Department of Electrical Engineering and Computer Science

The Department of Electrical Engineering and Computer Science (EECS) remains an international leader in electrical engineering, computer engineering, and computer science by setting standards both in research and in education. In addition to traditional foci on research, teaching, and student supervision, the department is actively engaged in a range of efforts in outreach and globalization and continues to evolve its recent major initiative in undergraduate curriculum reform.

Research within the department is primarily conducted through one of the affiliated interdisciplinary research labs. Research expenditures within the department were $74 million, down 8% from the previous year, a drop that primarily reflected global financial concerns. Specific research highlights are presented in the separate reports by the affiliated research laboratories.

EECS continues to display enrollment trends that are ahead of national trends. At the undergraduate level, the number of new majors has shown small but steady increases over the past five years. The percentage of women undergraduate majors has risen to 32%, compared with 24% in 2005. At the graduate level, we continue to see significant interest in the department, with roughly 2,600 applications this year, of which only 165 were offered admission. The acceptance rate of admission offers was nearly 70%, reflecting the high interest in the department. To foster increased interest in the field, we continue to reach outside the department in a variety of ways. Our Women's Technology Program (http://wtp.mit.edu/) for high school women from across the country just completed its ninth summer. The number of young women passing through this program who choose to pursue engineering careers is remarkably high, with more than 60% of graduates of the program choosing to major in engineering or computer science, more than half of them at MIT.

The department continues to support several active student groups at the graduate and undergraduate levels; many are involved in outreach endeavors. These student groups include Eta Kappa Nu at the undergraduate level (http://hkn.mit.edu/), the Graduate Student Association for graduate students (http://web.mit.edu/eecsgsa/www/), and GW6 for graduate women students (http://scripts.mit.edu/~gw6/www/). These groups initiate a range of activities, many focused on mentoring and community building within the department. The most recent senior survey indicated a very strong increase in student approval of the atmosphere within the department, ranging from advising, mentoring, and contact outside the department to traditional curricular and academic factors. In support of this trend, we continue to support the EECS REFS (Resources for Easing Friction and Stress) Program (http://projects.csail.mit.edu/eecsrefs/index.php), a student-run mediation system for helping students deal with conflicts and other difficulties in their professional and personal lives. The department also sponsors a wide selection of student-initiated activities that foster interest in the department; these activities include a set of extremely popular competitions run during Independent Activities Period, ranging from robot challenges to humanoid robots to web programming to video game agent design.

The department is actively engaged in developing opportunities for global experiences by our students and faculty. Ongoing activities include a large number of EECS students participating in MIT International Science and Technology Initiatives (MISTI) activities (based in part on direct departmental support for MISTI), student exchanges with Cambridge, and curricular outreach through OpenCourseWare. We have also expanded our VI-A Internship Program to include an international element, with students taking internship positions in China, India, France, and England. We have also pioneered a program to enable faculty from international institutions, initially in China and Hong Kong, to spend time in our department observing our teaching methods and interacting with our faculty and students to learn best practices for effective educational delivery. The first of these scholars have just completed a very successful year in EECS, and our second set of scholars is set to arrive for the fall term. The department is engaged in active discussions of methods to expand this program.

The department undertook a major revision of its undergraduate curriculum several years ago; this year's graduating seniors were the first to complete their degree program under the new curriculum. Analysis of the senior survey over the past several years indicates that students are very satisfied with it, finding that it provides more flexibility, a better range of subjects, improved communications skills, better teamwork experience, and greater intellectual excitement. Enrollment in many of our subjects from students outside the department continues to rise. The department keeps evolving its introductory course offering in computer science intended for students from outside EECS. Annual enrollment for this class now exceeds 250 students, with representation from virtually every department at the Institute.

