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Honors Banquet Culminates with \$1 Million Gift Announcement

Michael Crabtree, President, Chief Executive Officer and Chairman of the Board of IdleAire Technologies Corporation, announced at the UT College of Engineering's 2005-2006 Honors Banquet on April 11th a gift of \$1 million to the university from the founders of CTI Molecular Imaging to establish a new CTI Chair in the Department of Electrical and Computer Engineering (ECE).

Crabtree, who received his bachelor's and master's degrees from UT, joined fellow alumni and former CTI founding partners Dr. Ronald Nutt, Kelly Milam and Dr. Terry Douglass in providing the funding for the new chair. The other three CTI founders were present at the event for the announcement.

Crabtree was attending the Honors Banquet to accept the Nathan W. Dougherty Award, the college's most prestigious recognition. In his comments about the gift, Crabtree said that the chair was established to attract, retain and recruit world-class professors to the ECE Department.

"CTI's name has stood strong in the Knoxville community and the PET (positron emission tomography) medical diagnostic imaging industry from 1983 until 2005," Crabtree said. "It is our hope that this CTI Chair, together with Dr. Min Kao's \$17.5 million gift to the Department of Electrical and Computer Engineering, will be cornerstones paving the way for a new standard of excellence for the University of Tennessee's College of Engineering."

This year's surprise announcement by Crabtree was the second time that the college received a \$1 million donation at the Honors Banquet. At the 2004 event, Nutt made a \$1 million challenge gift to the COE.

Crabtree began his career in engineering as a UT co-op student in 1969 at NASA's Kennedy Space Center, where he worked on the Saturn-Apollo launch team for the Apollo 12, 13, 14 and 16 space missions. Almost three decades later, Crabtree is at the helm of IdleAire.

IdleAire develops HVAC technology that long-haul truck drivers can attach to their vehicles at specially equipped truck stops as an alternative to idling their heavy-duty diesel engines. The components provide air-conditioning and heating, electricity, Internet access, satellite TV, movies and long-distance telephone service to the drivers.

The IdleAire system has been highly praised by the trucking industry, government agencies and environmentalists for its many benefits. Since

drivers are able rest more comfortably, high turnover rates are reduced. Companies can also administer remote training through high-speed Internet connections, improving highway safety. Diesel exhaust fumes and other atmospheric pollutants are greatly diminished and precious fossil fuel is conserved by the elimination of truck engine idling time.

The company closed on \$320 million of new funding in late 2005, which will provide substantial growth capital. IdleAire is projected to add over 210 sites to the existing 24 sites within 15 months, and is currently planning to expand into 800-1,200 locations by the end of 2010.

In the 1990s, Crabtree served as President and Chief Operating Officer of the Southeast Group



COE alumni and former CTI founding partners (left to right) Kelly Milam, Dr. Ronald Nutt, Michael Crabtree and Dr. Terry Douglass.

of OneMain.com, a national Internet Service Provider (ISP). Crabtree was also a founding shareholder and member of the company's board of directors.

Continued on page 2

From the Dean's Desk



Our focus in this issue of *Tennessee Engineer* is on student quality and diversity.

The positive effects of the State of Tennessee HOPE Scholarship continue, with larger enrollments and marked increases in the number of high-achieving students choosing to attend UT and major in engineering. Many freshmen students also had impressive high school GPAs, with a considerable number showing averages of 4.0.

The COE entering freshmen had an overall ACT score ranking of 27.8. The average ACT math score for engineering students was an impressive 28.

The diversity of UT students is another notable change in the fall freshman class. Minorities composed almost 16% of entering freshmen, an increase of 1% over last year, and the university has also enrolled 26% more Hispanic and 16% more Asian freshmen.

The college has steadily been growing the underrepresented student population enrolled in engineering programs for over three decades, beginning with early efforts through the Minority Engineering Scholarship Program (MESP), which was re-named the Diversity Engineering Scholarship Program (DESP) in 1999.

Our goals to increase the diversity of our students, both graduate and undergraduate,

were greatly enhanced this year through the establishment of the Pipeline Engineering Diversity Program. Funded through a Department of Energy grant, the Pipeline offers a comprehensive approach to engineering education.

The Pipeline program, along with the Office of Engineering Diversity Programs (EDP) and the state-wide Tennessee Alliance for Minority Participation (TLSAMP) program all function under the direction of James Pippin. The college was honored to welcome Jim back in January after he spent almost two years of service as a Command Sergeant Major with the 278th National Guard Unit in Iraq.

While it is exciting to see these new developments with our student body, we still have other areas that need improvement. I am currently working with the associate deans and department heads to improve our graduation rates. We also need to improve our recruiting efforts for graduate students.

We will continue to work hard to improve our national rankings, our services to students and constituents and our value as an economic partner to the state and the region.

We appreciate your interest in the College of Engineering. Please direct any comments to coe@utk.edu.



Way Kuo
Dean of Engineering and
University Distinguished Professor

Honors Banquet *(continued from page 1)*

The COE Honors Banquet, sponsored by Eastman Chemical Company for 13 years, is held annually to recognize outstanding faculty, staff and students.

Keynote speaker was Dr. Gregory O. Nelson, Executive Vice President of Eastman Chemical Company. Nelson's speech centered on the theme of building the future, challenging the audience to pursue what he considered to be two of the most important motivators of success: "perseverance and curiosity."

The recipients of this year's college-wide awards were acknowledged for their own dedication and enthusiasm in their academic and professional careers.

Dr. Edwin G. Burdette, of the Department of Civil and Environmental Engineering (CEE),



Keynote speaker Dr. Gregory O. Nelson (right), congratulates Sarah Elizabeth Kyker for earning the Eastman Chemical Company's Chemical Engineering Scholar Award.

was awarded this year's COE 2006 Teaching Fellow Award for his exceptional record of graduate and undergraduate teaching and strong performance in teaching-related service activities.

"I have taught at the college since 1961, just short of forever," Burdette said. "I enjoy what I do. Every semester, I get to teach a new group of people material I must have taught a million times, but I'm not just teaching the subject matter, I'm teaching the people. It's being in the classroom and getting to

know new individuals every semester that keeps me excited about teaching."

Dr. Robert E. Ford, of the Department of Industrial and Information Engineering (IIE), was named this year's Outstanding Faculty Advisor, for his performance of quality advising through availability and commitment to students.

The Allen & Hoshall Engineering Faculty Award for excellence in undergraduate teaching, research and advising was given to Dr. Hairong Qi, an ECE associate professor.

This year's Moses E. and Mayme Brooks Distinguished Professor Award for outstanding teaching was presented to two COE faculty members for demonstrating effectiveness in teaching and gaining distinction in engineering practice: Dr. Syed K. Islam and Dr. Dayakar Penumadu.

Islam has taught at UT since 1999 and is currently an associate professor in the ECE department.

Penumadu has been a professor in the CEE department since 2001. Penumadu began his career as a consulting engineer.

"I did not find the challenge I wanted related to the technical complexity of the task at hand. I wanted a career that is vibrant and dynamic, with diverse research topics spanning different disciplines. For me, teaching fulfilled these needs," Penumadu commented.

Dr. Donald W. Bouldin, a professor in the ECE department, received this year's Charles Edward Ferris Faculty Award for his distinguished record of research and teaching in the area of technology advancement and his involvement in the community.

Dr. Richard M. Bennett, a professor in the CEE department, received the Leon and Nancy Cole Superior Teaching Award for his outstanding teaching skills and the ability to motivate through effective advising and counseling.

Mrs. Jeanette L. Myers, an administrative assistant in the IIE department, received this year's Outstanding Support Staff Award for demonstrating professionalism and a positive attitude, initiative and the willingness to go the extra mile in her job responsibilities.

