Texas A&M ECE Distinguished Professor posthumously given Spirit of Innovation Award

A year after former electrical & computer engineering Distinguished Professor, Dr. Henry F. Taylor, died, his legacy continues to live on.

Taylor was posthumously given a Spirit of Innovation Award by Texas A&M University’s Office of Technology Commercialization. The Spirit of Innovation awards are given in recognition of individuals at Texas A&M whose research exemplifies the spirit of innovation within the Texas A&M University System.

Taylor, who is best known for his latest invention of an intrusion sensor to monitor perimeters among other things, died in May 2006 after a brief battle with cancer. During his illustrious career, he has authored more than 300 journal articles and conference presentations and holds 40 U.S. patents.

Taylor received his B.A., M.A. and Ph.D. degrees in Physics from Rice University in 1962, 1965 and 1967 respectively. He joined the electrical engineering faculty at Texas A&M as professor and director of the Institute for Solid State Electronics in 1985. Since 1988 he had held the Irma Runyon Chair in Electrical Engineering at Texas A&M. In 2001 he was promoted to the position of Distinguished Professor of Electrical Engineering. Since 1970 his principal research interests had been in the fields of fiber optics, integrated optics and diode laser applications.

Texas A&M ECE Distinguished Professor posthumously given Spirit of Innovation Award

Taylor also had served as chairman of the graduate research committee for 36 students receiving Ph.D. degrees and 32 students receiving M.S. degrees in electrical & computer engineering.

Prior to Texas A&M, Taylor was employed as a research physicist at the Naval Ocean Systems Center in San Diego, CA from 1967 to 1978. From 1978 to 1980 he was employed by Rockwell International in Thousand Oaks, CA, where he was principal scientist of the Optoelectronics Department of the Microelectronics Research and Development Center. From 1980 to 1985 he was head of the Optical Techniques Branch of the Naval Research Laboratory in Washington, D.C.

Taylor was awarded a Civil Service Commission/Navy fellowship to study Systems Analysis at the Massachusetts Institute of Technology during 1971-1972. He also received the Naval Electronics Laboratory Center Annual Science Achievement Award in 1974, the American Society of Naval Engineers’ Solberg Award for Applied Research in 1975 and the...
Loudons endow Texas A&M electrical engineering scholarship

Bert and Mary Loudon of Austin endowed a $25,000 scholarship for electrical and computer engineering students at Texas A&M University.

“This is a substantial donation that is very much appreciated by our students and faculty. It is through such scholarships made possible by generous people like Bert and Mary Loudon that we are able to attract, retain and ultimately reward well deserving students,” said Dr. Costas Georgiades, department head and holder of the Delbert A. Whitaker Chair in Electrical and Computer Engineering.

Bert Loudon retired from a 38-year career with Square D Company, a supplier of electrical control and distribution equipment. A portion of the Mary T. and Albert M. Loudon ’57 Scholarship in Electrical and Computer Engineering will be funded by corporate matching contributions from the Square D Foundation.

“When I look back at my life, it becomes very clear that Texas A&M had a huge impact. Besides an outstanding education, A&M was key to helping me develop leadership skills and instilling a strong set of core values. It is our desire to make it possible for some future talented students to attend Texas A&M who might not otherwise be able to do so,” Loudon said.

A native of Fredericksburg, TX, Loudon grew up in San Antonio. While a student at Texas A&M, he was commanding officer of “B” Armor and a Ross Volunteer in the Corps of Cadets.

After receiving his bachelor’s degree in electrical engineering, Loudon spent six months with the U.S. Army at Fort Knox, Ky., where he met Mary Trabue, now his wife of 47 years.

After active duty, Loudon accepted a technical sales position in New Orleans with Square D, the flagship brand of the North American Division of Schneider Electric, the world’s leading manufacturer of electrical distribution, industrial control and automation products and systems. He rose through sales and marketing positions of increasing responsibility, including district sales manager, area sales manager and division marketing director. He retired in 1993 and moved back to his roots in the hill country near Austin.

Loudon was active professionally in the Institute of Electrical and Electronics Engineers (IEEE) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). His civic contributions included membership with the Lions Club and service on numerous homeowners’ boards.

At Texas A&M, he serves on the advisory board of the 12th Man Foundation.

Mary Loudon, a native of Kentucky, attended the University of Florida but says she is “a Texas Aggie at heart.” Before retirement, she was a human resources director in the hotel industry. She coordinated the family’s move to 16 homes during her husband’s career.

“We have two happily married daughters and two grandkids: Joshua, Class of 2014, and Vanessa, Class of 2016. We feel blessed in that we all live within 15 minutes of each other,” she said.

The Loudons are active in their local church where Bert is an elder and past deacon. They enjoy international travel and frequently attend athletic events and other activities at Texas A&M.

They are 33-year Century Club members of the Association of Former Students and members of the A&M Legacy Society, which recognizes supporters whose gifts total $100,000 or more through the university, Texas A&M Foundation, AFS, 12th Man Foundation and George Bush Presidential Library Foundation, as well as individuals who have planned future gifts through their estates.

Their gift is part of the One Spirit One Vision Campaign, the university’s $1 billion multiyear fund-raising effort aimed at helping Texas A&M attain national top 10 status among public universities while sustaining the distinctive Texas A&M spirit. The volunteer-led campaign, coordinated by the Texas A&M Foundation, encompasses all private gifts benefitting the university.

By Exa York

Electric power engineers gather for 60th Protective Relay Conference

When protective relay engineers from across the country gathered in March for the 2007 Conference for Protective Relay Engineering at Texas A&M University, they marked an anniversary with a big number.

The 2007 edition of the conference marked the 60th anniversary of the conference, held for the first time at Texas A&M in 1948 and repeated every year since.

“As far as we’ve been able to determine, this is the longest running technical conference for the first time at Texas A&M in 1948 and repeated every year since. The conference for Protective Relay Engineering at Texas A&M University, they marked an anniversary with a big number. The 2007 edition of the conference marked the 60th anniversary of the conference, held for the first time at Texas A&M in 1948 and repeated every year since.

“The conference is about keeping the power system working,” said Russell, an expert in electric power distribution. “It’s about technology and making it work.”

In addition to presentations on techniques and equipment used to keep the power grid operating by engineers from utility companies, the conference also featured displays of new technology by protective equipment manufacturers.

First held in 1948 as a complement to the college of engineering’s short course in electrical metering for technicians, the Texas A&M conference has been running almost exactly half as long as there have been large-scale electric utility systems in the United States, Russell said. It was established to serve electric utility companies in the United States, especially in the western part of the country.


By Gene Charleton

Texas A&M Association of Former Students Award for Excellence in Research in 1991.

He also served as conference chairman for the Institute of Electrical and Electronics Engineers (IEEE)/Optical Society of America (OSA) Topical Meeting on Integrated and Guided Waved Optics for 1986, and was program chairman for the Conference in 1984. Taylor also was a member of the steering committee for the Optical Fiber Communication and Integrated Optics and Optical Communications Conferences from 1987 to 1989. He was guest editor for a special issue of the IEEE Transactions on Circuits and Systems for December 1979 and for a special issue of the Journal of Lightwave Technology for March 1987.

Taylor was a Fellow of the IEEE and OSA, a life member of the American Society of Naval Engineers and a member of the American Physical Society.

To honor Taylor’s memory and continue his legacy, his family has set up the Dr. Henry F. Taylor Memorial Fund at the Texas A&M Foundation. Proceeds from this memorial fund will be used to create the Dr. Henry F. Taylor scholarship in Electrical & Computer Engineering at Texas A&M University. Checks should be made payable to the Texas A&M Foundation and mailed to: Engineering Development Office, 3126 TAMU, College Station, TX 77843-3126. Indicate the funds are for the Dr. Henry Taylor F. Memorial Fund.

Taylor-contd from page 1
U.S. News & World Report ranks Texas A&M’s electrical & computer engineering programs

The Department of Electrical & Computer Engineering’s graduate electrical and computer engineering programs at Texas A&M University recently were again ranked in the top 25 nationally. The U.S. News & World Report released on newsstands its report on America’s best graduate schools for 2008. Electrical engineering was ranked 21st among 185 Ph.D.-granting engineering schools and 13th among public schools. In 2006 it was ranked 25th. Computer engineering was ranked 25th (15th among public schools). In 2006 it was ranked 25th as well. Specialty rankings are based solely on nomination by educators at peer schools, with the department heads asked to judge the overall academic quality of programs in their field on a scale of 1 (“marginal”) to 5 (“outstanding”), and the average scores were used for rankings. In addition, the graduate engineering program at Texas A&M was again ranked 14th nationally (8th for public institutions.) For more information, see www.usnews.com.

2006/2007 Annual Fund Donors

The Department of Electrical & Computer Engineering at Texas A&M University would like to thank the following supporters for their contributions to our Annual Fund. This fund was established for scholarships, recruiting and other items not covered by state or tuition in order to compete for the retention of the finest students and faculty. Support of our annual fundraising campaign in the past six years has been very helpful to the growth of the department.

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Texas A&M University, recognized as having one of the premier engineering programs in the world, has offered accredited undergraduate degrees in chemical, electrical, mechanical and petroleum engineering at its Education City, Qatar, campus since 2003. In addition to engineering courses, TAMUQ provides supporting classes in science, mathematics, liberal arts and the humanities.

