Tennessee Engineer Fall 2010

College of Engineering

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From the Dean’s Desk

As I reflect on the college’s accomplishments during the last year and look forward, I can’t help but be excited about the future of engineering. Our college has grown substantially over the last several years in both size and quality. The preliminary information available as I write this message is that the number of freshmen entering directly into our Freshman Engage program is approximately 413 students for this semester. This is 30% larger than last year’s Engage enrollment and clearly a high for the last ten years. The average math ACT of these students is 30.0 and 30% of our new students are in the Chancellor’s Honors program. Our freshman to sophomore retention rate of the students who enter directly into our Engage program is also at an all time high of 82% over all and 89.5% for the honors students. All of our honors students and many of the other students are committed to an international experience during their degree program at UTK, and we are working closely with our faculty, universities across the globe and our corporate partners to help facilitate these experiences.

Our graduates are also making a difference within the state, the nation and around the world. One indication of this impact is the number of students who are going on to graduate school, and the number who are being recruited by the top companies in the nation.

College of Engineering Moves Forward with New Building Projects

Progress on the college’s building construction and renovation projects is going well with most on schedule, according to Dr. Bill Dunne, COE dean for research and technology.

The Min H. Kao Electrical Engineering and Computer Science Building, on the corner of Estabrook Drive and Cumberland Avenue, is expected to be substantially finished in August 2011. The contractors will conclude final work in September of that year and then officially hand the building over to the university and the College of Engineering.

“The exterior is nearly completed on the west and north sides,” Dunne said. “Work on the interior of the building is ongoing. In some areas, including the classroom annex, the inside projects have made substantial progress, but in others we are on schedule but at the stage of precursor mechanical and electrical work.”

Dunne expects the exterior work on the north and west side of the building will be completed close to the beginning of the fall semester so that Middle Way Drive can be reopened for traffic.

The college’s other new facility, the John Tickle Engineering Building, is on track for construction to begin in December of this year. The entire building design was submitted to the State Fire Marshal for review Aug. 30, so construction plans are being finalized.

“We’re hoping that the building will be completed in Aug. of 2012,” Dunne commented. “I know that sounds like a short period of time, but we’ve been assured that it can happen.”

As for the Joint Institute for Advanced Materials (JIAM) facility on the university’s new Cherokee Campus, site preparation is in progress and Dunne anticipates that construction will begin in late 2010 or very early 2011.

“The JIAM building is a more complicated project,” Dunne said. “The mechanical and construction documents are going forward, and this project is likely going to be completed in late 2012 as well.”
Building Projects continued from page 1

Current plans are for several COE researchers and faculty members to have space in the JAM building.

The college will do a series of chalkboard moves with a number of departments as the new structures are completed and ready for occupancy. The Department of Electrical Engineering and Computer Science will move from locations in Ferris and Clanton Halls to the new Min H. Kao Building. The Department of Materials Science will move to the former EESCs offices on the fourth floor of Ferris plus the lower three floors of the building, while the Jerry E. Stoneking Engage Freshman Engineering Program, the Advising Office and the Engineering Diversity Program office will be relocated to the fourth and fifth floors in Ferris.

Once the Tickle building is completed, the Department of Civil and Environmental Engineering will move into the new facility from locations in Perkins, Estabrook and Berry Halls, freeing up considerable space in Perkins. The Department of Industrial and Information Engineering will also relocate to the Tickle Building from East Stadium Hall. Dunne also plans to relocate two of the college’s research centers, The Center for Materials Processing and the Reliability and Maintainability Center, to Perkins Hall.

The situation with Estabrook is more problematic, Dunne added. Although the building is the second oldest on campus, it was built without a single foundation and in fact several structures linked together.

“We are hoping to return Estabrook to the university once we have relocated all of our personnel in offices and labs that are currently housed in that building,” Dunne said. “At that point, UT administrators would make a decision on what to do with the building. Estabrook’s proximity to the football stadium is one issue as well as difficulties meeting fire code regulations in such an old and complex building.”

In addition to freeing up space in Ferris and Perkins Halls, 8,102 square feet in the Science and Engineering Research Facility will also become available when the Min H. Kao Building is completed.

Once the new buildings are completed and the former materials science space is open in Dougherty, the biomedical engineering faculty will move back from Perkins Hall to be in closer proximity to the Department of Mechanical, Aerospace and Biomedical Engineering Department (MABE) main offices on the fourth floor of that building. Direct renovations related to the damage from a fire that broke out in Dougherty a few years were completed in April 2012. The second phase of the renovation to upgrade life safety systems is currently in progress.

Dougherty may also be the recipient of a S. L. Quinby Foundation grant that will fund the construction of state-of-the-art research labs in the facility. COE nuclear engineering professor Dr. Wei Hua launched efforts to get the grant together, with assistance from Dr. Roman Klimanov, professor and head of the Department of Chemical and Biomolecular Engineering (CBE), and Dr. Bill Hamel, professor and head of the MABE department. Dunne said the indications are hopeful that the COE will receive the grant, which is expected to be announced in October 2012.

