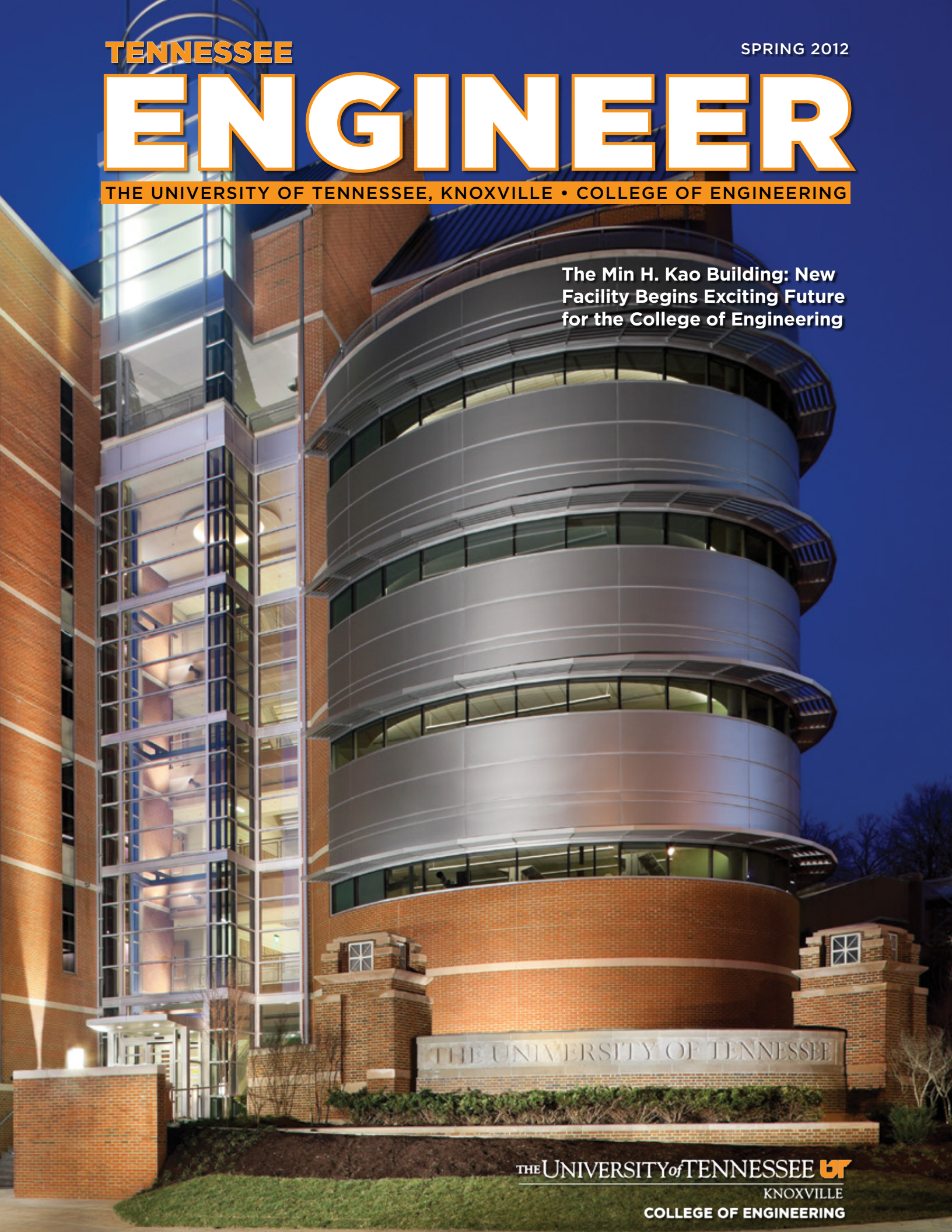
SPRING 2012

TENNESSEE ENGINEER

THE UNIVERSITY OF TENNESSEE, KNOXVILLE • COLLEGE OF ENGINEERING

The Min H. Kao Building: New Facility Begins Exciting Future for the College of Engineering



THE UNIVERSITY of TENNESSEE
KNOXVILLE
COLLEGE OF ENGINEERING

Contents



1 The Dean's Message

2 Min H. Kao Building Dedication Events



6 Faculty Updates

7 Faculty Focus: Dr. Xueping Li

8 Engineer's Day



10 The COE Pre-College Programs

11 Special Feature: Bill Palmer

12 Research Feature: CURENT



14 Engineering Alumni

15 Alumni Profile: Bennett Croswell

16 The Dean's Circle



17 Campaign for Tennessee

18 Engineering Alumni Around the World

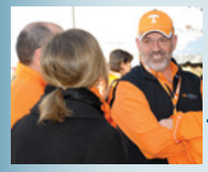
20 Outstanding Engineering Alumni



21 Alumni News: Memorials

22 Events & Awards

23 Special Feature: Ed Burdette



24 Homecoming

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Dean's Message

Numbers, numbers, numbers. Our engineering minds are filled with numbers, some that become so embedded that we never seem to forget them. As I write my greeting, I am reminded that today is Ⓟ-day or 314, or as we often recall it, 3.1417, to four significant figures. Today is also the day of the ribbon cutting ceremony for our new Min H. Kao Electrical Engineering and Computer Science Building, located at N35 57.542' and W083 55.451' at the corner of Estabrook Drive and Cumberland Avenue. Photographs of this celebratory event are included with the cover story of this issue of *The Tennessee Engineer*.