Dr. Khalid Qaraqe and Dr. Mohamed-Slim Alouini, Electrical Engineering Faculty at TAMUQ, described in more details the functions of the wireless communication laboratory to include a wireless testbed that will be essentially used for (i) the evaluation of technology, (ii) the understanding and development of wireless/wired internetworking and (iii) the development of protocols and applications for seamless mobile operation. The laboratory will include a combination of software and hardware equipment such as an RF multipath fading simulator controlled by a personal computer, a spectrum analyzer, a logic analyzer, a signal generator, an oscilloscope, a network simulator and a signal processing part (with Matlab and real-time DSP capability).

Qatel also collaborated with TAMUQ and the College of the North Atlantic at Qatar (CNA-Q) in December 2005 with $648,000 to conduct research and studies into third generation (3G) technologies and services. This is the first 3G research program of its kind in the Middle East.

Advanced Techniques for Wireless Downhole Communication Systems

An upcoming research collaboration has been initiated between engineers at Tubel Technologies, and researchers in the electrical engineering departments at Texas A&M University and TAMUQ. This research is sponsored by RasGas. In this project, researchers at Texas A&M will work with engineers at Tubel Technologies to improve the state of the art of wireless communication systems for downhole applications and in particular will perform the research and development necessary to modify this wireless downhole communications technology for use in Qatari oil and gas wells.

Alouini received the Ph.D. degree in electrical engineering from the California Institute of Technology (Caltech), Pasadena, CA, in 1998. He was an associate professor with the Department of Electrical and Computer Engineering of the University of Minnesota. In 2005, he joined the electrical engineering program at TAMUQ, where his current research interests include the design and performance analysis of wireless communication systems.

Qaraqe received the B.S. from the University of Technology, Baghdad in 1986, with honors, he received the M.S. degree from the University of Jordan, Jordan, in 1989 and he earned his Ph.D. degree from Texas A&M in 1997.

From 1989 to 2004 Qaraqe has held a variety positions in many companies and he has over 12 years of experience in the telecommunication industry. Qaraqe has worked for Qualcomm, Enad Design Systems, Cadence Design Systems/Tality Corporation, STC, SBC and Ericsson. He has worked on numerous GSM, CDMA, WCDMA projects and he has experience in product development, design, deployments, testing and integration. Qaraqe joined the Department of Electrical Engineering of TAMUQ in July 2004, where he is now a visiting associate professor. Qaraqe's research interests include performance analysis of the 3G UMTS wireless communication, WCDMA estimation theories, fading channels, frequency hopping and STTD diversity.

Whitaker endows graduate fellowship in department

Former electrical engineering student, Delbert A. Whitaker of Dallas, has endowed a graduate fellowship in the Department of Electrical and Computer Engineering at Texas A&M University.

Whitaker will contribute $10,000 per year with matching funds from Texas Instruments, for a total of $20,000 per year over the next five years for the graduate fellowship.

In addition to his current endowment, Whitaker has endowed the Delbert A. Whitaker Chair in Electrical and Computer Engineering, and has helped secure TI support of $6.4 million for analog design and mixed-signal testing efforts in the university’s electrical engineering and engineering technology programs. He’s also personally established two scholarships in the electrical engineering department under the Bolton Scholars Program.

Whitaker also is an Outstanding Alumnus of Texas A&M’s engineering college and has been a member of its External Advisory Council. He earned a B.S. degree in electrical engineering from Texas A&M in 1965, then worked in General Electric’s nuclear power generation business. In 1969 he joined TI, where his 31-year career included stints in various semiconductor product areas plus marketing and sales. He served as senior vice president of TI’s U.S. Semiconductor Business in the late 1980s and then as senior vice president of TI’s Worldwide Analog and Standard Logic business from 1990 until his retirement in 2000.

In addition to his past service on the board of trustees of the Dallas Theater Center, Whitaker also has been active in his support of women and minorities in engineering through his work at Texas Women’s University and has been honored for his efforts. Whitaker is presently on the Board of Directors of Novellus Systems Inc.
New TAMUQ CEO, Mark Weichold, honored at reception

Dr. Mark Weichold, electrical and computer engineering professor at Texas A&M University, was honored at a reception as he began his new role as dean and CEO of Texas A&M University at Qatar.

Weichold, who also held the positions of dean of undergraduate studies and associate provost for academic affairs, was named for this position upon the recommendation of former Texas A&M President Robert M. Gates. He succeeds Michael Kemp, who has returned to the main campus to continue his teaching and research career in the College of Science.

Gates cited Weichold’s unique qualifications for the TAMU-Qatar position.

“He was instrumental during the preparation and subsequent negotiation of the TAMU-Qatar agreement that established the branch campus over four years ago, so he has a clear understanding of the unique and exciting issues facing the developing institution,” Gates said.

Weichold said he welcomes the opportunity to head the Qatar campus.

“I am excited by the prospects of this position and look forward to being part of a very unique educational enterprise... one whose promise extends well beyond providing a top engineering education,” Weichold said.

Cantrells to endow Erdman fellowship at Texas A&M

Pierce and Carol Cantrell of College Station will endow a graduate fellowship at Texas A&M University in memory of a close friend and engineering administrator.

The Carl A. Erdman Memorial Fellowship in Engineering, funded through the Texas A&M Foundation, honors the late professor’s dedication to students and his national leadership in engineering education. Erdman was executive associate dean of engineering at the time of his death in June 1995.

“I cannot think of a more fitting way to honor Carl Erdman than establishing a graduate fellowship,” said G. Kemble Bennett, vice chancellor and dean for engineering. “Carl made many contributions to engineering education, but his love of teaching and his commitment to his graduate students always came first and brought him great joy. Under his guidance, teaching and counseling, many successful futures were shaped and through this graduate fellowship, Carl will continue to help students achieve their best. He was one of the best educators I have ever known.”

The fellowship will be awarded to graduate engineering students who pursue master’s or doctoral degrees at Texas A&M. Erdman received his bachelor’s and master’s degree from the University of Virginia in science engineering and nuclear engineering, respectively. After earning a doctorate in nuclear engineering at the University of Illinois, he served on the University of Virginia faculty before joining Texas A&M in 1981.

At Texas A&M he achieved many firsts. He was the first holder of the Carolyn S. and Tommie E. Lohman Professorship in Engineering Education and the university’s first director of academic development for engineering.

He also was first project director for the fledgling National Science Foundation-funded Foundation Coalition for Engineering Education, and first principal investigator and designer of the Texas Alliance for Minority Participation program.

Erdman is survived by his widow, Anne Rudder Erdman, and two adult sons, Benjamin and Michael.

“Not only was Carl a wonderful friend but a great colleague. I so enjoyed working with him on the Foundation Coalition. His leadership in this endeavor was extraordinary. Additionally, he was dedicated to diversity and pioneered many of the programs that helped to foster the success of the college in diversification of its students, faculty and staff,” said Pierce Cantrell, vice president and associate provost for information technology at Texas A&M.

A computer engineer and member of the Texas A&M faculty since 1982 in the electrical engineering department, Cantrell also served six years as the assistant department head. He is an associate professor and former Faculty Senate speaker.

Cantrells to endow Erdman fellowship at Texas A&M

The dean and CEO of TAMU-Qatar is the chief executive officer of Texas A&M’s branch campus in the Persian Gulf and provides it with intellectual and administrative leadership, coordinates priorities and goals with faculty and department heads and supports faculty development and quality educational programs. Major responsibilities of the position include academic program management, financial management, external relations with the Qatar Foundation and the U.S. Ambassador to Qatar and promotion of TAMU-Qatar both in Qatar and in Texas.

TAMU-Qatar is fully funded by the Qatar Foundation for Education, Science and Community Development. Its campus is part of Education City, a consortium of educational and research institutions hosted by the foundation. TAMU-Qatar offers four undergraduate engineering programs at the Education City campus: electrical engineering, chemical engineering, mechanical engineering and petroleum engineering.

Weichold, who has been with the department since 1978, has expertise and three patents related to integrated circuit device design and fabrication. He received his Ph.D. degree in electrical engineering from Texas A&M University.

By April Osborn
Rebeiz discusses Silicon MM-Wave RFICs for Wide-Bandwidth Radars and Telecommunication Systems

Dr. Gabriel M. Rebeiz, professor at the University of California, San Diego, discussed “Silicon MM-Wave RFICs for Wide-Bandwidth Radars and Telecommunication Systems.” He said a new set of architectures have been developed, which are suitable for wide-bandwidth systems, such as UWB radars or Gbps telecommunication systems and antenna integration is important, and while we are not integrating the antennas on-chip due to space and efficiency considerations.

Gabriel M. Rebeiz, a Fellow of IEEE, earned his Ph.D. degree in electrical engineering from the California Institute of Technology, Pasadena. His research interests include applying micro-electromechanical systems (MEMS) for the development of novel RF and microwave components and sub-systems. He also has a considerable effort in Si RFIC design for radar and communication systems, and in the development of millimeter-wave front-end electronics, planar antennas, imaging systems and phased-arrays.

