Tech students recognized with national scholarships

National scholarship recipients at the Institute this year include the Student Government Association undergraduate president, a two-time winner and one graduate recipient of an award in its second year.

Nick Wellkamp, a senior Industrial and Systems Engineering and Public Policy major, was one of 60 students nationally named a 2009 Harry S. Truman Scholar. He was selected from more than 600 candidates nominated by more than 285 colleges and universities. Scholars were selected on the basis of leadership potential, intellectual ability and likelihood of “making a difference.” The 2009 Truman Scholars will assemble May 26 for a leadership development program at William Jewell College in Liberty, Mo., and receive their awards in a special ceremony at the Truman Library in Independence, Mo., on May 31.

“IT is just an unbelievable honor to be recognized as a Truman Scholar,” said Wellkamp, a Mechanical Engineering major.

Senior Nick Wellkamp, with Rhodes and Truman Scholarship Advisor Paul Hurst and Provost Gary Schuster, was named a 2009 Harry S. Truman Scholar.

Global collaboration
GT–Lorraine brokers international lab agreement

Nearly 20 years after its establishment, Georgia Tech-Lorraine (GTL) in Metz, France, has enabled a major international collaboration between the Centre National de la Recherche Scientifique (CNRS), one of the pre-eminent European research agencies, and Georgia Tech.

In 2006, CNRS and Georgia Tech created the International Mixed Unit (UMI) 2958, the first of its kind in France, allowing a mutually enriching collaboration between Tech and CNRS researchers in optics and secure communications, advanced materials and nanotechnology, and multifunctional materials.

Within one year, state-of-the-art laboratories were built on the Metz campus, and today UMI is the research engine of Georgia Tech-Lorraine,” said GTL Vice Provost and President Yves Renelot, a professor in the School of Mechanical Engineering. “This fosters the exchange of students, faculty and ideas that benefits the global Tech enterprise.”

A public research organization, CNRS is present in more than 1,200 research and service units, extending into all scientific, technological and societal domains in France. It is not only the largest governmental research organization in France, but also the largest fundamental science agency in Europe.

“At the end of May, CNRS Director General Arnold Muguin and Scientific Director Pierre Guillon will lead a delegation to Atlanta and sign an amendment to the 2006 agreement, opening an arm of UMI 2958 on this campus and extending the research collaboration to Computer Science,” said UMI Director Abdallah Ougazzaden, also a School of Electrical and Computer Engineering professor at GTL.

CNRS visiting scholars from the UMI will now have access to resources such as the MicroElectronc Research Center and the Marcus Nanotechnology Building. The UMI also enables Tech researchers to develop strategic opportunities, through CNRS and GTL, with major French and European Union institutions. The UMI has already attracted five major grants from the Agence Nationale de la Recherche in France, one European contract and several industrial contracts.

“They have made significant progress in most of its research activities, in building state-of-the-art facilities, in contributing to the local, national and international programs and in establishing various alliances.

In 2006, Georgia Tech entered into an agreement with the Centre National de la Recherche Scientifique (CNRS) to create a collaboration between the research body and Georgia Tech-Lorraine. In May, the collaboration will be extended to include the Atlanta campus.
Looking sharp

Researchers develop new way to see single RNA molecules in living cells

ABBY VOGEL

RESEARCH NEWS

Biomedical engineers have developed a new type of probe that allows them to visualize single ribonucleic acid (RNA) molecules within live cells more easily than existing methods. The tool will help scientists learn more about how RNA operates within living cells.

Techniques scientists currently use to image these transporters of genetic information within cells have several drawbacks, including the need for synthetic RNA or a large number of fluorescent molecules. The fluorescent probes developed at the Georgia Institute of Technology circumvent these issues.

"The probes we designed shine bright, are small and easy to assemble, bind rapidly to their targets, and can be imaged for hours. These characteristics make them a great choice for studying the movement and location of RNA inside a single cell and the interaction between RNA and binding proteins," said Philip Santangelo, an assistant professor in the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University.

