

ECE Student Profile: Brooke Shrader

"I grew up and went to high school in Rockville, Md., and earned a BSEE at Rice University and an M.S. at the Royal Institute of Technology (KTH) in Stockholm, Sweden. I became interested in the Electrical and Computer Department at the University of Maryland after I read some research papers by Professor Anthony Ephremides. I was enthralled, and knew I wanted to do research under his guidance.

Now, I'm studying communication theory as it applies to wireless



ECE Ph.D. Student Brooke Shrader

networks. I'm currently doing research on broadcast stability and throughput.

The professors here are leading top-notch research efforts and it is a pleasure to learn from them.

Also, I have really enjoyed meeting the other graduate students in the program. My colleagues are very talented people from all over the world. I've learned so much from

them—and not just about engineering.

I attend weekly seminars with a large group of students and professors, and the atmosphere is great.

I am very involved with student groups here on campus, including the Engineering Graduate Student

Council (EGSC).

After I complete my Ph.D., I aspire to become a university professor. I like teaching, I like doing research, and academia seems to me to be the best way to influence future technology.

In the ECE program, I have received great opportunities and encouragement toward academia; I have enjoyed teaching classes and helping with grant funding proposals." □

Connections is published twice yearly for alumni and friends of the Department of Electrical and Computer Engineering at the University of Maryland.

Alumni news and comments are welcome. Please send them to: Ted Knight, Department of Electrical and Computer Engineering, 2405 A.V. Williams Building, College Park, MD 20742.

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ECE's Entrepreneurs: Students Earn First Prize in \$50K Business Plan Competition

For the second straight year, Electrical and Computer Engineering (ECE) students earned first prize in the University of Maryland's Business Plan Competition, organized annually by the Clark School's Maryland Technology Enterprise Institute (MTECH). Entrepreneurial opportunities offered by MTECH Venture Accelerator and the Hinman CEOs program are making Maryland a great place for students to start their own businesses.

This year's winner in the competition's Undergraduate category was I-Receipts, a team comprised of **Michael Altman**, an ECE senior, and **Sam Fine**, a finance student. The I-Receipts team provides a service that eliminates paper receipts for consumers and businesses by providing instant database and Internet access to purchase information. The team received \$12,000 to help put their business plan into action.


A team consisting of ECE Professor **Isaak Mayergoyz**, Research Assistant and doctoral candidate **Iulian Nistor**, and Research Associate **Carsten Holthaus** won the Faculty & Graduate category and a \$15,000 prize, and also received the Maryland Department of Business and Economic Development Award. Their business plan, titled Advanced Magneto-Optical Systems (AMOS), will provide technology compatible with current optical scanners that will enable the use of two-dimensional hidden magnetic bar-



The I-Receipts Team (above) won the Undergraduate category at this year's \$50K Business Plan Competition.

codes and other authenticity marks to enhance the security of critical identity products such as credit cards, checks, banknotes, drivers' licenses, and medication packages.

"Winning this award represents a huge boost for the credibility of our start-up company, and will allow us to enter the first round of funding and partnerships with a great deal of confidence," said Nistor. "We feel very fortunate to be affiliated with the University of Maryland, an institution where the entrepreneurial spirit is so strongly supported and encouraged."

Last year, the ECE student team ARTKIA won the undergraduate category for their plan to develop a complete PDA-based solution for restaurant management. Since graduating, ARTKIA's co-founders have set up a corporate office in Rockville, Md. Learn more about entrepreneurship at Maryland at www.mtech.umd.edu. 

ECE Climbs in *U.S. News & World* Rankings: #1 Public in Northeast


The University of Maryland's Electrical Engineering and Computer Engineering programs, as well as the A. James Clark School of Engineering, were ranked among the top ten among public universities in *U.S. News & World Report's* 2007 Best Graduate Schools.

The Electrical Engineering program, ranked 16th in the nation last year, climbed to 13th in the nation, 7th among public universities, and 1st among all public universities in the Northeast in this year's rankings.

The Computer Engineering program, ranked 17th in the nation last year, rose to 16th in the nation, 9th among public universities, and 1st among all public universities in the Northeast.

The Clark School of Engineering, ranked 17th in the nation last year and 11th among all public universities, climbed to 15th in the nation and 9th among all public universities this year. From a regional perspective, the Clark School is ranked fifth among all East Coast engineering programs, and second among East Coast public engineering programs.

"The new ranking puts us in the company of institutions we have long considered to be our peers and increases the likelihood that the best prospective students will look more closely at our programs," said Dean Nariman Farvardin in a written statement.


Learn more about the latest *U.S. News & World Report* rankings online at www.usnews.com. 



NanoCenter Hosts First NanoDay, Earns State Funds, Media Attention

On May 12, the Maryland NanoCenter welcomed approximately 300 academic, corporate and government leaders on campus to attend NanoDay, a showcase for the university's strengths in nanotechnology. The event featured presentations, poster sessions and Kim Building lab tours.

The Maryland NanoCenter was further strengthened by a new \$3.65 million equipment grant awarded by the state of Maryland through the Department of Business and Economic Development, as well as a \$1.5 million grant from the National Institute of Standards and Technology (NIST). The state grant will fund new nano fabrication technologies, while the NIST grant funds a new collaborative program to establish new measurement standardizations.

The NanoCenter also received media attention from PBS's Nightly Business Report. The program aired a segment on nanotechnology, which featured footage of Associate Professor Reza Ghodssi's MEMS Sensors and Actuators Lab, as well as an interview with Professor and NanoCenter Director Gary Rubloff. 

Honors & Awards for ECE Faculty

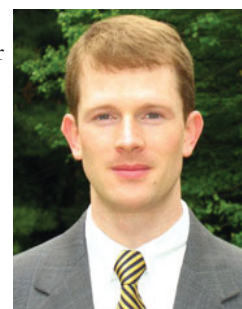
Baras Elected to Royal Swedish Academy of Engineering Science

Professor **John S. Baras** has been elected as a Foreign Member of the Royal Swedish Academy of Engineering Science (IVA), the world's oldest engineering academy. He was also invited to deliver a lecture at IVA on a topic of his choice. The induction ceremony will take place at the Academy's annual meeting in Stockholm on Oct. 27.

Murphy Receives NSF CAREER Award for Nonlinear Photodetector Research

Assistant Professor **Thomas E. Murphy**

has been awarded a Faculty Early Career Development Award (CAREER) from the National Science Foundation (NSF) to conduct research on nonlinear optical devices. The five-year, \$400,000 award will support Murphy's ongoing research and education program.



Thomas E. Murphy

Horiuchi and Shamma Cited for "Leading Labs" by IEEE Spectrum Magazine

Associate Professor **Timothy Horiuchi** and Professor **Shihab Shamma** were cited in the May 6 edition of IEEE Spectrum magazine for their "Leading Labs." The citations appeared in an article on analog VLSI and neuromorphic engineering titled "Brain Power." A table accompanying the article mentioned Horiuchi's lab as one of the leading labs in "Vision and Robotics," and also cited Horiuchi and Shamma for their leading lab in the area of "Hearing, Sonar, and Speech Processing."

