

# ECE Connection

School of Electrical and Computer Engineering | Spring 2007

## New Design Course Shows the Fun of ECE to Freshmen

Anyone near room E261 in the Van Leer Building probably noticed an unusually high level of energy and enthusiasm during the last week of fall semester classes, as students armed with robots of varied shapes and operating modes faced off in qualifiers

and then a final challenge to see which robot could transport the most balls over to its opponent's side within two minutes. Generating that kind of excitement was exactly what the faculty who created ECE 1882—Introduction to ECE

Design—had in mind as they organized this course, the first to use the new LEGO MINDSTORMS/NXT kits in the U.S.

Offered for the first time in fall 2006, ECE 1882 acquaints freshmen electrical engineering and computer engineering majors with the basics of both disciplines. Students designed autonomous robots that respond to sensor inputs and use motors/actuators to accomplish simple tasks. Each class section, divided into eight three-member teams, learned robot building basics in labs dealing with

programming; motors and rotational sensors; ultrasound, touch sensors, and loops; sound sensors; and Bluetooth communication.

Throughout the semester, the teams also assessed how consistently and how well their robots worked, while also learning about ECE research and education during specialized faculty presentations. Austin Hurd, a computer engineering major, said that the course was fun and well structured. "The technical interest lectures helped me to see what opportunities are available in ECE, and working with the LEGO kits was a fun challenge because you could build the robot however you wanted," he said.

In addition to the technical aspects of the course, students also used their management and communications skills by delegating tasks and creating realistic timelines for their projects. They also wrote design strategy reports, culminating with an end of project paper detailing the final design, strategy, technical description, and performance assessment. Hugh Kinsel, an electrical engineering major, said ECE 1882 helped him get an idea of what the next four years would be like. "Working with the robots helped us see the different things that ECE students can do," he noted. "It was also a big challenge to explain our decisions and our strategies."

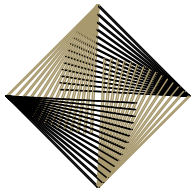
From most indications, the first offerings of this course are addressing the concerns of course co-creators, Douglas B. Williams, Robert J. Butera, Jeffrey A. Davis, and George F. Riley, that ECE freshmen were not getting any early exposure to "doing engineering." Taking into con-

sideration similar comments and concerns from students, fellow faculty, and various outside groups, the faculty team reviewed several freshman engineering courses developed by peer universities, and then decided that a robotics course would probably generate the most interest. "We felt that robotics provided the best combination of getting students to use their technical acumen and their interpersonal and team-building skills," said Dr. Williams, who also serves as associate chair for ECE undergraduate affairs. "The course also provides a chance for these students to build relationships with faculty and other students in ways that they may not be able to do in their other courses at this stage of their academic careers."

While ECE 1882 is only available to ECE majors in 2006-07, it may be opened to other majors in the future, and it is housed in the Klaus Building, Room 2448 as of spring 2007. Noting the huge amount of support and positive feedback that this course has received, Dr. Williams added that the faculty team has been asked by LEGO Education and National Instruments to develop a book and course materials for ECE 1882. When completed, these materials will be available to other colleges and to high schools around the country. |



*Hugh Kinsel (l) and David Smith show their winning robot after the ECE 1882 final challenge was completed.*



## "Engaging Undergraduates"

Goal number one of the Georgia Tech Strategic Plan promotes the importance of a student-focused education. That plan postulates that "the student body is the soul of Georgia Tech and the mark of our success." In ECE, we agree with that philosophy. Our objective is to provide all of our students with a relevant, learner-centered education that prepares them for a productive professional career and leadership. This requires a teaching and learning environment in which students, faculty, and staff collaborate to achieve this desired outcome.

Establishing a learner-centered educational environment suggests that we reconsider the sequence in which we choose to structure the engineering curriculum. From World War I through the Cold War era, engineering education was transformed from the "practitioner-apprentice" model to a paradigm more grounded in fundamental mathematics and physical science as a platform or foundation for in-depth disciplinary study. While there were many positive benefits resulting from the inherent rigor of this approach, there were also some unintended consequences. One of these was the evolution of undergraduate engineering curricula to a model that requires students spending the first two years of their degree programs immersed in calculus, chemistry, and physics, but doing little or no actual engineering. By analogy, if we taught children how to play baseball using the same approach, they would spend weeks learning the fundamentals of running, throwing, catching, and hitting before they ever actually played a baseball game!

To address this situation, we have developed a new course, "Introduction to Electrical and Computer Engineering Design," for freshman ECE students. The objective of this course, which is being offered for the first time this year, is to get students engaged and excited about an engineering career and to give them early experience in engineering with ac-

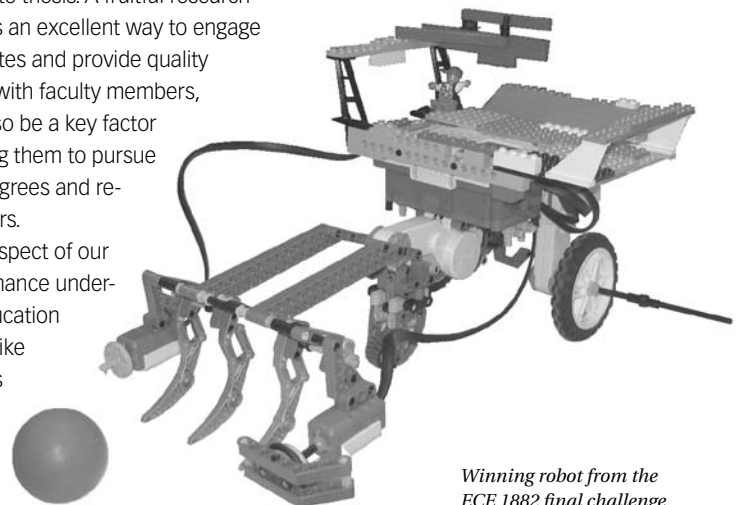
tual design "scrimmages." The goal was to offer a course with no prerequisites that nonetheless gives a comprehensive view of ECE. The course has one lecture and one lab per week and focuses on robotics. It concludes with a competition to determine which student team's robot best meets a design challenge. We are using the new LEGO MINDSTORMS NXT kit, which includes software, a 32-bit processor, and the necessary motors and sensors. As the first university program in the country to use this kit, we have received significant support from LEGO Education and National Instruments, who developed the programming environment.

In addition to the freshman course, we are also placing renewed emphasis on undergraduate research. Through our Undergraduate Research Opportunities Program (UROP), ECE has long been a proponent of this approach. More recently, the Institute as a whole has implemented an Undergraduate Research Option as a degree designator (similar in concept to the co-op degree designator). The Undergraduate Research Option offers students the opportunity for a substantial, in-depth research experience. Student participants spend multiple terms working directly with a faculty advisor, culminating in the preparation of an undergraduate thesis. A fruitful research experience is an excellent way to engage undergraduates and provide quality interactions with faculty members, and it can also be a key factor for motivating them to pursue advanced degrees and research careers.

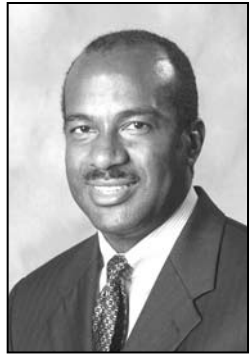
The final aspect of our efforts to enhance undergraduate education that I would like to highlight is the Arbutus Center for Distributed Engineering Education. The

Arbutus Center, initiated by a generous donation by ECE alumnus Jim Carreker and led by Professor Tom Barnwell, focuses on research, development, and deployment of methodologies, techniques, and courseware for the enhancement of ECE education. The Center brings together specialists in education, learning sciences, assessment, networking, and engineering education to create multidisciplinary teams dedicated to using technology to improve learning, teaching, and information sharing for engineering faculty and students. The result is a distributed technology-based environment for distributed classroom experiences and on-line archives that includes a unique network of interoperable technology-enhanced classrooms and a powerful high-speed network for distributed education delivery. In short, the Center provides "education on demand" for students in Atlanta and elsewhere.