Another space that will eventually be available to the college is Senter Hall, formerly the White Avenue Biology Annex. The building is undergoing an internal renovation from a teaching science laboratory to a research wet lab facility. Current plans are to complete the renovation in 2013, and to provide a large laboratory space similar to that available in SREB. The building is shared space between the COE and the College of Arts and Sciences; however, tenants can only stay in Senter for up to two years, so that it acts as surge space for both teaching and research missions with those who have been located in other permanent facilities.

“The next few years will bring us a lot of opportunity to expand and to enhance both undergraduate and graduate research missions with new space,” Dunne said. “We’ve just got to stay focused and organized to get everything completed.”

College Information

Dr. William Weber, an authority in the interactions between radiation and materials, has been named the eighth University of Tennessee-Oak Ridge National Laboratory National Laboratory’s Governor’s Chair. Weber will serve in the Department of Materials Science and Engineering at UT Knoxville and in ORNL’s Materials Science and Technology Division.

He was previously a laboratory fellow and team leader at Pacific Northwest National Laboratory (PNNL), where he served as a researcher since 1997.

For more than three decades, Weber has researched the complicated interactions between radiation and ceramic materials. He uses both direct measurement of materials and extremely powerful computer simulations to examine how radiation affects ceramics. The research has broad applications, touching areas from nuclear energy to environmental remediation, and even space exploration.

Weber has been a particularly prolific researcher, and his research has been published more than any other scientist in the more than 45-year history of PNNL. Weber is the editor or co-editor of five conference proceedings, and the author or co-author of more than 320 journal articles, seven book chapters, 108 peer-reviewed conference papers and 53 technical reports.

Weber has spent his entire career with PNNL, where he has also served recently as chair of the PNNL Council of Fellows, chair of the PNNL Laboratory Fellows Institute. He received his bachelor’s degree in physics from the University of Wisconsin, Madison, and his master degree and doctorate, both in nuclear engineering, from the University of Wisconsin, Madison.
Dr. George Pharr, McKamey Professor and Head of the Department of Materials Science (MSE), and Warren C. Oliver of nanomechanics in Oak Ridge, Tenn., have been honored with the inaugural MRS Innovation in materials Characterization Award for their joint work on nanomechanization. Pharr and Oliver were cited for "innovative contributions to the development of the instrumentatation and analysis methods of nanomechanization for characterizing the mechanical properties of materials at the micro- and nanometer length scales." Oliver received his Bachelor of Science in materials science from the University of Tennessee and is the son of the late Dr. Ben Oliver, a long-time faculty member in the MSE department. The award was presented to Pharr and Oliver at the 2010 Materials Research Society Spring Meeting in San Francisco.

Dr. Stephen Paddison, Department of Chemical and Biomolecular Engineering

Dr. George Pharr, McKamey Professor and Head of the Department of Materials Science (MSE), and Warren C. Oliver of nanomechanics in Oak Ridge, Tenn., have been honored with the inaugural MRS Innovation in materials Characterization Award. "Proton exchange or polymer electrolyte membrane fuel cells (PEMFCs) are applicable as power supplies for a range of devices, including portable electronics, vehicular power, or stationary power for small buildings. Essentially these fuel cells will be used to directly change energy storage devices including batteries," said Paddison. "My group is essentially interested in the materials used in PEMFCs, with a specific focus of the material properties at a fundamental, that is, molecular level." The majority of his research involves the simulation of the structure and function of materials.

Paddison received his bachelor's in chemical physics and a Ph.D. (1990) in physical/theoretical chemistry from the University of Calgary, Canada.

"When I finished my Ph.D., I chose to do a fellowship in a completely new area of research, and it really came as an opportunity to do something different then what I had done in the past," commented Paddison. The post-doctoral fellowship and later staff position, with the Materials Science Division at Los Alamos National Laboratory led Paddison into experimental and theoretical investigations of anodic acid based polymer electrolyte membranes.

Paddison then spent three years as an assistant professor in the Department of Chemistry and Materials science at the University of Alabama in Huntsville before taking a position at the University of Tennessee in August 2007.

"Mostly what attracted me to the University of Tennessee was the proximity to Oak Ridge. I had spent eight years in Los Alamos National Lab, and was well acquainted with what could be done in a national lab with all their 'toys,'" explained Paddison.

In the classroom, Paddison hopes to instill a level of enthusiasm in graduate and undergraduate students. "I don’t want to make anything more difficult than it is, but I don’t want my students to be afraid to tackle the difficult topics," Paddison said. His professional achievements mimic his classroom mentality as he too has tackled obstacles for the success of new discoveries in fuel cell research. "We are extremely fortunate to have attracted Stephen to our program at the University of Tennessee. Not only is he a great scholar but also an excellent citizen of the CBE community," said Dr. Banim Khoiami, professor and head of the CBE department.