Shayman Appointed Associate Dean for Faculty Affairs

ECE Professor **Mark Shayman** was appointed Associate Dean for Faculty Affairs in the A. James Clark School of Engineering by Dean **Nariman Farvardin**. In his

new position, Shayman will help the Clark School develop and implement its strategic plan, streamline faculty and graduate student activities, and launch new initiatives.



Mark Shayman

ECE Faculty Promotions Announced

Department Chair **Patrick O'Shea** announced the promotion of two associate professors and four assistant professors. University of Maryland President **C.D. Mote** approved the promotion of **Shuvra Bhattacharyya** and **Mel Gomez** to the rank of Professor, and also approved the promotion of **Rajeev Barua**, **Gang Qu**, **Sennur Ulukus**, and **Min Wu** to the rank of Associate Professor with tenure. O'Shea also announced the appointment of Professor **K. J. Ray Liu** as Associate Chair for Graduate Studies and Research, and Professor **Wes Lawson** as Associate Chair for Undergraduate Education. O'Shea thanked the previous Associate Chair for Graduate Studies, Associate Professor **Manoj Franklin**, and previous Associate Chair for Undergraduate Studies, retiring Professor **Jon Orloff**, for the quality of their service to the Department.

Jacob, Lawson Named to Clark School's Keystone Academy

Professor **Wesley Lawson** and Associate Professor **Bruce Jacob** were two of six faculty members to be named to the

Clark School's Keystone Academy of Distinguished Professors. The Keystone program fosters exemplary undergraduate teaching skills and commitment to excellence in fundamental engineering courses.

Gomez Wins E. Robert Kent Outstanding Teaching Award

Dr. **Mel Gomez** was awarded the 2005 E. Robert Kent Outstanding Teaching Award, given annually to a junior Clark School faculty member for excellence in teaching. He has introduced many new courses in his ten years with the Department, and has been instrumental in keeping the curriculum up-to-date and at the forefront of electrical engineering programs. He also consistently received excellent teaching evaluations from his students, who frequently cite his energy, enthusiasm, and dedication.



Mel Gomez

JaJa Receives Internet2 IDEA Award

Professor **Joseph JaJa** was among the winners of the first annual Internet2 Driving Exemplary Applications (IDEA) Awards. The new IDEA Awards program seeks to recognize leading innovators who have created and deployed advanced network applications that enable transformational progress in research, teaching, and learning, and hold the promise to maximize the impact of next-generation networks around the world. A total of four inaugural IDEA awards were given out. JaJa's award winning project, titled "Transcontinental Persistent Archives Prototype," addresses the nation's challenge of safeguarding, preserving, and providing access to authentic electronic records that document the rights of American citizens and the national experience.

Ephremides Wins Information Theory Award

Professor **Anthony Ephremides** received the IEEE Information Theory Society 2006 Aaron Wyner Distinguished Service Award in recognition of his service and leadership in the field of information theory. He also delivered a keynote lecture at the 35th annual




Anthony Ephremides

IEEE Communication Theory Workshop in San Juan, Puerto Rico in May. He spoke on the topic "What is in Sensor Networks for Communication Theorists."

Martins Wins AACC Award for Theory

Assistant Professor **Nuno Martins** won the 2006 American Automatic Control Council's (AACC) O. Hugo Schuck Award for Theory. Martins won the award for his paper titled "Fundamental Limitations of Performance in the Presence of Finite Capacity Feedback," which he presented at the 2005 American Control Conference in Portland, Oregon.

Start-Up Co-Created by Shayman & Kalantari Wins Entrepreneurship Award

NetImmune, Inc., a start-up company developed by Professor **Mark Shayman**, **Mehdi Kalantari**, assistant research scientist and 2005 Ph.D. graduate; and **Mehdi Alasti**, a 2001 Ph.D. graduate, was presented with the Award for Entrepreneurship at the University of Maryland's Invention of the Year awards. The award is sponsored by the Maryland Technology Development Corporation (TEDCO). NetImmune, located in Germantown, Md., develops products to protect internet networks by mimicking human immune system responses. 

Hinman Named Distinguished Alumnus


Alumnus **Brian Hinman**, B.S. '82 electrical engineering and sponsor of the Hinman CEOs program, was honored as a Distinguished Alumnus on Saturday, April 8,



Brian Hinman

at the University of Maryland Alumni Association Seventh Annual Awards Gala. He also delivered a Whiting-Turner Business and

Entrepreneurial lecture on "IP Video and the New Age of Entertainment." The lecture is available for download on the ECE website, www.ece.umd.edu.

Hinman is the co-founder, president and CEO of 2Wire, and co-founder of PictureTel Corporation and Polycom, Inc. He is the sponsor of the Hinman Campus Entrepreneurship Opportunities (CEOs) program – the nation's first high-technology, living-learning program for undergraduates. Hinman is also a trustee of the University of Maryland College Park Foundation and a member of the A. James Clark School of Engineering Board of Visitors. 

ECE Alumnus Balaji Sampath Wins MIT Global Indus Technovator Award

Alumnus **Balaji Sampath**, a former student of Professor **K. J. Ray Liu**, was awarded the Massachusetts Institute of Technology (MIT) Indus Technovator Award for his work with the Association for India's Development (AID), a non-profit, volunteer organization committed to promoting sustainable, equitable and just development in India, particularly at the country's grassroots.

While he studied as a graduate student at the University of Maryland, Sampath was instrumental in expanding AID's chapter base to many cities across the U.S. Upon completing his Ph.D. in 1997, he returned to India as an AID Fellow. Based in Chennai, Dr. Sampath works with the Tamil Nadu Science Forum, particularly in the areas of community health, education initiatives and women's savings groups.


"After graduating from Maryland, Balaji had some good opportunities in the U.S., but he went back to India without regret," said Professor Liu. "He believed someone had to do something to help those unfortunate people. I am very glad that he

has been recognized for his work."

Among his accomplishments, Dr. Sampath's AID-team has established Ganini Computer and Information Centres, which offer low cost computer education.

His team also created a mathematical model for malnutrition studies from data gathered as part of the Arrogya Iyyakam project. In each block of about 30 villages, the health needs of about 30,000 families are addressed. This project was recently judged one of the ten best projects in the world by UNICEF.

Sampath's group also developed the use of a digital data card for use in Self Help Groups and other development related areas. The impact of their work has been seen in several villages, which are now able to generate their own funds and sustain their own community development programs with the help of the new technology.

Recently, Sampath, in his capacity as the AID Tsunami Relief and Rehabilitation campaign leader, was elected as an Ashoka Fellow for his social entrepreneurialism. 