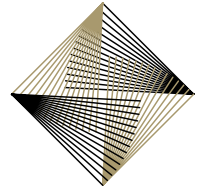
ECE will continue to nurture a community of scholars that seeks out the rich opportunities for lifelong learning both inside and outside of the classroom. Georgia Tech's rigorous curriculum and co-curricular activities will continue to challenge our students to grow as intellectual and social beings, preparing them for success on their chosen paths. |



*Winning robot from the ECE 1882 final challenge.*



**Gary S. May**  
*Steve W. Chaddick*  
School Chair



## John Peatman Honored with 2006 IEEE Undergraduate Teaching Award

Acknowledged by his students and colleagues as a tremendous role model for all educators, John B. Peatman was presented with the 2006 IEEE Undergraduate Teaching Award last October at the IEEE Frontiers in Education Conference in San Diego, Calif.

This award, the industry's premier recognition for undergraduate teaching achievement, honors Dr. Peatman for a 40-plus year career of inspirational teaching and mentoring and for his six definitive textbooks in digital systems design. A professor at Georgia Tech since 1964, he received the Georgia Tech Outstanding Teacher Award in 1971 and has been chosen three times by the ECE senior class for the Richard M. Bass/Eta Kappa Nu Outstanding Teacher Award, a feat not matched or exceeded since the award was established 35 years ago.

Preparing students for their future lives has always been a top priority for Dr. Peatman. In 1969, he and a group of seniors organized the electrical engineering senior seminar, where business professionals spoke about professional and personal challenges that students would likely face after graduation, said Neal M. Williams (BEE '69), a seminar co-founder.

"After we graduated, John continued the seminar with new groups of seniors each year to steer it for the next 30 years, providing valuable career insight and advice to thousands of students," said Mr. Williams, now an attorney with Carr & Ferrell, LLP, in Palo Alto, Calif. Though the seminar ended with semester conversion in 2000, Dr. Peatman still invites speakers—often including former students—to his classes.

Dr. Peatman also enhanced his teaching and project advisement by spending summers in industry, returning with newly acquired knowledge to share. In one instance, he and his students participated in a 1989 Motorola program, in which they developed a low-cost microcomputer emulator board, that eventually became a company product. "His encouragement, support, and expert advice

have helped many students to align their interests with their knowledge and empower them to find work that is both a career and a hobby rather than just a job," said Rawin Rojvanit (BSEE '01, MSECE '03), an engineer with Microchip Technology, Inc.

Many of Dr. Peatman's former students are involved, dedicated alumni. Not surprisingly, they attribute many of their positive experiences at Georgia Tech to time spent with him individually, in his classes, or in small project groups. James R. Carreker (BEE '69), current member of the Georgia Tech Advisory Board and head of Arbutus Hospitality Group, endowed the Arbutus Chair in Distributed Engineering Education and formed the Arbutus Center for Distributed Engineering Education with the largest single alumni gift ever made to ECE.

"John's gentle style and willingness to take the time to listen distinguished him among his peers. Speaking both from personal experience and with the knowledge of others similarly impacted, John has created a powerful and positive connect for Georgia Tech students with their alma mater," Mr. Carreker said. "In doing so, he started a process that has led many to remain engaged with and/or return to Tech with substantial support of the institution, college, and school."

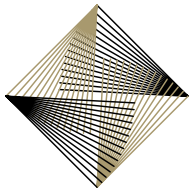
Even today, ECE alumni count Dr. Peatman as a friend and mentor, seeking his counsel on personal and business matters, said Doug Kraul (BSEE '78), senior vice president for product development at MusicGremlin in New York City. "John has provided professional and personal guidance every time I asked, and I have long sensed his hand assisting behind the scenes without credit or notoriety," Mr. Kraul said. "I have worked with, employed, and known other students John taught. All were excellent professionals, and more important, good people. John is one of those people who bring out the best within." |



John B. Peatman (l) and IEEE President, Leah Jamieson, at the awards ceremony, held at the Frontiers in Education Conference.

*"His encouragement, support, and expert advice have helped many students to align their interests with their knowledge and empower them to find work that is both a career and a hobby rather than just a job."*

Rawin Rojvanit  
BSEE '01, MSECE '03



## ECE Students Hone Communication Skills in State-of-the-Art Studio

### New Facility Funded by Coleman Family Gift

With the opening of the Coleman Family Professional Communication Studio this past fall, 1,300+ ECE undergraduates now have an innovative multimedia facility to practice communication tasks associated with their ECE studies.

Located on the fourth floor of the Van Leer Building, the Studio is led by Christina Bourgeois, founder and coordinator of the ECE Undergraduate Professional Communications Program (UPCP), where oral, written, electronic/digital, and graphical communication skills are taught in five required ECE courses.

Already a great hit with the students, the Studio has a comfortable—yet very high tech and professional—environment equipped with the latest technology, including a presentation rehearsal studio with video capture capability and computers with standard Windows XP operating systems and relevant ECE software.



writing assignments such as lab reports and workplace-oriented assignments like feasibility reports, speeches, and Power Point presentations. Equipped with these skills and using facilities that are standard in today's workplace, Georgia Tech ECE students will be the "next generation" engineers, possessing exceptional analytical and communications abilities, said Ms. Bourgeois.

graduates for the workplace."

The Studio is made possible by a generous gift from Michael Coleman (BSEE '82), his wife, Jennifer, and his mother, Harriett. Michael's late father, Jeff Coleman, was also a Georgia Tech graduate (BSEE '56) who founded Coleman Research Corporation in 1980, a start-up aerospace company. Following the sale of Coleman Research in 1995, Michael co-founded Coleman Technologies, Inc., based in Orlando, Fla.

While on campus for Family Weekend in 2004, Michael and Harriett Coleman heard about Ms. Bourgeois' proposal for the Studio and enthusiastically supported the plans. "If an engineer cannot communicate effectively, then his or her ideas don't have much value," said Michael. "The communications emphasis in ECE is very important, and we are very pleased to support the program and this new studio." |



"While engineering classes teach us how to think, it is through this training that we learn how to communicate our ideas effectively," said Roshi Goel, an electrical engineering senior who interned at Motorola last summer.

From the sophomore digital design lab—ECE 2031—to the senior capstone design course—ECE 4006, students develop their written, oral, and critical thinking skills by completing academic

"For our students, multimedia is ubiquitous to their experience. The Studio transforms the outdated writing center concept into a 21st century, state-of-the-art facility that allows students to work on all communication-related tasks," she added. "The generous financial support from the Coleman Family has made it possible for the School of ECE to be proactive in shaping engineering education and leading the country in preparing its

*(top, l-r) Michael Coleman, Jennifer Coleman, Harriett Coleman, and Victoria Coleman, age 13, at a special dedication ceremony for the studio.*

*(left) Christina Bourgeois and Michael Laughter, assistant UPCP coordinator, are shown in the new Coleman Family Professional Communication Studio, as students work on different projects.*

# Klaus Advanced Computing Building Fuels Collaborative Spirit

The Georgia Tech community, along with state and national dignitaries, celebrated the grand opening of the Christopher W. Klaus Advanced Computing Building on October 26-27, signaling the importance of Georgia Tech and Atlanta as leaders in the digital economy.

The educational and research facility houses students and faculty members from ECE and the College of Computing. The two units collaborate through activities such as the Center for Experimental Research in Computer Systems, the Georgia Tech Information Security Center, and the new Center for Robotics and Intelligent Machines. Other areas of focus include computational media and embedded systems and technology.

"For years, faculty in ECE and the College of Computing have teamed up on many interdisciplin-

ary activities, long before it was considered "the right thing to do," said Gary S. May, Steve W. Chadwick School Chair. "Together, they have created labs and centers, developed courses and co-advised students. With our faculty and students housed in the Klaus Building, I look forward to more exciting activities and discoveries." |

*Top photo: (l-r) Cliff Klaus, Crissy Klaus, Chris Klaus, Susan Klaus, President Wayne Clough. In front: Will Klaus-6, and CJ Klaus-3.*

*Taking part in the ribbon-cutting for the Klaus Advanced Computing Building are (l-r) Georgia Governor's Office COO James R. Lientz, Jr.; former U.S. Senator Sam Nunn; Christopher Klaus, founder and CEO of Kaneva, Inc. and founder of Internet Security Systems; College of Computing Dean Rich DeMillo; Georgia Tech President G. Wayne Clough; and ECE School Chair Gary S. May.*

# The Next Big Thing in the World of Small: New Nanotechnology Building

Now under construction on the Georgia Tech campus, the new Marcus Nanotechnology Research Center Building will create a unique merger of the physical and biological sciences. State officials believe that this fusion will win Georgia a place in future nanotechnology-based industries.