This building would not be a reality without Dr. Kao's vision or without the responses of the State of Tennessee, our alumni and our friends to Dr. Kao's challenge gift. As I look back over the building's five-year progression from architectural drawings to completion, other numbers come to mind. During that time, the college's undergraduate (UG) and graduate (G) enrollment increased by 23 percent and 45 percent respectively, resulting in an increase in generated engineering student credit hours of 45 percent. Research funding, as measured by external grant expenditures within the college, increased by 84 percent and by 23 percent just this past year. We have been successful in hiring seven Governor's Chair Professors in the past three years. One of the Governor's Chair Professors, along with the department head and a faculty group in electrical engineering and computer science, have been awarded the college's first joint NSF/DOE funded Engineering Research Center: The Center for Ultra-wide-area Resilient Electric Energy Transmission Networks (CURENT) (See the article on pages 12-13). This center will also include a large number of industrial/commercial partners.

Other significant events of the past five years included the groundbreaking ceremony for the new John Tickle Engineering Building (to house the Department of Civil and Environmental Engineering and the Department of Industrial and Information Engineering), which is slated for completion in late spring 2013, and the initiation of the new multidisciplinary Ph.D. program in energy science and engineering with joint faculty from UT and ORNL. Recently, we received notification from *US News & World Report* that our college's overall 2013 ranking among all colleges of engineering in the U.S. increased from 70th to 67th, and our ranking among public colleges of engineering increased from 41st to 40th. Our UG program is ranked 32nd. While these rankings place us in the upper 20th percentile of the colleges of engineering in the nation, we aspire to be a 25th ranked college in support of the university's goal of becoming a Top 25 university. But in the end, it's not about numbers—it's about the quality of our faculty, the quality of our students, and the impact that they, our alumni, and the engineering profession are making in the state, in the nation, and in the world. We are even making an impact outside of this world! Stay tuned for upcoming news about how our faculty and students were involved in the design of microchips on the Mars Rover that should land on Mars in August!

While the last five years have been years of outstanding progress, we continue to look forward to opportunities just over the horizon. Already in view on that horizon, more specifically the year 2013, is the 175th anniversary of the founding of the College of Engineering at the University of Tennessee, Knoxville. We look forward to the opportunity to celebrate this milestone with you. Please let us know your thoughts about creative ways to celebrate!

Wayne T. Davis

A New Era Begins



Dedicating the Min H. Kao Building at the ribbon-cutting ceremony are (left to right): Dr. Kevin Tomsovic, Professor and Head of the Department of Electrical Engineering and Computer Science; Mrs. Sue Hung, wife of the late Dr Jim Hung, one of Dr. Kao's mentors; Mrs. Fan Kao; Dr. Min H. Kao, CEO of Garmin International; State of Tennessee Governor Bill Haslam; UT Knoxville Chancellor Jimmy G. Cheek; COE Dean Wayne T. Davis; UT President Joe DiPietro; and Min H. Kao Fellow and EECS student representative Michael Pickelsimer.

On Wednesday, March 14, 2012, in a gala ceremony at 11:00 a.m., University of Tennessee, Knoxville, alumnus and Garmin International, Inc. founder Min H. Kao helped dedicate the new $37.5 million engineering building named in his honor—an iconic addition to the Hill and welcome new space to one of UT's fastest growing colleges.

Min Kao and his wife, Fan Kao, joined Governor Bill Haslam, Chancellor Jimmy G. Cheek, UT President Joe DiPietro, College of Engineering Dean Wayne T. Davis, and EECS Department head Kevin Tomsovic along with state and local officials and university faculty, staff, and students to dedicate the Min H. Kao Electrical Engineering and Computer Science Building.

The Kaos committed $12.5 million with the stipulation that the State of Tennessee would match the gift. The match was approved by then-Governor Phil Bredesen and the Tennessee State Legislature, creating a total funding of $37.5 million for the project and establishing one of the first such matching arrangements for a new academic building in the state.

In his remarks, Kao recalled his first visit to Ferris Hall, the former home of the electrical engineering department.

"When I first came to UT and walked up to Ferris Hall I thought, 'This is what a university building should look like.' I still think Ferris is one of the most beautiful buildings on the campus and it inspired me during the years of my education at UT. I hope that someday other young people will look at this beautiful new electrical engineering and computer science building with the same feeling I still have for Ferris."

The Kaos also donated $5 million to create the Min H. Kao Scholars and Fellows endowments and the Kao Professorship. This gift was the foundation of a challenge campaign encouraging other alumni and friends to establish their own funds to support the department. An additional $5 million was raised, providing tremendous new support for students and faculty.

The Min Kao building streamlines six buildings that formerly housed the Department of Electrical Engineering and Computer Science (EECS) into one one hundred fifty-thousand square-foot engineering building. The centralization allows for more collaborative research between students. The building houses nineteen research laboratories, thirteen teaching laboratories, nine classrooms and faculty offices; a two-thousand five-hundred-square-foot, one hundred forty-seven-seat auditorium; and an educational wing with smaller lecture classrooms that are available to other departments.

"The Min Kao building enhances students' learning experience by offering them better classrooms, student offices, and laboratories for research," said College of Engineering Dean Wayne Davis. "The building is also designed to accommodate the technological demands of these students' work by having special power requirements for computations and network development. These technological learning spaces enhance their education and also help us stay competitive in our journey to the Top 25."

The building also houses the Center for Ultra-wide-area Resilient Electric Energy Transmission Networks, a one-of-a-kind center funded by the National Science Foundation and the Department of Energy, which seeks to develop smart grid technologies to overhaul our nation's chronically overstretched electric power grid.