ECE Alumni Achievements & Recognition

Alumnus Gordon England Confirmed as Deputy Secretary of Defense, Receives Eisenhower Award

Gordon England, B.S. '61 electrical engineering, was confirmed by the U.S. Senate as the 29th deputy secretary of defense during a Capitol Hill voice vote conducted April 6. He also received the National Defense Industrial Association's Dwight D. Eisenhower Award for his contributions to national security.

Bezos Gift to Benefit Keystone Program

A \$50,000 donation by **Angel P. Bezos**, B.S. '69 electrical engineering, will help to support the Clark School's Keystone Academy of Distinguished Professors. The Keystone program fosters exemplary undergraduate teaching skills and commitment to excellence in teaching fundamental engineering courses.

Alumna Mingyan Liu Promoted to Associate Professor at Michigan

Alumna **Mingyan Liu** has been promoted to associate professor with tenure in the University of Michigan's Department of Electrical and Computer Engineering. Mingyan received her MSSE degree in 1997 and her Ph.D. in electrical engineering in 2000. She was advised by Professor **John S. Baras** for both degrees.

Alumnus Sami Tantawi Elected Fellow of the American Physical Society

Sami Tantawi, '92 Ph.D. electrical engineering, was elected as a Fellow of the American Physical Society (APS). Tantawi, currently Associate Professor at the Stanford Linear Accelerator Center, was a student of Professor **Victor Granatstein**.

Ph.D. Graduate Davoodi Joins University of Wisconsin ECE Faculty

ECE 2006 Ph.D. graduate **Azadeh Davoodi** has accepted a position as Assistant Professor of Electrical and Computer Engineering at the University of Wisconsin, Madison. Davoodi, who is advised by Assistant Professor **Ankur Srivastava**, chose the position at the University of Wisconsin among several offers from other prominent universities.

Alum Xiaobo Tan Wins NSF CAREER Award

Alumnus **Xiaobo Tan**, assistant professor of Electrical and Computer Engineering at Michigan State University (MSU), won a National Science Foundation Faculty Early Career Development (CAREER) Award for his research on artificial muscles. At MSU, Tan directs the Smart Microsystems Laboratory and is part of an interdisciplinary research team on High Assurance Systems. He earned his Ph.D. in electrical and engineering in 2002, and was co-advised by Professor **John S. Baras** and Professor **P.S. Krishnaprasad**. He also worked with Associate Professor **Reza Ghodssi**.

Book Features "World-Changing" Alumna Judith Resnik

A new book titled *Changing Our World: True Stories of Women Engineers* features ECE alumna **Judith Resnik**, a 1977 Ph.D. graduate. A project of the organization Extraordinary Women Engineers, the book is intended to provide inspiration and encouragement for young women to pursue careers in engineering.

After graduating from the University of Maryland, Resnik went on to become an astronaut and perished in the 1986 space shuttle Challenger disaster. Resnik was remembered recently in a ceremony at Cape Canaveral on the 20th anniversary of the space shuttle disaster.

Alumnus Modiano Earns Tenure at MIT

Alumnus **Eytan Modiano**, already an associate professor of aeronautics and astronautics at the Massachusetts Institute of Technology, has earned tenure there. Modiano earned his M.S. in 1989 and Ph.D. in 1992, both in electrical engineering. His advisor was Professor **Anthony Ephremides** for both degrees. Modiano is a specialist in optical and ad hoc wireless networks and will be the Technical Program Chair at next year's IEEE INFOCOM. "He is one of the best known and respected researchers in the field worldwide," said Ephremides. "We are proud to have such distinguished graduates."

Alumna Zheng Featured in MIT Technology Review's 10 Emerging Technologies

Alumna **Heather (Haitao) Zheng**, M.S. '89 Ph.D. '92, electrical engineering, was featured in MIT *Technology Review's* Ten Emerging Technologies, a short list of technological innovations "ready to have a big impact on business, medicine, [and] culture" in the magazine's March/April edition. Zheng, who was advised by Professor **K.J. Ray Liu**, was cited for her work with cognitive radio technology as a method for enabling wireless devices to more efficiently share available airwaves. She was previously named to *Technology Review's* TR 35 list, which featured the top 35 technology innovators under the age of 35.

Ph.D. Candidate Jiaqiao Hu To Join Stony Brook Faculty

Jiaqiao Hu, an ECE 2006 Ph.D. candidate, will join the Applied Mathematics and Statistics Department in the College of Engineering and Applied Sciences at Stony Brook (SUNY) as Assistant Professor this fall. Hu, who will graduate later this summer, was co-advised by Professor **Steven Marcus** and Professor **Michael Fu**.

Cohn Elected Modbus-IDA President

Alumnus **Fred Cohn**, B.S. '80 electrical engineering, was elected president of Modbus-IDA, a growing membership-based trade association committed to promoting Modbus as the world's leading protocol for industrial automation.


Alumna Hong Zhao To Join University of Alberta Faculty

Hong (Vicky) Zhao, Ph.D. '04 electrical engineering, will join the Electrical and Computer Engineering Department at the University of Alberta, Canada, as assistant professor this fall. Since February 2005, Zhao has been a research associate with the Institute for Systems Research, working with her advisor, Professor **K. J. Ray Liu**, on multimedia security and digital forensics. She co-authored the book *Multimedia Fingerprinting Forensics for Traitor Tracing* with Liu, fellow alumni **Wade Trappe** and **Z. Jane Wang**, and Professor **Min Wu**.

Alumnus Korman Named Chair of ECE Department at GWU

Alumnus **Can E. Korman** was appointed to Chair of the Electrical and Computer Engineering Department at the George Washington University (GWU) in Washington, DC. Korman, a former advisee of Professor **Isaak Mayergoyz**, earned all three of his advanced degrees — a B.S. in 1985, his M.S. in 1987, and his Ph.D. in 1990 — at the University of Maryland.

ECE Alumnus Named Outstanding Engineer by Baltimore IEEE PES Chapter

Ronald N. Carstens, Jr., a 1988 ECE B.S. alumnus, was named the 2006 Baltimore Chapter Institute of Electrical & Electronics Engineers (IEEE) Power Engineering Society (PES) Outstanding Engineer. Carstens has served the Baltimore Gas & Electric Company (BGE) for over 17 years. 

Remembering the Riots of Spring, 1970

by Dr. Leonard Taylor, Professor Emeritus

Thirty-six years ago this May, the University of Maryland campus was rocked by student protests of the Vietnam War. ECE Professor Emeritus Dr. Leonard Taylor reflects on his experiences as a faculty member at that time and the unusual role he played as a faculty mediator.

Despite assurances that the turmoil of the Vietnam War protests that had disturbed many campuses would never come to the University of Maryland, the events of the Spring of 1970 proved otherwise. The College Park campus became the scene of events that I found both exciting and tragi-comic: students fleeing police pursuing them across campus firing tear gas canisters, occupation of the campus by the Maryland State Guard, mass meetings of students and faculty in Cole Field House, and a welter of rumors and bomb threats that cancelled classes. Suddenly there was a sense of being caught up in world events.