EECS research is carried out in a set of affiliated laboratories: the Computer Science and Artificial Intelligence Laboratory (CSAIL), the Research Laboratory of Electronics (RLE), Microsystems Technology Laboratories, the Laboratory for Information and Decision Systems, and the Laboratory for Electromagnetic and Electronic Systems. Details of research achievements within these units are described in their separate reports. EECS graduate students working in one of these labs are further assigned to a departmental research area that is responsible for monitoring their academic progress. These areas are as follows:

> Area I: Systems, Communication, Control, and Signal Processing: Gregory Wornell, chair
>
> Area II: Computer Science: Randall Davis, chair
>
> Area III: Electronics, Computers, and Systems: David Perreault, chair
>
> Area IV: Engineering Physics: Leslie Kolodziejski, chair
>
> Area VII: Bioelectrical Engineering: Louis Braida, chair

Service Awards

School of Engineering Infinite Mile awards for excellence were presented to Donna Kaufman, administrative assistant to the head of EECS, and to Karen Shirer, assistant director for administration in CSAIL. The School of Engineering presented an Infinite

Mile Award for Sustained Excellence to Ron Wiken, research specialist in CSAIL, and an Infinite Mile Award for Team Excellence to Mike Hobbs, Tom Lohman, and Bill Maloney, all of Microsystems Technology Laboratories. Agnes Chow, administrative officer for EECS, was awarded one of two Ellen J. Mandigo Awards for excellence, hard work, and dedication to the Institute over an extended period of time.

At this year's EECS annual spring awards event, two staff members, Linda Sullivan and Lisa Bella, were presented the Richard J. Caloggero Award for dedicated service to the department. Linda was cited for tireless contributions to the smooth operation of the undergraduate office and Lisa was cited for many years of dedicated service to the operations of the department.

Vera Sayzew, Helen Schwartz, Karen Sollins, and Alan Wu were inducted into the Quarter Century Club.

Women's Technology Program

This summer marked the ninth year of the Women's Technology Program (WTP) in EECS. Forty students were selected from an applicant pool of 300 female 11th-grade high school students from across the country; participants this year hailed from 16 states. The WTP high school students are all top math and science performers who are not yet committed to pursuing engineering or computer science; WTP gives them an opportunity to learn more about their aptitude for these fields, shows them some of the exciting research being done here at MIT, and allows them to explore the MIT community. For four weeks, the WTP-EECS students take hands-on lab-based college level classes in electrical engineering, computer science, and discrete mathematics, all designed and taught by a dedicated staff of MIT graduate and undergraduate women students. Three of the summer 2010 WTP-EECS staff attended WTP when they were in high school. Collaboration with the Department of Mechanical Engineering (ME) also continued this year with the 20-student WTP-ME curriculum track. Of the 306 WTP-EECS college-age alumnae from 2002–2009, 127 have come to MIT. Of the 212 WTP-EECS alumnae who have declared college majors or graduated, 131 are in a field of engineering or computer science (62%) and 75 of them are at MIT. The summer 2010 WTP students are rising high school seniors; they will apply to colleges in fall 2010.

VI-A Internship

The department's VI-A Internship Program is in its 93rd year. The VI-A International Internship Program is in its fifth year with three students in Beijing, China, at Microsoft Research Asia and Qualcomm. Forty-one students applied to VI-A for summer 2010 positions at 15 participating companies. Twenty-two students were selected as members of the incoming VI-A class. Currently there are 20 undergraduates and 19 MEng students in the program. The VI-A master of engineering program provides leading-edge technology thesis opportunities with a full calendar year of tuition support for all VI-A MEng students and is company-funded by the VI-A fellowship program. Since the last report, approximately four students have withdrawn from the VI-A internship program, as they believed their needs were better matched with the opportunities available on campus. However, most VI-A students continue to find the program professionally rewarding. Participating companies offer challenging and well-mentored

assignments with leading-edge technology MEng thesis topics. We hope these improved thesis opportunities and funding will result in an increase in EECS student applicants to the VI-A Internship Program.