Rebeiz was the recipient of the NSF Presidential Young Investigator Award and the URSI International Isaac Koga Gold Medal Award. He also was selected by the students as the 1997-1998Eta-Kappa-Nu EECS Professor of the Year and he received the Amoco Foundation Teaching Award. Rebeiz also is the co-recipient of the IEEE 2000 Microwave Prize and he received the Outstanding Young Engineer Award of the IEEE MTT Society. Rebeiz is the author of the book RF MEMS: Theory, Design and Technology, Wiley 2003.

Shamai Discusses Decentralized Processing: An Information Theoretic Perspective

Dr. Shlomo Shamai (Shitz), discussed Decentralized Processing: An Information Theoretic Perspective. He first discussed the scenario where remote nomadic users (or a single user) communicate to a destination via a set of intermediate agents, who are ignorant of the codebook used due to the nomadic regime and are connected to the destination via reliable links of finite capacity. His talk focused on independent Gaussian channels to all agents, who are equipped with a single antenna while the transmitter or transmitters may possess multiple antennas.

Shamai received the B.Sc., M.Sc. and Ph.D. degrees in electrical engineering from the Technion-Israel Institute of Technology. During 1975-1985 he was with the Communications Research Labs as a Senior Research Engineer. Since 1986 he has been at the Technion-Israel Institute of Technology, where he is now the William Fondiller Professor of Telecommunications. His research interests encompass a wide spectrum of topics in information theory and statistical communications.

Shamai is an IEEE Fellow and a member of Union Radio Scientifique Internationale (URSI). He is the recipient of the 1999 van der Pol Gold Medal of URSI and a co-recipient of the 2000 IEEE Donald G. Fink Prize Paper Award and the 2003 and 2004 joint IT/COM societies’ best paper awards. He is also the recipient of the 1985 Alon Grant for distinguished young scientists and the 2000 Technion Henry Taub Prize for Excellence in Research. He has served as associate editor for Shannon Theory of the IEEE Transactions on Information Theory and also serves on the Board of Governors of the Information Theory Society.

Nassif discusses Model to Hardware Matching for nm Scale Technologies

Dr. Sani Nassif discussed Model to Hardware Matching for nm Scale Technologies. He said our ability to reliably predict the outcome of a semiconductor manufacturing process has been steadily deteriorating because the CMOS technology slowdown has led to rapidly increasing complexity in the process and in its interaction with design and the manufacturing variability is becoming important for digital designs as well and thus its prediction is now a first order priority.

Nassif received his PhD from Carnegie-Mellon University in the eighties. He worked for 10 years at Bell Laboratories on various aspects of design and technology coupling including device modeling, parameter extraction, worst case analysis, design optimization and circuit simulation. Nassif joined the IBM Austin Research Laboratory in January 1996 where he is presently managing the tools and technology department, which is focused on design/technology coupling and includes activities in: model to hardware matching, simulation and modeling, physical design, statistical modeling, statistical technology characterization and similar areas.

Vaidyanathan discusses Signal Processing for Genomic and Proteomic Signals

Dr. P.P. Vaidyanathan presented a lecture on Signal Processing for Genomic and Proteomic Signals. After first giving a brief overview of molecular biology, Vaidyanathan said the theory and methods of signal processing are becoming increasingly important in molecular biology. He followed by a review of the applications of signal processing theory. His discussion included the identification of protein coding genes and the study of hot spots in protein functional groups.

Vaidyanathan is a professor at the California Institute of Technology. His research interests are in signal and information processing. His recent work includes research on genomic signal processing and applications of signal processing theory in communications. He has received several awards for teaching excellence from the students of the California Institute of Technology. He is a Fellow of the IEEE, recipient of the F.E. Terman award from the American Society of Engineering Education, recipient of the IEEE Circuits and Systems Society Golden Jubilee Medal and the recipient of the Technical Achievement Award of the IEEE Signal processing society.
plugged-in

Ulisses Braga-Neto

Dr. Ulisses Braga-Neto joined the Biomedical Imaging and Genomic Signal Processing group of the department in January 2007 as an assistant professor. He received his Ph.D. in electrical & computer engineering, an M.S.E. in electrical & computer engineering and an M.S.E. in mathematical sciences, all from The Johns Hopkins University in 2002 and 1998 respectively. He received his M.S. from the State University of Campinas in 1994 and his B.S. from the Federal University of Pernambuco, Recife, Brazil, in 1992.

Braga-Neto’s research interests include genomic and immunomic signal processing, computational biology and statistical pattern recognition, with applications in the study of cancer and infectious diseases. He is particularly interested in the design of novel statistical learning methods for small-sample microarray classification, error estimation and inference of regulatory networks.

Sebastian Hoyos

Dr. Sebastian Hoyos joined the Analog and Mixed Signal group of the department in September 2006 as an assistant professor. He received his Ph.D. at the University of Delaware in 2004, his M.S. at the University of Delaware in 2002 and his B.S. at the Pontificia Universidad Javeriana in 2000.

Hoyos’ research interests include design and implementation of mixed-signal processing algorithms that strategically couple analog and digital systems to enhance performance or reduce complexity of high-speed and high dynamic range wireline and wireless communication systems.

Gregory Huff

Dr. Gregory Huff joined the Electromagnetics and Microwaves group in the department in September 2006 as an assistant professor. He received his Ph.D., his M.S. and his B.S., all from the University of Illinois, Urbana-Champaign in 2006, 2003 and 2000 respectively.

Huff’s research interests include reconfigurable antennas and other agile devices (sensors, phase shifters, filters, etc.) for multi-function systems, the impact of radiating mechanisms in spread spectrum digital communications, utilizing reconfiguration in multiple antenna techniques and the evaluation/mitigation of packaging, placement and electromagnetic interference (EMI) issues arising from high speed devices and radiators.

Tie Liu

Dr. Tie Liu joined the Telecommunications and Signal Processing group in the department in September 2006 as an assistant professor. He received his Ph.D. and M.S. from the University of Illinois-Urbana-Champaign in 2006 and 2004 respectively, and his M.S. and B.S. from Tsinghua University in 2000 and 1998 respectively.

Liu’s research interests include multiuser information theory, wireless communication and connections between information theory and statistics.

Henry Pfister

Dr. Henry Pfister joined the Telecommunications and Signal Processing group in the department in September 2006 as an assistant professor. He received his Ph.D., M.S. and B.S. all from the University of California, San Diego in 2003, 2000 and 1995 respectively.

Pfister’s research interests include information theory, error-correcting codes and the capacity of communication channels. Pfister currently focuses on applications in magnetic recording, wireless networks and related areas.

ECE Hosts Discover Engineering

More than 500 high school students, parents and teachers throughout the state arrived for Discover Engineering, a daylong symposium hosted by Texas A&M Engineering at Texas A&M University.

The symposium offered more than 30 workshops taught by Texas A&M Engineering faculty members to introduce the high school students to different kinds of engineering. This included workshops offered by faculty in the Department of Electrical and Computer Engineering.

Dr. Prasad Enjeti presented “Electrical and Computer Engineering,” Dr. Steve Wright presented “Changing the World in Big (and Small) Ways,” Dr. Laszlo Kish presented “Electronic Noise Utilized for Totally Secure Data Communication and Prompt Bacterium Identification” and Chris Weldon and Windy Lala presented “ECE Department Presentation.”

Another talk was presented three times throughout the day by Dr. Deepa Kundur titled, “Secrets, Spies, Thieves and Lies: the Art and Practice of Information Security.” Her three sessions reached close to 200 prospective students, parents and siblings.

After the 15 to 20 minute presentation by the above speakers, the prospective students and parents worked with a student volunteer from IEEE to complete a lab in the Zachry 113D lab, entitled “Discover Engineering: Audio Bass Booster.” This was followed by a group of ENGR 111 peer tutors, who demonstrated the different robot labs these prospective students would do in their first semester at Texas A&M. All four sessions together reached just over 120 prospective students, parents and siblings.

The IEEE student volunteers were, Chris Weldon, Dane Martindale, Brian Mikeska, Don Shannon, Marshall Tett, Brett Hern and Austin McClintock. The peer tutors were David Thompson, Muneer Naqi and Shyam Kumar.

“We host Discover Engineering every fall because the recruitment literature indicates that the most effective way to recruit the top high-school students is by having them interact with faculty members,” said Dr. César O. Malave, assistant dean for international programs and recruitment and professor in the Department of Industrial and Systems Engineering.

“We have faculty members who bring excitement and passion to the classroom, and we want high-school students to see it.”
EE grad named Honorary Member of AIME and SPE

A Texas A&M electrical engineering graduate was elected to the position of Honorary Member of the American Institute of Mining, Metallurgical and Petroleum Engineers (AIME) and the Society of Petroleum Engineers (SPE), the highest honor given by the petroleum society.

James L. “Jim” Rike, ’48, was presented with the award at the awards banquet during the SPE Society’s 2006 Annual Technical Conference and Exhibition in San Antonio. Rike’s distinguished career began after he graduated from Texas A&M in 1948 with an electrical engineering degree, finishing after service in WWII in the Navy. He said he learned how to study and work hard at A&M and earned good grades, so he received a lot of employment offers, both from petroleum companies as well as G.E. Westinghouse and Allis-Chalmers, among others.