The background to these happenings was, of course, the general resentment against the Vietnam War among the students and many faculty and the protests that had occurred elsewhere, most famously at Berkeley. A leading force in those protests had been the Students for a Democratic Society (SDS), and there was indeed a small chapter with about fifty members at College Park. However, they had been hardly noted, at least at the Engineering end of the campus, until a half dozen or so staged a quiet sit-in one afternoon in a little office in Engineering which had been assigned for the use of

military recruiters that day. Engineering faculty members were stunned to discover that this small event was being covered by national TV, but the protesters left quietly as soon as the camera crews departed and nothing else untoward occurred. Elsewhere on campus, however, student activism caused more serious disturbances; a protest against the denial of tenure to a popular

hadn't received a more grandiose badge.

The fuse to the campus explosion was lit when the invasion to interdict the North Vietnamese supply routes in Cambodia was announced by then President Nixon on April 30. Sentiment against the war was galvanized: the incursion was widely viewed as a widening of the scope of the conflict. A campus-wide protest was announced.

Previous student demonstrations, such as those occurring after football victories, had filled Route 1 in front of the campus and this was the announced venue again. Calls were flashed to the "concerned faculty" to attend and, hopefully, prevent any violence. So, as a result, I found myself that afternoon of May 1 in the midst of a group of about twenty professors, all wearing the manila armbands,

standing at the intersection of Route 1 and Campus Drive. It appeared that traffic had been diverted away from that section of the highway because no cars were in sight. Instead, a crowd of several thousand students filled the sidewalks and spilled onto the street, milling about in the bright sunlight. After some hesitation, we agreed that our proper course was to try to get people out of the roadway, so we formed a ragged line across the highway and began slowly walking south in the warm spring afternoon, saying "please get off the roadway, or the police will come."

The complete civility and good nature of the crowd was astonishing. Without a murmur the students followed our instruc-



Police chase students down Route 1 in College Park on May 1, 1970. Photo by James Kelmartin, from the Baltimore News American, courtesy Hearst Publishing.

faculty member led to a day-long takeover of the Philosophy building, resulting in the pre-dawn arrest of several dozen students along with a few faculty supporters.

Some time during the days that followed, a notice appeared in my mail seeking "concerned faculty" who would be willing to intercede and mediate in such events in the interest of maintaining a functioning university. I blithely offered my services, probably thinking that this was an unusual opportunity to finally meet faculty from other parts of the campus. In return, I received an armband constructed from a manila folder with "faculty" scrawled across it and a green ribbon attached. I think I was disappointed that I



Police stand in front of student protesters during campus unrest in May, 1970. Photo by John Davis, from the Baltimore News American, courtesy Hearst Publishing.

tion and moved onto the sidewalks where they waited uncertainly. As we strolled down the road, some of the faculty recognized their own students and dropped off to chat. I was particularly impressed by Professor Mary Berry (later chairperson of the U.S. Civil Rights Commission, Assistant Secretary of HEW, etc.). She seemed to know every African-American student in sight and told them forcefully to go home: they obeyed instantly. Perhaps, the behavior of the crowd was best typified by a young woman standing at the edge of the street who began talking to me vehemently about the war. When I simply asked why she was being so loud when I was standing only two feet away, she stopped, blushed, begged my pardon, and stepped back onto the curb.

Our group had almost completely fragmented by the time we reached Regents Drive, near the Maryland Book Exchange. And here the nature of the crowd of several hundred that filled the intersection was dramatically different. They were younger, dressed more in “hippy fashion” and definitely unwilling to disperse. When told that the police would

come unless they cleared the intersection, they responded “Hooray! We want the police to come!” It appeared to me that these were students from local high schools and I did recognize a couple of our neighbors’ teen-age boys among them. (Later, I learned that high school students were a common element at uni-

versity anti-war protests. They probably regarded them as providing a patriotic excuse to cut school. However, they represented a particularly disruptive faction in university protests because they had no stake in the functioning of the university). Our tactics had no effect on the crowd here, and I could see police lines forming back up on Route 1. Natural caution, plus a previous experience with police behavior in a tense situation, decided for me; I walked up the hill on the lawn towards Memorial Chapel and turned to watch the scene below from about a hundred yards away.

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I remember being slightly surprised that only a couple of others in the crowd had left with me.

Below me the crowd formed massive lines several students deep on each side of Route 1. A solid phalanx of more than a hundred state policemen were marching down the highway, shoulder-to-shoulder, resplendent in their brown and beige uniforms; the sun gleamed off their helmets and plastic face guards. As they came directly below me, a small group of male figures ten yards behind the crowd suddenly became active, hurling rocks, which they had evidently stored, over the heads of the crowd into the police formation. (Afterwards, I was told that the rock-throwers were members of a “guerilla theater” that was visiting the campus to present anti-war performances.) The effect of the assault was sudden; two state policemen fell to the ground. The response came seconds later: the police charged the crowd on the sidewalk from whose direction the rocks had come. The students fled onto campus with the rock-throwers in the lead, chased by the police firing tear-gas canisters. A cloud of the stuff began drifting up the hill towards the campus as all ran from Route 1.



Professor Taylor’s “Faculty” armband, made from a manila folder and green ribbon, indicated that he was a “concerned faculty” member during the campus unrest.



National guard troops stand in front of the campus Administration Building on May 5, 1970. Photo from the Baltimore News American, courtesy Hearst Publishing.

"Riots of Spring," continued from page 7

I fled the scene also. Because I had a hundred-yard lead on the crowd, I was able to run around the main administration building and, turning behind Physics, get back unscathed to my office in the Martin Engineering building. I carefully locked my door and sat down, panting. I waited for about an hour before leaving, avoiding Route 1. That evening, there were scattered acts of minor vandalism on campus and in the adjacent shopping areas and the Governor called out the National Guard. About a thousand guardsmen and state policemen came on the campus to restore order.

The following day saw the calling of a campus-wide convocation to formulate a plan of action. The meeting was held in Cole Field House. The faculty who attended were seated on wooden folding chairs set up on the basketball court floor in front of a makeshift podium; the students sat in the spectator stands. (Some faculty complained that the seating arrangement made them feel that they

were the intended victims in a Roman coliseum.) The speeches seemed endlessly repetitive; for the most part they called for stopping classes and engaging in protests against the war or against the occupation of the campus by the National Guard. It became apparent from the applause that the students had grouped themselves in the stadium. The engineering students were all seated in one section; with only a few weeks remaining before the end of the semester and commencement, they were anxious that the University remain in operation, but the general sentiment was against them.