The J. Francis Reintjes Excellence in VI-A Industrial Practice Award was presented at the EECS spring awards ceremony in May 2010 to two outstanding VI-A students: Amanda Gaudreau (Medtronic, Inc.) and Zuoyu Tao (Lincoln Laboratory). Amanda and Zuoyu demonstrated outstanding performance in their VI-A work assignments. Amanda completed her thesis research titled "Algorithm for Automatic Modification of Spinal Cord Stimulation Therapy Parameters." Amanda will continue her research in the PhD program at Boston University. Zuoyu's thesis based on his VI-A research is titled "Improved Uncertainty Estimate for Geophysical Parameter Retrieval." Zuoyu has accepted a position with Oracle.

Booz Allen Hamilton joined the VI-A program this year. One undergraduate student and one MEng student will be working at Booz Allen Hamilton in the Washington, DC, area during the summer and fall terms. There have been numerous inquiries from companies interested in the VI-A program, and we hope to obtain new members in the near future as well as to increase the number of applicants, positions, and participants in the VI-A master of engineering thesis program.

Graduate Program

In September 2009, 794 graduate students were enrolled in the department. About 42 % were foreign nationals. The department supported 443 research assistants and 98 teaching assistants. In addition, there were 163 full or partial two-term fellowships including 31 National Science Foundation fellowships and 17 Department of Defense fellowships. The remaining students had fellowship support for one term or less.

During academic year 2009–2010 the department awarded 80 master of science degrees and 103 doctoral degrees.

The department received 2,572 applications for the 2009–2010 year, a slight increase from 2008; 165 were admitted for the year, which resulted in 114 new graduate students registering in September.

Undergraduate Program

Enrollment of undergraduates averaged 728 in 2009–2010, not significantly different from 2008–2009, with 14% in the electrical engineering program (6-1), 42% in the computer science program (6-3), and 44% in the electrical engineering and computer science program (6-2). From the Class of 2012, 209 students enrolled in Course VI. About 204 students from the Class of 2013 have so far selected Course VI, down slightly from the Class of 2012.

The master of engineering (MEng) program entered its 16th year with an average of 209 students.

Faculty Notes

Faculty on sabbatical leave:

Harold Abelson	9/09–1/10
Arvind	9/09–1/10
Sangeeta Bhatia	9/09–1/10
Michael Collins	9/09 –5/10
Frédo Durand	9/09 –5/10
Munther Dahleh	9/09–5/10
Martha Gray	9/09–5/10
Qing Hu	9/09–1/10
Dina Katabi	9/09 –5/10
Piotr Indyk	9/09–1/10
Patrick Jaillet	9/09–5/10
Jae Lim	9/09–5/10
Silvio Micali	9/09–5/10
Ronald Rivest	9/09–5/10
George Verghese	9/09–1/10

Faculty on leave:

Scott Aaronson	9/08–1/10
Rodney Brooks	9/08–5/10
Joel Dawson	9/09 –1/10
Shafrira Goldwasser	9/09–5/10
Ronitt Rubinfeld	9/08–5/10
Madhu Sudan	9/09–5/10

The department notes with sadness the passing of the following faculty:

Robert H. Rines, teacher at MIT of patent law and principles of intellectual property and inventions and founder of the Academy of Applied Science (1963) and the Franklin Pierce Law Center (1973). He was an accomplished international patent attorney, professor of law, prolific inventor, and musical composer. At EECS, he was noted for his creation and teaching of 6.901/6.931 Inventions and Patents/Development of Inventions and Creative Ideas. More information can be found at http://www.eecs.mit.edu/cgi-bin/announcements.cgi?page=2009/data/435.dat.

William F. Schreiber, MIT professor emeritus of electrical engineering. Dr. Schreiber's major professional interest was image processing systems, including printing, facsimile, and television. This work encompassed theory and extensive practical

applications, including the development of a number of successful commercial products that incorporated innovative image-processing technology developed under his direction. For these contributions, he was bestowed numerous prestigious awards. More information can be found at http://www.eecs.mit.edu/cgi-bin/announcements. cgi?page=2009/data/377.dat.