“I was a depression baby from a poor family, so I took a job with Humble Oil (now Exxon), because they offered about 20 percent more initial pay than did the electrical industry,” Rike said. Rike said he found that the petroleum industry needed a great deal of expertise available from an EE mind, relative to powered equipment, instrumentation and energy use and that the flow of fluids in a porous media (“Reservoir Engineering” in petroleum circles) is governed by the same equations used in electrical engineering, steady state as well as transient form, with just a change in units. As a result, within 10 years, he was practicing petroleum engineering in all its ramifications with considerable success.

“I pioneered the coiled tubing intervention principle, wherein steel pipe is bent and straightened repeatedly in order to go in and out of the deep oil or gas well with a continuous string of pipe, even with pressure on the well at the surface,” Rike said, adding that he even oversaw the building of the first prototype rig.

“The Coiled Tubing Rig has since revolutionized well workover operations world-wide, making long horizontal holes in the oil or gas reservoir feasible with much higher productivity.”

He said his “Coiled Tubing Rig” is currently used to drill wells in many places and may be the only economically feasible way to repair the billion dollar developments in water depths of 2,000 to 10,000 feet before reaching the bottom of the ocean.

During his 22 year tenure at Exxon (Humble) Rike obtained 12 patents. After 1970 Rike then became a consultant/trainer for the worldwide industry traveling to all petroleum producing countries and teaching the practical aspects of applying petroleum technology, rather than theory.

As a consultant, Rike, a registered professional engineer in Texas and Louisiana, has been retained by major and independent producing companies (domestic and foreign), drilling contractors, workover contractors, service companies, universities and professional organizations. Rike is well-known for his seminars with managers, engineers and field supervisors on well completion and workover practices, reservoir engineering, surface production facilities and other production areas. In addition to industry-wide seminars, he conducts in-house training courses for Shell, Schlumberger, Union, Phillips, British Petroleum, Texaco, Exxon, ARCO, Chevron, Government Agencies, TOTAL, YPF, Petrobras, Ecopetrol, PTI (Nigeria), ADMA-OPCO and ADCO (Abu Dhabi), ONGC (India), and GUPCO (Egypt), among others.

Other honors include being a member or chairman of the Well Completions Committee for the Society of Petroleum Engineers for 18 years. He was a member of the Organizational Committee for the Formation Damage Symposia. Rike served as an SPE “Distinguished Lecturer.” Rike also was chairman of the Well Completions Reprint Committee and received the SPE 1990 Production Engineering Award for outstanding achievement and contribution.

He was awarded an API Meritorious Service Award in 1997 for “distinguished and meritorious service and in appreciation for his invention and work on API standards of the coiled tubing rig,” among other accomplishments. He was selected for a Citizen Ambassador program to the Soviet Union to help the transition to free market industrialization. He was awarded the Todd Medal for technological achievement; he has been designated a Distinguished Member by SPE.

It was because of this distinguished career that Rike was elected to the position of Honorary Member of the AIME and SPE.

Honorary Membership is conferred on individuals for outstanding service to SPE and/or in recognition of distinguished scientific or engineering achievement in fields encompassed in the Society’s technical scope. Honorary Membership is the highest honor the Society bestows on an individual and it is limited to 0.1 percent of the Society’s total membership.

Luman L. Gaddis ’39

Luman L. Gaddis joined the military shortly after graduation working in communications. In 1944 he married Marylou Haffa and in 1945 their first son, Lynn Jeffrey, was born. In 1946 Gaddis was offered a position with American Telephone and Telegraph Company (AT&T) doing the same type of work he did in the military. Shortly after, their daughter, Diana Lou, was born in 1947, and their second son, Brian Evan, was born in 1950, the same year Gaddis was promoted into management at AT&T. After much moving around with AT&T, Gaddis and his family finally settled in New Jersey in 1957, where he worked for 18 years. The main duties of his job as a Transmission Engineer was long range switching planning. He was in charge of a group that made a study of converting electromechanical switching to digital.

In 1975 Gaddis retired early from AT&T and moved back to Texas to begin work with his family’s genealogy and help others with theirs. From 1972-1995 he traveled numerous times overseas to England, Scotland and Germany researching his ancestors, which he discovered were of Scottish origin on the male side and German on the female side.

Mike Saville ’97

After graduating from Texas A&M in 1997, Mike Saville was commissioned in the United States Air Force through Officer Training School. He held various technical and leadership positions during the past 10 years, and is now an assistant professor at the Air Force Institute of Technology (AFIT). His teaching and research areas include radar fundamentals, advanced radar systems analysis, radar imaging and adaptive processing, computational electromagnetics, electromagnetic radiation and scattering measurement and theory.

Saville attended A&M, married with two children, and since then he and his wife were blessed with a second daughter. They currently live in Springboro Ohio.

Since graduating from A&M, Saville received the MSEE from AFIT in 2000 and the Ph.D. from the University of Illinois at Urbana-Champaign in 2006. He has been selected for the rank of Major and anticipates promotion in 2007. Saville attributes many aspects of his successes to the “wonderful experiences and education at Texas A&M.”
The Association of Former Students and Texas A&M University honored the school’s 2006 Distinguished Alumni at the Distinguished Alumni Gala. Among this year’s award recipients were two graduates of the Texas A&M Department of Electrical Engineering, Erle A. Nye ’59 (left) of Dallas and Richard W. Younts ’67 (right) of Austin.

Established in 1962, the Distinguished Alumni Award is the highest honor bestowed upon a former student of Texas A&M. The award recognizes outstanding Aggies who have made significant contributions in their professions, to Texas A&M and to their local communities.

Nye received a bachelor’s degree in electrical engineering from Texas A&M in 1959, a juris doctorate from Southern Methodist University in 1965 and a doctorate of science honoris causa from the Baylor College of Dentistry in 1996. During his time as a Texas A&M student, Nye was a member of the Corps of Cadets and was a Distinguished Military Graduate.

Nye began his career in 1960 with Dallas Power & Light Company, a subsidiary of Texas Utilities Company. In 1980, he was named Vice President of the parent company where his career would span 45 years and he would lead seven companies under TXU Corp., Texas’ largest publicly-held utility company. In 2004, he retired as Chief Executive Officer and now serves as Chairman Emeritus of TXU Corp. During his long and distinguished career, Nye chaired many industry organizations, including the Edison Electric Institute, the Electric Power Research Institute, the North American Electric Reliability Council and the Nuclear Energy Institute. He has served on numerous state and federal boards and committees and currently serves as Chairman of the President’s Critical Infrastructure Advisory Council. He has been recognized with numerous honors, including The Nasher Award from the Dallas Business Committee for the Arts, the Robert H. Dedman Award for Ethics and Law from the Southern Methodist University Dedman School of Law and Texas General Counsel Forum and the Corporate Social Responsibility Award from the Mexican American Legal Defense and Educational Fund.

As a former student, Nye has generously served Texas A&M with his time and talent. He has been a member of the Texas A&M University System Board of Regents since 1997 and previously served as its chairman. Nye is also a member of the Chancellor’s Century Council, the Dwight Look College of Engineering Development Council, the One Spirit One Vision Campaign Executive Committee and the Texas A&M Foundation Development Advisory Committee. In 1993, he received the Outstanding Alumni Honor Award from the Dwight Look College of Engineering and was inducted into the Corps of Cadets Hall of Honor in 2004. Born in Fort Worth, Nye and his wife Alice have five children: Kathy, Class of 1984; Allen, Class of 1989; Ann, Kyle and Scott. Younts received a bachelor’s degree in electrical engineering from Texas A&M in 1967 and attended business school at Arizona State University. During his time at Texas A&M, he was a student assistant in the Engineering Research Laboratory.

Prior to attending Texas A&M, Younts served from 1957-1960 in the U.S. Marine Corps. Following completion of his education, Younts joined Motorola’s semiconductor division in Phoenix, Arizona, in 1967. After several years of advancement within that division, he was appointed to operations manager of the rectifier businesses in 1974. In 1979, he moved to the semiconductor group’s MOS division in Austin as the group operation manager of logic and special functions. In 1982, he was appointed vice president of Motorola and director of operations for the MOS Memory Group in Austin.

In 1984, Younts moved to Japan as vice president and GM of the semiconductor division of Nippon Motorola, Ltd. Three years later, he was made an elected vice president and president of Nippon Motorola, Ltd. Younts returned to the U.S. in 1991 to serve as executive president and executive director for the Asia and Americas Regions. In 1997, he was named president of the Asia Pacific regions and appointed to serve on the management board of Motorola Inc. Today, Younts serves on a few boards and as an advisor to the City of Tianjin, China. In 2001 he was given an honorary citizenship of China.

As a former student, Younts has been an integral part of Texas A&M’s success in its international programs. He was the co-organizer for the China-U.S. Relations Conference in 2003 and 2005, and established the Kyle R. Younts International Forum, in memory of his son, to support the International Programs Office and international awareness on campus. In 2003, he was appointed by Dr. Robert M. Gates to serve as the Lockheed-Martin World-Scholar-in-Residence for Texas A&M to provide advice to University administration on building Texas A&M’s presence in China. Born in Temple, Younts and his wife, Pat, have three children, Rhonda ’85, Marcy ’86 and Kyle (deceased).

We want to hear from you!!!