Meanwhile, the University President, Wilson Elkins, was deciding the course for the College Park campus. He had opposed amnesty for those arrested in the previous sit-in and, most likely, he was averse to surrendering to the demands of the protestors. However, he was also certainly aware of rumors of impending disaster. The most troubling was the reported recent theft of a large quantity of dynamite from

a construction site in Maryland. Elkins consulted the deans. ("The deans!" snorted one of my colleagues, "they're the last to know what's happening on campus.") That afternoon a faculty messenger appeared on the podium in Cole Field House and announced that on the deans' advice the President had decided to close the campus immediately. All students were to vacate the dormitories and leave campus before 5:00 p.m.!

That decision was completely unexpected and consternation appeared on all sides. Suddenly, the student protestors realized that they would have to disperse and they would be without a convenient site for demonstration. Those who had wanted to stop the University because of the Guard's presence began to wonder whether no University at all was really a better alternative. The engineering students were thrown into confusion because they thought that the President also wanted to keep the campus going. But the most dismayed of all were the out-of-state, foreign,

and other students living on campus who had no place to go on such short notice. They may have wanted to stop classes, but they had not considered sudden eviction. A committee formed by acclamation was sent to the President to ask him to rescind the order and when word was received that he had, the convocation disbanded with a sense of relief on all sides. Wilson Elkins had stumbled onto a path back to normality.

Of course, problems remained, and there were more disturbances the following year. The National Guard did stay on campus for a few days longer. Their commanding officer, a folksy general from Maryland's Eastern Shore, became a local favorite as he walked around campus chatting with students. Elsewhere on campus, some classes never resumed and the stu-

dents were graded on the basis of earlier performance, but classes in Engineering resumed immediately. However, every week a telephoned bomb threat against the Engineering building was received; the alarms sounded, and we were asked to leave the building while it was checked. After a while, however, it was realized from the timing of the threats that some student was trying to cancel a class unilaterally. After that, when the alarms sounded the faculty and staff, for the most part, simply closed doors and nervously stayed in place.



About the Author:

Dr. Len Taylor has been a faculty member at the University of Maryland since 1967 and has been a pioneer in the field of

medical technology. He is now a Professor Emeritus but is still actively teaching in the ECE Department. He is the author of over 150 journal articles and conference papers, has had 48 funded research grants, contracts and projects, and holds six U.S. and 16 foreign patents. He is a life fellow of the IEEE and of the American Society for Laser Surgery and Medicine and has been a Distinguished Lecturer of the IEEE Engineering in Medicine and Biology Society. He received the Distinguished and Centennial Alumnus Awards from New Mexico State University and the Outstanding Commitment Award from Maryland's Clark School of Engineering.

Professor Taylor still has his faculty armband in a desk drawer at his office on campus to remind him of his role during the Vietnam War protests in College Park. 📷



Policemen attempt to restrain a student during a Vietnam War protest on the College Park campus. This photo appeared in the University of Maryland yearbook.

ECE Professors Orloff, Rhee, and Zaki Retire

Three longtime Electrical and Computer Engineering (ECE) professors retired this year after decades of service to the Department.

Professor **Moon-Jhong Rhee** was honored at a reception on December 8. Among the attendees and speakers at the event was Provost **William Destler**, who served with Dr. Rhee as a professor of electrical and computer engineering before becoming Dean of the Clark School, and later Provost of the University.

"Prof. Moon-Jhong Rhee has been a distinguished scholar and educator at the University of Maryland for over 35 years," said Destler. "He has brought to his research unusual depth and breadth in his knowledge of fundamental science and engineering across many fields.

"Speaking personally, Prof. Rhee was one of my first colleagues at the University and much of what I know about teaching and research I learned from him. Those of us who have had the privilege of working with him have been lucky, indeed."

Rhee was born in Korea and received his B. S. and M. S. degrees in Physics from Seoul National University, before earning his Ph.D. in Space Science and Applied Physics from The Catholic University of America. He became a faculty member at the University of Maryland's ECE Department in 1970. His primary area of expertise has been in the area of charged particle beams and their applications. He is a member of IEEE and APS.

At the reception, Rhee recalled that his friend Destler had a lasting effect on his children. Early in their careers, Destler had brought over some popular records to the Rhee home, offering Rhee's daughters their first exposure to western music. The Rhee children continued to enjoy the records as they grew older, and still listen



Professor Kawthar Zaki (left) and Professor Jon Orloff (right) were honored for their service to the ECE Department at a reception on May 26. They will both remain active in the Department as Professor Emeriti.

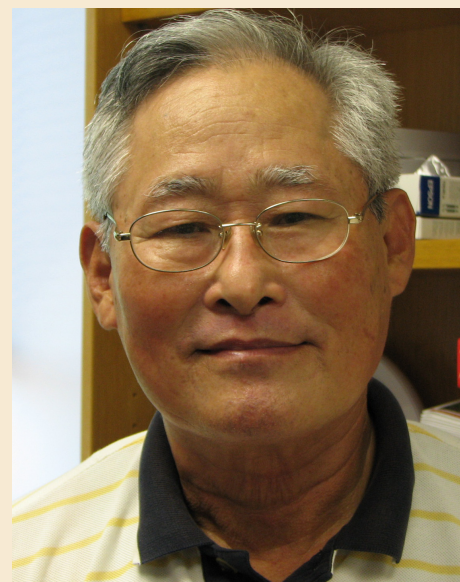
to them, only now in CD format. Rhee pulled the CDs from his jacket at the podium, and gave them to his old friend as a gift. "My family still enjoys listening to Bill Destler's records," he said, smiling.

Rhee observed that perhaps the most noticeable change during his time as professor was the Department's gradual shift from analog to digital technology.

Rhee will remain active as Professor Emeritus, and plans to spend his time helping the Department and also traveling a few months per year to Korea to work on a project at Seoul National University.

Kawthar Zaki and **Jon Orloff** were honored at a reception on May 26.

Professor Zaki retired after 36 years of service to the Department. As a pioneering woman in engineering, she set



Professor Moon-Jhong Rhee (above) was honored at a reception on December 8 for his 35 years of service to the ECE Department. He will remain involved in ECE affairs as a Professor Emeritus.

numerous milestones and blazed a trail for future female engineers. In 1969, Zaki was the first woman to earn a doctorate in Electrical Engineering at the University of California, Berkeley. After graduating, she moved on to the University of Maryland, where she became the first female professor in the ECE Department. She is a recognized, award-winning pioneer and leader in microwave engineering, and is a fellow of IEEE.

"Throughout her distinguished career, Professor Zaki has made significant and lasting contributions to research and education programs in our University," said Clark School Dean and former ECE faculty colleague **Nariman Farvardin**. "Generations of students have benefited from her knowledge and dedication to teaching.

"Above all, Professor Zaki has been a great friend for many faculty and staff members and played a motherly role for many of our junior faculty members, myself included in my early days at Maryland. We will never forget the wonderful Thanksgiving parties in her home and her delicious homemade baklavas!"

Zaki plans to stay active in the Department as Professor Emerita.