Arthur Clarke Smith, MIT professor emeritus of electrical engineering. He served as dean for undergraduate education and student affairs from 1990 through 1995 and was an invaluable contributor to student life and learning at MIT and in EECS for nearly 50 years. More information can be found at http://web.mit.edu/newsoffice/2009/smith-0427.html.

John M. "Jack" Wozencraft, former professor emeritus in EECS. An electrical engineer and information theorist, he is considered one of the pioneers of coding theory. Wozencraft developed the sequential decoding techniques for convolutional codes that made error-free communication possible with relatively low computing power, enabling the subsequent development of modern strategies used by the Internet, cellular phones, and deep-space transmissions. More information can be found at: http://web.mit.edu/newsoffice/2010/wozencraft-obituary.html.

Since July 2009, 10 new faculty members have joined the department or have been hired.

Patrick Jaillet is the Dugald C. Jackson professor in EECS and a member of the Laboratory for Information and Decision Systems; he is also codirector of the MIT Operations Research Center. He was head of Civil and Environmental Engineering at MIT from 2002 to 2009, where he currently holds a courtesy appointment. Dr. Jaillet's research interests include online problems, real-time and dynamic optimization, network design and optimization, probabilistic combinatorial optimization, and financial engineering. His research has been funded by the National Science Foundation, (NSF) the Office of Naval Research, the US Department of Transportation, and private funds (e.g., UPS, Indosuez Bank). Dr. Jaillet was a Fulbright scholar in 1990. He is a member of the Institute for Operations Research and the Management Sciences (INFORMS) and of the Society for Industrial and Applied Mathematics. He is currently an associate editor for *Networks*, *Transportation Science*, and *Naval Research Logistics* and was an associate editor for *Operations Research* from 1994 until 2005.

Timothy Lu was hired in July 2009 but deferred joining the department until July 2010, as he was completing his MD at Harvard Medical School, having earlier completed a PhD in health sciences and technology working with James Collins of Boston University. In addition to other awards, Tim was the Lemelson–MIT student prize winner in 2008. In his PhD work with Jim Collins at Boston University/Howard Hughes Medical Institute, Tim built and modeled artificial memory systems and counters in bacteria and developed methods for delivering synthetically engineered bacteriophages to infection sites. His research focuses on the development of synthetic-biology-based solutions for pressing medical and industrial problems, using concepts from electronic circuits and systems design. His current focus is on inventing effective treatments for infectious diseases and cancer using synthetic biology. Tim will join EECS and RLE as an assistant professor starting in fall 2010.

Joel Emer has joined the department as a professor of the practice. Joel is currently an Intel fellow at Intel Hudson and will continue his relationship at Intel, while also spending part of his time as a professor of the practice in EECS. Joel is a world-renowned computer architect, who was instrumental in the design and implementation of Intel's hyperthreaded processors, which include the Intel Atom, Core i7, Itanium, Pentium 4, and Xeon central processing units. He is also considered a pioneer in developing simulation tools that enable correct decisions in high-performance microprocessor design, an area in which he maintains an active interest by developing simulation tools for rapid architectural performance evaluation through novel mechanisms for design abstraction, while maintaining performance modeling accuracy. Joel is a fellow of the Association for Computing Machinery (ACM) and Institute of Electrical and Electronics Engineers (IEEE) and a recent winner of the Eckert–Mauchly Award, which is widely considered the highest award in computer architecture.

Li-Shiuan Peh is an associate professor of computer science and engineering and a member of CSAIL. She holds a PhD and MS in computer science from Stanford University and a BS in computer science and information systems (first class honors) from the National University of Singapore. Her main interests include interconnection networks (networks connecting subsystems within a digital system, such as multiprocessors, blades, disks, clusters, router line cards, on-chip modules, and embedded systems)—specifically power-aware interconnection networks—and parallel architectures and networking in general.