If you are a graduate in electrical or computer engineering from the Department of Electrical & Computer Engineering at Texas A&M we would love to hear how you’re doing. You can E-mail your information to deana@ece.tamu.edu, or if you prefer, you can mail us news about your career, family or anything else to:

Deana Totzke, Currents Editor
Department of Electrical & Computer Engineering
TAMU 3128
Zachry Engineering Center
College Station, TX 77843-3128

Please notify us of any address changes so we can continue giving you news from the department.
J-F Chamberland
Dr. Jean-Francois Chamberland won a Best Paper Award from the IEEE Signal Processing Society. Chamberland, along with V.V. Veeravalli, won the 2006 Young Author Best Paper Award from the Society for their paper titled “Decentralized detection in sensor networks.” The Young Author Best Paper Award honors the author(s) of an especially meritorious paper dealing with a subject related to the Society’s technical scope and appearing in one of the Society’s solely owned Transactions and who, upon the date of submission of the paper, is less than 30 years of age. Judging is on the bases of general quality, originality, subject matter and timeliness. Nominations may arise from any individual or a technical committee, including editorial boards of the Society’s publications, and shall be submitted directly to the Society’s Awards Board. Chamberland, an assistant professor, joined the department in 2005. He received his B.Eng. degree from McGill University, Montreal, Canada, in 1998, the M.S. degree from Cornell University, Ithaca, NY, in 2000 and his Ph.D. degree at the University of Illinois at Urbana-Champaign in electrical engineering in 2004. His research interests are in the area of communication and control theory and the efficient design of wireless sensor networks in the context of decentralized detection.

Andrew Chan
Dr. Andrew Chan, professor in the Department of Electrical and Computer Engineering at Texas A&M University, received an International Excellence Award for Faculty from Texas A&M’s International Programs Office. Chan serves as the advisor for the TAMU Campus Chinese Christian Fellowship (TAMUCCCF), through which he organizes welcoming events for students so that new Chinese students will have a chance to meet and establish friendships with other A&M students. He hosts weekly dinner parties at his house, creating an environment where students can feel comfortable and at home sharing conversation and traditions with each other. Chan also assists new students in locating apartments and furniture and gives them a ride to purchase groceries if there is a need for transportation. He introduces them to activities on and off campus and helps facilitate a church program that pairs American students and international students as conversation partners.

As a professor, mentor and friend, Chan has kept in close contact with students, both current and former, assisting them in any way he can, whether it is writing letters of recommendation or directly supervising graduate students. This commitment is one of true compassion, love and energy.

Chan, a Fellow of the Institute of Electrical and Electronic Engineers (IEEE), has research interests in Digital Signal Processing, Image Processing, Wavelets, Nonlinear Optical Propagation and Numerical Methods. He has been with the department since 1976. Other honors include being awarded the Halliburton Professorship. Chan received his bachelor's, master's and doctoral degrees from the University of Washington and is a member of several professional societies.

Kai Chang
Dr. Kai Chang was appointed to the TI Endowed Analog Chair in the Department of Electrical and Computer Engineering at Texas A&M. Chang, an IEEE Fellow, is a professor in the department and directs the Electromagnetics and Microwave Programs. His research areas are in Microwave/Millimeter-Wave Circuits and Devices, Microwave Integrated Circuits, Antennas and Phased Arrays, Active Antennas and Power Combining, Microwave Power Transmission, Wireless Communications, Microwave Systems, Microwave-Optical Interactions, Electromagnetic Field Theory, Solid-State Oscillators and Amplifiers, Transmitters and Receivers.

Chang also was named recipient of the 2007 Distinguished Educator Award of the IEEE Microwave Theory and Techniques Society (MTT-S) “for Outstanding Achievements as an Educator, Mentor and Role Model of Microwave Engineers and Engineering Students.”

Chang began working for the department in 1985. He received his BS in 1970 from National Taiwan University in 1970, his MS from the State University of New York at Stony Brook in 1972 and his Ph.D. from the University of Michigan in 1976. Other honors include receiving a TRW Special Achievement Award, a Halliburton Professor Award, a Distinguished Teaching Award, a Distinguished Research Award and being named a TEES Fellow. He also is the editor of several publications, has four U.S. patents and has authored numerous publications, books, book chapters and government reports.

Aniruddha Datta
Dr. Aniruddha Datta was named a Eugene E. Webb ’43 Fellow by the Dwight Look College of Engineering at the annual Spring Meeting. “The faculty fellows program recognizes the significant contributions faculty members have made to the Texas A&M engineering program,” said Dr. G. Kemble Bennett, vice chancellor and dean of engineering. Datta, a professor in the department, joined the faculty in 1991. He received the B. Tech degree in electrical engineering from the Indian Institute of Technology, Kharagpur in 1985, the M.S.E.E. degree from Southern Illinois University in 1987 and the M.S. and Ph.D. degrees from the University of Southern California in 1991. His areas of interest include adaptive control, parametric robust control, decentralized control and process control. Other honors include being named a TEES Special Research Fellow. He also has been a member of several program committees, has been an associate editor for IEEE Transactions on Automatic Control, has won best presentation awards and has authored numerous journals and other publications.

Ed Dougherty
Dr. Ed Dougherty was selected for the 2007 - 2008 University Distinguished Lecture Series, one of only two faculty members to receive this honor. His lecture, which is titled “Genomic Signal Processing: The Key to Systems Medicine,” will be April 15, 2008.

Dougherty also was appointed the inaugural holder of the Robert M. Kennedy ’26 Chair in electrical and computer engineering. Dougherty, professor in the department, is considered a leader in the study of the Human Genome Project by measuring gene activity with engineering techniques such as signal processing, pattern recognition and image analysis.

He received his Bachelors of Science and his Masters of Science in mathematics from Fairleigh Dickinson University in 1967 and 1969, respectively. He earned another Masters of Science in computer science from Stevens Institute of Technology in 1986 and his Ph.D. in mathematics from Rutgers University in 1974. Other honors include being named recipient of the Presidential Award from SPIE, the International Society for Optical Engineering, being elected chair of the Society of Industrial and Applied Mathematics (SIAM) activity group on imaging science and having a paper accepted to the Proceedings of the National Academy of Science, which represents joint work with MDACC and Tampere. Dougherty also was named a Texas Engineering Experiment Station (TEES) Fellow at Texas A&M. He is the editor of several technical journals and has chaired a number of conferences.

Mark Ehsani
Dr. Mehrdad (Mark) Ehsani was given two Patent Awards by Texas A&M University’s Office of Technology Commercialization. Ehsani was given his two awards for his patents, “Geroter Apparatus for a Quasi-Isothermal Brayton Cycle Engine” (co-inventors:Mark Holtzapple and Matthew Whiteacre) and “System and Method for Inductance Based Position Encoding Sensorless SRM Drives.”

Ehsani, a Robert M. Kennedy ’26 Professor, joined the department in 1981. He has served as a consultant to many companies and government agencies since 1981, has served as director for the Texas Applied Power Electronics Center in the department from 1992 to 1999 and has served as the...
director of the Advanced Vehicle Systems Research Program in the department since 1999. Widely recognized in the electrical engineering industry, Ehsani’s research focuses on power electronics, motor drives and hybrid vehicles and their control systems. He has written or contributed to 11 books, written more than 300 journal and conference papers and holds 23 United States and European Commission patents. Ehsani was the recipient of the Prize Paper Awards in Static Power Converter and motor drives at the IEEE-Industry Applications Society 1985, 1987 and 1992 annual meetings, as well as numerous other honors and recognitions. Other honors include being named Outstanding Young Engineer of the Year by the Brazos chapter of the Texas Society of Professional Engineers. Ehsani was elected as a Fellow of IEEE in 1986 and being selected for the IEEE Vehicular Society 2001 Avant Garde Award. Ehsani also was selected for a BP Amoco Faculty Award for Teaching Excellence and the IEEE Undergraduate Teaching Award, was named the Halliburton Professor in the Dwight Look College of Engineering at Texas A&M and he was named the Dresser Industries Professor in the Look College. In 2001 he was selected as the Ruth & William Neely ’52 Dow Chemical Faculty Fellow of the Look College. A registered professional engineer in Texas, Ehsani received his bachelor’s and master’s degrees from the University of Texas at Austin and his doctorate from the University of Wisconsin-Madison, all in electrical engineering.

Laszlo Kish
Dr. Laszlo Kish, a professor in the department, and his collaborators discussed their recent work in secure communication during a plenary talk at the Fourth Annual SPIE Fluctuations and Noise Symposium May 20-24 in Florence, Italy. The talk was featured as Top News in the Technology Section of the New Scientist magazine (by Jason D. Palmer, on May 23, 2007).

Kish proposed that a simple pair of resistors on the ends of a communications wire such as a phone or computer line could keep eavesdroppers from intercepting secret messages. Added electronic disturbances (called “noise”) or the natural thermal noise produced by the resistors (called Johnson noise) makes the scheme function, keeping the message unconditionally secure provided the bandwidth of the noise is kept sufficiently narrow. Kish calls this the Kirchhoff-Loop-Johnson-(like)-Noise (KLJN) cipher, which he and his collaborators — Robert Mingesz and Zoltan Gingl of the University of Szeged (Hungary) — have designed, built and tested with the assistance of a Texas A&M Information Technology Task Force grant. The KLJN device can now be installed as a computer card similar to Ethernet network cards and has performed with 99.98 percent fidelity up to a range of 2,000 kilometers (1,250 miles) through a model line. This distance is about 12 times longer than the achieved range of direct quantum communication (160 km), Kish said.