Dr. Stephen Paddison, Department of Chemical and Biomolecular Engineering

Paddison received a 2010 CBE Research Fellow Award. The award was established to recognize and reward superior research. For Paddison, the award reflects his exceptional record of fuel cell research activity and efforts that clearly contribute to the mission of the college. He has dedicated more than 14 years to advancing the structure-function relationships in fuel cell materials. Looking to the future of fuel cell research in his department, Paddison said, “My own aspiration for the department is to bring excellence in terms of research and scholarship, and therefore training of students and young researchers.” The majority of his research in the field involves international collaboration with such institutions as the University of Cambridge and the Max Planck Institute, Stuttgart. “I want to bring an awareness of this department to the international community,” added Paddison.

Paddison’s high expectations and forward-looking philosophy for the CBE department hinges on his central statement that “if you want a good product, then you’ve got to hold the light, and you have to demand and require a high but achievable standard.”

Outside of the classroom, Paddison enjoys spending time with his family: wife Joan, daughter Kassandra, 11, and son Cooper, 10. He is very involved in his children’s musical activities. Cooper plays the violin with the youth orchestra, and Kassandra studies the piano.

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COE Welcomes Eight New Faculty Members

These professors have joined the college this fall:

Dr. Cong Trinh is an assistant professor in the Department of Chemical and Biomolecular Engineering. Trinh’s research areas include inverse metabolic engineering and systems biology, metabolic flux quantification, cell physiology and advanced fermentation, and bioremediation. He received his Ph.D. from the University of Minnesota. Trinh will join the CBE faculty in January 2011. The Department of Electrical Engineering and Computer Science has added four new faculty members. Dr. Judy Day, an assistant professor, received her Ph.D. from the University of Pittsburgh. Day's research area includes mathematical models of the immune response to various insults and application of engineering control algorithms to ODE models of the inflammatory response to test potential therapies to correct immune response dysfunctions. Dr. Gong Gu, also an assistant professor, has 13 U.S. patents on organic semiconductor devices, display technologies and circuit design. He received his Ph.D. from Princeton University. Dr. Nicole Nelson's research area encompasses mixed signal VLSI circuit design particularly applied to bio-sensors and imaging; exploring the application of information theory to study trade-offs in circuit designs, microfabrication and development of devices. The new assistant professor in EECS received her Ph.D. from the University of Maryland.

Dr. Jianyu (Stella) Sun, an assistant professor, received her Ph.D. from the University of Florida. Sun's areas of expertise include security and privacy in wired/wireless networks and systems, wireless communications and computer networks.

The Department of Materials Science and Engineering welcomes Dr. Yanwen Zhang. She received her Ph.D. from Lund University, Sweden, and her research area includes interactions of charged particles with materials, detection and characterization of charged particles including ion-solid, electron-solid and photon-solid interaction. The Department of Mechanical, Aerospace and Biomedical Engineering welcomes Dr. Matthew Mench, professor and Condra Chair. Mench received his Ph.D. from the Pennsylvania State University and has two United States patents and one international patent issued, three additional U.S. patent applications currently being reviewed and three invention disclosures also under review. Mench’s primary research area is fuel cells.

Dr. Bethany Goldblum has joined the Department of Nuclear Engineering as an assistant professor. Goldblum's Ph.D. was awarded at the University of California, Berkeley, where she was a Clare Booth Luce Chancellor's Postdoctoral Fellow. She was also a member of the Project on Nuclear Issues Scholar at the Center for Strategic and International Studies in Washington, D.C., and served as a technical associate in physics and advanced technologies at Lawrence Livermore National Laboratory in Livermore, Calif.

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The University of Tennessee College of Engineering held its annual Faculty and Staff Awards Dinner on Thursday, April 22, 2009, at the Knoxville Convention Center. Award winners, COE administrators and staff, and their guests enjoyed a reception, dinner, and awards program. This year, members of the college’s Board of Advisors and their guests also attended the dinner. COE Dean Wayne Davis and Associate Dean for Research and Technology Bill Dunne served as emcees for the event.

The highlight of the evening was the presentation of the Nathan W. Doughtery Award to Dr. John Prados, professor emeritus in the Department of Chemical and Biomolecular Engineering. Prados is a former Vice President and University Professor Emeritus at UT, where he has served for more than 50 years, beginning as a graduate assistant in 1953. He was a full-time professor in the Department of Chemical Engineering for 13 years, and for the next 20 years he held several administrative positions, including Associate Dean of Engineering, Dean of Admissions and Records, Acting Chancellor of the Knoxville and Martin campuses, Acting Director of Energy Conversion Engineering, and Dean of the College of Engineering.

Prados returned to the Department of Chemical Engineering in 1989 and from 1990-93 he was the department head. He served as the COE Dean from 1994 through 1997. Prados has been a consultant to industry, government and more than 30 universities and state education agencies in the United States and abroad.

In 2009, Prados received the Benjamin Garver Lamme Award from ASEE. Established in 1928, the honor recognizes excellence in teaching, engineering education reform and innovation. After the award presentation to Prados, Dr. Bamin Kh Rahemi, professor and head of the Department of Chemical and Biomolecular Engineering, announced the establishment of the John W. Prados Professorship in his department. The professorship was created by Malcolm Collins (BS COE ’58) and additionally supported by J. Michael Stone (BS/MS CE ’63), both of whom are former students of Dr. Prados.