Dana Weinstein is an assistant professor of electrical engineering and a member of Microsystems Technology Laboratories. She holds a PhD and MS in applied and engineering physics from Cornell University and a BS with highest honors in physics and astrophysics from the University of California, Berkeley. Her main interests are in GHz MEMS resonators for optomechanical modulation, micromechanical filters, radio frequency electronics, and clock distribution.

Ron Weiss is an associate professor, dual in the Department of Biological Engineering and EECS. He holds a PhD and SM in electrical engineering and computer science from MIT and a BA with highest honors in computer science and in economics from Brandeis University. His research focuses on programming new cellular behaviors by designing and embedding synthetic gene networks that perform desired functions in single cells and multicellular environments.

Konstantinos (or Costis) Daskalakis joined EECS as an assistant professor and a member of CSAIL in fall 2009, after spending a year as a postdoctoral researcher at Microsoft Research New England. Costis received an undergraduate degree in electrical and computer engineering from the National Technical University of Athens and a PhD in computer science at Berkeley under the supervision of professor Christos H. Papadimitriou. Costis is interested in algorithmic game theory and applied probability, particularly in computational aspects of markets and the Internet, in social networks, and in computational problems in biology. The Game Theory Society honored Costis and his collaborators, Paul Goldberg and Christos Papadimitriou, with the first Game Theory and Computer Science Prize for their work on the computational complexity of Nash equilibria.

Three new faculty members have been hired and will be joining the department.

Wojciech Matusik received his BS in electrical engineering and computer science from the University of California at Berkeley in 1997 and his SM and PhD in EECS from MIT in 2001 and 2003, respectively. In 2004, he was named one of the world's top 100 young innovators by MIT's *Technology Review Magazine*. He has worked at Mitsubishi Electric Research Laboratories and at Adobe Systems. He is currently a senior research scientist at Disney Research Zurich and will join MIT EECS in February 2011, as well as becoming a member of CSAIL. In 2009, he received the Significant New Researcher Award from ACM Siggraph. His primary research is in the area of computer graphics with broad applications in other disciplines, such as digital communications, materials science, and biomechanics.

Dana Moshkovitz received her PhD from the Weizmann Institute of Science in 2008. During 2009–2010, she was a postdoctoral fellow in the joint program of the theoretical computer science group of Princeton University and the theoretical computer science and discrete mathematics group at the Institute for Advanced Study, Princeton. She is a theoretical computer scientist with a focus on probabilistically checkable proofs, pseudo-randomness, and coding theory. She received the Best Paper Award from the Foundations of Computer Science Conference in 2008 for her work on probabilistically checkable proofs. Dana will join EECS in July 2010 and will also be a member of CSAIL.

Michael Watts received his BSEE from Tufts (1996) and his SM (2001) and PhD (2005) from MIT. From 1996 to 1999, he was a member of the technical staff at Draper Laboratory, and from 2005 to 2010, he was a member of the technical staff at Sandia National Laboratories, where he led their silicon microphotonics effort. Mike's research focuses on electromagnetics, photonics, and optical networks, with particular interest in microphotonic circuits for application in communication networks, high-frequency scenarios, and new sensor modalities; a key example of Mike's work is an ultralow-power, high-bandwidth silicon microphotonic communications platform. Mike will join EECS in July 2010 and will also be a member of RLE.

The department hosted six visiting faculty this year: professor Khurram Afridi, professor Stephen Boyd, professor Michael Perrott, professor Bertram E. Shi, professor Yuan Tang, and professor Silvan Toledo.

Faculty Honors

Academic year 2010 was a stellar time for honors given to faculty, graduate, and undergraduate students. Below is a list of the awards (internal and external).

> Scott Aaronson was selected as a 2009 Alfred P. Sloan Foundation research fellow, was named TIBCO career development professor, and was selected as this year's recipient of the School of Engineering's Junior Bose Teaching Award.

> Scott Aaronson, Nancy Lynch, Ronald Rivest, Peter Shor, and Madhu Sudan were members of a team of researchers including representatives from eight

colleges around the country, led by Purdue University's Wojciech Szpankowski, to receive a new NSF award. This Science and Technology Center grant will provide the team $25 million to create Indiana's first science and technology center.