Kish joined the department in 2001. His interest areas are in electronics, new measuring principles and new sensors, non-invasive probing, nanomaterials, devices, processing, and models of the underlying physics, fluctuation spectroscopy for chemical sensors, the constructive role of noise and fluctuations in physics and biology, including stochastic resonance, the physics and diagnostic application of noise and fluctuation, information transfer in biological systems and noise, quality, aging and degradation of films and electronic devices. He received his Physicist Diploma and Doctoral Degree in Solid State Physics from Attila Jozsef University (JATE) in Hungary, in 1980 and 1984 respectively and his Docent in Solid State Physics (habilitation) from Uppsala University in Sweden in 1994. Kish also directs the Fluctuation and Noise Exploitation Laboratory in the department.

Deepa Kundur
Dr. Deepa Kundur was given an Association of Former Students College Level Award for her teaching excellence.

Kundur, an associate professor, joined the department in 2003. Before joining Texas A&M, she was an assistant professor with the Edward S. Rogers Sr Department of Electrical and Computer Engineering at the University of Toronto, where she held the title of Bell Canada Junior Chair-holder in Multimedia and was recently the recipient of the 2002 Gordon Stemon Teaching of Design Award and the 2002 Best Electrical Engineering Professor Award (Spring), presented by the ECE Club. From 1999-2001 Kundur was an Associate of the Nortel Institute in Telecommunications where she conducted research in the area of multimedia security and worked on enabling networking technologies for enhanced digital rights management (DRM). In 2002, she was a member of the Bell University Labs in Toronto, where she was involved in research focusing on mobile DRM. Kundur’s research interests include multimedia security, digital rights management, digital watermarking, video encryption, steganography, sensor network security, nonlinear dynamic information processing algorithms, hardware implementation of communication algorithms and sensor fusion.

Christi Madsen
Dr. Christi Madsen was named a Shell Fellow during the annual Spring Meeting by the Dwight Look College of Engineering. Madsen joined the department in 2005 as a professor. Previously she was a Distinguished Member of the technical staff in the Integrated Photonics Research Department at Lucent Technologies, Bell Laboratories. She received her Ph.D. from Rutgers University, New Brunswick, NJ in 1996, her M.S. from Stanford University, Stanford, CA in 1987 and her B.S. from the University of Texas at Austin in 1986, all in electrical engineering.

Madsen’s research interests are in Digital filter and signal processing theory applied to optical filters and optical signal processing, adaptive filters for mitigating intersymbol interference such as from chromatic and polarization mode dispersion (PMD), novel integrated optical devices, polarization controllers and polarimeters, wavelength-dependent modulators, solid-state variable optical delay lines, real-time PMD measurement, optical signal quality monitoring, channel estimation for control of adaptive optical filters, and applications for ring resonators, allpass and subband optical filters. She is a Member of the Optical Society of America and an IEEE LEOS Distinguished Lecturer 2004-2005. The faculty fellows program recognizes the significant contributions faculty members have made to the Texas A&M engineering program.

Scott Miller
Dr. Scott Miller received an Outstanding Faculty Award from the department for outstanding work performance.

Miller, a professor for the department, received his B.S., M.S. and Ph.D. degrees in electrical engineering from the University of California at San Diego (UCSD) in 1985, 1986 and 1988 respectively. In August 1998, he joined the department at Texas A&M. Miller has taught courses at both the graduate and undergraduate level on such topics as signals and systems, engineering mathematics, digital and analog communications, probability and random processes, coding, information theory, spread spectrum, detection and estimation theory, wireless communications, queuing theory and communication networks. He has published more than 75 refereed journal and conference papers on a variety of topics in the area of digital communication theory. Miller is a senior member of the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and an editor for the IEEE Transactions on Communications. He also was named a Eugene E. Webb ’43 Faculty Fellow by the Dwight Look College of Engineering.

Robert Nevels
Dr. Robert Nevels was elected to the rank of Fellow of IEEE “for contributions to electromagnetic field theory for quantum mechanics.” The IEEE Directory describes the honor as “one of unusual professional distinction conferred only by the [IEEE] Board of Directors upon a person of extraordinary qualifications and experience.” Nevels, a professor for the department, began working at Texas A&M in 1969.
Russell also won first place in the 2006 “Picture Research” photo contest, sponsored by Texas A&M’s Office of the Vice President for Research. Russell’s entry, “Unsafe at any speed,” placed first in the Research Technology category. Amateur photographers among the faculty, staff and students at Texas A&M as well as the A&M System components in the Research Valley were invited to submit photos that highlighted research at the university.

Russell is a member of the National Academy of Engineering and Regents Professor of the Texas A&M University System. He holds the J. W. Runyon Professorship in the Department of Electrical and Computer Engineering and is a Fellow of IEEE, NSPE and IEE.

Weiping Shi

Dr. Weiping Shi, along with three ECE students, Ying Zhou, Zhuo Li and Yuxin Tian and Frank Liu from the IBM Austin Research Lab, won the Best Paper Award at the 12th Asia and South Pacific Design Automation Conference (ASP-DAC). Shi and his colleague’s paper, titled “A New Methodology for Interconnect Parasitics Extraction Considering Photo-Lithography Effects,” was one of two papers receiving the award out 408 entries. The ASP-DAC 2007 is the 12th in a series of annual international conferences on VLSI design automation. Shi, an associate professor for the department, began working for Texas A&M in 2000. His research interests include computer-aided design of Very Large Scale Integration VLSI CAD, including physical design, parasitic extraction, fault diagnosis, variational analysis and process synthesis. Previous honors include an IBM Faculty Award, a best paper award from the Design Automation Conference and a research initiation award from the NSF. He received his bachelors and masters degree from Xian Jiaotong University in China and his Ph.D. from the University of Illinois at Urbana-Champaign.

Hamid Toliyat

Dr. Hamid Toliyat, professor in the department, along with Dr. Sabhasis Nandi and Xiaodong Li, were named winners of IEEE’s Power Engineering Society (PES) Prize Paper Award for their paper titled “Condition Monitoring and Fault Diagnosis of Electrical Motors – A Review.” He will receive his award and recognition at the General PES Meeting in Tampa. The IEEE PES awards only 14 society-level awards each year. The recipients of these awards are selected through an extensive and competitive process.

Singh, former department head and Regents Professor, is an IEEE Fellow and is internationally recognized as an expert on the reliability and security of power systems. He began working at Texas A&M in 1978. As department head, Singh helped with the continued improvement of the graduate program, helped obtain two competitive grants worth $1.2 million to enhance the quality and quantity of the department’s undergraduates as well as a $5.1 million gift from Texas Instruments to expand and enhance the departments’ analog design and research program. During his tenure he also helped with building the faculty strength of the computer engineering program and quadrupled the department’s endowed chairs and professorships from four to 16, as well as initiating the allocation of 19 new faculty positions through the university’s faculty reinvestment plan.

Toliyat also was named a faculty fellow of the Dwight Look College of Engineering at their annual fall meeting. “The faculty fellows program recognizes the significant contributions faculty members have made to the Texas A&M engineering program,” said Dr. G. Kemble Bennett, vice chancellor and dean of engineering.

Toliyat also was given a Patent Award by Texas A&M University’s Office of Technology Commercialization in recognition of individual presenters employed by the Texas A&M University System whose inventions were granted patent protection from the United States Patent & Trademark Office during the previous calendar year.

Toliyat was given his award for his patent, “Unipolar Drive Topology for Permanent Magnet Brushless DC Motors and Switched Reluctance Motors.” Toliyat, a professor for the department, began working at Texas A&M in 1994. His research interests include analysis and design of electrical machines, variable speed drives for traction and propulsion applications, fault diagnosis of electric machinery and sensorless variable speed drives.

He received his bachelor’s degree from Sharif University of Technology in Iran, his master's degree from West Virginia University and his doctoral degree from the University of Wisconsin-Madison. He is an editor of the IEEE Transactions on Energy Conversion, and was an associate editor of the IEEE Transactions on Power Electronics. He also is chairman of the IEEE IAS Electric Machines Committee and is a member of Sigma Xi. Toliyat also is senior member of the Power Engineering Industrial Applications, Industrial Electronics, Power Electronics Societies of the IEEE. Other honors include the Cyril G. Veinott Electromechanical Energy Conversion Award, the Association of Former Students College Level Award, the E.D. Brockett Professorship, the Select Young Faculty and the Select Young Investigator Awards from TEES, the Space Act Award from the NASA Inventions and Contributions Board and he was selected as a Webb Faculty Fellow.
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making waves

Haiyan Wang
Dr. Haiyan Wang, assistant professor in the department was among 21 scientists in the US awarded an Air Force Young Investigator’s Program (YIP) award from the Air Force Office of Scientific Research (AFOSR). The newly instituted YIP award is open to scientists and engineers at research institutions across the United States. It supports scientists and engineers who have received Ph.D. or equivalent degrees in the last five years with an objective of fostering creative basic research in science and engineering, enhancing early career development of outstanding young investigators and increasing opportunities for the young investigators to recognize the Air Force mission and the related challenges in science and engineering. Wang’s YIP research will focus on nanoengineered YBCO coated conductors for flux pinning enhancements.