Additional awards presented during the evening included:

- Outstanding Support Staff Award: Julia Elkins, Administrative Services Assistant, Electrical Engineering and Computer Science
- Outstanding Support Staff Award: Leon and Nancy Cole Superb Teaching Award: Dr. John Landes, Professor, Mechanical, Aerospace and Biomedical Engineering
- Allen & Hoshall Engineering Faculty Award: Dr. Michael Berry, Professor, Electrical Engineering and Computer Science
- Outstanding Support Staff Award: Dr. John Prados (left) at the 2010 Faculty & Staff Awards Dinner
- Outstanding Support Staff Award: Dr. J. Wesley Hines, Professor, Nuclear Engineering
- Outstanding Support Staff Award: Dr. Stephen Padilko, Associate Professor, Chemical and Biomolecular Engineering
- Outstanding Support Staff Award: Dr. Xiaorui Wang, Assistant Professor, Electrical Engineering and Computer Science

The University of Tennessee and Oak Ridge National Laboratory (ORNL) are offering two joint graduate programs. They are the Distinguished Graduate Fellowship and an Energy Science and Engineering (ESE) program. The two programs are administered through the Center for Interdisciplinary Research and Education (CIRE).

These two programs constitute a new level of collaboration between ORNL, a Department of Energy facility, and the University of Tennessee Knoxville, that will create the opportunity to recruit very high caliber graduate students,” said Dr. Bill Dunne, associate dean of research and technology for COE.

Graduate students for these programs will collaborate with the faculty from the Colleges of Arts and Sciences, Agricultural Sciences and Natural Resources, and Engineering as well as research staff at ORNL. They will determine the curriculum and work primarily as teachers, researchers and mentors for the admitted students.

One cycle of recruiting has already been completed for the Distinguished Graduate Fellowship program. The students enrolled for fall semester were chosen from Michigan University, Louisiana State University and the University of Tennessee Knoxville.

There is a preference for U.S. citizens, but we do not exclude international students, said Shelly Lobmann, manager of University and Fellowship Recruiting Programs for ORNL. “We did a great job making this program attractive the first year out, and recruited very good, choose students.”

The Fellowship program derived from the idea that the UTK-ORNL partnership paired with a strong stipend would be alluring to high quality prospects that would not normally apply to UTK and cannot apply to ORNL because ORNL does not grant degrees. Students who meet the requirements will receive a $30,000 stipend for their fellowship.

“We anticipate this program to be very competitive,” commented Lobmann.

The Fellowship is a five-year program with a carrying capacity of 60 doctoral students, and focuses on material sciences engineering, computational engineering and nuclear science engineering. Students in the Fellowship program will spend the majority of their time at ORNL.

Students will have the opportunity to participate in both the Fellowship program and the ESE program.
New leaders Take the Helm in Diversity, Professional Practice Programs

The Engineering Professional Practice Office and the Engineering Diversity Programs Office in the College of Engineering have both undergone changes in leadership this year.

In January, Todd Reeves was named as the new director of Engineering Professional Practice, replacing Walter Olson, who left the university to accept a position as Director of Recruiting and Retention with Norfolk State University in Norfolk, Va.

Reeves served 22 years in private industry, where he focused on new product development, team leadership and customer relationship management.

Reeves’ most recent position was with Emerson, working for the Knoxville-based Machinery Health Management Business as a senior staff engineer and product manager. In this role, he focused on the creation and global market launch of new machinery condition monitoring products for the process industries. Prior to that, Reeves worked for General Dynamics Electric Boat division in Groton, Conn., as a sound and vibration design engineer, where he assessed the acoustic acceptability of nuclear submarine propulsion plant systems.

Since moving to Knoxville in 1991, Reeves has been an active member of the Knoxville community, leading and participating in various civic organizations. He holds seven patents in the area of machine condition monitoring, and has received numerous recognitions and awards for his work.

Reeves said that the change in leadership has been a beneficial opportunity for the program.

“Todd has a background in industry and will bring a fresh perspective to our work,” Griffin said. “His experience will be invaluable as we continue to grow the program.”

The establishment of the James Pippin Pre-College Program Endowment was recognized during the reception. Pippin worked with Griffin as the UT Career Services Office.

“Working with Todd Reeves, along with staffers Joyce Reed, Suzanne Sawicki and Yvette Hayward, plans to continue to work with students to provide real world job opportunities during their years of academic study,” Reeves added. “Our role is putting opportunities together, and we have an excellent staff. I want to see more student participation and also to grow our employer base. We’re planning to increase our communications efforts with students so they will be more aware of the opportunities that are available with co-op positions and internships.”

Reeves also hopes to enhance the program’s relationships with faculty and departments as well as the UT Career Services Office.

“Your organization as a place to serve not only co-op students and interns, but also as a resource for students to find out how exactly to go to work to prepare for a professional standpoint for that job,” Reeves said.