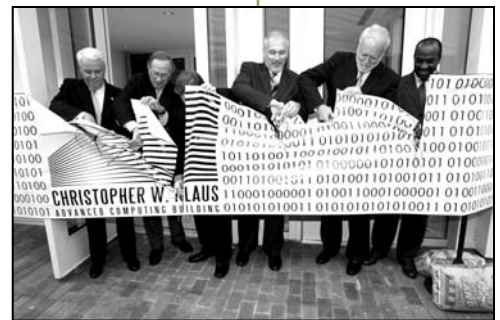
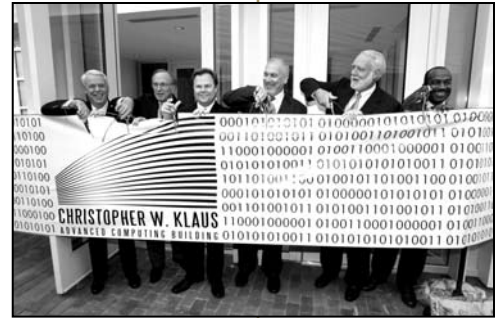
The \$80 million building—to be named after philanthropist Bernie Marcus—will be the most advanced nanotechnology facility in the Southeast when it opens in fall 2008. An official groundbreaking ceremony was held on August 7.

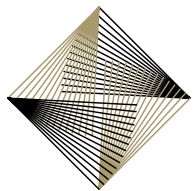
"With this new building, we will have 20,000 square feet of clean room space dedicated to nanotechnology focused on the physical sciences and engineering, adjacent to a 10,000-square-foot-facility dedicated to biological and biomedical nanotechnology research," said James D. Meindl, founding director of the new center and Joseph M. Pettit Professor in ECE. "To the best of my knowledge, this combination does not exist anywhere else in the world."

Micron-scale semiconductor chips have fueled the world's economic growth for the past five decades. Dr. Meindl predicted that nanotechnology—operating at an even smaller size scale where the laws of physics change how materials behave—will drive growth in the future.

Mr. Marcus, whose generosity has already created the Georgia Aquarium, committed \$15 million to fund the building's construction. A former pharmacist, he said that he was initially attracted to nanotechnology because of its promise in curing disease. |

*(left) Officials move ceremonial dirt at the August 7 groundbreaking. Shown (l-r) are James D. Meindl, director of the new Nanotechnology Research Center; Georgia Tech President Wayne Clough; Philanthropist Bernie Marcus; Georgia Governor Sonny Perdue; and University System Chancellor Erroll Davis.*





#### 2006-07 ECE Advisory Board

##### C. Dean Alford

Allied Utility Network  
Conyers, Ga.

##### Antonio R. Alvarez

Cypress Semiconductor  
(Retired)  
San Jose, Calif.

##### Michael B. Bartlett

Texas Instruments, Inc.  
(Retired)  
Richardson, Tex.

##### Michael Buckler

Lucent Technologies  
Cary, N.C.

##### Steve W. Chaddick

Ridgewood Advisors, LLC  
Atlanta, Ga.

##### Mel Coker

BellSouth Telecommunications  
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##### Michael A. Coleman

Orlando, Fla.

##### H. Allen Ecker

Scientific-Atlanta, Inc.  
Lawrenceville, Ga.

##### Holmes J. Hawkins, III

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Atlanta, Ga.

##### Kelvin C. Hawkins, Sr.

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Research Triangle Park, N.C.

##### Leonard Haynes

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##### Joseph Parks

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##### Randall E. Poliner

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##### Thomas J. Quigley

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##### Ron Slaymaker

Texas Instruments, Inc.  
Dallas, Tex.

##### C. Meade Sutterfield

SSPCS Corporation  
Atlanta, Ga.

## Chaddick Named New Advisory Board Chair; Two New Members Added

Composed of mostly alumni industry representatives, the ECE Advisory Board provides ongoing external assessment of the School's programs and formally meets twice per year. For 2006-07, the ECE Advisory Board has a new leader and two new members.

**Steve W. Chaddick** (BSEE '74, MSEE '82) was named the new chair of ECE's Advisory Board in spring 2006, succeeding C. Meade Sutterfield (BEE '72) who served for two years in this post. Mr. Chaddick is the managing partner of Ridgewood Advisors, LLC, a vehicle for angel investing that nurtures the community of emerging technology companies in the Atlanta area and facilitates technology commercialization.

**Holmes J. Hawkins, III** (BEE '90) joined the Board in spring 2006. A partner in King & Spalding's Intellectual Property Practice Group in Atlanta, Mr. Hawkins specializes in patent litigation. He is listed in the 2006-07 edition of *The Best Lawyers in America* and in *Chambers USA: America's Leading Business Lawyers*. *Atlanta Magazine* has also recognized him as a "Georgia Super Lawyer."

**Joseph Parks** (PhDEE '97) became a member in fall 2006. After graduating with his doctorate, he joined Intel Corporation in Beaverton, Ore. Dr. Parks has worked with Flash and logic processes spanning the 0.35 micron to 65 nm nodes. Currently, he is focusing on chipset process development. |



(l-r) Holmes J. Hawkins, III; Gary S. May; Steve W. Chaddick; and Joseph Parks at the fall 2006 advisory board meeting.

## Etta Pittman Joins ECE Development Team

Last July, Etta Pittman was named associate director of development in the School of ECE, where she manages a portfolio of ECE-oriented companies and directs the School's Industrial Partnership Program. She reports to Marci Reed, ECE's director of development.

Ms. Pittman has been with Georgia Tech since 1999. Before joining ECE, she was a development associate in the Georgia Tech Office of Corporate Development.

Prior to joining Georgia Tech, she was the assistant director for clinical services at the Mental Health Mental Retardation Authority in Houston, Tex. She holds a bachelor's degree in psychology and nursing from Tennessee State University and a master's degree in public administration from Texas Southern University. |



## Eight ECE Alumni Chosen for CoE Awards

The College of Engineering honored eight ECE alumni at its annual awards induction ceremony on November 3 at the Westin Buckhead Atlanta. Congratulations to our alumni for their outstanding achievements!

### Council of Young Engineering Alumni

Holmes J. Hawkins, III, BEE '90  
*Partner, King & Spalding*

Carlos A. Muniz, BEE '90  
*Senior Network Vice President -  
Atlantic Operations, BellSouth*

### Academy of Distinguished Engineering Alumni

David L. Burgess, BEE '81  
*Commissioner,  
Georgia Public Service Commission*

J. Mark Elder, BEE '68; MSEE '69  
*President, Aztek Engineering*

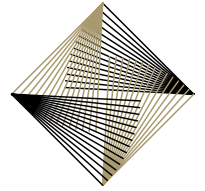
Linda J. Jordan, BEE '85; MSEE '86  
*Senior Vice President, Inst. Sales  
and Marketing, Mesirow Financial*

W. Wayt King, BEE '81; MSEE '82  
*Technology Entrepreneur*

Slim S. Souissi, MSEE '92  
*Senior Vice President and Chief  
Technology Officer, Novatel Wireless*

### Hall of Fame

Mark C. Smith, BEE '62  
*Chairman, Adtran, Inc.*



## James R. Carreker Lecture Rich Templeton, Texas Instruments CEO

### "These Are Exciting Times for Engineers"

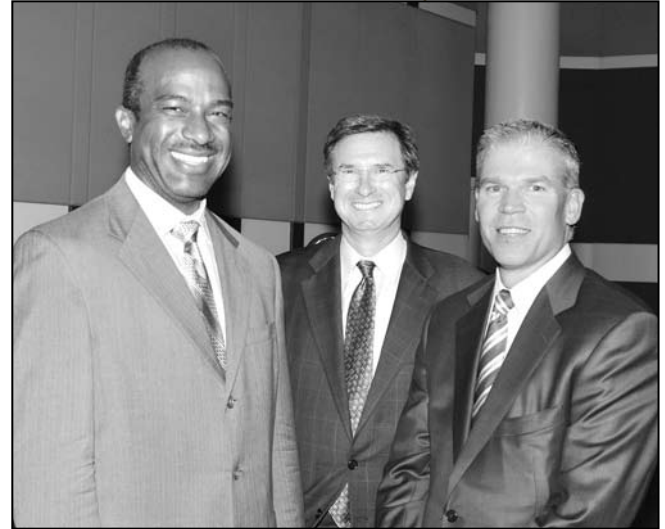
Richard K. Templeton, president and CEO of Texas Instruments (TI), spoke to a standing room only crowd at the seventh annual James R. Carreker Distinguished Lecture on October 11, 2006.