Construction began on the building in May 2007 and it opened January 2012. The building is built for LEED certification, which requires using environmentally sound materials, positioning the building to make the best use of natural lighting and using indoor lighting that is both cost-and-energy-efficient.

The Kaos were feted with a private tour of the building and an invitation-only reception the night before the dedication ceremony. Additional events included a breakfast on Wednesday morning with the Min H. Kao Scholars and Fellows and Dr. Leon Tolbert, the Min H. Kao Professor, and a luncheon with EECS faculty after the dedication ceremony.



Julie Wichlinski (far left) and Brian Shupe (far right) from the Engineering Development Office and COE Dean Wayne Davis (left) get together with Dr. Min H. Kao (third from right) and a group of Garmin International Employees (left to right): Stacey Peterson, College Relations Recruiting Team Leader; Laurie Minard, Vice President, Human Resources; Debbie Pollard, Senior Executive Assistant & Executive Project Manager; and Raedawn Johnson, Human Resources Generalist, at the invitation-only reception held in the Min H. Kao Building on March 13, 2012.



Jennifer Kao (left) and her brother Ken Kao (right) join their parents, Dr. Min H. Kao and Mrs. Fan Kao, at the opening reception for the Min H. Kao Electrical Engineering and Computer Science Building.

Balloons drop from the ceiling of the Min H. Kao Electrical Engineering and Computer Science Building after the dedication ceremony.





Guests enjoy the luncheon held after the dedication ceremony for the Min H. Kao Electrical Engineering and Computer Science Building.



Dr. Min H. Kao talks with the Min H. Kao Scholars and Fellows at a breakfast prior to the dedication ceremony.



Dr. Min H. Kao (left) enjoys the evening reception with UT President Joe DiPietro (center) and Mr. John Tickle, the donor who provided funding for the John D. Tickle Engineering Building, which is currently under construction on Neyland Drive.



The beautiful weather allowed guests to mingle on the terrace during the reception after the building dedication ceremony.



Tennessee Governor Bill Haslam speaks at the dedication ceremony on March 14.

Faculty Updates


Dr. Terry C. Hazen

Hazen Appointed Governor's Chair

Dr. Terry C. Hazen has been named as a UTK-Oak Ridge National Laboratory (ORNL) Governor's Chair, tenured in the College of Engineering's Department of Civil and Environmental Engineering at full professor rank. Hazen also holds courtesy joint appointments with Departments of Microbiology and Earth and Planetary Sciences in the College of Arts and Sciences. He will be interacting with both the Center for Environmental Biotechnology and the Joint Institute for Biological Sciences. Hazen's joint appointment at ORNL is within the Biosciences Division.

Hazen received his B.S. and M.S. degrees in Interdepartmental Biology from Michigan State University. His Ph.D. is from Wake Forest University in Microbial Ecology.

Prior to coming to UT, Hazen was serving as the Head of the Ecology Department and Center for Environmental Biotechnology at Lawrence Berkeley National Laboratory (LBNL). He was also serving as the Director of Microbial Communities Division within the Joint Bio-Energy Institute at LBNL.

Hazen recently led groundbreaking research about how the giant clouds of oil from the Deepwater Gulf spill seemed to disappear. His team identified the oil-eating bacteria that proliferated below the ocean surface and helped to break down and clean up the oil plume.

Hazen has received numerous awards, including the Pacific Northwest National Laboratory Outstanding Lecturer Award in 2011 and the DOE BER Distinguished Scientist Award in 2005 (one of only four ever given). Hazen's primary area of specialty is environmental microbiology, especially as it relates to bioremediation, water quality, and bioenergy.


Dr. Kivanc Ekici

MABE Assistant Professor Receives CAREER Award

Dr. Kivanc Ekici, an assistant professor in the Department of Mechanical, Aerospace and Biomedical Engineering, has received a CAREER Award from the National Science Foundation (NSF) for his proposal "A Multidisciplinary Framework for Innovative Design of Wind Turbines." The funded project will investigate unsteady aerodynamic modeling and rapid design of wind turbines by developing and applying two very efficient computational methods—a "multi-frequency" harmonic balance method and an adjoint method—which will be used in an optimization algorithm to design innovative turbines with improved aerodynamic, aeroelastic, and aeroacoustic characteristics.

Education and outreach plans for the program include development of a wind engineering course and a wind turbine aerodynamics and aeroelasticity course as well as involving undergraduate students in cutting-edge research and setting up summer outreach programs that target high school teachers and K-twelve students.

The CAREER program is a foundation-wide activity that offers the NSF's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations.

Bredesen Center Leaders Elected AAAS Fellows

Dr. Lee Riedinger and Dr. Michael Simpson, joint faculty members of the University of Tennessee, Knoxville, and the U.S. Department of Energy's Oak Ridge National Laboratory (ORNL), have been elected fellows of the American Association for the Advancement of Science (AAAS).

Riedinger and Simpson are leaders of the UT-ORNL Bredesen Center for Interdisciplinary Research and Graduate Education (CIRE). Riedinger is the center's director and Simpson is the assistant director. The Bredesen Center offers a unique doctoral degree in engineering and energy sciences and a very competitive distinguished graduate fellowship.

Riedinger is also currently serving as the UT Interim Vice Chancellor for Research and Simpson is a joint UT-ORNL faculty member in the Department of Materials Science and Engineering.