In the Engineering Diversity Programs Office, longtime director James Pepin retired on June 30. A reception was held on May 7 at the UT Career Services Office at (865) 974-3123 or via e-mail at mjpp@utk.edu.

On May 3, Travis Griffin was named as the new director of Engineering Diversity Programs. Griffin comes to the university from Oklahoma State University where he served as the coordinator for the Multicultural Engineering Program. In this role, Griffin focused on recruiting, advising and retaining students for the College of Engineering, Architecture and Technology. He also developed, implemented and managed special programs targeted to underrepresented groups and a multicultural awareness program for the college. Prior to this position, Griffin was the outreach coordinator at the University of Southern Mississippi (USM) within the College of Science and Technology, in which he mentored students and helped them pursue graduate degrees and career opportunities.

Griffin received his bachelor’s degree in software engineering from Mississippi State University in 2004 and his master’s degree in higher education from USM in 2005. Griffin is an active member, leader and advisor within the National Society of Black Engineers (NSBE) and National Association of Multicultural Engineering Program Advocates and has received numerous recognitions and honors including the NSBE Alumni Extension (AE) National Leadership 2006 award and the Region 3 NSBE AE Dedication 2006 award.

"It is an honor to succeed the legacy of James Pepin," Griffin said. “This position is a dream come true for me, and I plan to follow the vision that has already been established for the diversity programs.”

Griffin defines his plans for the future in these words: outreach, recruitment and retention.

“We are planning to enhance our outreach to African-Americans, Native Americans and Hispanics,” Griffin commented. “We also want to provide more outreach to women as an underrepresented group in engineering. We want the student organizations such as NSBE, the Society of Hispanic Engineers and the Society of Women Engineers to help us with these efforts.

In terms of academics, preparation is critical for students to succeed in the engineering program. We are using initiatives such as the Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) and our Summer Bridge programs to help them acclimate to the requirements to succeed in engineering. In terms of retention, we provide monthly professional and academic development sessions to help the students excel in the program.”

For more than three decades, more than 900 minority students have graduated from the UT Knoxville College of Engineering, due in large part to the diversity programs’ efforts in recruiting, retaining and graduating African-American, Hispanic and Native-American engineering students. Since 1978, UT Knoxville has consistently ranked among the top 50 universities and colleges in the nation for graduation rates of African-American engineering students. The college’s initial outreach to underrepresented students began in 1973 with the establishment of the Minority Engineering Scholarship Program, which was renamed the Diversity Engineering Scholarship Program (DESP) in 1999. The DESP program is currently under the auspices of the Engineering Professional Practice Office.

Both Reeves and Griffin plan to work together to meet the goals for their respective programs.

“Travis and I have agreed that we want to take a fresh look at DESP and see if we can make it even more beneficial for students,” Reeves said.

Griffin agreed. “The system that has developed within the DESP is great for retention,” he said.

“The professional experience that it provides is a large part to the diversity programs’ efforts in recruiting, retaining and graduating African-American, Hispanic and Native-American engineering students. Since 1978, UT Knoxville has consistently ranked among the top 50 universities and colleges in the nation for graduation rates of African-American engineering students.”

Griffin and Reeves plan to work together to continue the success of the Diversity Programs Office.

For more information on the Engineering Professional Practice Office, visit: http://www.cmp.utk.edu/
College of Engineering and Eastman Continue Productive Relationship

The University of Tennessee College of Engineering (CCE) and Eastman Chemical Company, founded in 1920, a global chemical company that manufactures and markets a broad portfolio of chemicals, fibers and plastics, have enjoyed a strong and mutually beneficial partnership for many years. The company is based in Kingsport, Tenn. “Eastman and the university have a strong corporate partnership which encompasses research partnerships, community outreach programs and a number of advisory boards and councils,” said Norris Sneed, Senior Vice President for Manufacturing Support and Chief Administrative Officer for Eastman. “In addition, Eastman has more than 300 UT alumni working in various roles from entry level positions to an executive team member. The strong commitment from both Eastman and the university enables both parties to be innovative, develop breakthrough technologies and provide an avenue to develop outstanding leaders.”

One example of this long-term partnership is the capstone design class for chemical engineering students, which has been facilitated by Dr. Charles Moore in the Department of Chemical and Biomolecular Engineering (CBE) for many years. “The Capstone Design Program is an opportunity for five to 10 senior chemical engineering students from UT to work on a process control issue for Eastman in exchange for class credit. The program is directed by Dr. Moore and is coordinated at Eastman through the company’s Advanced Controls Technology group. Over the years, Eastman has hired more than two dozen students who were involved with the Capstone Design Program,” Sneed commented. “For Eastman, the program offers various benefits. It provides Eastman with an innovative approach to process control issues, along with the opportunity for technical studies of our processes, to test solutions to operational/employee concerns from students. Additionally, it is a chance to promote our company among potential engineering students, and it greatly supports our relationship with the University of Tennessee and the College of Engineering.”