While the global demand for the latest electronic devices continues to grow, so does the need for engineers and scientists who can push the limits of semiconductor technology. However, Mr. Templeton added that the industry also needs managers, attorneys, and sales personnel with backgrounds anchored in engineering knowledge.

He reflected on the 20-plus year relationship between ECE and TI, pointing to the company's key partnerships

with analog and digital signal processing faculty. Currently, 150 TI employees are Tech alumni and over 40 Tech students are on co-op or internship assignments. He thinks that the great challenges for the future are in electronics meeting life sciences to create breakthroughs in artificial sight, hearing aids, and non-invasive patient monitoring devices.

Mr. Templeton also stressed promoting education and careers in math, science, and engineering to K-12 students. "We have had careers and educations in these areas because of investments made in the last 10 to 40 years," he said. "We need to maintain that momentum to keep the U.S. university research and education system as the best in world, of which Georgia Tech is a terrific example."



(l-r) Gary S. May, with TI's Ron Slaymaker and Rich Templeton.

## Hartlein Chosen as New NEETRAC Director

Richard A. Hartlein has been named the new director of the National Electric Energy Testing Research and Applications Center (NEETRAC), effective January 1. A principal research engineer at NEETRAC, Mr. Hartlein has served as the Center's interim co-director since Hans B. Püttgen retired from Georgia Tech in March 2006.

"Given his background and experience, Rick is uniquely qualified to lead NEETRAC to a preeminent position in the field of electric energy research," said Gary S. May, Steve W. Chaddick School Chair.

For the first 20 years of his career, Mr. Hartlein worked at the Georgia Power Research Center. In 1996, he came to Georgia Tech to help establish NEETRAC, a merger of the Georgia Power Research Center and Georgia Tech's research and instructional programs in electric power.

While at Tech, Mr. Hartlein has served as the Center's Underground Systems Program Manager, where he develops and manages research and testing projects related to electric utility underground cable systems and markets NEETRAC to prospective members. A graduate of Tech's George W. Woodruff School of Mechanical Engineering, Mr. Hartlein also serves in several leadership roles in industry technical organizations related to this field.

One of the world's foremost electric energy research and testing centers, NEETRAC has 31 industrial members, both manufacturers and utilities, involved in the transmission and distribution of electric energy. NEETRAC electric utility members provide over 50 percent of the electric energy used by U.S. consumers. Members collaborate in baseline projects of broad interest to the membership, and they may also direct a portion of their membership to projects that focus on their individual needs. In addition to ECE, the Schools of Mechanical Engineering, Aerospace Engineering, Industrial and Systems Engineering, Materials Science and Engineering, and GTRI are also involved in NEETRAC activities. |



## ECE Students Earn Corporate Scholarships

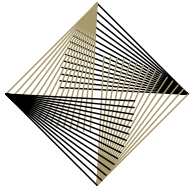
For fall semester 2006, eight ECE undergraduate students received scholarships for their academic excellence from major corporations. Congratulations to them all!

Alcoa  
Mehak Dinesh

Cingular  
Karan Gandhi

Caterpillar  
Jose Vidal, Jr.  
Man-Ting Au  
Mekre Mesganaw  
Matthew Brown  
Thomas To

Schlumberger  
Heather Macfie



## Russell Dupuis to Receive IEEE Edison Medal

The Institute of Electrical and Electronics Engineers has selected Russell D. Dupuis, the Steve W. Chaddick Endowed Chair in the School of ECE, to receive its prestigious 2007 IEEE Edison Medal. The medal will be presented at the 2007 IEEE Honors Ceremony to be held June 12-17 in Philadelphia.

The Edison Medal is bestowed for a career of meritorious achievement in electrical science, electrical engineering, or the electrical arts. Dr. Dupuis' award commemorates his innovative contributions to metalorganic chemical vapor deposition (MOCVD) and continuous-wave room-temperature quantum-well lasers. MOCVD is a method for depositing high-quality complex semiconductor structures that contain many layers, some only 0.1 millionths of an inch thick.

The complex semiconductor "sandwiches" produced with MOCVD are currently used to create light sources (lasers) for optical devices such as laser pointers, DVD lasers, solar cells, photodiodes, and the latest high-density DVD disc technology called "Blu-Ray," which is expected to replace DVDs. Other applications include LED-based indicator lamps and solid-state light sources like those in

flashlights and large display panels such as the NASDAQ sign in Times Square.

"MOCVD is used for virtually all high-brightness LEDs in traffic signals, automotive lighting, and LCD back lighting, and soon this technology will be widely used to illuminate public buildings and eventually your home," said Dr. Dupuis. "I hope that my students can use the knowledge they gain at Georgia Tech and contribute to even greater future advances in this field."

LED technology, based on Dr. Dupuis' MOCVD process, is already transforming the lighting industry. LEDs provide a highly efficient and reliable light source. As they become increasingly useful for general illumination and displace the incandescent light bulb, the United States will save billions in energy costs. Carbon emissions from traditional power plants will also be significantly reduced.

"The Edison Medal is a very special and truly wonderful honor for me, both because of the outstanding and innovative inventor and engineer for whom it is named and for the very many truly exceptional individuals who have received it before me," said Dr. Dupuis. "I am especially honored to acknowledge the

impact that Professor Nick Holonyak, Jr., who received this medal in 1989, has had on my academic and professional career." Dr. Holonyak was Dr. Dupuis' thesis advisor and mentor at the University of Illinois at Urbana-Champaign, where Dr. Dupuis earned his B.S. (with Highest Honors—Bronze Tablet), his M.S., and his Ph.D. in electrical engineering.

Dr. Dupuis currently directs the Center for Compound Semiconductors at Georgia Tech. A Georgia Research Alliance Eminent Scholar, he has received many awards and distinctions. Among these is the 2002 National Medal of Technology, the nation's highest honor for work in science and technology. President George W. Bush awarded this medal to Dr. Dupuis and two colleagues for their work on developing and commercializing LEDs.

The Edison Medal is the oldest medal in engineering. It was created by Thomas Edison's friends and associates in 1904, twenty-five years after Mr. Edison introduced his incandescent electric light bulb. Past Edison Medal honorees include Alexander Graham Bell, Nikola Tesla, and other pioneers of the modern electronics era. |



*"MOCVD is used for virtually all high-brightness LEDs in traffic signals, automotive lighting, and LCD back lighting, and soon this technology will be widely used to illuminate public buildings and eventually your home."*

— Russell D. Dupuis  
Steve W. Chaddick  
Endowed Chair  
in Electro-Optics

## Gary May Receives AAAS Mentor Award

Gary S. May, professor and Steve W. Chaddick School Chair, received the 2006 Mentor Award from the American Association for the Advancement of Science (AAAS). The award was presented at the organization's annual meeting, held Feb. 15-19 in San Francisco.

"I am honored to have received this prestigious award and to have been recognized by my peers at the national level," Dr. May said. "I am particularly grateful to the AAAS, to the National Society of Black Engineers, who nominated me, and to my students, who have worked so hard and made this important work possible."

The Mentor Award is given to an individual for extraordinary leadership that increases the involvement of underrepresented groups in the science and engineering fields. Honorees must have mentored significant numbers of underrepresented students through completion of their doctorates or helped to increase the diversity of doctoral students in a department or institution.

"Diversity adds quality and creativity to any enterprise, including science," Dr. May said. "Doing a better job of educating America's minorities will ultimately lead to a more thriving scientific community and one that better reflects our increasingly heterogeneous society." |



## Three ECE Faculty Leaders Named to Distinguished Professorships

Steve W. Chaddick School Chair Gary S. May named Joy Laskar, Madhavan Swaminathan, and A.P. Sakis Meliopoulos to prestigious professorships in ECE, effective January 1.

*"ECE is fortunate to have internationally recognized technical leaders like Joy, Madhavan, and Sakis on our faculty," Dr. May said. "We look forward to many more interesting findings from their programs in the years to come."*

### Joy Laskar Named Schlumberger Chair in Microelectronics

An ECE faculty member since 1995, Joy Laskar has been named the Schlumberger Chair in Microelectronics. Previously, Phillip E. Allen held this endowed chair until his retirement in June 2005.