Edward H. Adelson, Nancy Lynch, Michael Stonebraker, and Madhu Sudan were elected as fellows by the American Academy of Arts and Sciences.

Saman Amarasinghe, Luca Daniel, Clifton Fonstad, Charles Sodini, and George Verghese were awarded MISTI Global Seed Funds for international projects.

Tim Berners-Lee was one of the first two recipients of the Millennium Technology Prize, an award created by the Finnish government.

Dimitri Bertsekas was the recipient of the 2009 INFORMS Expository Writing Award.

Sangeeta Bhatia was a recipient of a Pioneer or T-R01 grant.

Costis Daskalakis and Nickolai Zeldovich were awarded 2010 Alfred P. Sloan Foundation research fellowships.

Joel Dawson was named the Mark Hyman, Jr., career development professor; in addition, he received a Presidential Early Career Award for Scientists and Engineers.

Shafrira Goldwasser was one of 11 scientists chosen as the 2010 Benjamin Franklin Medal awardees.

Paul Gray was awarded the 2010 IEEE Founders Medal.

Berthold K. P. Horn received the IEEE Computer Society's Azriel Rosenfeld Lifetime Achievement Award.

Qing Hu, Thomas Knight, and Bruce Tidor were awarded the distinction of fellows of the American Association for the Advancement of Science.

Qing Hu, Daniela Rus, and Madhu Sudan were elevated to fellows of the IEEE.

Leslie Kaelbling was named as Ellen Swallow Richards professor.

David Karger and Martin Rinard were inducted as fellows of the Association for Computing Machinery.

Nancy Lynch was the recipient of the IEEE 2009 Emanuel R. Piore Award.

Tomás Lozano-Pérez was named as the School of Engineering professor in teaching excellence.

Tomás Palacios was recipient of the International Symposium on Compound Semiconductors Young Scientist Award.

Tomás Palacios and Vladimir Stojanovic were awarded the Emanuel E. Landsman (1958) career development chair.

Rajeev Ram was selected as a 2010 MacVicar faculty fellow.

Ronald Rivest was awarded the 2009 NEC C&C (Computers and Communications Technologies) Prize and was MIT's James R. Killian Jr. Faculty Achievement Award winner for 2010–2011.

A team of students working under principal investigator Nicholas Roy won first prize at the 19th annual International Aerial Robotics Competition.

Armando Solar-Lezama was awarded the NBX career development chair.

Dana Weinstein was awarded the Steven G. (1968) and Renee Finn career development chair, and was the recipient of a 2010 Defense Advanced Research Projects Agency Young Faculty Award.

Alan Willsky was elected to the National Academy of Engineering and was selected as recipient of the 2010 IEEE Signal Processing Society Technical Achievement.

Patrick Winston was presented the Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching.

Nickolai Zeldovich was named the Douglas T. Ross career development professor of software technology.

The following faculty and staff received awards at the annual EECS spring awards ceremony held on May 16, 2010:

Anant Agarwal and George Verghese were awarded the 2010 Jamieson Prize for Excellence in Teaching.

James Glass was presented the Best Advisor Award by IEEE.

Daniel Jackson was the 2010 recipient of the Bose Award (School of Engineering) for Excellence in Teaching.

Manolis Kellis received the Ruth and Joel Spira Award for Distinguished Teaching.

Leslie Kolodziejski was awarded the 2009 Capers and Marion McDonald Award (School of Engineering) for excellence in mentoring and advising by the School of Engineering.

Alan Oppenheim received the Graduate Students Association Graduate Counselor Award.

Christopher Terman was presented the Best Instructor Award by HKN.

The following faculty members were inducted into the Quarter Century Club: Rodney Brooks, Hae-Seung Lee, and John Tsitsiklis. Alan Oppenheim, Ronald Parker, and James Roberge were recognized as members of the 50-year class.