The students also receive the benefit of adding an industrial component to their undergraduate curriculum. The course provides a team approach to solving problems. The students gain experience in delivering presentations to an audience of industrial professionals, and it allows them an opportunity to apply their academic studies to “real world” problems. They also get the experience of visiting an industrial plant site and seeing chemical process equipment firsthand, along with the opportunity to talk with Eastman’s process operators.

The chemical company also sponsors the Eastman Leadership Seminars through the university’s Office of Career Services. This program helps students prepare for future careers in all disciplines, not just engineering. Leaders from Eastman interact with students in an open and relaxed environment to discuss real world topics, current issues and leadership styles. The program also provides opportunities for students to engage with students from different concentrations and backgrounds.

“The intent of this program is to provide student participants with skills that enable them to become better communicators and leaders. Our hope is that this innovative initiative will give students the confidence and professionalism required to excel in a competitive engineering marketplace.”

The program provides Eastman with many benefits as well. A valuable take away from the program is information about what the current generation values. It provides Eastman with insight into what these students are looking for in a future employer. Participation in this program also allows Eastman an opportunity to showcase the quality of its leadership and the value placed upon employees at our company. Lastly, it’s an excellent opportunity for us to identify potential hires early on in our recruiting process.”

Eastman recently provided the engineering college with $1 million to establish a new Chemical and Process Engineering Fellowship in the CBE department. “Our goal for this position is to help enable the university to attract the brightest students into the graduate program and provide adequate funding for the selected individual to be successful,” Sneed added. “The funding also shows Eastman’s commitment to UT, specifically the College of Engineering.”

Sneed added that it is high time for the company to reexamine the current difficult economic climate and develop multiple cost cutting measures and made it clear that truly business decisions, the company is also dedicated to making sure that decisions on reducing short-term costs do not jeopardize long-term growth goals.

“Our initiative with UT is a reflection of our future growth endeavor,” Sneed said. Sneed said that Eastman looks forward to continuing its relationship with both the university and the CCE, and is confident that his company will continue to progress in the future. “Our company is committed to growth and we are well-positioned for growth,” Sneed said. “We will continue to build on our core businesses while also pursuing new growth opportunities in emerging global markets. Our vision is to be an outstanding chemical company by delivering growth for our employees, customers, owners and communities. We expect Eastman to be a larger company than it is today, with a broader global footprint.”

COE Collaborates with College of Business Administration to Offer Courses Focused on Engineers’ Needs

The University of Tennessee College of Engineering (CCE) and College of Business Administration (CBA) are collaborating to provide business education opportunities to UT engineering graduates. Leading this effort and guiding the business curriculum is Chuck Parke, a 1985 graduate of UT’s College of Engineering. Parke took the position in 2004, just before joining the CFA faculty was vice president of operations of Walthwhold Corporation. “My UT engineering degree armed me with the strong, technical foundation to advance my engineering career,” said Parke. “However, as I moved up the organizational ladder, it became apparent to me that leadership was a key component of my organization from a strategic and leadership perspective.”

Parke earned his MBA through the University of Tennessee Executive MBA program in 2003. “Earning my MBA allowed me to understand my organization through the eyes of leadership – both financially and strategically. After I retired from Walthwhold, I joined the college to develop and teach courses that specifically addressed the needs of engineers and manufacturing leaders.”

For nearly 40 years, the college’s Center for Executive Education (CEE) has offered non-degree, short courses and executive-level MBA programs for working professionals in order to keep our chemical and engineering students on the cutting edge of the latest developments in their fields. CEE’s Executive Development Program began in 1972 through the encouragement and financial support of the organizations that contributed to the college’s first quarter in 1969. Since the 1980s, CEE aligned itself with Dr. W. Edwards Deming, the father of quality improvement initiatives, to establish itself as a world-class head of quality and process improvement education; the center grew as did its initiative to engage its clients with the solid strategic-level education the company’s profitability and sustainability. “The sharing of knowledge was invaluable to me,” Fulghum said. “Whether it is building business skills through non-degree programs or building strategic-level business and technical capabilities through an MBA program, CCE graduates have many opportunities to enhance their excellent technical backgrounds with a solid understanding of business.”

For more information on any of these programs, please visit http://TheCenter.utk.edu or contact Nicole Cortes at either 865-974-1620 or nicole.cortes@utk.edu.
The College of Engineering Spring 2010 commencement ceremony took place on May 12, with more than 240 engineering graduates participating in the event. A record-breaking more than 2,000 parents, friends and relatives attended the graduation, which took place in Thompson-Boling Arena on the UT-Knoxville campus at 11:30 a.m.

Dr. Wayne Davis, dean of engineering, led the academic procession that signaled the beginning of the ceremony. The procession included associate deans, department heads and faculty representatives. Dr. Susan Martin, UTK Provost and Vice Chancellor, and Dr. Brad Fennwick, UTK Vice Chancellor for Research, also attended the ceremony.