In addition to faculty and staff, many exceptional students were also honored. Two of these students, Hillary Holback and Jessica Hunt, received the Tau Beta Pi Awards for Outstanding Junior and Senior, respectively, for their distinguished scholarship and exemplary character as undergraduates in the field of engineering. Both are chemical engineering majors.

After receiving her B.S. in May, Hunt will start a position as a production engineer for ExxonMobil in Torrance, Calif.

Holback, who still has one year left of study, sees her future in research and development. She is currently considering pursuit of a M.S. and Ph.D. in chemical engineering or another science-related field following her graduation next May.

"My ultimate goal is a career in research and development," says Holback. "Additionally, I would like to mentor high school and/or college students, in the

same way that men and women have mentored me, to give students opportunities to cultivate awareness about their own career paths."

Additional honors and recognitions at the event included the COE departmental awards; the Chancellor's awards for Extraordinary Professional Promise and Extraordinary Academic

Achievement; the newly established Peter Barile Sr. Design Competition Scholarship Award; the COE 2006 Engineering Research Fellows recognitions; and the Engineers Day 2005 awards.

In addition to Nelson, other speakers for the event were student speaker Christopher Luke Stewart, a senior majoring in chemical engineering; faculty speaker Dr. Peter Liaw, Professor and Ivan Racheff Chair of Excellence in the Department of Materials Science and Engineering; and alumnus/individual donor speaker Ron Green, Chairman of ADVATECH LLC and a COE Board of Advisors member.

—Story by Megan McCarter

Contents

College Events	2
Faculty News	3
Research Notes	4
Student Focus	6
Alumni Profile	8
Development Notes	9
Alumni News	10
Honors & Awards	11
Calendar and Contact Info	12

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Alumnus Ron Green addressed this year's Honors Banquet and stressed the need for a strong national energy policy.

Faculty Focus

Dr. Larry Townsend

Dr. Larry Townsend, professor in nuclear engineering, is shooting for the moon—literally. In addition to his various other research efforts, Townsend is applying his work in space radiation protection and transport codes to NASA's Cosmic Ray Telescope for the Effects of Radiation (CRaTER) project team, part of the Lunar Reconnaissance Orbiter (LRO) spacecraft. The spacecraft's 12-month mission will launch in December 2008.



Dr. Larry Townsend (left) goes over some research data with one of his graduate students, Sirikul Indi Sriprisan.

CRaTER is one of six projects under development for LRO, which is the first of several planned robotic lunar missions to prepare for the return of humans to the moon. Collaborators for CRaTER include Boston University, Massachusetts Institute of Technology, UT, Aerospace Corporation and the Air Force Research Laboratory. Townsend, who is Measurements Team Leader of CRaTER, will investigate the effects of galactic cosmic rays on tissue-equivalent plastics experienced in a flight to the moon—more simply put, the effects of space radiation.

"I'm responsible for computational modeling of calibration runs and the radiation exposures expected during the actual mission. When the data are received from the mission, it will be partly my responsibility to analyze and interpret those data," said Townsend. "The project is going well. CRaTER's objectives include measuring and characterizing the radiation environment in the vicinity of the moon. The detectors we'll place on the spacecraft will be flying in polar orbits about 30 kilometers above the lunar surface."

Townsend is currently completing calculations modeling calibration runs to prepare for detector testing. "We have to submit our concept design review to NASA," explained Townsend. Micron Technology Inc. is producing the silicon chips for the detector, which will be built by MIT and the Aerospace Corporation.

Townsend became involved in space radiation research while working for NASA Langley Research Center. "I helped develop space radiation transport codes and interaction models. I've been conducting this type of research for about 25 years now," said Townsend. His codes examine how the radiation fields of these particles are altered as they pass through matter.

"This research is actually part of a consortium of institutions. UT is the lead with approximately \$2 million in funding. NASA internally spends another \$1 million. The University of Houston, Roanoke College, SID Inc. and Worcester Polytechnic Institute are also involved," said Townsend. "The project uses atomic and nuclear reaction models to describe how these particles change identities and other physical properties when interacting with spacecraft shielding and human tissue. Our goal is to devise methods of protection against radiation for humans and electronics while in space."

Townsend has also been involved in other research endeavors. With support from the Department of Energy and TVA, Townsend worked with NE professor Dr. Laurence Miller and NE research professor Dr. F. R. Mynatt to develop a method for mounting a Generation IV modular nuclear reactor on a barge for transportation from the Gulf of Mexico upstream to other locations on the Mississippi, Ohio and Tennessee River systems. "We developed a computer model of the layout and component sizes of steam plant components, such as turbines, condensers and generators, for actually generating electricity and worked with TVA to explore potential uses and limitations associated with transportation of modular reactor systems," explained Townsend.

Despite the time constraints that come with multiple projects and research interests, Townsend continues to enjoy teaching. "Interacting with the students is very important to me in my teaching," said Townsend. "I've taught nine or ten different courses in my time in the college, and I've helped develop or modify several courses. For example, we've made

Continued on page 4

New MSE and MABE Department Heads Named

Dean Way Kuo has named Dr. George Pharr as head of the Department of Materials Science and Engineering (MSE).

Pharr had been serving as interim department head since the resignation of the late Dr. Ray Buchanan, who died in January of 2006.

Pharr received his Ph.D. from Stanford University, and joined the COE faculty as a professor in the MSE department in 1998. He is also a UT/ORNL Collaborating Scientist.



Dr. George Pharr

During his career at UT, Pharr has been the recipient of numerous research and teaching awards, including the College of Engineering Research Fellow Award in 2003, 2004 and 2005; the Chancellor's Research and Creative Achievement Award in 2004; and the ISI Highly Cited in Materials Science Recognition in 2003.

Pharr is an internationally respected scholar and researcher in the areas of mechanical behavior of materials, nanoindentation and thin film mechanical properties.

"I am pleased to announce the appointment of Dr. Pharr as department head for the materials science and engineering," said Dr. Kuo. "I expect the MSE department to continue its forward momentum under his leadership."

Dr. William Hamel, a professor in mechanical engineering, has been named as the new head of the Department of Mechanical, Aerospace and Biomedical Engineering



Dr. William Hamel

(MABE). Hamel had been serving as interim department head since the previous interim head, Dr. Masood Parang, was appointed as Assistant Dean for Student Affairs for the COE in September, 2004.

Hamel has been recognized as an outstanding teacher and researcher, and his honors and awards include the 2004 Allen & Hoshall Engineering Faculty Award; 2003 and 1997 B. Ray Thompson Sr. Professorship Award; and the 2000 Moses E. and Mayme Brooks Distinguished Professor Award.

"Dr. Hamel has a long and distinguished record in the college as a teacher and a researcher," Kuo stated. "I am confident that the department will continue in a positive direction under his leadership."

New Scintillation Materials Research Center Exemplifies Research/Industry Partnership

On March 22, 2006, Dr. Loren Crabtree, Chancellor of UT-Knoxville, formally announced the establishment of the college's new Scintillation Materials Research Center (SMRC).

The center specializes in both the growth and characterization of scintillation materials, which are used in a variety of applications: medical imaging systems for detection of diseases such as cancer and Alzheimer's, homeland security inspection and monitoring equipment, energy exploration and basic science research—namely, high energy physics and neutron research, such as will be conducted at the Spallation Neutron Source, a multi-laboratory project funded by the U.S. Department of Energy that is currently underway at the Oak Ridge National Laboratory.

Chuck Melcher, director of the SMRC, stresses the importance of the center's labs for both the synthesis and characterization of scintillation materials.