Wang joined the department in the solid state electronics area in 2006. She received her BS degree from Nanchang University (Nanchang, China) in 1998 and her MS degree from the Institute of Metal Research (Shenyang, China) in 1999. She received her Ph.D. degree in materials science and engineering at North Carolina State University (Raleigh, NC) in December 2002. Before she joined the department, she worked at Los Alamos National Lab. Wang’s research interests lie in the area of functional oxide and nitride thin films for microelectronics, optoelectronics, high temperature superconductors, magnetic and structural applications. Her expertise is thin film growth and structural characterizations. Other awards to her credit include being the winner of the TMS Young Leader Award in 2005 and MRS Graduate Student Award in 2001.

Mark Weichold
Dr. Mark Weichold, professor for the department and former Associate Provost for undergraduate programs, received a Distinguished Achievement Award from the Association of Former Students for Administration. Weichold, who has been with the department since 1978, has expertise and three patents related to integrated circuit device design and fabrication. He received his B.S., M.S. and Ph.D. degrees in electrical engineering from Texas A&M.

Weichold also was speaker of the Faculty Senate in 1994-95, serving on a number of university committees and receiving several awards for teaching and advising. Other honors include being presented the International Excellence Award from the TAMU International Programs Office and earning the TAMU GSC Kunze Award for Outstanding Graduate Advising from the TAMU Graduate Student Council.

Steve Wright
Dr. Steve Wright was inducted as a Fellow of the American Institute for Medical and Biological Engineering (AIMBE).

Wright is a professor in the department, with a joint appointment to the Department of Biomedical Engineering.

He also was appointed the Royce E. Wisenbaker Professorship II in Engineering and was given an Outstanding Faculty Award by the department for continuous endeavors towards excellence and promotion of the continued success of the department.

Wright’s research interests are in the areas of magnetic resonance imaging (MRI), antenna theory and electromagnetics. He directs the department’s Magnetic Resonance Systems Lab, which aims to develop instrumentation and techniques to improve magnetic resonance imaging and to train students in MRI, radio frequency, applied electromagnetics, and image and signal processing.

Prior to joining A&M, Wright was a research engineer for magnetic resonance imaging at Saint Francis Medical Center in Peoria, Ill., and an adjunct assistant professor of electrical engineering at the University of Illinois at Urbana-Champaign.

Wright also is a member of the International Society for Magnetic Resonance in Medicine and the Institute of Electrical and Electronics Engineers Engineering in Medicine and Biology Society. He earned his Ph.D. from the University of Illinois at Urbana-Champaign.

Zixiang Xiong
Dr. Zixiang Xiong was elected to the rank of Fellow of IEEE “for contributions to source and channel coding.”

Xiong, along with his ECE students, Angelos Liveris and Samuel Cheng, also won the Signal Processing Magazine Best Paper Award from the IEEE Signal Processing Society for their paper titled “Distributed source coding for sensor networks.”

Xiong, an associate professor, began working in the department in 1999 after working at the University of Hawaii as an assistant professor. His research interests include image and video coding, adaptive quantization and fast algorithms, digital watermarking, joint source channel coding, internet video, lossless medical image compression, image recovery, image rendering and color quantization.

Other recent honors include being named TEES Fellow and a TEES Select Young Faculty, receiving the Young Investigator Award from the Office of Naval Research (ONR) and the United States Army Research Office (ARO) and the CAREER Award from the National Science Foundation.

Xiong received his bachelor’s degree at Wuhan University in P.R. China, his master’s degrees at the University of Kansas and the Illinois Institute of Technology and his doctoral degree from the University of Illinois at Urbana-Champaign in 1996.

Xi Zhang
Dr. Xi Zhang received a TEES Select Young Faculty Award from the College of Engineering at Texas A&M.

Zhang began working for the department in 2002. He received his bachelor’s degree from Xidian University in Xi’an, China in 1982, his master’s degrees from Xidian University in 1984 and Lehigh University in 1995 and his Ph.D. from The University of Michigan in 2001. Zhang’s interests include networking and communication systems involving design, modeling, performance analysis and implementation of flow/congestion and error control algorithms and protocols, with emphases on flow control and support Quality of Service (QoS) guarantees for video/audio and data multicast over the internet with wired/wireless links/networks.

Zhang’s interests include networking and communication systems involving design, modeling, performance analysis and implementation of flow/congestion and error control algorithms and protocols, with emphases on flow control and supporting Quality of Service (QoS) guarantees for video/audio and data multicast over the internet with wired/wireless links/networks. Zixiang Xiong was elected to the rank of Fellow of IEEE “for contributions to source and channel coding.”

Recent honors include an NSF CAREER Award, an IEEE Grant Award of GLOBECOM ’99, an IEEE Grant Award of INFOCOM ’97, an AT&T Bell Labs Graduate Fellowship, a National Science Foundation (NSF) Graduate Fellowship, an Overseas Telecommunications Commission (OTC) Research Fellowship, an Excellent Instructor Award from the Beijing Information Technology Institute and First Prize of Scientific Invention from the Ministry of Electronics Industry of China.

Deana Totzke
Deana Totzke received an Outstanding Staff Award from the department. Recipients of these awards are nominated by their fellow co-workers for their outstanding work performance. The objective of these awards is to recognize support staff and faculty members for their continuous endeavors towards excellence and promotion of the continued success of the department.

Totzke joined the department in 1999 as the information representative. Prior to that, she was a police beat reporter for the Bryan-College Station Eagle and a reporter for the Stephenville Empire-Tribune. She received her B.A. in English from Texas A&M University in 1994.

Gayle Travis
Gayle Travis received an Outstanding Staff Award from the department. Recipients of these awards are nominated by their fellow co-workers for their outstanding work performance. The objective of these awards is to recognize support staff and faculty members for their continuous endeavors towards excellence and promotion of the continued success of the department.

Travis has been with the department nearly three years. She advanced from a Clerk III position to her current position as administrative secretary. Previously she held the position of administrative secretary at the Brenham Independent School District in the Child Nutrition Program of the Food Service Department for 14 years.
ECE graduate student receives first place paper award at NAPS

Recently, a graduate student in the Department of Electrical and Computer Engineering received a first place paper award at the North American Power Symposium (NAPS) 2006. Fabian M. Uriarte, whose advisor is Dr. Karen Butler-Purry, took first place for best paper and presentation at the national conference that draws graduate and undergraduate students from the United States and abroad. The students in this conference are researching power systems in electrical engineering. Each paper was graded by four judges on the following 11 aspects: organization; logical development; poise, eye contact; correct use of English; clarity and directness; original, elegant; apparent technical and factual accuracy and grasp of the subject; well supported analytically and/or experimentally; use of graphic aids; use of examples; and paper discussion.

Uriarte won $1500 for taking the first place prize for his paper titled “Diakoptics in Shipboard Power System Simulation”. “It’s been an honor to represent Texas A&M University at a national conference as such,” Uriarte said. Other recent honors for Uriarte include winning 2nd place in a student paper contest at the prestigious IEEE Transmission & Distribution (T&D) Conference & Exposition and being awarded a travel grant to the IEEE Ph.D. Research in Micro-Electronics, (PRIME) conference.

The North American Power Symposium is a forum for students, faculty and professional engineers for presenting ideas and innovative developments in the area of Electric Power. For more information about the conference, visit http://www.engr.siu.edu/elec/naps2006/index.htm.

ECE students win prizes at SRW

Five students in the Department of Electrical and Computer Engineering received prizes during Texas A&M University’s Student Research Week for either their oral or paper presentations. Ayorinde Akinnikawe, a masters student under Dr. Karen Butler-Purry, won 1st Place in his session for his research titled “Traffic Congestion: Electrification the way out.” Mohammad Asad Chaudhry, a Ph.D. student of Dr. Alex Sprintson, won 3rd place in his session for his research titled “Applications of Network Coding in Distributed Computing.” Babak Faryabi, a Ph.D. student of Drs. Aniruddha Datta and Ed Dougherty, won 3rd place in his session for his research titled “Diakoptics in Shipboard Power System Simulation.” Xiaofan Qiu, a senior student of Dr. Jose Silva-Martinez, won 3rd place in his session for his research titled “Analysis and Characterization of a Programmable Low-Dropout Regulator.” And Golnaz Vahedi, a Ph.D. student of Dr. Ed Dougherty, won 2nd place in her session for her research titled “Inference Of Boolean Networks Under Constraint On Bidirectional Gene Relationships.”

The mission of Student Research Week (SRW) is to recognize and celebrate student research at Texas A&M University by providing an opportunity for students to present research and to foster an environment for students, faculty, staff and administration to learn about the research occurring at Texas A&M University and the resources available on campus. Last year more than 500 students participated.

The goal is to promote understanding and communication about research among disciplines, as well as to the public, thereby promoting a positive university research environment. Student Research Week exemplifies Texas A&M University’s long-standing commitment to providing educational research opportunities for students at all levels. It is one of the largest university-wide student led research week programs in the nation.