Details of the probe production process and RNA imaging strategy were published online in the journal Nature Methods on April 6. In addition to Santangelo, graduate student Aaron Lifland, Emory University Associate Professor Gary Bassell and Vanderbilt University Professor James Crowe Jr. also contributed to this research. This research was funded by new faculty support from Tech.

In the study, the probes—produced by attaching a few small fluorescent molecules called fluorophores to a modified nucleic acid sequence and combining the sequences with a protein—exhibited single-molecule sensitivity and allowed the researchers to target and follow native RNA and non-engineered viral RNA in living cells.

"The great thing about these probes is that they recognize RNA sequences and bind to them using the same base pairing most people are familiar with in regards to DNA," Santangelo said. "By adding only a few probes that would bind to a region of RNA, we gained the ability to distinguish a targeted RNA molecule from a single unbound probe because the former lit up two or three times brighter."

For their experiments, the team used a bacterial toxin to transport the probes into living cells—a delivery technique that when combined with the high affinity of the probes for their targets required significantly fewer probes than existing techniques. The toxin created several tiny holes in the cell membrane that allowed the probes to enter the cell's cytoplasm.

"The researchers tested the sensitivity of conventional fluorescence microscopy to image individual probes inside a cell. Previous studies showed that these techniques were able to image an accumulation of probes inside a cell, but the current study demonstrated that individual probes without cellular targets could be observed homogeneously distributed in the cytoplasm with no localization or aggregation."

Santangelo is currently trying to improve the probes by making them smaller and brighter, while also using them to investigate viral pathogenesis and other biological phenomena.

For more information

www.bme.gatech.edu

Biomedical Engineering Assistant Professor Philip Santangelo has helped develop a new technique for visualizing ribonucleic acid (RNA) molecules in a living cell. Image of an epibetal cell showing 1,400 native mRNA granules (red) taken at several heights above and below the nucleus (blue).

CNRS, continued from page 1

with academic and industrial partners," said Ougazzaden. "We are very grateful for the support of Georgia Tech, CNRS and the local authorities of the Region Lorraine in creating an exceptional lab with international culture and a great opportunity for our scientists and students."

"This extension of the GT-CNRS lab to Atlanta continues to build and expand the strong partnership between Tech and CNRS," said Vice Provost for International Initiatives Steven Lecours. "Not only does it grow both of our research portfolios into new areas, but it continues to serve as a model for how strategic international research partners can both benefit from a project that cannot be done by either one individually."

"This is the model for all of our international initiatives and one that has proven successful time and again by GT-Lorraine."

Established in 1990, GTL offers a year-round campus, with typical enrollment of 150 to 200 students per semester. It continues to receive strong financial support from French sources. More than 1,400 master's degree students in mechanical engineering, electrical and computer engineering, and computer science and 100 faculty members have spent at least one semester in Metz. More than 1,200 Tech alumni—primarily from France—now work in Europe. Some, Berthelot says, are in key positions.

In addition, nearly 1,000 undergraduate students have benefited from the Summer Program in Metz since it started in 1998, with 200 students scheduled to attend this summer. Berthelot points out that, in addition to expanding students' exposures to European culture, students have also the opportunity to pursue a double master's degree from Tech and leading partner institutions in France. Some students also have access to internships with GTL's corporate sponsors.

"GTL carries the mark of excellence that characterizes Georgia Tech," Berthelot said. "Tech's reputation is growing in France and in Europe because of GTL and the UMI."

For more information

www.GT-Lorraine.eu

The agreement creating the International Mixed Unit collaboration was formalized in 2006. It was attended by then-Provost Jean-Lou Chameau (third from left).
In Brief . . .

Rohatgi recognized by EPA

Ajeet Rohatgi, a Regents’ Professor in the School of Electrical and Computer Engineering, was recently recognized by the U.S. Environmental Protection Agency (EPA) and the American Solar Energy Society (ASES) for his lifetime’s contribution to making solar technology a realistic, low-cost energy solution.

The EPA honored Rohatgi as an Individual Climate Protection Award Winner in a ceremony recently held at the Kennedy Center in Washington, D.C.

