they are studying chemistry, computing, mechanical engineering or history, can and will confront ethical issues associated with their work," he said. "Thus, it is crucially important to stay at the forefront of graduate education by introducing students to the realm of research ethics."

The course is scheduled August 16-17 and is expected to enroll 35 students. It will be held before the start of fall semester to avoid conflict with fall class schedules. Graduate students should register for the course during Phase I Registration, from July 11-24.

Borenstein hopes that students who register for the course will have completed at least one year of their graduate education. He also

encourages faculty and staff to participate in the course, either as a presenter or as a case study discussion leader.

"The course is designed to help satisfy federal requirements for research ethics training," Borenstein said. "It is important to emphasize that every graduate student, regardless of whether they are funded through a federal grant, could benefit from learning about ethical issues associated with their research."

A semester-long version of the research ethics course is likely to be offered during spring semesters.

For more information...

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## IN BRIEF:

### Athletics names sports information director

Dean Buchan, the assistant athletic director for media relations at Wake Forest University for the past seven years, has been named to the same position at Georgia Tech, Director of Athletics Dan Radakovich announced last week.

"Our relationship with the local and national media is a top priority," said Radakovich. "We are very fortunate to have attracted someone with Dean's experience and stature in the media relations field. He is extremely well-respected by the many members of the media we spoke with during the search process."

Buchan will oversee the Yellow Jackets' sports information office. He will also serve as the primary contact for Georgia Tech's football team.

### Three students named to Academic All-American teams

Women's tennis All-American Kristi Miller, golf All-American Roberto Castro and swimming standout Ofer Finkler have been named as 2007 Academic All-Americans by ESPN The Magazine.

Miller, a junior with a 4.0 GPA majoring in history, technology and society, earned first-team Academic All-America honors for the second time in her career, while Castro, who capped his career at Georgia Tech with his second-straight first-team Academic All-America honor, graduated with a degree in industrial engineering in May with a 3.81 GPA. Finkler was named a second-team Academic All-America after graduating with a 3.96 GPA in electrical engineering.

### ATDC launches weblog

The Advanced Technology Development Center (ATDC) has announced the launch of its official blog, PeachSeedz.com. In keeping with the ATDC's mission, Peachseedz is dedicated to helping Georgia technology entrepreneurs launch and build successful companies.

"Peachseedz will allow ATDC to serve more entrepreneurs and enable us to share the experiences and insights beyond the physical walls of our incubators," said Tony Antoniadis, ATDC general manager. "We believe that Peachseedz will be a valuable resource for the technology community and further establish ATDC as the hub of Georgia entrepreneurial activity."

The blog will focus on the key aspects of starting and managing a high-growth technology company and will be a resource for news on Atlanta and Georgia entrepreneurship. To subscribe, visit [www.peachseedz.com](http://www.peachseedz.com).