"The more typical scenario is for one research group to specialize in growing crystals, while a second group, perhaps in a different part of the country, concentrates on characterizing the properties of the crystals. Then a third group may implement the crystals in radiation detection devices. Since there can be a significant time lag between each of these steps, it may take months for information about the crystal properties to get back to the researchers who grew the crystals," Melcher said. "We are fortunate to have all three of these elements gathered together in one research center, so that we have very quick feedback to guide our research in terms of the eventual applications—and we can close that loop a lot more quickly than is typically done."

The College of Engineering collaborated with Siemens Medical Solutions Molecular Imaging to establish the new, \$4 million center, located in the college's Science and Engineering Research Facility (SERF). The relationship between the college and Siemens was initiated through CTI Molecular Imaging Inc., a Knoxville-based company that was purchased by the Siemens Corporation in April of 2005.

CTI was founded in 1983 by four College of Engineering alumni, Terry Douglass (BS/EE '65; MS/EE '66; PhD/EE '68), James "Kelly" Milam (BS/EE '61, MS/EE '64), Michael Crabtree (BS/EE '73; MS/EE '75), and Ron Nutt (BS/EE '61; MS/EE '62; PhD/EE '69). CTI became internationally renowned for the development of Positron Emission Tomography (PET) scanners, which use scintillator crystals to aid in the early detection of cancer and many other diseases.

Scintillator crystals are an integral part of the scanner's design. The patient is injected with a radio-pharmaceutical ("tracer") which is metabolized by the body and simultaneously emits positrons. The positrons in turn produce gamma rays that are then absorbed by the scintillator crystals, stimulating the crystals to produce photons of light. The crystals are connected to photomultiplier tubes, which convert the photons into electrical signals that can be manipulated into an image of the designated area.

During the 1990s, Nutt worked with Dr. David Townsend, currently director of the Cancer Imaging and Tracer Development Research Institute in UT-Knoxville's Graduate School of Medicine, to develop CTI's most recent innovation, the PET/CT scanner. This device combines the strengths of the PET and CT scans to produce a scanner that takes faster, higher resolution images of areas containing possible malignancies. The clearer images allow for certainty in diagnosis and, therefore, earlier, more accurate treatment of cancer patients.

The device received the honor of *Time Magazine's* "Medical Invention of the Year" in 2000. This technology utilized LSO, a scintillator discovered

by Melcher in the early 1990s. The qualities of this crystal far surpassed those of sodium iodide and BGO for application in the field of nuclear medicine, the only two materials that had been widely utilized for this purpose up to that point. LSO is dense, durable and, with Melcher's development of a process for growing large single crystals, practical.

The discovery of practical scintillators is no easy task. A material may appear ideal under laboratory conditions, but if it is not stable, durable or capable of being grown in large quantities with uniform properties, it cannot be used commercially.

"This delicate process is almost an art more than a science," said Townsend.

The new Scintillation Materials Research Center will use resources provided by Siemens and the College of Engineering to not only identify and develop innovative materials, but also to envision potential commercial applications for these materials. Melcher and colleague Merry Spurrier, now a UT Research Associate, were with CTI for more than eight years each. Their unique backgrounds in both research and industry have broadened their perspective in approaching research.

"It's a very ripe area for research," said Nutt. "I see this expanding to include other companies and hopefully national laboratories. I believe the center will benefit the college and industry significantly."

Melcher and Spurrier are interested in working with faculty and students in the College of Engineering. "I would expect that a student working in this area would have a fairly easy time finding a job when they graduate," Melcher commented. "Scintillation materials are widely used in numerous commercial and industrial applications, and there is a demand for people with expertise in this area."

"One of the things I try to tell students is that this is something you can feel good about working on," added Spurrier. "You're helping sick people; you're helping homeland security by developing these materials."

—Story by Megan McCarter



Director Chuck Melcher fielded questions at the SMRC announcement event at UT's Science and Engineering Research Facility.

Faculty Focus (continued from page 3)

changes in the NE Fundamentals course in response to alumni feedback, bringing the Fortran computer language back to the curriculum in order to prepare graduates for the field."

Townsend finds the growth in the number of students in the nuclear engineering department exciting. "I know our undergraduate enrollment has at least doubled. About four years ago we had 24 students. Now I have nearly 40 students in one of my classes. We have distance education graduate students, and the incoming classes just keep getting larger." Townsend added that he supervised the research of nine graduate students last fall, and has seven this spring.

As for free time, Townsend travels often for pleasure and for his research. "I rarely have free time," he commented. "But I try to workout during the week and spend time with my wife, Sue. We did manage to see my son David and his sons, Caleb and Gabe, over the holidays." Townsend has two other grown children, Laura and Jeremy. His favorite place to travel is to Alaska. He has been there three times in the past nine months – once by land, once by sea, and most recently by air.

For more information about CRaTER, please visit <http://snebulos.mit.edu/projects/crater/>.

—Story by Betsy Saylor

BP Taps MRC for Industrial Assessments

In late 2004, a representative from British Petroleum (BP), on a mission to find universities or institutions dealing with reliability, contacted the College of Engineering (COE) Maintenance and Reliability Center (MRC) at the University of Tennessee. The company was seeking methods to improve the reliability of BP's directional drilling used in the production of oil and gas reserves. The result: a multi-departmental effort within the COE to significantly impact reliability and maintenance, and to reduce the direct maintenance and ensuing production costs of BP's directional drilling equipment.

A team composed of the COE Associate Dean for Research, MRC staff and faculty members from the Departments of Mechanical, Aerospace and Biomedical Engineering (MABE), Industrial and Information Engineering (IIE) and Nuclear Engineering (NE) created a presentation to address the needs of BP, illustrate the strengths of the COE and demonstrate how the college could provide a positive solution. Competing with 12 other entities, the UT team traveled to Houston, TX, to present what the COE could provide in terms of maintenance and reliability for specific directional drilling equipment.

"Obviously we did a good job because BP came back and asked us to work with them on this project," said Tom Byerley, director of the MRC. From this request grew a three-way project between BP, the COE team



MRC team members present results and recommendations from a recent assessment to representatives of BP and BHI.

and Baker-Hughes-Inteq (BHI), one of BP's suppliers. The COE team proceeded to conduct on-site assessments at several BHI and BP locations in the U.S. and in Europe, where they reviewed the process, starting with design, through engineering tests and manufacturing of the equipment, and concluding with repair and recycling of the tools. The team then reported to BP and BHI, offering a list of recommendations and opportunities for improvement, which Byerley believes will result in additional research contracts with UT. So far, reactions from BP and BHI have been positive.

"Our assessments have been very well accepted," said Byerley. "There is a lot of enthusiasm about what the COE team and others at UT can bring to the table."

Maintenance and reliability engineering is considered a business of urgent priority because of its focus on management systems, analysis techniques and advanced predictive and preventative technologies to identify, manage and eliminate failures that lead to losses in system functions.

"Very few universities deal with maintenance and reliability," said Byerley. "UT is unique. This is an exciting project because we have the opportunity to help someone really understand and better utilize their processes. There is also really great synergy within the multi-departmental team."

Dr. Wayne Davis, the COE's associate dean for research and technology, was instrumental in pulling together the multi-departmental team, and said the interdisciplinary nature of the program is an excellent example of teamwork within the college.

"The project is unique in that MRC was able to coordinate the development of a team from multiple departments to respond directly to BP and BHI's concerns," said Davis. The project also utilizes research and experience to address "real world" problems, while at the same time providing the opportunity for the faculty and students to stay current on issues in the field, enhancing the educational environment within the university.

"This is clearly a great example of a win-win situation for all participants," said Davis.

—Story by Amanda Womac

COE Remembers Faculty & Staff Members

The UT College of Engineering lost three notable professors and a longtime staff member in early 2006.