Mr. Ray Jubran (BSEE ‘84), founder, Chief Executive Officer, and 51 percent stockholder of the Denark Construction Company, Inc., was the commencement speaker. Jubran has led the management team of the general contracting and engineering company since its incorporation in 1985. A former member of the college’s Board of Advisors and the recipient of the 2004 Nathan W. Dougherty Award for outstanding achievements in engineering, Jubran reminded graduates to thank everyone who helped them along the way—parents, community, alumni and faculty. He also offered five suggestions for a successful future: be a leader, stand up for what you believe in; make the right choices; take care of your family; and take care of your community and give back to it.

The college’s top students were also recognized: Zachary Taylor Deason, aerospace engineering; Mark Edward May, chemical engineering; and Timothy Richard Wentz, computer engineering. Daniel Stephen Smith was recognized as the winner of a Society of American Military Engineers Award. The Society ROTC Award of Merit given to one of the college’s ROTC programs was presented to the U.S. Army. The new second lieutenants are Brittany Starr Arnold, Andrew Zane Jackson, Garrett Anthony Karnowski, Sharon King, Christopher Michael Riley, Daniel Stephen Smith and Benjamin Joseph Tickle.

Engineers Award. This Society ROTC Award of Merit is a national award given only to 20 ROTC Air Force cadets. The award is designed to attract top graduate students in engineering.

For the first time, all academic departments based in the College of Engineering have a graduate degree program nationally ranked by the U.S. News & World Report, and the nuclear engineering graduate program is in the top 10. College of Engineering Dean Wayne Davis said the college’s latest rankings will help recruit highly qualified candidates for the college’s graduate programs.

“Reinventing is also being enhanced by the recently established UT Knoxville-ORNL Graduate Fellowship Program, a new program designed to attract top graduate students in science and engineering, and the fact that our nuclear engineering program is one of the best in the country will be a definite asset in attracting high-caliber candidates to UT,” Davis said.

UT’s College of Engineering’s overall graduate program was ranked 73rd nationally out of 198 public and private colleges and 44th among public universities.

College of Engineering programs ranked nationally:

- Aerospace Engineering is ranked 63rd
- Chemical Engineering is ranked 60th
- Civil Engineering is ranked 59th
- Computer Science is ranked 61st
- Electrical Engineering is ranked 55th
- Mechanical Engineering is ranked 57th
- Nuclear Engineering is ranked 9th
- Each year, U.S. News ranks graduate programs in the areas of business, education, engineering, law and medicine. These rankings are based on expert perception (40%) about the program’s quality and quantitative metrics (60%) that measure the level of a school’s faculty, research and students. Indicator and perception data come from surveys of more than 1,500 programs and some 12,400 academics and other professionals that were conducted the previous year.

In recent years, the university’s colleges have been offering conferences during smaller, more individualized graduation events.

Although Tickle is a relatively young alumnus, he encourages his fellow UT graduates not to wait to contribute to the university.

“I think a lot of the younger alumni don’t realize what is possible when you give to UT,” Tickle said. “I believe that nothing will propel our society and our nation further than an investment in our children’s education. Secondly, UT has the potential and roadmap to be one of the top research universities in the country. Our partnership with ORNL is unparalleled. The quality of life and business environment in East Tennessee is unsurpassed. All we have to do is invest and work at reaching our goals every day. I know that Chancellor Jimmy Cheek, our leadership and our professors and alumni want the best and that’s what we should strive for all of the time.”

John Tickle and his wife Ann have set a high standard for giving by contributing to two university buildings. They were instrumental in providing for the construction of the John and Ann Tickle Small Animal Hospital expansion within the College of Veterinary Medicine, which was opened in the spring of 2008. The John Tickle also provided significant support for the new John D. Tickle Engineering Building, which will begin construction on Neyland Drive in November 2010. The facility will house the Department of Civil and Environmental Engineering and the Department of Industrial and Information Engineering.

“It is very humbling and inspiring to see our family name on two campus buildings,” Tickle commented. “I have to say, my father really sets a fast pace! We all have to try to do the right thing every day in our lives.”

Tickle’s wife, Lisa, is a UT graduate, and they have two children—Jack, who is 8 years old, and 16-month old Josie.

Tickle hopes his gift will inspire others to give to the university.

“I knew that I gave the gift, I was doing the right thing and that I would have a productive legacy,” Tickle said.
the “Federal Engineer of the Year.” He resides in Nashville, Tenn.

Charles L. McEntyre (BS/ME ’58) was recognized by the National Society of Professional Engineers. He resides in Politico, N.Y.

Thomas A. Bach (BS/EE ’83) has been named to the Board of Directors of JETS, one of the nation’s leading nonprofit educational organizations. He is the Utility Systems Engineer for the Water and Sewer Authority of Calumet County and is the Community Outreach Committee Chair for the Professional Engineers of North Carolina (PENC). He resides in Concord, N.C.

Todd Kruecke (BS/’84, MS/’97) was named vice chair for the Airport Consultants Council’s Legislative and Regulatory Committee. He resides in Springfield, Ill.

Garrett Lee Skrobot (BS/’98) is a NASA mission manager. He resides in Cocoa, Fla.

Joe Purkey (BS/ME ’58, BA/EE ’76) died on February 27, 2010. He lived in Oviedo, Fla.