Dr. Lee Riedinger


Dr. Mike Simpson


Dr. Richard Bennett

CEE Professor elected to Masonry Society Board

Richard Bennett, professor in the Department of Civil and Environmental Engineering and director of the Engage Engineering Fundamentals Division, was elected to the Board of Directors of the Masonry Society. It is an international professional, technical, and educational association dedicated to the advancement of knowledge on masonry.


Dr. David Clarke

Clarke Appointed Chair of T&DI

David B. Clarke, director of the Center for Transportation Research, has been appointed chair of the Rail Transportation Committee of the Transportation & Development Institute (T&DI) of the American Society of Civil Engineers. The T&DI provides leadership within the society to promote integrated transportation and development that is safe, secure, and sustainable.

Faculty Focus

Dr. Xueping Li, Industrial & Information Engineering


Dr. Li talks with students in a study group.

Dr. Xueping Li's motto is "Industrial engineers make things better."

Li, an assistant professor in the Department of Industrial and Information Engineering (IIE), has a wide variety of interests and research areas that keep him constantly in motion.

Li was born in Sichuan, a southwest province of China, and lived there until he moved with his family at the age of twelve to the Liaoning province in northern China. He received his B.S. in automatic control and computer science in 1996 and his M.S. in computer science in 1999 from Nankai University.

Li became involved in the field of industrial engineering after seeing it as a chance to tackle real-world challenges in a wide number of areas, including manufacturing and service industries, healthcare and supply chain, and logistics. In 2002, Li was accepted as a doctoral student at Arizona State University, where he received his Ph.D. in industrial engineering in 2005.

Li was interested in the unique opportunities that the University of Tennessee, Knoxville, offered.

"UT is the flagship campus of the state of Tennessee, and the area is home to Oak Ridge National Laboratory (ORNL), the Y-12 National Security Complex, and other leading government and corporate entities, so the potential for collaborative projects is great," Li said. "I also saw the UT Department of Industrial and Information Engineering (IIE) as a rising program with lots of space to grow."

Li co-founded the Ideation Laboratory (iLab: http://iLab.engr.utk.edu) with IIE research assistant professor Dr. Lee Martin. The iLab is a collection of hardware, software, and relationships that can rapidly convert intangible ideas into tangible representations. The facility provides students and faculty with tools for rapid transformation of ideas into first prototype products for plastic, wood, metal, and software mobile applications. Located in 301 Stadium Hall, the iLab's first educational use was by the Governor's School in the summer of 2011. Students in the Engineering Fundamentals program have also used the iLab.

"The goal of the iLab is for it to be a UT 'user facility' available to all faculty and students for prototype projects," Li commented. "Both software design tools and hardware fabrication tools will be accessible via the Internet at the iLab website with individual accounts through either credit card or UT charge accounts."


Dr. Li works with two graduate students in an IIE lab.

Li is also the co-director, with Dr. Tami Wyatt from the College of Nursing, of the Health Information Technology and Simulation Laboratory (HITS Lab), an organized research unit at UTK. This interdisciplinary initiative brings together the expertise of engineers and nurses to test technology and human computer interaction and to facilitate knowledge in health information technology. Drs. Li and Wyatt have a long-term goal to develop eventual federal funding for the center.

Li and Wyatt recently developed and patented an electronic health record (EHR) for academic use called DocuCare (http://thepoint.lww.com/lwwdocucare.) DocuCare was sold to Wolters Kluwer/Lippincott last year, and the system will now be integrated into Laerdal's suite of mannequin simulation offerings. Laerdal is the top distributor of simulated mannequins for healthcare education.

> *"UT is the flagship campus of the state of Tennessee, and the area is home to Oak Ridge National Laboratory (ORNL), the Y-12 National Security Complex, and other leading government and corporate entities, so the potential for collaborative projects is great."*

Li, the recipient of the IIE department's Best Teaching Award in 2009, Outstanding Researcher Award in 2010, and the UT Quest Scholar of the Week in August 27, 2011, also enjoys teaching and interacting with students.

"I want my students to take away the hands-on experience from my classes to apply in their research and work," Li said. "I teach both undergraduate and graduate level courses in modeling and simulation as well as graduate level courses in advanced information system and design."

When he's not working in the classroom or the laboratory, Li enjoys family time with his wife, Coco, and his four-and-a-half year old daughter, Joy. He also enjoys traveling, sports, and playing volleyball and was part of the winning team for the 2009 UTK Intramural Volleyball Championship.

COE Welcomes High School Students to 2011

Engineers Day



Ralph Heath Addresses the Crowd at Engineers Day.

An excited crowd of close to one thousand high school students from forty-two high schools descended on the University of Tennessee, Knoxville, campus for Engineers Day on October 27, 2011.

The annual event, which has been held by the UTK College of Engineering since 1912, allows university students and faculty to spend time interacting with hundreds of potential engineering students from high schools across the region.

Activities during Engineers Day include exhibits, contests such as the Balsa Wood Bridge Competition, the Egg Drop Competition, and the Quiz Bowl, one of the most popular segments of the event. During the Quiz Bowl, each team, consisting of four students, are given thirty minutes to answer sixty to seventy written, multiple-choice engineering-based questions. The winners advance to the Championship Round to determine who will take first place.

The Food Battery Competition, a new activity added for Engineers Day 2011, was a big hit and provided a lot of entertainment for students.

The keynote speaker for Engineers Day 2011 was Ralph D. Heath (*BS/EE '70, MBA '75*), Executive Vice President–Aeronautics for Lockheed Martin Corporation. Heath leads the corporation's military aircraft business, which employs more than twenty-six thousand people at nine locations across the country.