Professor Jon Orloff retired after 13 years of service to the ECE Department. Dr. Orloff received a B.S. in physics from M.I.T. and a Ph.D. in applied physics from the Oregon Graduate Institute. His major fields of research are charged particle optics and applications of field emission processes. He is a Fellow of the IEEE and of the AAAS. He has been a Professor in the ECE Department since 1993, and has served as Associate Chair for Undergraduate Studies since 2000. He will remain involved with the Department as Professor Emeritus. Orloff and his wife are retiring to the Oregon coast, but plan to return to visit the Department several times per year.

"The past thirteen years with the

Department have been some of the most enjoyable of my career," said Orloff. "I feel honored and privileged to have been a part of it and to have made a small contribution to this wonderful organization. There are a lot of wonderful people here and I will miss them all."

Orloff added that during his time with the Department, he was most impressed by the influx of "young, remarkably talented faculty" in the last several years.

"Jon Orloff is an outstanding scholar and teacher, and has contributed greatly

to our Department as Associate Chair for Undergraduate Studies," said ECE Chairman Dr. **Patrick O'Shea**. "He has provided leadership and performed many difficult tasks with dedication and caring for our students, faculty, and staff. He also led the Department through a curriculum revision, and the successful ABET accreditation reviews of both our Electrical Engineering and Computer Engineering programs. I am delighted that he, Professor Zaki, and Professor Rhee will continue to offer their talents and service to our Department as Professors Emeriti." 

In Memoriam: Dr. T. C. Gordon Wagner

T.C. Gordon Wagner, an emeritus professor of the Electrical and Computer Engineering Department, died of pulmonary fibrosis Dec. 13 at his home in Rockville, Md. He was 89.

Wagner was born in Pittsburgh and was raised in New York City. He graduated from Harvard University in 1937 and later earned a master's degree and doctorate in mathematics from the University of Maryland. He served as an ECE professor until he retired in 1976. In 1992, he was named professor emeritus.


He was the co-author of "Electronic Communications Experiments" (1952) and the author of "Analytical Transients" (1959).

Dr. Wagner will be remembered on campus for his love for sports cars. He purchased his first Porsche in 1959 and was a member of the Porsche Club of America and the Sports Car Club of America. He and his wife often attended sports car road rallies and won many awards for their driving. They were nationally ranked expert rallyists and were featured in a *Washington Post* article in 1996. Professor Wagner continued rallying until 2002.



Professor Emeritus T. C. Gordon Wagner

In the 1950s, he was an active member of the Capital Dog Training Club and traveled the East Coast showing his beloved Shetland sheepdog, Petey.

Professor Wagner is survived by his wife of 62 years, Rita M. Wagner of Rockville, Md.; three children, Ann W. Brandon of Chicago Heights, Ill., James J. Wagner of Washington, D.C., and Daniel G. Wagner of Potomac, Md.; nine grandchildren; and five great-grandchildren. 

Liu, Wu Earn Awards for Multimedia Forensics Technology

Associate Professor **Min Wu** and Professor **K.J. Ray Liu** are developing innovative, new multimedia fingerprinting technology that could offer applications as varied as protecting Hollywood's assets and identifying national security leak sources. Wu and Liu have developed a method to not only protect digital resources but also trace those who attempt to steal or misuse them.

The researchers' pioneering technology is documented in their recent book, *Multimedia Fingerprinting Forensics for Traitor Tracing*, co-authored by alumni **Jane Wang**, **Wade Trappe**, and **Hong Zhao**.


Through sophisticated "collusion attacks," a common contemporary piracy method, multiple users conspire to electronically steal and distribute copyrighted or classified material, diluting or erasing the original digital ID, or fingerprint, from the stolen multimedia content to avoid implication.

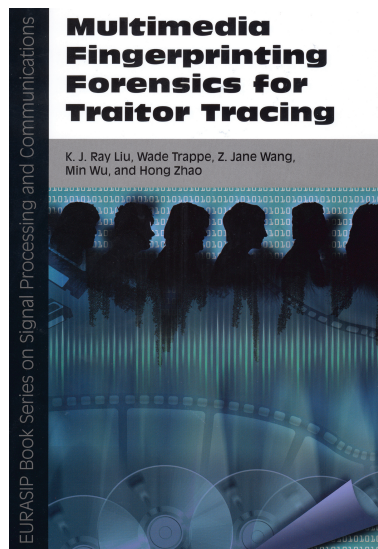
Wu and Liu's digital fingerprinting technology employs anti-collusion codes

to protect multimedia content from unauthorized redistribution by embedding a unique ID that leaves a distinct fingerprint on each user's copy. This ID can accurately identify which users have contributed to a piracy attempt. The technology can be applied to images, video, audio, and special documents like maps. It can even be used to protect live multicasts, such as pay-per-view events. The system can accommodate up to millions of users, an especially important feature for satellite and Internet multimedia distribution.

"We have introduced concepts that no one has thought of before," Wu says.

The team's research has captured the attention of colleagues in academia and industry worldwide, earning media attention and an honorable mention in *ComputerWorld's* 2006 Horizon Awards. Papers related to the new technology won the IEEE Signal Processing Society's Best Paper Award for 2005 and the European Association for Signal, Speech and Image Processing (EURASIP) Journal on Applied Signal Processing Best Paper Award for 2004. In addition, Liu delivered a keynote plenary on the subject of multimedia forensics at the IEEE 2006

International Conference on Multimedia and Expo (ICME) in July. Learn more about their research at www.ece.umd.edu. 



Liu and Wu recently published a book on their award-winning forensics research

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Stanford University Graduate Edo Waks Joins ECE Faculty

The Electrical and Computer Engineering (ECE) Department welcomes Dr. **Edo Waks** to the University of Maryland's A. James Clark School of Engineering faculty. Waks, a graduate of Stanford University, will join the ECE Department as an assistant professor this fall.

"I am very pleased to have Edo join us as the latest addition to our faculty," said ECE Chair Dr. **Patrick O'Shea**. "He is an outstanding individual, and will contribute greatly to the quality of our Department's research and

education programs."




Edo Waks

Waks was previously a postdoctoral fellow at Stanford, working with Professor **Jelena Vuckovic** in the Ginzton Laboratory on nanophotonic implementations of quantum information processing. He received his Ph.D. in electrical engineering at Stanford while working with Professor **Yoshihisa Yamamoto** in the area of quantum optics and quantum information. Waks received his B.S. and M.S. from the Electrical Engineering Department at the Johns Hopkins

University in Baltimore, Maryland.

His primary research interests are in the application of photonic crystals to quantum information processing, and as practical tools in optical telecommunication and sensing.

Waks is a National Science Foundation (NSF) Fellow and was a member of Tau Beta Pi, the engineering honor society, at Stanford. A fellowship grant from the Department of Central Intelligence funded his postdoctoral research at the Ginzton Laboratory. Outside of the lab and the classroom, Waks enjoys outdoor activities including hiking, mountain biking, and rock climbing. He will officially begin his new position with the ECE Department this August. 