Dr. Raymond Buchanan, professor and head of the Department of Materials Science and Engineering, died on January 15th. Buchanan received his B.S., M.S. and Ph.D. degrees from Vanderbilt University, and joined the faculty of the Department of Materials Science and Engineering at UT in 1985. An outstanding professor and researcher, he was the recipient of numerous awards, including the UT Chancellor's Award for Research and Creative Achievement, the Brooks Distinguished Professor Award, the Allen and Hoshall Engineering Faculty Award, the Robert M. Condra Professorship and several outstanding teacher awards.

Buchanan was appointed as interim department for the MSE department in 2002 and was named as permanent department head in 2004.

"You could always depend on Ray to do the important tasks that needed to be done. And he was a great listener. He would listen carefully to your problem and then give you good, thoughtful advice. This allowed him to get along with everyone, while leading by example," said Dr. Joseph Spruell, MSE professor and former department head.

Another longtime MSE professor, Dr. William T. Becker, died on January 5. Becker received his Ph.D. from the University of Illinois, and was a faculty member at UT for over 35 years until his recent retirement. He served as the faculty sponsor for the student chapter of the American Society of Materials for many years.

Dr. Marcia Katz, a retired professor from the UT Department of Nuclear Engineering, died on March 1. Katz was the first female doctoral student to graduate from the NE department and was also the COE's first female faculty member.

A dedicated professor, researcher and student advisor, Katz received several awards and recognitions, including an American Society of Mechanical Engineers White House Fellow in 1994, the Allen and Hoshall Awards for Excellence in Teaching in 1993, and the department's Outstanding Teacher Award.

"Marcia was a dedicated teacher and advisor who loved her students and did everything she could to help them," said Dr. Lee Dodds, NE department head. "She will be deeply missed, both professionally and personally."

June Moore, who was affiliated with the COE for over 35 years, died on March 8th. Moore retired in 1995 as Associate Dean of Cooperative Education. The college's cooperative engineering program is now administered through the Office of Professional Practice (OPP).

"June Moore was one of the most respected co-op professionals in the state of Tennessee," said OPP Director Walter Odom. "In 1995, the Tennessee Cooperation Education Association established the June Moore Award to recognize excellence in the cooperative education profession."

For more information about the June Moore Award, or other faculty memorial scholarships, contact the Engineering Development Office at (865) 974-2779/engrdev@utk.edu.

Changing the Face of Engineering

UT Diversity Initiatives Opening Doors

In 1973, Fred D. Brown Jr., began a tradition of excellence at the University of Tennessee by developing the Minority Engineering Scholarship Program (MESP). As an African-American beginning his career in a public institution at a time when integration was still very young, Brown saw the need to provide better educational opportunities for minority students. Over the next 13 years, his efforts paid off with an increase of African-American students in the College of Engineering (COE) from 26, in 1972, to 133 in 1985, when Brown retired.

For years afterwards, minority student enrollment in the COE increased substantially, and in 1999, the program had a face-lift. The MESP was renamed the Diversity Engineering Scholarship Program (DESP) and incorporated into the Office of Cooperative Engineering and Professional Practices (OPP); the Minority Engineering Program was renamed Engineering Diversity Program (EDP). UT added the Tennessee Louis Stokes Alliance for Minority Participation (TL-SAMP), a program sponsored by the National Science Foundation, which works to double the number of minority students attending college and graduating with degrees in engineering, science, technology and math. With these changes came new possibilities for minority students in engineering through pre-college summer programs for middle and high school students, bridge programs for new freshmen, targeted recruiting initiatives to potential minority students and mentoring and retention programs.

"The COE offers a host of programs to promote involvement and develop a community of students," said Amy Bugyis, a junior in the Department of Industrial Engineering. "I believe the team program all engineers go through in the first years at UT contributes to the community atmosphere and helps recognize diversity."

"There are also a number of clubs and organizations formed around minorities," said Sarah Yoder, also a junior in the IIE department. Minority student organizations such as the National Society of Black Engineers and the Society of Women Engineers contribute to the base of support minority engineering students have in the college.

"As a former leader of the Society of Women Engineers, I found overwhelming support, financial and otherwise, in all departments within the COE," said Lana Carnel, a junior in the Department of Electrical and Computer Engineering. "These organizations perform the important functions of providing professional opportunities and a sense of community among students."

The DESP also promotes the recruitment of minority students, and with UT's corporate partners, gives financial support and relevant work experience for minority students through the OPP. As a result, the COE has been ranked in the top 25 universities for African-American engineering graduates during the last two decades.

"When I'm on campus, I see a lot of different people from different countries and cultures," said Wenjun Zhao, a senior in electrical engineering.



Female engineering students (left to right) Chidinima Iwueke, Lana Carnel and Wenjun Zhao excel in their respective disciplines and exemplify the college's commitment to diversity.

New Pipeline Program Emphasizes Research Opportunities for Minorities

Over the past two decades, minority enrollment in the College of Engineering (COE) at UT has risen above national averages, due primarily to the Minority Engineering Scholarship Program (MESP) and the Engineering Diversity Program (EDP). In 2005 the COE added the Pipeline Engineering Diversity Program to its efforts in minority recruiting and retention. With a comprehensive approach to engineering education, the program provides a channel through which both undergraduate and graduate students can reach their potential in the field of engineering.

"The COE Pipeline program is unique because of its emphasis and support of research opportunities for African-Americans," said Brandice Green, a third-year Ph.D. candidate in the Department of Materials Science and Engineering. "Pipeline does not just stress undergraduate and graduate recruitment, but also has a pre-college component."

Funded by the Department of Energy, Pipeline introduces underrepresented middle and high school students to engineering, provides academic support during undergraduate study and offers financial assistance for graduate level students in engineering.

Pipeline co-sponsors three one-week COE summer programs, giving middle and high school students the opportunity to learn about and prepare for a major in engineering. Once the students are accepted into the college, they participate in a two-week Summer Bridge Program, which is designed to facilitate the transition from high school to college.

"Another appeal of the Pipeline program is that it provides financial support and opportunities for participants to spend time at research facilities, such as Oak Ridge National Laboratory," said Green. "This allows students to incorporate cutting edge technology with their research and interact with prominent scientists."

"I think UT's population is becoming more diverse," said Robyn Chaplin, a junior in the Department of Chemical Engineering. "With the Quality Enhancement Program, the International House and the Black Cultural Center, UT is moving in the right direction, though we still have a ways to go."

Exceptional programs do not become exceptional on their own, however. Chidinima Iwueke, a senior in the Department of Nuclear Engineering, believes the COE diversity program succeeds because of mentors such as James Pippin, director of the EDP.

"Individuals like Mr. Pippin are priceless," said Iwueke. "They are necessary in order to increase the retention of minorities in the engineering program."

Pippin, who has always had a passion for working with students, said he has to earn respect from the students in order to be an effective director.

"I have to understand the mindset of the stu-



Ph.D. candidate Brandice Green (right) works with Materials Science and Engineering Professor Dr. Peter Liaw in his research lab.

Through the competitive Graduate Research Partnership Program, focus is placed on matching qualified minority graduate students with research initiatives available at COE labs and centers, as well as at the Oak Ridge National Laboratory (ORNL).

“Pipeline graduate research assistantships make it possible for graduate students to work directly with faculty accomplishing funded research,” said Dr. Masood Parang, Associate Dean of Student Affairs. “The nature of the assistantship, type of research and the amount of the stipend are unique.”

The \$25,000 annual stipend is available to master’s students for up to two years, and to doctoral students for up to four years.

dents,” said Pippin. “I watch MTV and BET in order to utilize the culture and link it to a math or science program. I am not only an administrator, but also understand where they are coming from.”

Although the increase in minority student enrollment at UT has become evident through diversity programs, some minorities still find it difficult to compete with their peers.

“It seems that as a minority, often we must prove ourselves,” said Iwueke. “We are challenged to show that we deserve to be in this field of study and that we deserve the same respect as our peers.”