Lockheed Martin provided generous support for the event, which is sponsored by Tau Beta Pi, the national engineering honor society that is headquartered on the UTK campus in the Dougherty Engineering Building.

Engineers Day 2012 will be held on October 25. The College of Engineering is planning a special recognition for the event's 100th anniversary. For more information, visit http://www.engr.utk.edu/ed/ or contact the College of Engineering's Office of Academic and Student Affairs at (865) 974-2454.









High School Students Participate in Engineering Challenges during Engineers Day 2011.



The COE Pre-College Programs



Diamond Wallace

If you want to know how effective the University of Tennessee, Knoxville, College of Engineering's (COE) summer pre-college programs are, just ask Diamond Wallace.

The freshman biomedical engineering major attended the High School Introduction to Engineering Systems (HITES) program for rising minority eleventh and twelfth graders the summer before her senior year.

"After attending the HITES program, I decided to major either in biomedical or chemical engineering. The individual information sessions in the college allowed me to have a personal visit with each department to gain knowledge about the different engineering disciplines. After I decided to major in biomedical engineering, I was really focused on attending UTK," Wallace said.

The Office of Engineering Diversity Programs (EDP), formerly known as the Minority Engineering Program (MEP), sponsors two other pre-college programs: Middle School Introduction to Engineering Systems (MITES), for rising seventh and eighth graders; and Introduction of Sophomores to Engineering Principles (INSTEP), aimed at rising ninth and tenth graders.

Bechtel Corporation is a sponsor of the HITES program, and the company's support provided an opportunity to expand the number of participants in 2011 from twenty-four to thirty-two.

MITES, INSTEP, and HITES are all part of the COE's ongoing diversity initiatives, which began in 1973 with the establishment of the original Minority Engineering Scholarship Program (MESP) under the leadership of Fred Brown, the college's first director of the original MEP.

Today, EDP is structured to target underrepresented students beginning with middle school years, introducing them to engineering's academic and career opportunities through the pre-college summer programs, and eventually facilitating their enrollment in UT. Once enrolled in the university, EDP offers students support and connections to other services and opportunities for minorities throughout the campus and beyond.

"My participation in HITES allowed me to meet upperclassmen in engineering who are now my tutors for my engineering courses, and my co-participants in my study group," Wallace said. "The program really exposed me to the world of engineering here at UT."

As part of the expansion of engineering diversity programs at UT, a recent challenge/match from Dwight Hutchins (*BS/ChE '86*), a member of MESP's Group Nine, has provided an incentive to create The Engineering Diversity Excellence Endowment. Hutchins met with UT Chancellor Jimmy Cheek in the fall of 2011 and pledged $25,000 to the College of Engineering provided that it would be used to challenge other alumni to donate. Chancellor Cheek matched the Hutchins gift, as did Cavanaugh Mims (*BS/NE '86*), creating an initial challenge to raise an additional $75,000 to match their respective commitments for a total of $150,000. The ultimate goal is to reach a $1 million endowment within the next ten years, which will provide approximately $45,000 annually to support diversity outreach and programs in engineering.

Once the Engineering Diversity Excellence Endowment reaches $250,000 in gifts, the college plans to name The Fred Brown Director of Engineering Diversity Programs. This prestigious title, similar to named professorships in departments, will recognize Fred Brown for his important role in initiating minority engineering programs at UT.

The college is seeking support in any amount from individuals, companies, and foundations for the expansion of the diversity programs. Funding will be used for outreach and retention efforts to increase diversity enrollment in engineering, student travel to conferences, and aid to promising students. In addition to the Engineering Diversity Excellence Endowment, two other minority support endowments offer additional gift opportunities: the James Pippin Pre-College Program Endowment, named after James Pippin, the second director of MEP/EDP, who retired in 2010; and the Fred Brown Scholarship Endowment, created in 1987 to honor Brown's contribution to diversity programs at UT.

"The pre-college programs allowed me to be more confident coming into the College of Engineering and helped me to gain support as I began my studies in engineering," Wallace said.

For more information on supporting engineering diversity programs or contributing to the Engineering Diversity Excellence Endowment, contact Adlai Hurt in the Office of Engineering Development at (865) 974-2779/ahurt@utfi.org.

Special Feature

It was during a father-son conversation with his fourteen-year-old high-school sophomore son in 1963 about learning to drive that Bill Palmer Jr. (*BS/EE '48*) came up with the idea of building an electrically powered car.

Palmer, an electrical engineer, liked the idea of using the clean, quiet, efficient, non-polluting characteristics of electric power instead of the often dirty, noisy, and inefficient internal combustion engine.

"We went to Harrah's car museum and a 1904 Oldsmobile attracted our attention because its body had flat sides and a curved front which we could make with several layers of thin plywood," Palmer said. "We bought a six-inch plastic model of the 1904 Olds in the museum store. We estimated the full car wheels would be about twenty-four inches in diameter. The plastic model's wheels were 1.5" in diameter. That gave us a ratio of sixteen to one. Every part of the car should be sixteen times the size of the equivalent part of the plastic model. We made cardboard patterns of the body parts then made them out of plywood. Since we intended to drive our homemade car on city streets, we had to figure out how to make it 'street-legal,' licensable and insurable using ordinary household tools."