Prior to accepting the Schlumberger Chair, Dr. Laskar held the Joseph M. Pettit Professorship in Electronics. He is the director of the Georgia Electronic Design Center, a center focused on establishing Georgia as a world leader in the design of broadband communication systems, devices, and chips.

Dr. Laskar also leads the Microwave Applications Group, consisting of 40 graduate students and researchers who study the integration of high frequency mixed-signal electronics for next generation wireless and wireline systems. His work has also resulted in the formation of two graduate companies of the Advanced Technology Development Center—RF Solutions (now the WiFi division of Anadigics) and Quellan, a developer of collaborative signal processing solutions for the enterprise, video, storage, and wireless markets.

Elected an IEEE Fellow in 2005, Dr. Laskar currently serves as an IEEE Distinguished Lecturer for the Electron Devices and the Microwave Theory and Techniques societies and is the general chair for the 2008 IEEE International Microwave Symposium.

### Sakis Meliopoulos Appointed to Georgia Power Professorship

A.P. Sakis Meliopoulos has been named the Georgia Power Distinguished Professor, which was previously held by Hans B. Püttgen until his retirement in March 2006.

A faculty member with ECE since 1976, Dr. Meliopoulos has been a mainstay in the electric power research and education programs at Georgia Tech, establishing activities in power systems, power electronics/power electronics building blocks, and integration of distributed generation and renewables with power grids.

He also serves as the Georgia Tech site director for the Power Systems Engineering Research Center (PSERC), a National Science Foundation Industry/University Research Center. For his achievements in research, Dr. Meliopoulos was honored with the 2005 IEEE Richard Harold Kaufmann Award and was elected IEEE Fellow in 1993.

He is also the academic administrator for the Georgia Tech Power Systems Certificate Program, an internationally recognized continuing education program, and is the organizer of two longstanding annual electric power conferences—the Protective Relaying Conference and Fault and Disturbance Analysis Conference. Dr. Meliopoulos received the 2002 Georgia Tech Outstanding Continuing Education Award for his dedication to keeping engineering professionals abreast of the latest electric power technologies.

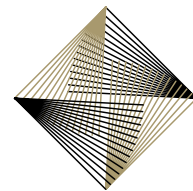
### Madhavan Swaminathan Appointed as New Pettit Professor

Madhavan Swaminathan is the new Joseph M. Pettit Professor in Electronics. Dr. Swaminathan started working at Georgia Tech in 1994 with the Microsystems Packaging Research Center (PRC) and then became a tenure track faculty member in 1997.

He has served as deputy director of the PRC since 2004 and also leads its System Design group. The Center is dedicated to System-on-Package and microsystems packaging technologies with a focus on research and education.

Dr. Swaminathan currently advises 15 graduate-level students and several researchers in his Mixed Signal Design Laboratory, which focuses on digital design, RF Design, mixed signal design, and electronic design automation. In 2002, he co-founded and became chief scientist of Jacket Micro Devices (JMD), an Advanced Technology Development Center start-up company that provides highly integrated radio frequency (RF) modules that dramatically reduce the size and improve the performance of wireless devices. Recently, QUALCOMM, Inc. selected JMD's M20006 and M20007 RF modules for the draft 2.0 compliant 802.11n AGN400™ chipset reference design.

Dr. Swaminathan was elected as an IEEE Fellow in 2006 and has received several awards, including the IBM Faculty Award in 2004 and 2005. |



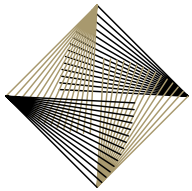
Joy Laskar



A.P. Sakis Meliopoulos



Madhavan Swaminathan



## Faculty News

### New Faculty

#### **Pamela Tridandapani Bhatti**

*Assistant Professor*

BS Biomedical Engineering '89, University of California at Berkeley; MSEE '93, University of Washington at Seattle; PhDEE '06, University of Michigan at Ann Arbor

*Areas: Microelectronics/Microsystems, Bioengineering*

Dr. Bhatti joined ECE in January 2007. Her research interests include biomedical sensors and subsystems, bioMEMS, neural prostheses, and integration of controlled-release drug delivery technology with flexible neural recording/stimulating arrays.

Before pursuing her doctorate at the University of Michigan, Dr. Bhatti had extensive experience in industry. From 1987-96, she worked at Alza Corporation (Mountain View, Calif.), Motorola's Semiconductor Products Sector (Austin, Tex.), Motorola-LONWORKS, and Microware Systems Corporation (Des Moines, Iowa). From 1997 to 2000, she served as a clinical trials research associate with the Department of Radiology at the University of Michigan investigating the discrimination and characterization of breast cancer using 3-D Doppler ultrasound imaging.

#### **Justin Romberg**

*Assistant Professor*

BSEE '97, MSEE '99, PhDECE '03, Rice University

*Area: Digital signal processing*

Before joining Georgia Tech in August 2006, Dr. Romberg was a postdoctoral fellow with the Applied and Computational Mathematics Department at Caltech, where he worked on the theoretical foundations of compressive sampling.

While living in the Los Angeles area, he became a consultant for the CBS television show, *Numb3rs*, a drama about an FBI agent who recruits his mathematical-genius brother to help the Bureau solve a wide range of challenging crimes in Los Angeles. At Georgia Tech, Dr. Romberg is a member of the Center for Signal and

## Hughes Appointed to Several Leadership Posts

Joseph L.A. Hughes was named to three key appointments during fall 2006

**Georgia Tech Executive Board chair:** The Board oversees all aspects of Institute faculty governance and consists of representatives from the administration, faculty from each college and the Georgia Tech Research Institute, students, and staff. Dr. Hughes will serve as chair through August 2007.

**Senior associate chair for ECE:** Dr. Hughes substitutes for and represents the school chair as directed, and he leads and manages ECE academic operations and support, as well as accreditation and assessment. Dr. Hughes coordinates administrative and operational matters for ECE academic programs at Georgia Tech campuses outside of Atlanta and forms Institute policy on the use and integration of computing and other technologies.

**IEEE Education Society president:** Dr. Hughes' one-year term took effect on January 1, with possible re-election for a second year in 2008. The Society has almost 3,200 members, more than half residing outside the United States, and 64 local chapters.

"Joe has shown extraordinary dedication to ECE, Georgia Tech, and the engineering profession," said Gary S. May, Steve W. Chaddick School Chair. "We are fortunate to have someone as knowledgeable as Joe on our faculty and in these major leadership roles." |



Image Processing, where his research interests include multiresolution techniques for analyzing, processing, and understanding images.

#### **Ying Zhang**

*Assistant Professor*

BS Materials Science and Engineering '95, Tongji University (China); MS Materials Engineering '01, University of Illinois at Chicago; MSEE '02, University of Massachusetts at Lowell; PhD Systems Engineering '06, University of California at Berkeley

*Area: Microsystems*

Before joining the ECE faculty at Georgia Tech Savannah in October 2006, Dr. Zhang was a Ph.D. student with the Berkeley Sensor and Actuator Center, an NSF Industry/University Cooperative Research Center involving researchers with the University of California campuses at Berkeley and Davis.

Dr. Zhang's research interests focus on the systems level of interdisciplinary

problems. Her doctoral research illustrated the creation of powerful, efficient design synthesis tools for microelectromechanical systems (MEMS) devices, which help engineers to develop rapid, optimal configurations for a given set of performance and constraint guidelines. She has also been involved in research related to sensor design, optical sensing system development, and wireless sensor networks development.

### Faculty Highlights

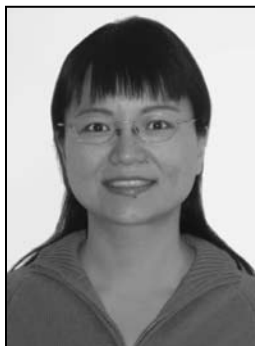
**Thomas P. Barnwell, III**, and his wife, Aina, were inducted into the Atlanta Country Music Hall of Fame's Hall of Honor on November 25 and were recognized for their articles and work with the Southeastern Bluegrass Association. This honor is given to Georgia musicians who have distinguished themselves for at least 20 years by performing, authoring, and/or teaching. *continued on page 11*



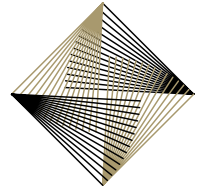
*Pamela Bhatti*



*Justin Romberg*



*Ying Zhang*



## Zhou Tapped to Lead Georgia Tech Shanghai Initiative

Last July, G. Tong Zhou was named director of the Georgia Tech Shanghai Initiative. In this role, Dr. Zhou is the institutional leader and contact for Georgia Tech operations in Shanghai, including educational and research programs at Shanghai Jiao Tong University (SJTU).