The COE is also seeing an increase in female enrollment, although, females still encounter difficulties in the traditionally male-dominated field of engineering.

Rebecca Lind, a senior in Civil and Environmental Engineering, finds herself intimidated sometimes because many of the male students have experience with construction and are more familiar with the terminology and real life application of civil engineering. But, she says, that does not stop her from succeeding.

“I find myself wanting to do my absolute best to prove myself to my peers,” said Lind. “I don’t want the fact that I’m a woman to be my excuse for not fully understanding my chosen field of study.”

Scholarship programs available through the EDP open doors to the world of

The Pipeline program did not become a standard for excellence on its own, however. Mr. James Pippin, Director of the EDP, is a key component to the success of the Pipeline program. According to Green, his concern and advocacy for underrepresented students is what makes UT’s COE diversity program stand out.

Pippin began his career in the MESP in 1984 as the assistant director under Fred Brown, founder of the MESP. When Brown retired in 1986, Pippin became director of the Engineering Diversity Program.

“When Fred Brown retired, he said to me, ‘This is the torch; keep it lit,’” said Pippin. “I try to look at the students as my family because part of my responsibility while they are here is to support them throughout their education.”

Pippin believes the Pipeline initiative is unique because efforts are made to get more students into research and Ph.D. positions. The program is specifically tailored for minorities in order for them to succeed in the field of engineering.

“My passion has always been to work with young people. By utilizing Fred Brown’s techniques of proactively recruiting students state-by-state, we have a history of minority students who do exceptionally well.”

“The EDP does an excellent job of recruiting students,” said Green. “I believe continued success in attracting underrepresented students to the COE can be ensured by continuing support of the EDP and the Pipeline program.”

For more information on COE diversity programs, contact the EDP office at (865) 974-1956.

—Story by Amanda Womac

engineering for minority students.

“As minorities in the College of Engineering at UT, we are very fortunate when it comes to monetary rewards,” said Iwueke.

Brown’s legacy lives on through the Fred. D. Brown Jr. Memorial Scholarship, and combined with other financial aid for minority students, the UT COE is a U.S. leader for retention of minority students with an overall rate of 60%. UT’s recruitment package for minority students is one of the most attractive packages in the country, and over the past three decades, hundreds of minority students have received engineering degrees from the University of Tennessee.

“From what I have seen, the best part about UT’s diversity program is that it does not single out anyone; rather, it encourages minorities in their academic goals without giving them any unfair advantage over someone who is not a member of a minority group,” said Emily Pritchard, a senior in biomedical engineering. “By catering to the academic needs of students of varying backgrounds, the faculty at COE tries to create the best learning environment for each student regardless of race or gender.”

—Story by Amanda Womac

Alumnus Ron Green Shares His Past Experience to Generate Future Success

COE alumnus Ron Green has had a career that has taken him around the world, but his heart remains in Big Orange Country.

Green grew up in nearby Oak Ridge, Tenn., where his dad was employed with Union Carbide, the former contractor retained to manage the Oak Ridge Complex. The family relocated to Paducah, Ky. when Green was four years old—his father was assisting in the start up of a new Union Carbide gaseous diffusion plant in the small Kentucky city. Green spent his elementary and middle school years in Paducah. The family returned to Oak Ridge as Green was starting high school.



As an original member of the college's Board of Advisors, Ron Green was instrumental in developing UT's innovative Engage Engineering Fundamentals Program.

Green enrolled in the UT-COE engineering physics program, and Dr. Bill Snyder, a professor in engineering mechanics at the time, emerged as one of his mentors.

"I was very close to Bill Snyder, and he eventually became a good friend," Green said. Snyder was named COE dean in 1983, and served as UTK Chancellor from 1992 to 2000.

Green worked his way through UT as a co-op student at Union Carbide. After receiving his engineering physics degree in 1970, Green accepted a position as a test engineer at Union Carbide in Oak Ridge. He was also determined to pursue a master's degree, and met personally with COE Dean Fred Peebles to encourage coordination between the engineering college and the College of Business Administration to set up a joint academic degree program. Green received a master's degree in engineering administration in 1978.

While working with U.S. Nuclear, Inc. at the age of 26, he became the youngest plant manager in the country. Green later served as manager of quality assurance and interface control for the U.S. Department of Energy, and three years later joined the System Development Corporation as southeast regional manager.

In 1982, Daniel International, a subsidiary of Fluor Corporation, offered Green a position

as a division vice president. Green stayed with the company for 16 years, traveling the globe to supervise construction of power plants in China, Saudi Arabia, South America, Jordan, Thailand and other countries.

In 1989, Fluor launched a new company with Duke Power called Duke/Fluor Daniel with Green as its first president. The new company saw revenues rise to \$4 billion a year during one of the most successful joint business ventures in history. Green served as president of the Power Generation Operating Company for Fluor Daniel, and he still gets requests from professional groups to lecture about merger of the two powerful entities.

Green is quick to credit strong mentoring as one component that helped build his successful career. Bill Lee, the chairman and CEO of Duke Power Company, and Buck Mickel, chairman of Daniel International, both took a strong interest in Green's career and provided advice and support.

Green left Fluor Daniel to become president of Shell Oil's Power division; however, when oil prices fell drastically in 1999, he decided to take the helm as president and CEO of Duke Engineering and Services, Inc.

"I had a wonderful experience at Duke," Green commented. "It was an exciting time to be involved in the energy business."

Although Green remained busy with business ventures, he also took time out to support his alma mater. When Dean Snyder decided to form a Board of Advisors to work with the college on both academic and business affairs in 1988, Green was one of the first individuals that he contacted.

"I was one of the original members of the college's Board of Advisors," Green said. "The first two selected were Dwight Kessell and myself."

As the board sought to establish an influential

role, Green saw the dynamics shift within the college.

"In the early years, we had some resistance to change," Green commented. "Those of us who were on the board and out in the business world every day saw that the engineering education curriculum needed to be updated. Graduates needed additional communications skills to function as part of a team. The board members kept pushing until we finally developed the Engage program, where students develop hands-on skills through working together."

Green also sees the role of the board as extending beyond support for the college's academic and research roles.

"When the Science and Engineering Research Facility (SERF) was built, funds for equipment and furnishings were not included in the original budget," Green said. "I got together with two other board members and we met with then-president Joe Johnson to see how we could raise money for these two items. The three of us reiterated how important high-technology jobs are to the state economy, and SERF is a major part of training our students for future research and technology careers. We managed to get \$1 million per year for five years for equipping SERF. As business professionals we can influence the university system in ways that are not always open to administrators or faculty."

Green is currently chairman of Charlotte, North Carolina-based ADVATECH, LLC, a provider of technology to reduce sulfur dioxide emissions and engineering, design and construction services for the power market.

The recipient of the COE's prestigious Nathan W. Dougherty Award in 1996,

Green believes that

it is important to give back to the university where he started on the road to an incredibly successful career.

"The most important thing that we can do as alumni is to support the university and the college, to make sure we're producing students who have the attributes and qualities that will make them successful," Green said.

—Story by Kim Cowart

"As business professionals we can influence the university system in ways that are not always open to administrators or faculty."

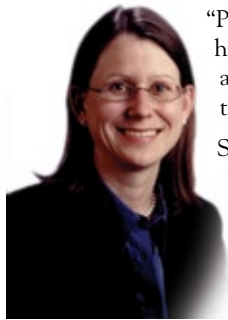
—Ron Green

Shea Appointed New Director of Engineering Development

After a national search, Patricia Shea, former Assistant Director of Engineering, was selected to be the new Director of Engineering Development. She assumed her new duties in January 2006.

Shea replaces former COE development director Cathleen Dodge, who accepted a position as Director of Development for Louisiana State University's College of Engineering.