Krishna M. Sadasivam (BS/EE ’82) was elected president of the 2010 IEEE Honors Ceremony on Saturday, June 26 in Quebec, Canada.

Lisa Bird wins Send Roses Award

Engineering Advisor Lisa Bird received the university’s Send Roses Award on June 18, 2010. Each month, the Positive Recognition Committee selects an employee who demonstrates outstanding courtesy and customer service. Bird received a framed certificate, three roses, a gift certificate for the UT Book and Supply Store and a reserved parking spot on campus for one month. The award is given to the employee who demonstrates outstanding courtesy and customer service skills. Customers are defined as students, parents, co-workers, faculty, staff and the general public. Consideration is also given to job performance, work behaviors, initiative and relationship with associates and other customers.

Lisa Bird (left) received the Send Roses Award from Bruce Delaney (right) and is congratulated by COE Associate Dean Bill Evans (back).
Development News

A Great Time to be an Engineer

It’s a great time to be an engineer because there are so many exciting and rewarding job opportunities to choose from. I think one of the best reasons to become an engineer is because engineers are simple, honest people who are interested in learning new things. In fact, engineers have a drive and a curiosity that I think is unique to a small group of people. Engineers are the ones who are revolutionizing our world and making the world a better place for all of us. Engineers are the ones who are changing the world and saving lives every day.

Brian Shupe and Gift Annuities

A donation envelope is inserted in this newsletter’s fold, or if it’s missing, call us at 865-974-2779, or find us on the Web at www.engr.utk.edu. Contact us to learn more about the various ways you can support UT engineering.

A Tradition of Giving

Gifts to the College Fund for Engineering and seven parallel funds in each of the departments are recognized as annual gifts. In most cases at UTK, only the College Fund is designated for annual giving, but Dean Wayne Davis firmly believes that supporting both department support and college-wide support is important.

Fiscal Year 2010 Donors

Both the Campaign for Tennessee and our new annual giving emphasis are counted on the calendar year. To keep totals consistent, we do the same here. Gifts to the College Fund for Engineering and seven parallel funds in each of the departments are recognized as annual gifts. In most cases at UTK, only the College Fund is designated for annual giving, but Dean Wayne Davis firmly believes that supporting both department support and college-wide support is important.

Donor List

Platinum ($10,000 and Above)

Donor ($5,000 and Above)

Bronze ($1,000-$2,499)

Bronze ($1,000-$2,499)

Outright gifts

Donors who make a new gift of cash or securities received during Fiscal Year 2009-2010 are listed alphabetically within giving groups. This category does not include pledge payments.

$500,000 and Above

John and Ann Tickle, Sr.

Engineering Annual Giving Total 2009 $371,855

Listed here are those who gave to Engineering at Leadership Levels.

*Indicates that part or all of their gift went to the College Fund for Engineering. Others supported one or more of the designated departmental funds.

Cultivating Knowledge for a Competitive Edge

As of August 2010, the College of Engineering has secured more than $54 million or 72 percent toward our campaign goal of $75 million. Opportunities to join this effort continue through December 2011.

Leadership Annual Giving Calendar Year 2009

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Cindy Akard

www.engr.utk.edu

President

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Nathan Zipper,

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and gift annuities, or the compelling legacy of a bequest.

A spirit - a vision - a plan

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Brian Shupe,
**Transportation Academy Introduces 7th and 8th Grade Girls to Careers in Science**

By Tammy Enix and Lissa Gay

The academy's home base is the UT Knoxville's STEM Center for Transportation Research's (CTR) office, located on the UT-Knoxville campus. The center is a partnership with Knox County Schools and the Southeastern Transportation Center. The center's mission is to facilitate interdisciplinary research, public service, and outreach in the field of transportation for the U.S. DOT program that encourages students to pursue careers in transportation. It is organized and sponsored by the CTR and the Southeastern Transportation Center. UT Knoxville is also a sponsor. For more information on the academy, visit [http://ctr.utk.edu/transportationacademy/](http://ctr.utk.edu/transportationacademy/)

The CTR was created in 1970 to foster and facilitate interdisciplinary research, public service, and outreach in the field of transportation at UT Knoxville. For more information about the CTR, visit [http://ctr.utk.edu/](http://ctr.utk.edu/).
The University of Tennessee, Knoxville College of Engineering invites you to “Homecoming 2010 – Rocky Top the Rebels” and the Annual Alumni Barbeque On the Hill catered by Dead End BBQ, co-owned by UTK Engineering Alumnus Robert Nutt.

**Saturday, November 13th, 2010**

3 hours prior to the Tennessee vs. Ole Miss game

Join us for a barbeque lunch, catered by Dead End BBQ; exhibits and demonstrations; and reunions with former classmates and faculty! Register today and be a part of the tradition!

Costs: $12.00/adults • $8.00/children under 10 years of age

RSVP to (865) 974-2779, e-mail Christina Parsons at cparson4@utk.edu or register online at [www.utk.edu/alumni/](http://www.utk.edu/alumni/)