In addition, ASES selected him as this year’s Hoyt Clarke Hotel Award Winner, for contributions in solar energy technology, and will honor him at the SOLAR 2009 conference, in Buffalo, New York, later this year.

www.ece.gatech.edu

Participants sought for study

The Georgia Tech and Emory Health Systems Institute Child Study Lab is seeking children participants aged 15 to 27 months.

The study, researching how to detect autism early in life, will examine various aspects of a child’s development, including play, attention and communication.

Studies usually take 30 minutes, during which time the child’s parent or guardian will always be present. To set up an appointment, visit the Web site or call Jenny Mathys at 404-727-8350 for more information.

childstudy.hsi.gatech.edu

Online parking registration begins

Online registration for 2009-2010 parking permits continues through June 30. To register, visit Parking and Transportation’s Web site, and click on the registration prompt. Questions should be directed to info.parking@parking.gatech.edu.

www.parking.gatech.edu

STUDENTS, continued from page 1

honor to receive this award,” said Wellkamp. “It is a great reaffirmation of the efforts that I have put in at Georgia Tech.”

Wellkamp served as Student Government Association president for the 2008-2009 academic year and has led efforts on conservancy, academic policies and representing the student voice in the transition to Institute leadership and the budget crisis.

“The Truman Scholarship recognizes future leaders who have been identified as change agents,” said Wellkamp. “It was a long and intense application process, but well worth the effort.”

Wellkamp said he plans to use the scholarship to go to law school.

Each Truman Scholarship, established by Congress in 1975 as a memorial to the former U.S. Senator’s pivotal contribution to the Northern Ireland peace process and international affairs, is designed to introduce and connect a generation of young people to the Northern Ireland peace process and international affairs.

A 14-member independent review committee selected this year’s group of scholars on the basis of commitment to careers in the environment, health care or tribal public policy; leadership potential; and academic achievement. Each scholarship provides up to $5,000 for one year.

This prestigious scholarship has generated more than 1,000 Udall Scholars since the first awards in 1996.

Graduating senior Sarang Shah has been named a 2010 George J. Mitchell Scholar, sponsored by the U.S.–Ireland Alliance. He was announced the winner of this award in November.

“Winning this award means I will be able to pursue my interest of researching fundamental theoretical physics and the nature of space, time, matter and energy with the world-class community of theoretical physicists at Dublin Institute for Advanced Studies, Trinity College Dublin, and the University College Dublin,” said Shah, who is excited about being a member of the Mitchell Scholarship community as well.

Being a part of these communities and making a lifelong connection with the science and people of Ireland are precisely my motivations for applying for the Mitchell Scholarship in the first place.”

Shah plans to graduate this spring with dual bachelor’s degrees in physics and public policy. He then plans on pursuing his research and a doctorate in theoretical physics at the University College Dublin.

During his time at Tech, Sarang conducted research in the field of theoretical neurosciences and developed textual analysis software to help map data.

Twelve Mitchell Scholars between the ages of 18 and 30 are chosen annually for one year of postgraduate study in any discipline offered by institutions of higher learning in Ireland and Northern Ireland. Applicants are judged on three criteria: academic excellence, leadership and a sustained commitment to service and community. The Mitchell Scholarship provides tuition, housing, a living expenses stipend and an international travel stipend.

The Mitchell Scholarship is a national competitive fellowship, named to honor the former U.S. Senator’s pivotal contribution to the Northern Ireland peace process and designed to introduce and connect generations of future American leaders to the island of Ireland, with an emphasis on fostering intellectual achievement, leadership and a commitment to public service and community.