A graduate of Michigan State University with a B.S. in Health Education and Human Performance, Shea has worked as assistant director with the COE development office since 2002. As the COE Interim Director of Development, she was a member of the UT-COE administrative team that helped close the second largest monetary gift in UT-Knoxville history, and also worked with the UT development office on planning efforts for the university's upcoming capital campaign.



Ms. Patricia Shea

"Patty has served the college well in the past, and I have every confidence that she will continue to do so as we embark on many new fundraising initiatives," said Dean Way Kuo.

Shea is a member of the University of Tennessee Faculty Women's Club, the Council for Advancement and Support of Education and the Tennessee Advancement Resource Council. She is also a founding member of the Long Island Bioscience Initiative and winner of the 1997 Arthritis Foundation All Star Staff.

The college has launched another national search for a new assistant director of development, and Shea hopes to begin interviewing candidates by mid-year.

Shea will lead the current development team, which includes Peg Schneider, administrative specialist, and two graduate student assistants, in several prominent fund-raising initiatives:

The Min H. Kao Initiatives

As outlined in the previous edition of *Tennessee Engineer*, Dr. Min H. Kao, CEO of Garmin Ltd., provided the COE with a transformational gift of \$17.5 million last June, \$12.5 million which was designated toward the construction of a new electrical and computer engineering building.

The remaining \$5 million was pledged toward a \$10 million ECE Department endowment, with the matching \$5 million to be generated by the college via fund-raising from individuals, corporations and foundations. The initial phases of the ECE Challenge Campaign began in 2004 and by the end of FY 2005 had raised almost \$1 million.

The Estabrook Hall Reconstruction Campaign

Originally completed in 1898, Estabrook Hall has been on the university's list of renovation projects for several years. In June 2005, the Tennessee State Legislature approved \$16.6 million for the renovation of the building.

Although the state has provided significant funding to renovate the facility, recent natural disasters such as Hurricanes Katrina and Rita have created an unprecedented demand for building materials, and significant private funds must be raised to assist with the completion of the construction and the furnishings of classrooms, laboratories and offices.

Noteworthy funding and naming opportunities are currently available for the building, which is projected for completion in 2009.

The University of Tennessee Capital Campaign

The university is preparing for a system-wide capital campaign to focus on raising funds for student aid, buildings and renovations, programs and research.

The College of Engineering campaign priorities include named chairs and professorships; faculty research and teaching fellowships; student support, including scholarships and fellowships; program support for cooperative education and diversity initiatives; and building construction and improvements, including the Min H. Kao ECE Building and Estabrook Hall. The ECE Challenge Campaign is also included in the UT capital campaign fund-raising effort.

For more information on the above fund-raising initiatives, or other COE development-related activities, including scholarships, fellowships and grants, please contact the Engineering Development Office:

Patricia Shea, Director
120 Perkins Hall
Knoxville, TN 37996-2012
Phone: (865) 974-2779
Fax: (865) 974-2015
E-mail: pwshea@utk.edu or engrdev@utk.edu

College of Engineering • Board of Advisors

Dr. Bert Ackermann Jr.
(BS/NE '65, MS/NE '67, PhD/NE '71)
CEO, SPINLAB
Knoxville, Tenn.

Ms. Karyl Bartlett
(BS/ME '84, MBA '00)
Leader, Propulsion Systems
Boeing Production System
Seattle, Wash.

Mr. Thomas R. Blose Jr.
(BS/CE '70)
Retired
Brentwood, Tenn.

Dr. Tom F. Cheek Jr.
(BS/EE '61, PhD/EE '69)
Vice President of R & D
Epic Systems, Inc.
Dallas, Texas

Mr. Joe C. Cook Jr.
(BS/IE '65)
Founder and Principal
Mountain Group Capital, LLC
Nashville, Tenn.

Dr. Mark E. Dean
(BS/EE '79)
IBM Fellow and Vice President
Almaden Research Center
San Jose, Calif.

Dr. R. G. Gilliland
(BS/ChE '58, MS/MetE '63)
Retired
Pittsburgh, Pa.

Mr. Ron Green
(BS/EPh '70, MS/EPh '78)
Chairman
ADVATECH, LLC
Charlotte, N.C.

Mr. H. M. Hashemian
(MS/NE '77)
President and CEO
Analysis & Measurement Services Co.
Knoxville, Tenn.

Mr. Dwight N. Hutchins
(BS/ChE '86)
Partner
Accenture
Washington, DC

Mr. Raja J. Jubran
(BS/CEE '81)
Chairman and CEO
Denark Construction, Inc.
Knoxville, Tenn.

Dr. H. Lee Martin
(BS/ME '78 PhD/ME '86)
Managing Member
Clarity Resources, LLC
Knoxville, Tenn.

Mr. Edwin A. McDougale
(BS/CEE '69, MS/CEE '75)
Principal
Ross Bryan Associates, Inc. Engineers
Nashville, Tenn.

Mr. Mark A. Medley
(BS/ME '69, MBA/Ind. Mgmt., '70)
President and CEO
Control Technology, Inc.
Knoxville, Tenn.

Mr. Andrew K. Phelps
Vice President and
Deputy General Manager
Bechtel Jacobs Company, LLC
Oak Ridge, Tenn.

Mr. James B. Porter Jr.
(BS/ChE '65)
Vice President of Engineering and
Operations
E.I. DuPont de Nemours Corp.
Wilmington, Del.

Mr. Richard T. Snead
(BS/IE '73)
President and CEO
Carlson Restaurants Worldwide
Carrollton, Texas

Mr. Mike Young
(BS/CE '71, MS/EnvE '72)
Senior Vice President/CEO
Allen and Hoshall, Inc.
Memphis, Tenn.

1960s

John D. Tickle (BS/IE '65) was designated an honorary alumnus by East Tennessee State University at the spring 2005 graduation. He lives in Bristol, Tenn.

Ralph Austin Pedigo (MS/EE '68) has retired from a career as a professional engineer. He lives in Chattanooga, Tenn.

James M. Browning (BS/Engr. '69; MS/Engr. '74) is the chief executive officer for Barge Waggoner Sumner and Cannon in Nashville. He lives in Brentwood, Tenn.

1970s

C. David West P.E. (BS/ME '73) has been re-elected to the board of directors at Barge Waggoner Sumner and Cannon, where he has been employed for 24 years. He lives in Nashville, Tenn.

Garland P. Rose Jr. P.E. (BS/Engr. '75) has been elected chairman of the board at Barge Waggoner Sumner and Cannon in Nashville. He has been with BWSC for 30 years and is the central region manager. He lives in Nashville, Tenn.

Robert F. Polk P.E. (BS/CE '76) has been re-elected to the board of directors of Barge Waggoner Sumner and Cannon and is the southern region manager and executive vice president for the firm's Birmingham's office. He lives in Savannah, Tenn.

1980s

Becky Boyd Caruso (BS/ES '80) is vice president for MediaFirst PR. She lives in Roswell, Ga.

Joseph A. Ledford P.E. (BS/CE '81) is director of project development for Barge Waggoner Sumner and Cannon's Knoxville office and has been elected to the firm's board of directors. He lives in Knoxville, Tenn.

Alan Kramer Mayberry (BS/CE '81) is the area head for Washington Gas in Springfield, Va. He lives in Woodbridge, Va.

Lai Chiu Chan (MS/Engr. '82) is the strategic sourcing director-Asia for Brunswick International Limited in Hong Kong. He lives in Hong Kong.

Michael K. Zill (BS/IE '85) is a vice president at Powerwave. He lives in Ladera Ranch, Calif.

Paul Anthony Grecco (BS/IE '86) is a staff engineer for the Missile Defense Agency in Washington, D.C. He lives in Clifton, Va.