After visiting many junkyards in search of usable parts, Palmer and his son came up with the rear axle from a Morris Minor; the drive shaft parking brake from a Dodge; the front axle steering joints and wheel spindles from a Simca; and the chassis frame was pieces of used "Power Strut" bolted together. The hydraulic disk brake calipers and master cylinder were go-cart parts. The wheel rims and spokes were Sears Moped parts. GE donated the 2.5 HP, thirty-six Volt motor. The original power storage was six six-Volt golf cart batteries, which were quite heavy. They have since updated the power storage to three twelve Volt RV/marine batteries. The original speed control was a homemade manual rotary switch, which connected the six batteries in combinations of series and parallel to apply zero, six, twelve, eighteen, twenty-four, thirty, and thirty-six Volts to the motor. The pair have since replaced that switch with a "transistor chopper" variable pulse-width speed controller.



A 1967 Photo of the just-completed 1904 Oldsmobile Replica with friends and family (right to left): Anne Murray, Elsie Emory, Bill Palmer III, Pam Palmer, Sally Palmer, and Bill Palmer, Jr.

"In the process, we learned that what I always called 'junk yards' are more properly called 'auto-parts recyclers,'" said Palmer.

Eventually, what started as a casual family project ended up taking four years. By 1967, when the car first ran on its own power, Palmer's son had learned to drive in the family car, was a sophomore in college, and had his own car, but they both continued tinkering with the electric car.

The car is now forty-five years old, and Palmer still maintains it and takes it to car shows, rallies, and parades.

"Since it looks like a sleigh and emits no exhaust, I have driven Santa Clauses into stores at Christmas time," Palmer commented. "I am always asked: 'How far the car will go on a battery charge?' I have to say that I don't know. I have never run out of battery power. At its top speed of twenty to twenty-five miles per hour, I get tired of driving and obstructing traffic before I run out of power."

The 1904 Oldsmobile replica was the first electric vehicle owned by a member of the Electric Auto Association (EAA), an organization first formed in 1967 in California. Palmer, as a member, continues to be active in supporting electric vehicles and in the mid-1970s converted a Chevrolet Vega to electric power.

Palmer is pleased to see the current interest in electric cars, and has high praise for the Chevrolet Volt.

"If I were going to buy a new electric car today, I would get a Volt," he said. "The range-extender engine generator makes the Volt the best compromise between a battery pack that is too small—like most electric cars from the late 1880s to today, leading to range anxiety—and too large—like the Tesla, which hauls around a lot of battery that is rarely used and therefore is a very expensive way to avoid range anxiety. With the Volt you have a minimum investment in battery, which you keep plugged into the lowest-cost 'off-peak' electricity when you are not using it. So, to reduce or eliminate range anxiety, you need to choose between hauling an extra-expensive battery or a less-expensive engine generator," Palmer commented.

"I think the other manufacturers will catch up eventually with the technology," said Palmer. "The trend to electric cars is long overdue, and I think it is here to stay."



The CURENT team: Dr. Leon Tolbert, Dr Kevin Tomsovic, Dr Fred Wang, Dr. Yilu Liu, and Dr. Fangxing Li

CURENT

The University of Tennessee, Knoxville, College of Engineering (COE) has received a five-year, $18 million award from the National Science Foundation (NSF) and the U.S. Department of Energy (DOE) to establish an NSF Engineering Research Center (ERC) focused on research, education, and technology for sustainable energy systems with an emphasis on power transmission systems.

The NSF ERC is historically the most prestigious award given to a university industry team, and this is the first time the university has been designated to lead an ERC and also the first time an ERC will address power transmission systems.

The new Center for Ultra-wide-area Resilient Electric Energy Transmission Networks (CURENT), involves a consortium of academia, industry, and national laboratories. CURENT will play a central role in President Barack Obama's goal to overhaul the nation's power grid. The president outlined a framework to take America's twentieth century power system into the twenty-first century through cutting-edge research. Through the partnership of NSF and DOE, CURENT will play a leading role in addressing the nation's critical need to develop a smart grid. CURENT is housed in the COE's new Min H. Kao Electrical Engineering and Computer Science Building.

Kevin Tomsovic, head of UT's Department of Electrical Engineering and Computer Science, will direct CURENT, and Yilu Liu, Governor's Chair for Power Electronics, will serve as co-director.

Since 1982, an increase in peak demand for electricity has exceeded transmission growth by almost twenty-five percent, according to the DOE, resulting in costly and inconvenient blackouts. This overload is expected to worsen as the population continues to increase. CURENT seeks to solve this problem by focusing its technologies and methods to operate the power grid efficiently and reliably over long distances.

"Using wide-area synchronized measurements, large-scale computer simulations, and hardware test beds to represent the major United States power grids, we seek the fundamental breakthroughs needed for the transmission system to accommodate high levels of alternative energy," Tomsovic said.

Liu has been monitoring power grid operations with frequency disturbance recorders installed in various parts of the nation's grids.

"Before you take any action, you need to see what is going on," Liu said. "Monitoring is an essential first step, then this will lead to better information, knowledge and eventually control."

CURENT engineers' contributions will have a positive environmental impact. The center's innovations will enable a global shift away from fossil fuels by facilitating higher levels of renewable energy resources within electric grids. This will mean green, sustainable, and reliable power to consumers.

CURENT is also focusing on the future work force by educating a new generation of energy leaders from diverse backgrounds with a global perspective. The educational mission concentrates on developing a broad interdisciplinary program that benefits graduate, undergraduate, and pre-college students.