Dr. Zhou directs the GT-SJTU ECE Dual-M.S. Degree Program in coordination with the ECE Graduate Affairs Office. In this program, SJTU students can simultaneously receive a non-thesis master's degree from ECE at Georgia Tech and a thesis M.S. degree from SJTU.

She also co-directs the Shanghai Summer Program, an undergraduate study abroad experience. Since its establishment in May 2005, 96 students have participated in the program, where Georgia Tech faculty members teach regular Georgia Tech courses in engineering, humanities, Chinese language, and social sciences at the SJTU Xuhui campus.

Dr. Zhou also works with individual units, the Office of International Education, and Georgia Tech Legal Affairs in the development of academic and research agreements with Shanghai entities and organizations. A faculty member with ECE since 1995, she is a member of the digital signal processing group

and continues with her research and educational activities in that area. |

*Howard Rollins, G. Tong Zhou, G. Wayne and Anne Clough, Leshelle and Gary May, and Sue Ann Bidstrup Allen at the city planning meeting in Shanghai.*



Highlights | continued from page 10

**Gregory D. Durgin** received a 2005-06 NSF CAREER Award for his project, "Long-Range 5.8 GHz Backscatter RF Tag Systems." The goal of Dr. Durgin's work is to make RFID tags and RF sensors operate at higher frequencies and longer ranges.

**Mary Ann Ingram** has been named as the NSF ADVANCE Professor representing the College of Engineering. The ADVANCE program supports the research, retention, and advancement of women faculty in science and engineering.

**Biing Hwang (Fred) Juang** has been elected as a member of the Academia Sinica of Taiwan, an equivalent to the National Academy of Engineering and the National Academy of Sciences in the U.S. Currently, the convocation of the Academia Sinica consists of 250 members, including six Nobel Prize Laureates, and is the most prestigious honor in academic achievement bestowed by the Taiwanese government.

**Kevin T. Kornegay** received an IBM Faculty Award for his project entitled "On-chip Jitter Measurement and Clock Duty-cycle Adjustment." Dr. Kornegay is the Motorola Foundation Professor in the School of ECE, and his research focuses on the design of circuits for high-speed wire and wireless data transmission.

**Chin-Hui Lee** has been named the recipient of a Signal Processing 2006 Technical Achievement Award. Presented by IEEE Signal Processing Society Board of Governors, Dr. Lee will be recognized for his career contributions to fundamentals in automatic speech and speaker recognition at the Society's Awards Ceremony at ICASSP 2007 in Honolulu, Hawaii. |

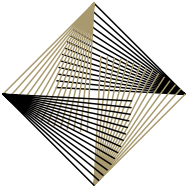
### Class of 2007 Fellows

Abhijit Chatterjee and Joseph L.A. Hughes were among 268 professionals elected to the 2007 Class of IEEE Fellows. Their citations are as follows:

**Abhijit Chatterjee**, "for contributions to testing analog and mixed signal circuits."

**Joseph L.A. Hughes**, "for contributions to engineering education program development, assessment, and accreditation activities."

**Bernard Kippelen** has been elected as a Fellow of the Optical Society of America (OSA) for his contributions to organic nonlinear optical materials and optoelectronic devices. He is one of 58 OSA members who were named to the Society's class of 2007 Fellows.



## Research in the News

More details about these stories—and many others—can be found at [www.ece.gatech.edu/media/news.html](http://www.ece.gatech.edu/media/news.html). Photos and stories were provided by Georgia Tech Research News and Publications.

### ECE/IBM Team Demonstrates First 500 GHz SiGe Transistors

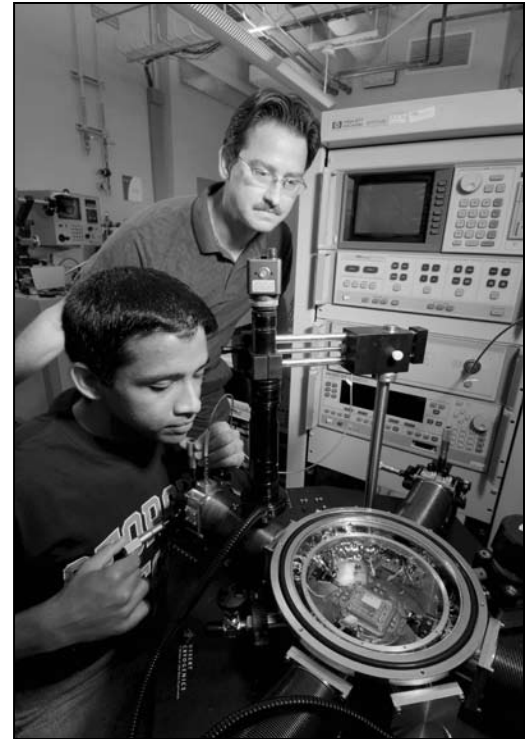
*Byers Professor John D. Cressler and Ph.D. student Ram Krithivasan examine a SiGe chip inside a cryogenic test station at the Georgia Electronic Design Center at Georgia Tech.*

A research team from IBM and Georgia Tech demonstrated the first silicon-germanium (SiGe) transistor able to operate at frequencies above 500 GHz. Though the record performance was attained at extremely cold temperatures, the results suggest that the upper bound for performance in SiGe devices may be higher than originally expected.

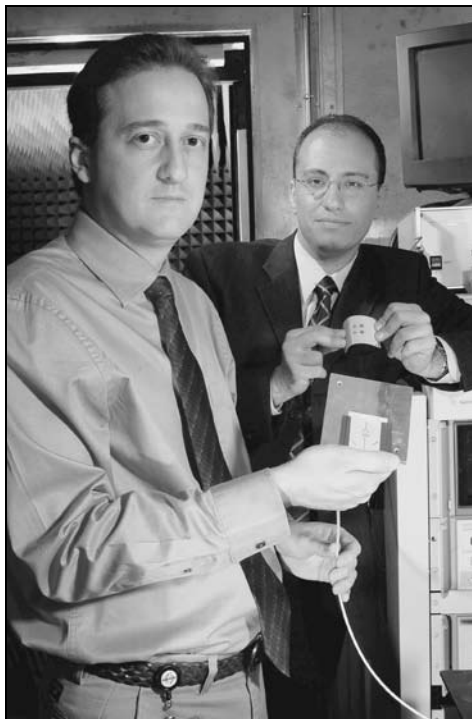
Ultra-high-frequency SiGe circuits have potential applications in many communications systems, defense systems, space electronics platforms, and remote sensing systems. The accomplishment was reported in the July issue of *IEEE Electron Device Letters*. Led by John D. Cressler, Byers Professor in ECE, the research has been supported by IBM, NASA, and the Georgia Electronic Design Center.

These SiGe heterojunction bipolar transistors operated at frequencies above 500 GHz at 4.5 Kelvins—a temperature attained using liquid helium cooling. At room temperature, these devices operated at approximately 350 GHz.

Achieving such extreme speeds in silicon-based technology—which can be manufactured using conventional low-cost techniques—could provide a pathway to high-volume applications. Until now, only integrated circuits fabricated from more costly III-V compound semiconductor materials have achieved such extreme levels of transistor performance.



### Ultra-Thin LCP Proves Tough, Yet Flexible



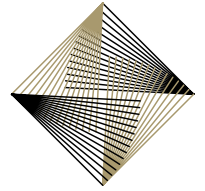
ECE Associate Professors John Papapolymerou and Emmanouil M. Tentzeris have received funding from the NASA/Earth Science Technology Office to evaluate a material called liquid crystal polymer (LCP) for electronics applications in space.

The ultra-thin, paper-like plastic can incorporate a variety of electronic circuits, yet it molds to any shape and appears to perform well in the extreme temperatures and intense radiation encountered by NASA spacecraft.

LCP's unique structure—aromatic crystal polyester comprised of benzene rings, acetyloxy polymers, and carboxyl groups—allows it to be heat resistant, flexible, and strong while also possessing excellent electrical performance.