The Second International Symposium on Fiber Recycling will be held from 7:30 a.m. to 5 p.m. at the Global Learning Center. Registration is $350.

www.ptrim.gatech.edu

May 11–12

The Symposium on Sustainable Polymers will be held from 7:30 a.m. to 5 p.m. at the Global Learning Center.

www.ptfe.gatech.edu

May 20

Go T.E.C.H., sponsors a Faculty and Staff Health Fair from 11 a.m. to 2 p.m. in the Student Center Ballroom, as part of National Employee Health and Fitness Day.

www.gatech.edu

Ongoing

Technology—Tech’s chapter of Toastmasters International—meets every Thursday at 7:30 a.m. in room 102 of the Microelectronics Research Center.

www.techmasters.gatech.edu

For a more comprehensive listing of events updated daily, visit www.gatech.edu/calendar.

STUDENTS, continued from page 1

Junior Thomas Christian, earth and atmospheric sciences and international affairs major, was named a Morris Udall Scholar for the second consecutive year.

He was the first Tech student to win the award and is now the first student to win the award twice. He was one of 80 students, selected from more than 66 colleges and universities.

“Being a recipient of the Udall Scholarship clearly has monetary and prestigious benefits but winning this for the second year in a row, being one of only seven this year to achieve this, validates my goals for the future and provides me with the support to make those goals become a reality,” said Christian, who hopes to earn a master’s degree in public policy or international policy studies with a focus on environmental policy.

“After finishing my academics, I hope to enter a career in the federal government doing work related to the environment and international affairs.”

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COMMUNICATIONS & MARKETING

Tech Police investigating office burglaries

Coming on the heels of reported robberies of students, Georgia Tech Police are also investigating the burglary of several campus offices during the last several weeks.

“Over the last two months, we have seen break-ins in Skiles, the Ford Environmental Science and Technology building, Boggs, Old Civil Engineering and the Montgomery-Knight buildings,” said Officer Ian Maybery with Tech’s Crime Prevention Unit. Several office doors were forced open, and desktop and laptop computers were the primary items taken.

While these thefts are under investigation, Maybery reminds the campus community that they can take some steps to prevent being victimized.

“Make sure that your door is shut and locked whenever you are not inside,” he said. “When you leave for the evening, take portable electronics with you, or secure them in a locked drawer of your desk. Lastly, if you see someone in your building that you do not know or who is acting suspiciously, make sure you call the police immediately.”

Dial 911 from any campus hardwired phone to contact the Police Department in case of an emergency. For all other calls, dial 404-894-2500.

2009 Annual Retirement Dinner

Long-standing members of the Georgia Tech community will be honored at the Annual Retirement Dinner, to be held May 19, from 6 to 9 p.m. in the Gordy Dining Room of the Watardlawn Center. Those wishing to attend should RSVP by May 1.

www.events.gatech.edu/institute/retirement.html

CLASSIFIEDS

For sale or rent: Renovated brick ranch on cul-de-sac w/ huge fenced yard, new appliances, HVAC. HW floors throughout, open great room, perfect for entertaining. 28R, large office or bonus room, formal DR, huge eat-in kitchen, LR, screened-porch, deck. Call 404-229-3526.

For rent: 3BR/2BA with 2 extra rooms. Master BR w/ bay ceiling, walk-in closet. Large LR w/ fireplace, big kitchen and laundry room, w/d. Fenced back yard. Excellent schools. Brookwood HS, Crees Mill and Crees E5 $1,100 deposit and $1,100 monthly rent. Call 770-617-1169.

For sale: Split level house in Lilburn. Camp Creek/Panther Creek schools, list price w/ a cul-de-sac. Call Matt Bass at 678-938-4015.

SPORTS/FITNESS/RECREATION

3BR/2BA peaceful, furnished, waterfront cottage along the south river. gut rehab, $1,200 a month. Close to Tech campus. Call Tim Purdy at 404-216-4227 or tim.purdy@cox.gatech.edu. Pics available at www.timburdydesigns.com.

For rent: 3BR/2.5BA with 2 extra rooms. DR, huge eat-in kitchen, LR, screened-porch, HVAC. HW floors throughout, on cul-de-sac w/ huge fenced yard, new appliances, HVAC. HW floors throughout, open great room, perfect for entertaining. 28R, large office or bonus room, formal DR, huge eat-in kitchen, LR, screened-porch, deck. Call 404-229-3526.

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