Partner academic institutions for CURENT include Northeastern University, Rensselaer Polytechnic Institute, Tuskegee University, Tsinghua (China) University, the University of Waterloo (Canada), and the National Technical University of Athens (Greece). More than forty companies support CURENT, including electric power utilities, manufacturers, consulting firms, and national laboratories, such as Oak Ridge National Laboratory (ORNL).

CURENT has the potential for continued NSF–DOE funding of $4-5 million per year over the next ten years.

For more information about CURENT, visit http://curent.utk.edu/.

Engineering Alumni
Keep Manufacturing Alive in the United States



Shek Hong with a Black Hawk helicopter model showing rotor.



Greg Carpenter's company specializes in lighting fixtures.

College of Engineering (COE) alumni use skills developed at U.T. to lead businesses that produce an impressive variety of goods and technologies. These US-based manufacturers have a positive economic impact on local and national levels.

Shek C. Hong (*MS/CE '77*) used the knowledge he gained in polymer chemistry at U.T. to found the Hontek Corporation in 1992. At its facility in Hartford, Conn., Hontek produces a protective coating that greatly extends the life of helicopter rotor blades used by the military.

"The master's degree education I received at UT provided me with the solid academic foundation for future research into polymer synthesis, characterization, and processing," explained Hong. "This led me into inventions in polymer processing, dental products, printing plates, and finally rain- and sand-erosion-resistant coatings for use on helicopter rotor blades."

The savings of not having to replace these parts is tremendous, with blades costing hundreds of thousands of dollars each. "As a result of the high performance and huge cost-saving potential, our HC05XP1 blade coating system has been requested to be put on the aircraft for America's allies," said Hong. "This will also increase the job opportunities here in America."

In the future, Hong sees his blade-coating system also used for windmills.

In the field of industrial engineering, alumnus John C. Williams (*BS/IE '71*) established Conveyorman, Inc., in the Memphis, Tenn., area. The company designs, builds, and installs conveyor systems and other equipment used for improving processes in material handling. Williams also found direct ways to apply his UT experiences to the creation of his company.

"Problem solving in class developed analytical thinking that applies to many business issues," Williams said.

While a lot of people might not think of the impact that conveyor-belt systems have on everyday life, Williams has one client that is almost ubiquitous.

"Every overnight letter or document sent by FedEx touches one of our products at some point worldwide," said Williams.

Greg D. Carpenter (*BS/IE '88*) owns Specialty Lighting LLC in Fallston, N.C. His company designs and manufactures lighting fixtures and related controls found in residential and office furniture and hospitality, institutional, and retail environments. This includes lighting for china hutches, display cabinets, kitchen cabinets, casinos, restaurants, retail displays, and store fixtures.

Carpenter cites multiple influences of his COE experience.

"My UT education equipped me with the necessary skills to 'drill through the layers' as related to problem resolution. Secondly, and perhaps most important, my education prepared me for the real world by instilling the value of collaboration–teamwork," Carpenter said.

Specialty Lighting has seen growth, even in the face of recent economic challenges.

"During a time that many businesses were reducing headcounts or closing their doors, we managed to add employees to our roster," added Carpenter. "Our workforce has become more productive and our work processes have been simplified. We believe these factors will translate to future job growth and business development in North America."

Other notable alumni manufacturing business owners include:

Kenneth Hardin (BS/*ChE, '78*): Climashield, Clinton, Tenn.

Tom Edwards (BS/*ME, '72*): Olympic Industries, Cordova, Tenn.

Dr. J. Donald Brock (BS/*ME, '61*): Astec Industries, Chattanooga, Tenn.

Gino Inman (BS/*ME, '81*): Republic Plastics, Knoxville, Tenn.

Garney B. Scott (*BS/IE, '62*), Executive CEO, and Garney B. Scott III (BS/*IE, '89*), President, Scepter, Inc., Waverley, Tenn.

Alumni Profile: Bennett Croswell

Bennett M. Croswell (*BS/ME'79*) may have left East Tennessee for other opportunities, but he still loves Big Orange country.

"Between work and family, I don't have a lot of time to spare, but when I do, I spend it in front of the television watching Tennessee football, basketball, and other sports," Croswell said. "I really enjoy watching the Vols, and I certainly enjoy watching them when they win."

Bennett Croswell is president of Pratt & Whitney's Military Engines business, where he oversees development, production, and support of the company's military offerings, including the fifth generation F119 and F135 engines for the F-22 and F-35 fighters, the F100 for the F-15/F-16, the F117 for the C-17, as well as the Small Military Engine and Advanced Engine Program sectors.

Croswell was born in Lynchburg, Va. His father was in the textile business, so the family moved around the south quite a bit, including stints in North Carolina and Huntsville, Ala. where Croswell attended high school.

When it came time to make a career decision after graduating from high school, Croswell decided to follow in his father's footsteps and become a mechanical engineer.

"When I looked at engineering schools, Tennessee was a really good fit for me," Croswell said. "My mother was born and raised in Bristol, and although I had never lived in the state before, we visited my grandmother frequently and I became attached to the area. It was really exciting for me to attend UT."

Croswell enjoyed his years at the university, studying hard, following sports, and making friends. He eventually met his wife, Stephanie, while both were UT students.

Croswell has always had an interest in military history, so when he was interviewing for his initial job, the fact that Pratt & Whitney designed and supported engines for the military made the company a good fit. Plus, the fact the company was located in West Palm Beach, Fla., didn't hurt either. He applied to the company and was hired initially as a performance engineer.

After working his way up to technology manager and spending several years as a field representative, working with Lockheed Martin, Northrop Grumman, and Boeing, Croswell relocated with the military engines team to Connecticut in 2001.