Moreover, the material can serve as a highly efficient substrate—material on which semiconductor chips are attached—as well as the backplane that connects those chips together. Both Drs. Papapolymerou and Tentzeris believe that even microelectromechanical system (MEMS) devices could be embedded on LCP, along with integrated circuits. They have received two three-year awards from the NASA/Earth Science Technology Office to pursue LCP-related applications and are currently developing a precipitation-radar application that NASA could use to monitor global water cycling. In addition to NASA, the National Science Foundation is also supporting this work. |

*Profs. John Papapolymerou (left) and Emmanouil Tentzeris demonstrate antenna arrays embedded on liquid crystal polymer in a laboratory at Georgia Tech.*



## Student News/Events

### Georgia Tech HKN Named Outstanding Chapter Organization Takes Honor for Second Straight Year

For the second year in a row, the Beta Mu Chapter of Eta Kappa Nu (HKN) has been named a recipient of the Outstanding Chapter Award. This honor will be formally presented during the Electrical and Computer Engineering Department Heads Association Annual Meeting, to be held in St. Augustine, Fla. on March 16-20.

A significant mark of distinction, this award recognizes a chapter's service to its fellow students, its department, its university, and the surrounding community during 2005-06.

Outstanding juniors, seniors, and graduate students are eligible for election to HKN, which sponsors community service projects throughout the year and hosts many professional development activities for ECE students, including the Bridge to Business meetings, the annual ECE Spring Picnic, and a number of awards throughout the year for both students and professors.

"Eta Kappa Nu has been an integral part of student life in ECE for many

years," said Steve W. Chaddick School Chair Gary S. May. "I am extremely proud of this group for receiving this national recognition for two consecutive years."

### Parents Enjoy Campus Life during Family Weekend

Parents got their chance to experience student life at Georgia Tech during Family Weekend, held on October 6-7. Sponsored by the Georgia Tech Alumni Association, this event gives families a chance to connect while showcasing first-class academics and extracurricular activities.

The crowd-pleasing event featured a slate of informative seminars, a Family Weekend Festival, a sold-out murder mystery dinner, a concert, and a movie on the lawn at Yellow Jacket Park.

Many schools hosted receptions that Friday. At ECE, parents and students visited the Van Leer Building, where they were welcomed by Steve W. Chaddick School Chair Gary S. May and Senior Associate Chair Joseph L.A. Hughes. Following student-led tours of the Embedded Microcontroller Design Lab and the new Coleman Family Professional

Communication Studio, families mingled with ECE faculty and students at a reception, complete with student organization tables and demos.

The weekend concluded on Saturday with a family tailgate party, followed by the Georgia Tech-Maryland football game at Bobby Dodd Stadium.



*Shadow Tigers, coached by Linda Sheffield, came in first place at the 2006 FIRST LEGO League Challenge held on January 20, 2007. The winning team consisted of: (top right) Perry Rogers-11, Domenic DaPonte-11, (l-r middle row) Ian Berryman-10, Ty Hilton-11, Parker Sheffield-9, Peyton Roth-9, (l-r front row) Kavi Mathur-9, Luke Haynes-11, Christian DaPonte-9.*

### In Memoriam

The School of ECE wishes to express its condolences to the families and friends of two students, Christopher D. Kautz and William Allen Miller, who have died in recent months.

Mr. Kautz, a graduate student in ECE, died at his home in Atlanta on September 9. He graduated magna cum laude from Colorado State University in May 2006 with a bachelor's degree in electrical engineering. At the time of his death, he had just started pursuing a master's degree at Georgia Tech and had received a U.S. Department of Defense fellowship for his studies.

William Allen Miller, a senior EE major, died at his home in Atlanta on February 12. Mr. Miller enrolled at Georgia Tech in 2005 after transferring from Georgia Southern University, where he received numerous awards, including the 2005 Georgia Southern Engineering Student of the Year Award. An Eagle Scout, he served for many years on the staff at Camp Thunder in Thomaston, Ga.

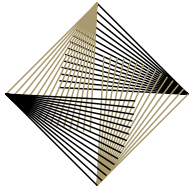
"The faculty and students who knew Chris and Allen miss their presence in ECE and at Georgia Tech," said Gary S. May, Steve W. Chaddick School Chair. "Our thoughts and condolences continue to be with Chris' and Allen's families and friends."

### WECE Seeking Mentors for New Program

The Women in Electrical and Computer Engineering (WECE) group welcomes alumni to take part in a professional mentorship program that provides academic and career development opportunities for female undergraduate students.

By having a professional role model as a mentor, students will learn from someone who followed a similar education track and will begin building professional networks. In turn, industry mentors will be directly involved with the education of ECE students and offer advice and guidance in life and career choices.

For more information about the WECE professional mentorship, contact Leyla Conrad at 404.385.0439 or [leyla.conrad@ece.gatech.edu](mailto:leyla.conrad@ece.gatech.edu).



## ECE-Oriented Camps Available This Summer

Looking for fun activities for your child this summer? ECE faculty members and the School's Outreach Office are teaming up with various campus units to present science and engineering camps throughout the summer.

"These activities provide a great chance for middle school and high school students to get acquainted with the campus as a whole and ECE in particular," said Gary S. May, Steve W. Chaddick School Chair. "We hope to see many of these students enrolled as engineering and science majors at Georgia Tech one day."

**The Technology, Engineering, and Computing (TEC) Camp**, scheduled for July 16-20, offers middle school girls an early introduction to these three fields. A variety of activities—from robotics to web page design—are designed to encourage TEC campers to consider college majors and careers in these important areas. Students will also work together on team projects and present the group's findings at the conclusion of the camp.

The format is highly interactive and is designed to address the specific interests of girls in 6th and 7th grades. The Georgia Tech Women in Engineering (WIE) program coordinates this camp, with significant participation from ECE faculty, staff, and students. Program sponsors are Atlanta Gas Light, Recall, Shell Corporation, and Wilmer Engineering.

**The FIRST LEGO League Summer Camp** is a new activity scheduled for June 18-22, 2007 and is designed to introduce middle school girls to FIRST LEGO League (FLL), an international robotics program that promotes the excitement of discovery, science, and technology.

Each year, Georgia Tech hosts the State of Georgia FIRST LEGO League Challenge (see related item, page 13). This new camp, sponsored by the WIE program and the School of ECE, will also encourage girls to form and lead FLL robotics teams. Campers will learn many skills, including:

- using robots to perform mechanical tasks with different gears, motors, and sensors
- programming robots to do fun things such as dancing or playing tag
- building robots from scratch
- competing in a mock FLL competition

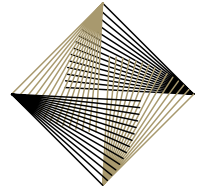
**Hands-On-Tech – HOT Days@GT**, a one-week-long program scheduled for June, introduces high school students to electrical and computer engineering concepts. With ECE faculty and students on hand to supervise, camp attendees participate in a wide variety of hands-on activities, including building a computer, working with robots, using music synthesis technology, building simple digital logic circuits, constructing a

speaker from common household parts, and tours of various research labs.

ECE faculty members coordinate HOT Days@GT with staff from Georgia Tech's Center for Education Integrating Science, Mathematics, and Computing (CEISM). The program is funded in part by the NSF and Motorola Foundation to promote diversity in engineering. All rising 10th and 11th grade high school students with an interest in engineering and sciences are encouraged to apply.

For information about these camps and other outreach programs, please contact Leyla Conrad at 404.385.0439 or [leyla.conrad@ece.gatech.edu](mailto:leyla.conrad@ece.gatech.edu).





## Alumni News

**K. Reed Thompson** (BEE '53, MSEE '54) was posthumously elected to the rank of IEEE Fellow. His wife, Margaret, accepted his Fellow award and pin at the Region 3 meeting in Memphis, Tenn. in late March 2006. Mr. Thompson's 40+ years of service with GE resulted in numerous publications and 14 patents, seven of which were from foreign countries. He was active in his fraternity, Phi Kappa Tau, and in July 2006, was named to its Hall of Fame.

**Jerry Bellott** (MSEE '80) is with DSPCon, Inc. in Bridgewater, N.J., where he works on analog and digital data acquisition systems. In his news, he said that classes in analog microelectronics have "provided invaluable insights to me over the years." He fondly remembers past and present ECE faculty members, J. Alvin Connelly, William E. Sayle, Cecil O. Alford, and Ronald W. Schafer.