Student Awards

The following awards were presented to EECS students at the annual EECS spring awards ceremony held on May 16, 2010:

Carlton E. Tucker Teaching Award:
Thomas A. Baran for 6.011 and 6.341

Harold L. Hazen Teaching Award:
Ali Mohammad for 6.867 and 6.01

Frederick C. Hennie III Teaching Award:
Mythili Vutukuru for 6.829 and 6.02 and William Herrington for 6.007, 6.013, and 6.161

George M. Sprowls Scholarship Fund:
Vikash Mansinghka for "Natively Probabilistic Computation"
Mihai Pǎtraşcu for "Lower Bound Techniques for Data Structures"
Vinod Vaikuntanathan for "Randomized Algorithms for Reliable Broadcast"

Northern Telecom/BNR Project Award for Best 6.111 Laboratory Project:
Fall 2009, 1st prize: Team of Stephanie Cheng, Tung Shen Chew, and An Li for the project "Beat Gunner"
Fall 2009, 2nd Prize: Team of Trevor Rundell and Oleg Kozhushnyan for the project "FPGABoy"

Morris Joseph Levin Award for Best Master Works Oral Thesis Presentation:
Raluca Ada Popa for "Provable and Practical Location Privacy for Vehicular and Mobile Systems" and Jenna Wiens for "Patient-Adaptive Classification of Ectopic Heartbeats When Little or No Expert Knowledge Is Available"

George C. Newton Undergraduate Laboratory Prize:
Fall 2009 6.131, 1st prize: Donald Eng for "Omni-directional Robot"
Spring 2010 6.163, 2nd prize: Trevor Shannon and ChaLing O'Connell for "Colliding Water Drops"
Fall 2009 6.131, 3rd prize: Karin Fisher for "Two-Player Tilting Table Pin-Ball Game"

Honorable Mentions:
Fall 2009 6.131: Benjamin Bloomberg for "Ambisonic Surround Sound System"
Fall 2009 6.163: Team of Margaret Leibovic, Neil Zimmerman, Oliver Yeh, Susie Fu for "Lifesaver Tribolumninescence"
Fall 2009 6.131: Juan Rodriguez Garcia for "Self-Standing Robot (a la Segway)"

David A. Chanen Writing Award:
Lakshman Roy Sankar for "Time Travel Support in the Unix File System" (6.033)

Charles & Jennifer Johnson CS Meng Thesis Prize:
Raluca Ada Popa for "Provable and Practical Location Privacy for Vehicular and Mobile Systems"
Radu Berinde for "Advances in Sparse Signal Recovery Methods"
Tao Schardl for "A Work Efficient Parallel Breadth-First Search Algorithm"
Alessandro Chiesa for "Proof-Carrying Data"
Andre Wibisono for "Generalization and Properties of the Neural Response"

William A. Martin Memorial CS SM Thesis Prize:
Rishabh Singh for "Storyboard Programming of Data Structures Manipulations"
Jenna Wiens for "Machine Learning for Patient-Adaptive Ectopic Beat Classification"

David Adler Memorial EE Meng Thesis Prize:
First prize: Zachary Remscrim for "Mathematical Methods for Non-intrusive Load Monitoring"

Second prize: Sharmeen Browarek for "High Resolution, Low-Cost, Privacy Preserving Human Motion Tracking System Via Passive Thermal Sensing"

Ernst A. Guillemin EE SM Thesis Award:
Two first-place recipients and two second-place recipients were selected this year:
First place: Benjamin Cannon for "Electroquasistatic Sensors for Surface and Subsurface Nano-imaging of Integrated Circuit Features"
First Place: Rahulkumar Rithe for "SSTA Design Methodology for Low Voltage Operation"
Second place: Lei Zhang for "Fast Scheduling for Optical Flow Switching"
Second place: Ermin Wei for "Distributed Newton-type Algorithms for Network Resource Allocation"