Satriya Suetoh (BS/CE '86) is the SE Asia regional manager for Cerner Corporation. He lives in Kuala Lumpur, Malaysia.

Scott Wartenberg (BS/EE '86) is now with Booz Allen Hamilton, a consulting firm in Washington, D.C. He lives in Vienna, Va.

Mohdzai Bin Abdlatip (BS/EE '88) is a doctor for TNB in Batu Pahat, Malaysia. He lives in Batu Pahat.

Stanley C. Jones (BS/IE '88) is a pilot in the U.S. Navy. He lives in Virginia Beach, Va.

George Andrew Huttick (BS/ChE '89) is a senior chemical process engineer for Newell Rubbermaid-Sanford Liquid Mfg. & Tech Center in Shelbyville, Tenn. He lives in Murfreesboro, Tenn.

Carmella Vitzthum Lawson (BS/ES '89) is deputy chief of strategic concepts and transformation for the U.S. Air Force.

1990s

Thomas Patrick "Pat" Lewis (BS/NE '90) is a facility representative for the U.S. Department of Energy in Los Alamos, N.M. He lives in Santa Fe, N.M.

Christopher Lewis Whaley (BS/AE '92; MS/IE '94) works as the business excellence program manager for Philips Consumer Electronics. He lives in Woodstock, Ga.

Bruce E. Martin (BS/EE '93) is currently the Director of Facilities Management at Blount Memorial Hospital, where he is responsible for maintenance, biomedical and construction at all Blount Memorial Hospital sites. He lives in Knoxville, Tenn.

Dennis Darrell Chandler (BS/AE '94) is director of operations for Envisioneering Medical Technologies. He lives in St. Louis, Mo.

Krista D. Conner (BS/IE '95) works as a program manager for Amazon.com. She lives in Seattle, Wash.

Frank Alan Willis (BS/IE '95; MS/IE '98) is the Senior Systems Engineer at the Lockheed Martin Aeronautics Company. He lives in Kennesaw, Ga.

Virginia Carolyn Stokes St. Ana (BS/ES '96) is a certified orthotist with the Veteran's Administration in North Little Rock, Ark. She lives in Little Rock, Ark.

Mark Stefan Webb (BS/ES '96) is a design engineer for Panasonic. He lives in Maryville, Tenn.

Laura Trentham Huskins (BS/CE '96) worked as a group leader at Rohm-Haas in Knoxville, and a group leader and product leader at United Technology Corp. Fuel Cells in Hartford, Conn. She lives in Simpsonville, S.C.

William L. Maxson II (MS/NE '96) is a radiation analyst for Framatome Cogema Fuels. He lives in Lynchburg, Va.

William Donald Muth (BS/AE '97; MS/AE '00) is an engineer II, Systems Engineering in Aerodynamics for Miltec Corp. of Huntsville, Ala. He lives in New Market, Ala.

Jason Ned Scott (BS/ChE '98) is a production specialist for Dow Chemical Company in Torrance, Calif. He lives in San Pedro, Calif.

Jacob Shea Chandler (BS/CE '99; MS/EnwE '01) is a civil engineer III for the City of Durham Public Works Department. He lives in Raleigh, N.C.

2000s

Virginia Attaway, Leigh Outten and **Jason Shrieves** (BS/ME '00) reunited in Freiburg, Germany, after realizing all three UT graduates currently live and work in Germany.

Phillip David Barbe (BS/ME '00) is a mechanical engineer with I. C. Thomasson Associates, Inc. He lives in Nashville, Tenn.

Stephen Aaron Crews (BS/IE '00) is a versatility manager for Nissan North America, Inc. in Smyrna, Tenn. He lives in LaVergne, Tenn.

Raymond E. Henshaw (MS/ES '00) is an engineer with ATA at Arnold Air Force Base in Tullahoma, Tenn. He lives in Lynchburg, Tenn.

Kurt Allen Stafford (BS/CE '00) is an environmental engineer with the Virginia Department of Environmental Quality. He lives in Glen Allen, Va.

Christopher Michael Hennessey (BS/EC '01) is a structural engineer with Haynes Whaley Associates in Reston, Va. He lives in Falls Church, Va.

Melissa Maureen Folk Foster (BS/ChE '02) is a senior project engineer for ExxonMobil Corporation. She lives in Spring, Texas.

Brian Paul Garven (BS/ME '02) is an engineer at Nortek Industries. He lives in Knoxville, Tenn.

Mark Henry Marshall (BS/ME '02) is an HVAC engineer for Vaughn & Melton in Greeneville, Tenn. He lives in Chuckey, Tenn.

Brandi Darne Gordon Collier (BS/CE '03) is an engineer in training at Turnbull Sigmon Design. She lives in Lake Wylie, Ga.

Ross Daniel Cosby (BS/AE '03) is a structural engineer for Vought Aircraft. He lives in Arlington, Texas.

Sudhakar Jagannathan (MS/PolyE '03) is a graduate research assistant at Georgia Institute of Technology. He lives in Atlanta, Ga.

Deniz Juliet Ocak (BS/ChE '03) is pursuing a master's degree at the University of San Francisco in California. She lives in San Francisco, Calif.

Vernique Worlds Shurland (BS/EE '03) is a substation design engineer for Georgia Power Company. She lives in Woodstock, Ga.

Chad Edward Drinnon (BS/EE '04) is an electronics engineer with NSWC Crane. He lives in Bloomington, Ind.

Dr. Subhadarshi Nayak (PhD/MSE '04) is a packaging engineer with Intel Corporation. He lives in Chandler, Ariz.

Grant Michael Ford (BS/CpE '05) works for the U.S. Patent and Trademark Office as a patent examiner. He lives in Alexandria, Va.

William Joshua Melhorn (BS/ME '05) is a design engineer for ALSTOM Power. He lives in Chattanooga, Tenn.

Courtney Lester Haggarel (BS/ME '05) is the Associate Engineer at WSMS-MidAmerica. She lives in Knoxville, Tenn.

Memorials

William Story (BS/Engr. '37) died April 1, 2006. He lived in Knoxville, Tenn.

Lt. Col. Alex Arthur (BS/CE '41) died January 15, 2006. He lived in Hockessin, Del.

Kenneth Deane Stout (BS/ME '42; MS/IE '49) died April 6, 2006. He lived in Hillsville, Va.

Elmer Lee White (BS/EE '53) died October 25, 2005 at age 82. He lived in Maryville, Tenn.

Trousdale Lewis (BS, MS/EE '58) died January 12, 2006. He lived in Oak Ridge, Tenn.

Jerry Thomas Berlin (BS/ChE '61) died March 9, 2005. He lived in Parkersburg, W. Va.

David Vondy (MS/NE '62; PhD/ES '68) died March 20, 2006. He lived in Lenoir City, Tenn.

Jerry Wayne Parker (BS/IE '67) died March 20, 2006. He lived in Knoxville, Tenn.

Kenneth Markley (BS/EE '72) died March 23, 2006. He lived in Maryville, Tenn.



James Edward Bevins

Bevins Garners Regional and National ACEC Scholarships

James Edward Bevins, a UT nuclear engineering student, has received a \$1,000 scholarship from the American Council of Engineering Companies of Tennessee (ACEC of Tennessee). Additionally, he was the 2nd place winner of a \$3,000 national scholarship awarded by the American Council of Engineering Companies, headquartered in Washington, D.C. Bevins, who is planning to graduate with a B.S. degree in nuclear engineering in May 2009, was selected to receive the state scholarship in competition with engineering students from across Tennessee. As the state winner, he competed for national scholarships with students throughout the U.S.

Bevins is a veteran of the U.S. Army, where he was assigned to Explosive Ordnance Disposal. He is the Deputy Squadron Commander of the Air Force ROTC at UT, a member of the American Nuclear Society and a participant in the University of Tennessee Honors Program.