Mayergoyz Co-Editor of New 3-Volume Set on Hysteresis

Professor **Isaak Mayergoyz** is the co-editor of a new three-volume treatise, titled *The Science of Hysteresis*. The treatise, which Mayergoyz co-edited with **Giorgio Bertotti**, senior scientist at Istituto Nazionale di Ricerca Metrologica (INRIM) in Torino, Italy, contains over 2100 pages on all aspects of hysteresis, from differential equations, and binary detection, to models of unemployment and magnetization dynamics. In addition to being co-editor, Mayergoyz also contributed seven chapters to the three-volume set.

Bhattacharyya Co-Author of New Book on DSP Software Synthesis

Professor **Shuvra Bhattacharyya** has co-authored a new book with **Praveen K. Murthy** titled *Memory Management for Synthesis of DSP Software*. The book explores the challenges of programming in the memory-restricted environment of digital signal processing (DSP). Bhattacharyya and Murthy offer extensive research on minimizing memory requirements during the synthesis of DSP software from data flow representations. The book is illustrated throughout to clarify mathematical concepts.

Ghodssi Research Efforts Featured in Microengineering Journal and Compound Semiconductor Magazine

A paper co-authored by Associate Professor **Reza Ghodssi**'s Micro-Electro-Mechanical Systems (MEMS) Sensors and Actuary Lab research group was selected as a featured article in the April 2006 issue of the Journal of Micromechanics & Microengineering (JMM). In addition to its print publication, the article was also listed as one of JMM's featured articles on the journal's home page as well as the Institute of Physics Publishing (IOP).

Ghodssi was featured in the March 2006 issue of *Compound Semiconductor*

magazine for his Laboratory for Physical Sciences and National Science Foundation-sponsored III-V Optical MEMS activities, including the first InP optical waveguide MEMS switch. According to Ghodssi, this device is ideal for use in network restoration applications. Ghodssi's current work on InP MEMS environmental sensors was also highlighted in the article.

ECE-Mentored Girl Scouts Earn Medals in National Game Design Competition

A girl scouts team mentored in electrical engineering by Professor **Mel Gomez** and ECE Laboratory Manager **Shyam Mehotra** was awarded medals for creating one of the most inspirational games at the TOYchallenge™ 2006 national toy and game design competition in San Diego on April 29. The DC-based team, consisting of 10-12 year-olds from the Lab School of Washington and Holy Trinity School, created a game to educate kids about the dangers of climate change. The team was personally congratulated by former Vice President **Al Gore** and astronaut and physicist Dr. **Sally Ride**.

ECE Faculty Receive Patents for Research

A research team consisting of Professor **Isaak Mayergoyz**, Research Associate **Chun Tse**, Laboratory for Physical Sciences Senior Engineer **Charles Krafft**, and **Dragos I. Mircea** received two patents. The first, U.S. patent number 7,002,762, was for their invention, titled "Method for intersymbol interference removal in data recovery." The invention allows users to perform drive-independent data recovery after a catastrophic drive failure. The second, patent number 7,005,849 was for their invention "System and method for high-speed massive magnetic imaging on a spin-stand," which allows whole tracks of hard disk data to be imaged through the process of "track-centering" and "track-following."

A research team consisting of Professor **Christopher Davis**, Research Professor

Stuart Milner, and Associate Research Scientist **Igor Smolyanivov** has been issued U.S. patent 6,990,350 for "Optical Wireless Networks with Adjustable Topologies." The team developed a method for dynamically configuring the topology of a wireless network that uses both laser and RF wireless connections to allow transmission directions to be changed as dictated by the needs of the network.


Professor **John Baras** and alumni **Junfeng Gu** and **Yimin Jiang** were issued U.S. Patent 7,006,568 for "3D Wavelet-Based Video Codec with Human Perceptual Model," a video encoding/decoding system that improves the subjective quality of compressed video.

Professor **Agis A. Iliadis** has been issued U.S. Patent 6,968,157 for his invention titled "On-Chip Input/Output Microwave Interference Sense and Protect Circuit," which offers a method for protecting devices from interference signals.

Simon Paper, Brain Image Featured on Cover of Cerebral Cortex

A paper by **Maria Chait**, **David Poeppel** and Assistant Professor **Jonathan Z. Simon** was featured on the June 2006 cover of the journal *Cerebral Cortex*. "Neural Response Correlates of Detection of Monaurally and Binaurally Created Pitches in Humans" details the results of a magnetoencephalography (MEG) psychophysical study that investigated the timing and formation of the percept of pitch in the brain.

ECE Faculty Contribute to New Study on Echolocating Bats

A new paper by Professor **Cynthia Moss**, Associate Professor **Timothy Horiuchi**, Professor **P.S. Krishnaprasad**, and Ph.D. student **Kaushik Ghose** finds that bats use a strategy much like that of a guided missiles to track and catch their prey. Their paper, titled "Echolocating Bats Use a Nearly Time-Optimal Strategy to Intercept Prey," appears in the May issue of *PLoS Biology*. 

Research Shows Female Chat Room Users More Likely to Receive Threats

A study conducted by computer engineering undergraduate **Robert Meyer** and **Michel Cukier**, assistant professor of mechanical engineering, found that chat room participants with female user names received 25 times more threatening and/or sexually explicit private messages than those with male or ambiguous user names.

The study focused on internet relay chat or IRC chat rooms, which are among the most popular chat services. The researchers logged into various chat rooms under female, male and ambiguous user names, counted the number of times they were contacted, and tracked the con-

tents of those messages. The study found that female user names, on average, received 163 malicious private messages a day.

"Some messages to female user names were innocuous, while others were sexually explicit or threatening," said Meyer, a sophomore student.

The researchers' results were published in the proceedings of the Institute of Electronics and Electrical Engineers International (IEEE) Conference on Dependable Systems and Networks in June.

The study also attracted media attention from the *Washington Post*, WJLA-TV, American Public Media's *Future Tense*, and other news sources across the globe. ☐

Student Team's SecureGo Device Could Make Online Shopping Safer

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A Maryland team of engineering and business students and faculty advisors have devised an ingenious solution called SecureGo that could decrease the risk posed by online shopping and increase the peace of mind of those who engage in it.

Their device is a USB flash drive with encryption capability for secure online transactions. SecureGo would keep critical ID and financial information offline and physically isolated from online criminals. Rather than entering a credit card number for each transaction, users could make purchases online using the value programmed into the USB device, somewhat like a prepaid phone card.

Team members **Kun Lin**, a recent ECE graduate, and **Lin Yuan**, a current ECE graduate student, demonstrated the prototype of the SecureGo device at the Oregon Museum of Science and Industry, as part of the Tenth Annual

"March Madness for the Mind" event, sponsored by the Portland-based Lemelson Foundation and the National Collegiate Inventors and Innovators Alliance (NCIIA). SecureGo was chosen as one of six promising invention teams to present at the NCIIA conference. Their presentation was recorded for a promotional video.