Robert A. Fano UROP Award:
Daniel Vickery for "Human Proximity Sensors That Use the Stray Electric Fields of Fluorescent Lighting"

Morais (1986) and Rosenblum (1986) UROP Award:
Sulinya Ramanan for "Stamping Methods for Thin Film Patterning"
Margaret Leibovic for "Social Mechanisms for Content Sharing on the Web"

Licklider UROP Prize:
Federico Mora for "StartMobile and StartSMS Natural Language Interfaces"

Anna Pogosyants UROP Prize:
Thomas Morgan for "Image Processing of Gene Expression in *Drosophila* Embryos"

J. Francis Reintjes Excellence in VI-A Industrial Practice Award:
Amanda Gaudreau for work done at Medtronic
Zouyu Tao for work done at Lincoln Laboratory

Jin-Au Kong Outstanding Doctoral Thesis Prize:
First place: Emily Fox for "Bayesian Nonparametric Learning of Complex Dynamical Phenomena"
Second place: Joel Yang for "Superconducting Nanowire Single-Photon Detectors and Sub-10-nm Lithography"
Honorable Mention: Jungwoo Joh for "Physics of Electrical Degradation in GaN High Electron Mobility Transistors"
Honorable Mention: Yogesh Ramadass for "Energy Processing Circuits for Low-Power Applications"

A team of professor Duane Boning and EECS postdoctoral associate Hayden Taylor as well as graduate students Matthew Dirckx and Eehern Wong of the Department of Mechanical Engineering was named winner of the Software in Design Innovation Award at the Institution of Engineering and Technology's Innovation Awards 2009 on Nov 25 in London. The awards span 15 categories and attracted more than 300 entries from around the world. They represent a unique opportunity for innovators to be recognized and to provide a showcase for the brightest ideas, highlighting the importance of innovation by celebrating its application across a range of engineering disciplines.

EECS student Rodolfo Alarcon '11 received MIT's Strength & Conviction Award. It is presented to a student who labored on behalf of a student group, living group, or governmental organization to overcome longstanding or unforeseen challenges while showing dedication to his or her organization and campus life at MIT.

EECS students Wesley Brown, Chris Cheng, Greg Durrett, Ylaine Gerardin, Cai GoGwilt, Wesley Graybill, Sonia Jin, Martyna Jozwiak, Yi-Hong Kuo, Tony Liu, Rajeev Nayak, Qingchun Ren, Nevada Sanchez, Jongu Shin, Praveen Subramani, Mason Tang, Jason Trigg, Angela Yen, Harley Zhang, and Yufei Zhao were elected to membership in Phi Beta Kappa.

EECS graduate students Hoda Eydgahi, Shirin Farrahi, Joy Johnson, Jenna Wiens, Vanessa Wood, and Clarissa Zimmerman were among 40 graduate women who were recognized by the Office of the Dean for Graduate Education at a kickoff event hosted in celebration of graduate women at MIT who have been nominated by their peers, faculty, and staff for their accomplishments.

EECS student Ylaine Gerardin '10 was one of three MIT students awarded a Hertz fellowship for graduate studies.

Nevada Sanchez '10 won the 2010 Henry Ford II Scholar Award. This award is presented by the School of Engineering to a senior engineering student who has maintained a cumulative average of 5.0 at the end of the seventh term and who has exceptional potential for leadership in the profession of engineering and in society.

EECS graduate student David Schultz won a William L. Stewart, Jr. Award, which recognizes outstanding contributions by an individual student or student organization to extracurricular activities and events during the preceding year.

Aisha Walcott, EECS graduate student and founding member of the Academy of Courageous Minority Engineers, a professional and scholar development program for graduate students, was selected as one of four members of the MIT community to receive the Martin Luther King Jr. Leadership Award for 2010.

W. Eric L. Grimson
Department Head
Bernard Gordon Chair of Medical Engineering
Professor of Computer Science and Engineering

More information about the Department of Electrical Engineering and Computer Science can be found at http://www.eecs.mit.edu/.