Founded in 1968, ACEC of Tennessee is a statewide organization with chapters in Memphis, Nashville, Chattanooga and East Tennessee. The organization's mission is to improve business practices of engineering firms and to enhance public awareness and understanding of the value of engineering services.

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UT Group Attends Transportation Symposium



A group of UT engineering students, along with personnel from the COE's Center for Transportation Research (CTR), attended this year's Transportation Student Southeastern Symposium (TSS), in Washington, D.C. The event brought together participating members of the Southeastern Transportation Center (STC), which includes 10 universities from Tennessee, Florida, Georgia, Kentucky and North Carolina. Held annually, the meeting promotes networking within the group and provides informative technical presentations.

This year, the American Public Transportation Association (APTA) hosted the STC students and faculty at the Washington Metropolitan Area Transit Authority's (WMATA) Emergency Response Center. WMATA's Carmen E. Turner Tunnel Training Center is the key training center used by area fire, military and safety rescue experts. Since its opening about four years ago, transit experts from around the world have visited the facility. The students enjoyed the presentations and tour, and received updates about the processes involved in evacuations during a transit incident. CTR director Steve Richards was the leader of the UT group.

UT Hosts TLSAMP Research Conference

The Tennessee Louise Stokes Alliance for Minority Participation (TLSAMP) Third Annual Undergraduate Research Conference took place at the University of Tennessee, Knoxville, April 7, 2006 in the University Center. Participating institutions included LeMoyne-Owens College; Middle Tennessee State University; Tennessee State University; the University of Memphis; the University of Tennessee, Knoxville; and Vanderbilt University.



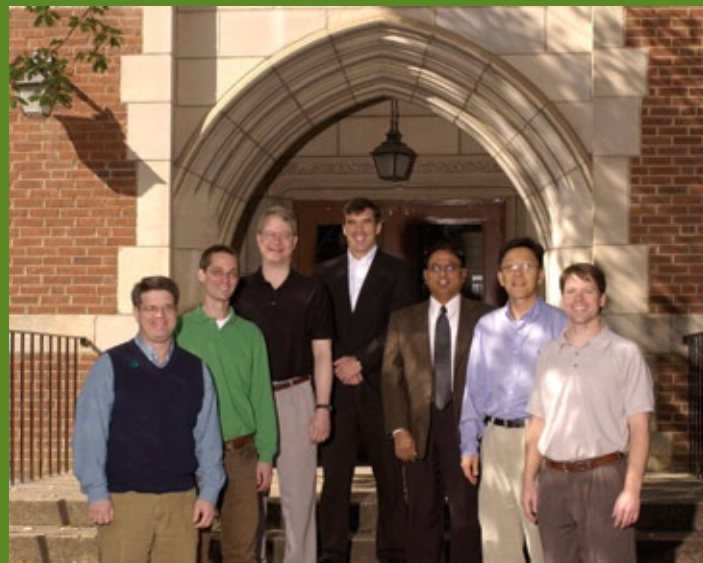
Stephanie Odom, sophomore in biomedical engineering, was awarded first place in the TLSAMP poster competition.

The conference, attended by 162 students, faculty and TLSAMP staff, showcased undergraduate research in science, technology, engineering and mathematics (STEM). Activities included a graduate student panel, poster competition, graduate school fair, TLSAMP JEOPARDY, oral presentations and a closing banquet.

During the plenary session Friday, students heard from a variety of speakers including Dr. Loren Crabtree, Chancellor, University of Tennessee; Dr. Way Kuo, Dean of Engineering, UT; Rep. Joe Armstrong, TN House; Knoxville Mayor Bill Haslam; and Dr. Jeffrey Wadsworth, Director of the Oak Ridge National Laboratory.

TLSAMP is a program sponsored by the National Science Foundation that works to double the number of minority students attending college and graduating with degrees in engineering, science, technology and math.

Eight Faculty Named COE Research Fellows



The 2006 Engineering Research Fellow Awards were presented to (left to right) Benjamin J. Blalock, assistant professor in Electrical and Computer Engineering; David J. Keffer, associate professor in Chemical Engineering; Chris D. Cox, associate professor in Civil and Environmental Engineering; J. Wesley Hines, professor in Nuclear Engineering; Narendra B. Dahotre, professor in Materials Science and Engineering; Hahn Choo, assistant professor in Materials Science and Engineering; Philip D. Rack, associate professor in Materials Science and Engineering; and Richard D. Komistek, professor in Mechanical, Aerospace and Biomedical Engineering (not pictured). The awards, established in 2004 through Dean Way Kuo's initiative to recognize and reward superior research, are presented to faculty members with exceptional records of research activity, and whose efforts clearly contribute to the overall mission of the college.

Calendar

2006

Spring Commencement	May 12
Fall Classes Begin	Aug. 23
Labor Day Holiday	Sept. 4
Fall Break	Oct. 12-13
Engineers Day	Oct. 24
Homecoming	Sept. 23
Thanksgiving	Nov. 23-24
Classes End	Dec. 5
Fall Commencement	Dec. 17

Contact Information

Senior Administration

Dr. Way Kuo, Dean of Engineering and University Distinguished Professor

Dr. Alberto Garcia, Associate Dean for Academic Affairs

Dr. Masood Parang, Associate Dean for Student Affairs

Dr. Wayne T. Davis, Associate Dean for Research & Technology

Administration & Programs

Communications	974-0533
Dean's Office	974-5321
Development	974-2779
Engineering Academic Affairs	974-6092
Engineering Diversity Programs	974-1956
Engineering Fundamentals	974-9810
Engineering Research	974-8360
Engineering Student Affairs	974-2454
Finance & Admin. Affairs	974-5279
Office of Professional Practice	974-5323

Departments

Chemical	974-2421
Civil & Environmental	974-2503
Electrical & Computer	974-3461
Industrial & Information	974-3333
Materials Science	974-5336
Mechanical, Aerospace & Biomedical	974-5117
Nuclear	974-2525

Research Centers

Homeland Security	974-3339
Materials Processing	974-0816
Maintenance & Reliability	974-9625
Scintillation Materials	974-0267
Transportation Research	974-5255

HOMECOMING 2006



Saturday, September 23, 2006

UT vs. Marshall University

Time TBA

Engineering Alumni Barbeque

Ferris and Perkins Courtyard

You are cordially invited to the annual College of Engineering Alumni Homecoming Barbeque on Saturday, September 23, prior to the UT vs. Marshall University football game (gametime is TBA). The event begins four hours before the game starting time and food service ends one hour before kick-off.

Cost for the meal is \$15 per person and includes barbeque, side dishes and tea and soft drinks. The barbeque will be held in the courtyard between Perkins and Ferris Halls. Look for an announcement of all Homecoming activities in the summer issue of the *Torchbearer* magazine, or contact Peg Schneider in the Engineering Development Office at (865) 974-2779 or via email at mschneil@utk.edu. Tickets for the football game must be purchased through the UT Alumni Office, (865) 974-3011.

The University of Tennessee does not discriminate on the basis of race, sex, color, religion, national origin, age, disability or veteran status in provision of educational programs and services or employment opportunities and benefits. This policy extends to both employment by and admission to the University.

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Inquiries and charges of violation concerning Title VI, Title IX, Section 504, ADA or the Age Discrimination in Employment Act (ADEA) or any of the other above referenced policies should be directed to the Office of Equity and Diversity (OED), 1840 Melrose Avenue, Knoxville, TN 37996-3560, telephone (865) 974-2498 (V/T/TTY available) or 974-2440. Requests for accommodation of a disability should be directed to the ADA Coordinator at the UTK Office of Human Resources, 600 Henley Street, Knoxville, TN 37996-4125.



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