ECE Student wins a Selected Professions Engineering Dissertation Fellowship from AAUW

Unoma Ndili Okorafor, a graduate student in the Department of Electrical and Computer Engineering, won a Selected Professions Engineering Dissertation Fellowship from The American Association of University Women (AAUW).

The Selected Professions Engineering Dissertation Fellowship is awarded for the writing of the Ph.D. dissertation in engineering to American women who have achieved or shown promise of achieving distinction in their scholarly work. The Fellowships are intended to cover academic and living expenses while a fellow pursues her dissertation project in fulfillment of her doctoral degree requirements. To qualify for the fellowship, the fellow must have completed all coursework, passed all preliminary exams and had the dissertation research proposal approved. Consideration is also given to a fellow’s academic record, recommendations, publications, scope/complexity/innovation of the project, feasibility of research plan and proposed time schedule, as well as potential of the fellow to make a significant future contribution to the field and to women in the discipline.

Okorafor is currently a Ph.D. Candidate at the electrical and computer engineering department under the advisement of Dr. Karen Butler-Purry. She received the M.Sc. degree in electrical and computer engineering department from Rice University, Houston Texas in May 2001, and the B.Sc in electrical engineering from the University of Lagos, Nigeria in 1998. Okorafor’s research interests include secure routing, information processing and connectivity analysis for directional and broadband wireless sensor networks. She is also a recipient of the Sloan Foundation scholarship for minority Ph.D. students, and has published a number of technical papers. She has a strong interest in mentoring women and minority students in Engineering and technology related fields. Okorafor also is a student member of IEEE, SPIE, NSBE and SWE.

For more than 125 years, AAUW has been one of the nation's leading voices promoting education and equity for women and girls. Through its nationwide network, AAUW opens doors for women and girls and influences public debate on critical social issues such as education, civil rights and workplace equity. AAUW sponsors community programs; publishes groundbreaking research on women, girls and education; is one of the world’s largest sources of funding exclusively for graduate women; and fights sex discrimination in education. Its mission is to promote equity for all women and girls, lifelong education and positive societal change. The AAUW Educational Foundation provides funds to advance education, research and self-development for women and to foster equity and positive societal change.
ECE Graduate Student Receives Competitive Scholarship from AACE International

Lingfeng Wang, a Ph.D student of Dr. Chanan Singh at Texas A&M University, received a competitive academic scholarship from the Association for the Advancement of Cost Engineering (AACE International) for his interdisciplinary research in electric power systems. His research topic is concerned with the multi-criteria design for power system operations and planning in terms of reliability, cost and environmental impact. This kind of multidisciplinary design requires the full comprehension of cost estimation, cost management, planning and scheduling and so forth, which fall into the domain of cost engineering.

Since 1956, AACE International has been the leading-edge professional society for cost estimators, cost engineers, schedulers, project managers and project control specialists. It is the largest organization serving the entire spectrum of cost management professionals, and it is dedicated to promoting the planning and management of cost and schedules. To promote this objective, AACE International awards academic scholarships to full-time students pursuing a related degree in engineering, construction management, building construction, computer sciences, business, quantity surveying, information technology and other related degrees. The cost engineering profession uses the process of cost management to identify and define those areas of business in which the discipline of cost engineering and cost management principles may be applied to plan and control resources, assets, costs, profitability and risk. The major elements of the cost engineering discipline include estimating, project/product controls, planning and scheduling, business sciences and project/product management.

Wang is currently pursuing his Ph.D degree in the electrical and computer engineering department at Texas A&M. He is the author or co-author of nearly 100 technical publications including five research monographs, and is the recipient of many awards for his academic and research excellence, including the prestigious Walter J. Karplus Summer Research Grant from the IEEE Computational Intelligence Society and the Excellent Overseas Student Award from Chinese Ministry of Education. Wang also is the best paper awardee of IEEE AUTOTESTCON'06, and an honoree of Who's Who Among Students in American Universities and Colleges. He now serves as a member of Educational Activities Committee of IEEE Computational Intelligence Society, and a regional representative of IEEE Instrumentation and Measurement Society. He also serves as a member of the organizing committee and technical/international program committee for many international conferences. His major research interests include computational intelligence, electric power systems, industrial informatics and autonomous agents.

ECE undergraduate students win TI Analog Design Contest

Recently, a team of ECEN 405 undergraduate students won the Texas Instruments (TI) Analog Design Contest at Texas A&M University.

Team BAAM, which consisted of Brian Thomas, Alan Letz, Andrew Schaper and Morgan May, originally submitted their design as a submission for an internal robotics design competition in the Department of Electrical and Computer Engineering 405 class, in which student groups had to create an autonomous mobile vehicle that could navigate an obstacle-riddled path to two waypoints marked by audio beacons. It won both the internal robotics competition and the "Best Senior Design Project," in addition to the $3000 TI prize.

The TI contest is open to design teams having a minimum of three team members. All design entries must be implemented using three different TI analog devices from the following categories: (i) data converters; (ii) amplifiers; (iii) power management devices; (iv) interface devices; (v) MSP430 (MCU+ADC); (iv) switches; (vii) RF devices; (viii) temperature sensors; and (ix) clocks and timers, (x) comparators.

Designs were judged on the following equally weighted criteria: (i) originality of design, (ii) quality of design, (iii) creativity of design, (iv) level of engineering analysis and (v) written description of how each TI analog integrated circuit benefited the overall design.

Team BAAM designed and built an autonomous robot capable of sequentially navigating to multiple pulsating audio beacons at specified frequencies so it could avoid contact with obstacles in its path and navigate around the obstacles to achieve its objective.

According to their summary, Team BAAM designed and built analog audio filtering elements, combined with an analog and digital phase detection apparatus enabling realtime processing of all signals using an inexpensive PIC microcontroller so it could use a timing-based approach, rather than an amplitude based approach, to track each beacon.

In order to detect obstacles in the robot's path, an array of three ultrasonic distance sensing devices has been implemented. This array is utilized to support efficient turning and avoidance algorithms as the robot navigates through its environment.

The majority of the computation takes place within the PIC, which has been programmed using PIC-BASIC PRO. The code is designed to be modular, with specialized subroutines that implement data acquisition, data processing, or actuation of the motors.

ECE graduate student named Best ECE Professor

Nebu John Mathai, a Canadian doctoral student in the Department of Electrical and Computer Engineering, was honored at the IEEE Student banquet as the “Best Electrical Engineering Professor” along with Dr. B. Don Russell. Mathai, who has been lecturing undergraduate courses in the ECE Department for the last year while conducting his doctoral studies, has received this award rarely bestowed upon graduate student lecturers.

Dr. Deepa Kundur, Mathai’s Ph.D. co-advisor, said, “Nebu is a rare individual who can motivate student learning through an excellent balance of engineering rigor, practical expertise and humor.”

Mathai is currently pursuing his doctoral research with Drs. Takis Zourntos and Kundur in the area of autonomous systems. Attracted by both the research and teaching aspects of an academic career, his long term aspiration is to become a professor.
Recently a graduate student in the Department of Electrical and Computer Engineering received a prestigious fellowship from the Institute of Electrical and Electronics Engineers, Inc., (IEEE) Solid State Circuits Society. Chinmaya Mishra, a graduate student under the guidance of Dr. Edgar Sánchez-Sinencio, is the first to receive the fellowship since 2002, since The IEEE Solid-State Circuits Society is reinstating the predoctoral fellowship, which ran from 1983 to 2002, but had been suspended from 2003 to 2005. “We are very happy and extremely proud of this highly competitive IEEE distinction,” said Sánchez-Sinencio, Director of the Analog and Mixed Signal Center. “Many world wide graduate students from top universities all over the world compete for this unique distinction.”

To compete for the fellowship, applicants must have completed at least one year of graduate study, be in a Ph.D. program in the area of solid-state circuits and be a member of IEEE. The award was based on academic record and promise, the graduate study program and need. It includes a stipend of $15,000, tuition and fees up to a maximum of $8,000 and a grant of $2,000 to the student’s department.

A certificate of the award was presented to Mishra in a ceremony during the plenary session of the next International Solid-State Circuits Conference (ISSCC) at the San Francisco Marriott in February, 2007.

Mishra received the B.E. (Hons.) degree in electrical and electronics engineering (with distinction) from Birla Institute of Technology and Science, Pilani, India in 2002 and the M.S. degree in electrical engineering from Texas A&M University in 2004. Since the fall of 2004, he has been working towards his Ph.D. degree under Sanchez-Sinencio in the Analog and Mixed Signal Center at Texas A&M.

In the spring of 2002 he was a technical intern in the DSP Design Group at Texas Instruments Inc., Bangalore, India where he worked on formal verification of hardware circuits. In the summer of 2005 he was a RF IC Design Engineer (intern) at WiQuest Communications Inc, Allen, Texas where he worked on the design of a CMOS frequency synthesizer for an ultra-wideband (UWB) radio.

Since February 2006 Mishra has been with the Communication Circuits and Systems Department at the IBM T. J. Watson Research Center, Yorktown Heights, where he is working on the design of millimeter wave integrated circuits.

Mishra received the Merit Scholarship in Birla Institute of Technology and Science, Pilani for being among the top 10 graduating students in the entire university for the class of 2002. His current research interests include RF and millimeter wave integrated circuit design for high-data rate broadband radios.