Last year the NCIIA awarded the Maryland team a \$14,837 grant to help them develop the device. The team also won \$5000 in May, 2005 when their business plan placed second in the graduate student category of the University of Maryland's annual business plan competition.

The SecureGo team, which also includes faculty advisors **Gang Qu**, **Steve Marcus**, **Charles Heller**, and **Ginginer Jin**, as well as recent graduates **Daniel Senai**, **Ogbonia Orji**, and **Josef Yeager**, was featured in a Cox-TV news story that aired nationally on Cox affiliate channels in May. ☐

Honors & Awards for ECE Students

Ph.D. Student **Nima Ghalichechian** Receives AVS Graduate Research Award

Ph.D. student **Nima Ghalichechian** is one of the recipients of the 2006 American Vacuum Society's (AVS) Graduate Research Award, a prestigious prize that draws nationwide competition each year. Nima is advised by



Nima Ghalichechian

Associate Professor **Reza Ghodssi**.

Nima is the second student from Ghodssi's MEMS Sensors and Actuators Lab to be honored with the AVS award in four years; Ph.D. student **Alireza Modafe** won in 2002. He also was advised by Dr. Ghodssi, who coincidentally won this same award when he was a graduate student.

Undergrad **O'Connor** Earns Phi Beta Kappa Honors, Best Thesis Award

Undergraduate **Alan O'Connor** was one of four Clark School students to earn election this semester

to Phi Beta Kappa, the oldest and most widely respected academic honorary society in the U.S. He also received the Suhan Guha Memorial Award for Best Thesis in



Alan O'Connor

Electrical Engineering. O'Connor was a member of the ECE Honors program and the University Honors and Gemstone programs while attending Maryland, and worked on research with Professor **P.S. Krishnaprasad**. He graduated with a B.S. in electrical engineering last May.

Holloway Receives SURA Fellowship

Ph.D. student **Michael Holloway** has been awarded a Southeastern Universities Research Association (SURA) Jefferson Laboratory Graduate Fellowship for the 2006-07 academic year. Holloway is an advisee of ECE Department Chair



Michael Holloway

Dr. **Patrick O'Shea**, and conducts research in the Institute for Research in Electronics and Applied Physics (IREAP). He is also working with Dr. **Ralph Fiorito** of IREAP. Holloway's research, which is supported by the Joint Technology Office and the Office of Naval Research, is focused on the development of better beam diagnostics for free electron lasers (FELs).

ECE Ph.D. Candidate Khandelwal Featured in EE Times

ECE Ph.D. candidate Vishal Khandelwal was featured in the *EE Times* in an April 17, 2006 article titled "Paths to better timing analysis." Khandelwal is advised by ECE Assistant Professor Ankur Srivastava.

Grad Student's High Altitude Work Highlighted in GPS World

Ph.D. student **Luke Winternitz** co-wrote an article for the April issue of *GPS World* magazine. The article explains the development of a GPS receiver for high-altitude (above the GPS constellation) satellite navigation. Winternitz, who is currently advised by Professor **P.S. Krishnaprasad**, received his B.S. in electrical engineering from Maryland in December 2000. Since then, he has worked at the NASA Goddard Space Flight Center. In January he began full-time Ph.D. research in stochastic control and machine learning as part of NASA-Goddard's study-fellowship program.

Ahmadi, Lee Win Everitt Award for Student Excellence

ECE undergraduates **Amir Ahmadi** and **Jeffrey Lee** received the International Engineering Consortium's (IRC) 2006 William L. Everitt Student Award of Excellence. The award honors outstanding seniors in electrical and computer engineering who are in the top 10% of their class and have an interest in the communications field. Ahmadi was an ECE Honors student and participated in the MERIT and TREND summer research programs. He will attend MIT in the fall for graduate study. Lee is a member of the Eta Kappa Nu honor society. He participated in the MERIT program in 2005, working on a project in which he modeled the sonar behavior of bats with circuits. He will attend the University of Illinois at Urbana-Champaign this fall for graduate study.

Reza Salem Wins Second Consecutive IEEE-LEOS Poster Competition

ECE Ph.D. student **Reza Salem** was selected as the winner of the annual Graduate Poster Competition of the IEEE Laser and Electro-Optics Society (LEOS) Baltimore/Northern Virginia/Washington, DC chapter on April 26 at Johns Hopkins University Applied Physics Laboratory. Salem's poster was titled "Polarization-Insensitive Optical Demultiplexing at 160 Gb/s Using 2-m Bismuth-Oxide-Based Fiber." This was the second consecutive year in which he won the competition. Salem is advised by Assistant Professor **Thomas E. Murphy**.

ECE Student Wins GSNP Best Student Speaker Award

Sameer Hemmady, an ECE Ph.D. student, won the Group on Statistical and Non-Linear Physics (GSNP) Student Speaker award at the 2006 American Physical Society March Meeting. Hemmady's research faculty advisors are **Steven M. Anlage**, **Thomas M. Antonsen Jr.**, and **Edward Ott**.

Undergrad Abutaleb Wins First Prize in Washington Area Paper Competition

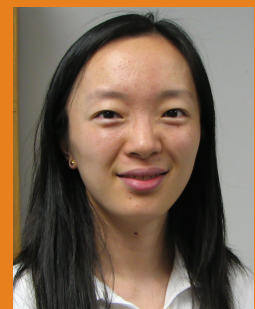
ECE student **Ameer Abutaleb** won the Undergraduate First Prize Award in the 2006 National Capital Region College Student Paper Competition sponsored by the District of Columbia Council of Engineering and Architectural Societies (DCCEAS) and the Washington Society of Engineers (WSE). Abutaleb won for his paper titled "A Nonlinear Model for the Cochlea and its Transistorization." This marks the second consecutive year that an ECE student won the Washington area paper prize; graduating senior **Amir Ahmadi** won in 2005.

Students Win Dean's Dissertation Fellowship

Two ECE graduate students were awarded the highly competitive University of Maryland Dean's Dissertation Fellowship. **Azadeh Davoodi**, a 2006 graduate, received the fellowship for the Spring 2006 semester, and **Soumya Krishnamoorthy** won the award for the Fall 2006 semester.

Song Li Named New President of ECEGSA

Ph.D. candidate **Song Li** was named the new President of the Electrical and Computer Engineering Graduate Student Association (ECEGSA). Li received a B.E. degree in electrical engineering from Tsinghua University in 2000. She is advised by Professor **Anthony Ephremides**. Li succeeds **Mainak Sen** as ECEGSA president. The ECEGSA seeks to improve the quality of education and life for ECE graduate students through social, academic and professional activities. The group was awarded the 2006 Golden Geese prize for their efforts to assist fellow students in their adjustment, matriculation, and retention in graduate school.



Song Li