**Lee Blankenstein**, PE (BEE '80) has been the vice president for sales and marketing at American Innovations in Austin, Tex. for six years. His firm produces solutions that enable oil and gas pipeline companies to protect their pipelines from corrosion. Products include wireless remote monitoring and interruption, GPS synchronized current interrupters, rugged field computers, and cathodic protection software. He has two daughters majoring in engineering at Texas A&M. In his spare time, he enjoys a good round of golf.

**Gerry Picard** (BEE '80, MSEE '81), a senior staff engineer with Lockheed Martin in Orlando, Fla., was recently issued U.S. patent number 7161552, "Electromagnetic Interference Protection for Radomes." He lives in the central Florida area with his wife, Denise, and his two children, Jessica and Scott.

**Giddon Ben-Dov** (MSEE '81) is the east coast manager of Exquisite Surfaces in Greenwich, Conn. and was appointed by the National Republican Congressional

Committee to serve on the Business Advisory Council for the State of Connecticut. He was also selected as a 2005 Businessman of the Year Award winner.

**John H.L. Hansen** (MSEE '83, PhD '88) was elected IEEE Fellow, effective January 1, 2007, "for contributions to speech recognition under stress and noise." He is the chair for the Department of Electrical Engineering at the Erik Jonsson School of Engineering and Computer Science at the University of Texas at Dallas.

**Michael Begley** (BSEE '83, MS '90) received the NASA Distinguished Public Service Medal for his contributions as Boeing's Guidance, Navigation, & Control System Subsystem Engineer for the International Space Station. He lives in Houston, Tex.

**John Simmons** (BEE '88) is the executive director of Morgan Stanley in Atlanta, Ga.

**Derek Cook** (BEE '96) graduated last May with an MBA in Finance from the Robinson College of Business at Georgia State University. He is an RF engineer with T-Mobile USA, Inc. in Atlanta.

**Adam E. Crall** (BEE '96), a patent attorney, has joined the law firm of Shutts & Bowen LLP in Tampa, Fla., where he will continue representing sophisticated and early-stage technology companies in all areas of intellectual property law, including patent, trademark, copyright, and trade secret matters and related litigation.

**Ayodele Embry Thomas** (BEE '96) is the assistant dean of multicultural student affairs at Stanford University. She is married to Jonathan Thomas, and they have a one-year-old daughter.

**Mark Morley** (BEE '96), president of The Ohmega Group in Jacksonville, Fla., is proud to announce that the *Jacksonville Business Journal* named the company as one of the Top 50 Largest Minority-Owned Businesses. The Ohmega Group

was also honored with the 2006 Up & Comer Award by the First Coast Business Alliance.

**Vinay Ravuri** (MS '96) is a software engineer with Lucent in northern California.

**D. Quincy Johnson** (BSEE '99), director of technical operations at Turner Broadcasting Systems Network Operations Division, won the 2006 Society of Cable Telecommunications Engineers Young Engineer of the Year Award. He was honored for leading the facility design of an initial, 12-channel network origination and distribution system for Turner's networks in Latin America.

**Robert Tinsley** (BSEE '01, MSEE '03) is currently a project engineer with EMS Technologies in Norcross, Ga.

**Nanju Na** (PhD '01) is employed with IBM in Essex Junction, Vt.

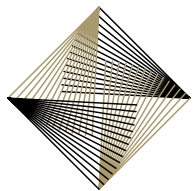
**Jeremy Silver** (BSCmpE '02) married Iulia Stefoi, who recently moved to Atlanta from Romania, on May 7 at the Atlanta Marriott in Alpharetta. The couple met while Mr. Silver was working for Synchrologic's new branch in Eastern Europe; they now reside in Atlanta and both work for Synchrologic.

**Cenk Argon** (PhDECE '02) is a development staff engineer with Seagate Technology and lives in Chapel Hill, N.C.

**Leandro Barajas** (MSECE '00, PhD '03) has been named a recipient of the 2007 Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers. He is currently a senior research engineer at General Motors Corp. in Troy, Mich. and was co-advised by ECE faculty members Edward W. Kamen and Magnus B. Egerstedt.

**Chi Wang (Jerry) Shum** (BSEE '02, MSECE '03) is an integrated circuit design engineer at Microtune, Inc. in Plano, Tex. |

**To submit your information and news, visit [www.ece.gatech.edu](http://www.ece.gatech.edu)**



## ECE Alumnus Shows Can-Do Spirit in the Iraqi Desert

*"Aut viam inveniam aut faciam."*

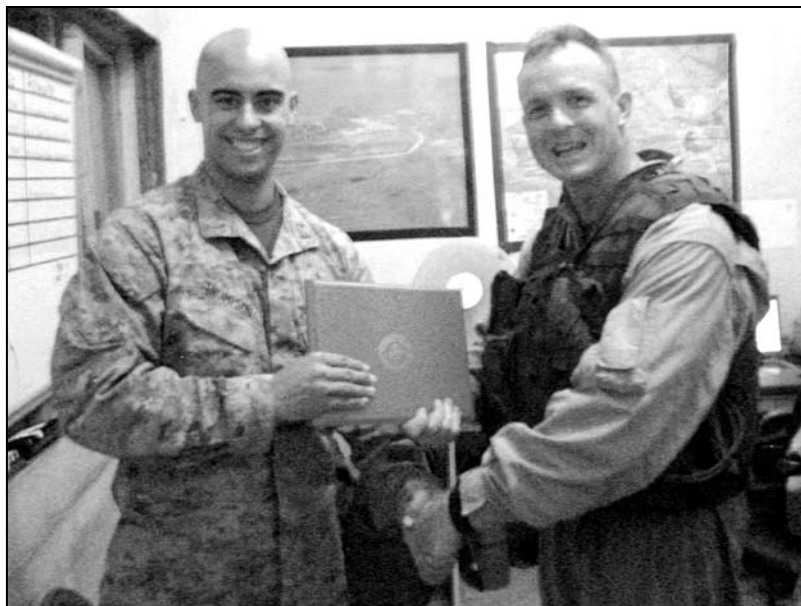
– Hannibal

Latin for "I'll either find a way or make one," this quote from one of history's finest military commanders and tacticians reflects the energetic spirit of U.S. Marine Corps Second Lieutenant Steven K. Thompson (BSEE '04). Last summer, 2nd Lt. Thompson was awarded a U.S. Navy and Marine Corps Achievement Medal when he built and tested an antenna that vastly improved radio communication support for his base, Camp Korean Village, located in the western desert of Iraq.

When his base was experiencing communications problems, 2nd Lt. Thompson drew on knowledge gained from his ECE 4006 Senior Design Course, taught by ON Semiconductor Junior Professor J. Stevenson Kenney, and additional advice from Professors Emeriti Robert K. Feeney and David R. Hertling. When 2nd Lt. Thompson e-mailed Dr. Kenney asking for help to improve a radio antenna, Dr. Kenney said that he was very willing to assist.

While a student in Dr. Kenney's class, 2nd Lt. Thompson's group project involved the location of rogue WiFi networks using directional antennas and specialized software. He and his group received an "A" for successfully demonstrating a working system, for which he was mainly responsible for selecting and testing the antenna.

Drs. Hertling and Feeney, both past military service members, made initial



*Second Lieutenant Steven K. Thompson (L) is presented with his certificate of recognition by Lieutenant Colonel P.A. Miller.*

suggestions on how to improve the existing antenna and provided further information on how to design and build single frequency antennas. Armed with that extra guidance and his own technical know-how, 2nd Lt. Thompson designed, built, and tested new UHF/VHF antennas that increased the communications range by 10-fold from when he arrived at Camp Korean Village.

His citation reads in part: "His relentless quest to improve radio communication support directly contributed to the successful establishment of long range airborne radio communications between medevac and close air support aircraft

and the airboss at Korean Village. His personal initiative, technical expertise, and unswerving devotion to duty reflected great credit upon him and were in keeping with the highest traditions of the United States Marine Corps and the United States Naval Service."

His former professors also admire 2nd Lt. Thompson's tenacity. "What is amazing is Steve designed and built this antenna with the very limited facilities and supplies that he had available," Dr. Hertling said. "After all, he does not have electronic parts stores available in the desert!" |

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