In May of 2010, Croswell was named president of Pratt & Whitney Military Engines.

"I couldn't be more thrilled or feel more fortunate to be in my current position," Croswell commented. "I hope I can do the best job possible for the warfighters who we support, the shareholders of United Technologies Corporation, and the one thousand five hundred employees in Pratt & Whitney Military Engines, as well as the extended team that make up the engineering manufacturing and organizations that support the military engines business."

Croswell sees his time at UT as an important part of the foundation for his career success.

"It's not only the technical skill you bring to a project, it's also how you communicate your ideas, how you present them to people, and how you handle yourself in difficult situations. I remember taking a course at UT where you had to stand up in front of class and give a formal presentation. And it really gave me a lot of experience in how to collect my ideas and present them in a clear and succinct way," Croswell said.

Croswell's wife, Stephanie, also a UT graduate, has a degree in education. They have three children: Caitlin, twenty-five years old and a graduate of the University of Connecticut; Hannah, eighteen years old, a freshman at UT; and Michael, a junior in high school.

"The friends that I met at the university are still friends of mine today, and UT brings us back together," Croswell said. "I have a lot of great memories from the University of Tennessee."



Bennett Croswell

"The friends that I met at the university are still friends of mine today, and UT brings us back together," Croswell said. "I have a lot of great memories from the University of Tennessee."

Dean's Circle Supports COE

Education, Research Initiatives

The Dean's Circle is a representation of the power of the college, our alumni, and friends coming together to create philanthropic momentum.

"The Dean's Circle is a great vehicle for participating collectively with other donors to provide resources and opportunities within the College of Engineering," Mark Frye, (*BS/CE'87*), said. "If one student gets an opportunity or is exposed to new/emerging disciplines, success has been achieved. As the first person in my family to graduate from college, there is no question, the Department of Civil and Environmental Engineering provided the map for my 'life path' and I am humbly grateful."

The impact of each gift is seen every day in the growth of programs like the Jerry E. Stoneking Engage Engineering Fundamentals Program, as well as the establishment of the NSF grant awarded to the CURENT lab, to name a few. The Dean's Circle members are committed to keeping this momentum moving forward.

"The education I got from the University of Tennessee allowed me to become successful in the engineering field," said Matt Dofflemyer, (*BS/AE '06*). "I feel that contributing annually to the college is a way of giving back to those who helped me get to where I am. Thanks to the college of engineering, I am in a position to donate."

The College of Engineering is challenging alumni to help grow the Dean's Circle and become a 2012 member. Join Dean Davis in giving one thousand dollars or more to the College Fund for Engineering or one of the seven department funds. With your membership, you will begin to collect the annual Dean's Circle medallion that features one of our engineering facilities. The 2012 medallion has been cast and will showcase Ferris Hall. Be among the first alumni to receive this commemorative medallion and join the philanthropic momentum that is helping the college move forward.



Campaign for Tennessee is a Huge Success!



Dorothy Bryson, Senior Director of Engineering Development

Sometimes the best thing we can do is to simply say thank you. As the University of Tennessee celebrates the end of a tremendously successful campaign we want to say a BIG thank you to each individual, family, company, foundation, or group who gave to the College of Engineering.

- ***If you gave a scholarship you sent a message to a student "you can do it!"***
- ***If you gave to the College Fund for Engineering you gave the dean the flexibility to fund priorities***
- ***If you created a professorship you invested in a professional who will make a difference***
- ***If you supported the Jerry E. Stoneking Engage program you helped freshmen understand engineering***
- ***If you supported a capstone design project you gave engineering experience to a senior***
- ***If you put engineering in your estate plans you are investing in the future***
- ***If you invested in one of our new buildings you are transforming our campus***
- ***If you gave a fellowship you helped us recruit a great new graduate student to engineering***

You gave. And the University of Tennessee, Knoxville, College of Engineering is better because of you. THANK YOU.

College of Engineering Campaign Goal
$75,000,000

Total Campaign Commitments
$93,214,421

We also want to give special recognition to the Engineering Campaign Committee whose leadership went far beyond their considerable gifts. Their time, introductions, advice, and encouragement came with unfailing faith that we would succeed.

ENGINEERING CAMPAIGN COMMITTE



Min H. Kao, *(MS/EE '74, PhD/EE '77)*
Engineering Campaign Honorary Chair
Chairman & CEO
Garmin International, Inc.
Olathe, Kansas



Chad Holliday, *(BS/IE '70)*
Engineering Campaign Co-Chair
Chairman
Bank of America
Nashville, Tennessee



Ron Turner, *(BS/AE '68)*
Engineering Campaign Co-Chair
President, CEO & Chairman, retired
Ceridian Corp
Amelia Island, Florida



Malcolm Colditz, *(BS/ChE '58)*
President
Sea Lion Incorporated
Texas City, Texas and Allardt, Tennessee



Mike Crabtree, *(BS/EE '73, MS/EE '75)*
Chief Manager
Crabtree Ventures, LLC
Knoxville, Tennessee



Dennis Denihan, *(BS/ChE '72)*
Retired, Chevron Texaco
Consultant, RaceTrac
Shallotte, North Carolina



Ron Nutt, *(BS/EE '61, MS/EE '62, PhD/EE '69)*
President & CEO
Advanced Biomarker-Technologies
Knoxville, Tennessee



Bill Moore, *(BS/EE '59, MS/EE '60)*
President/Mgmt Consultant, Retired
Outlook Technology, Inc.
Monte Sereno, California



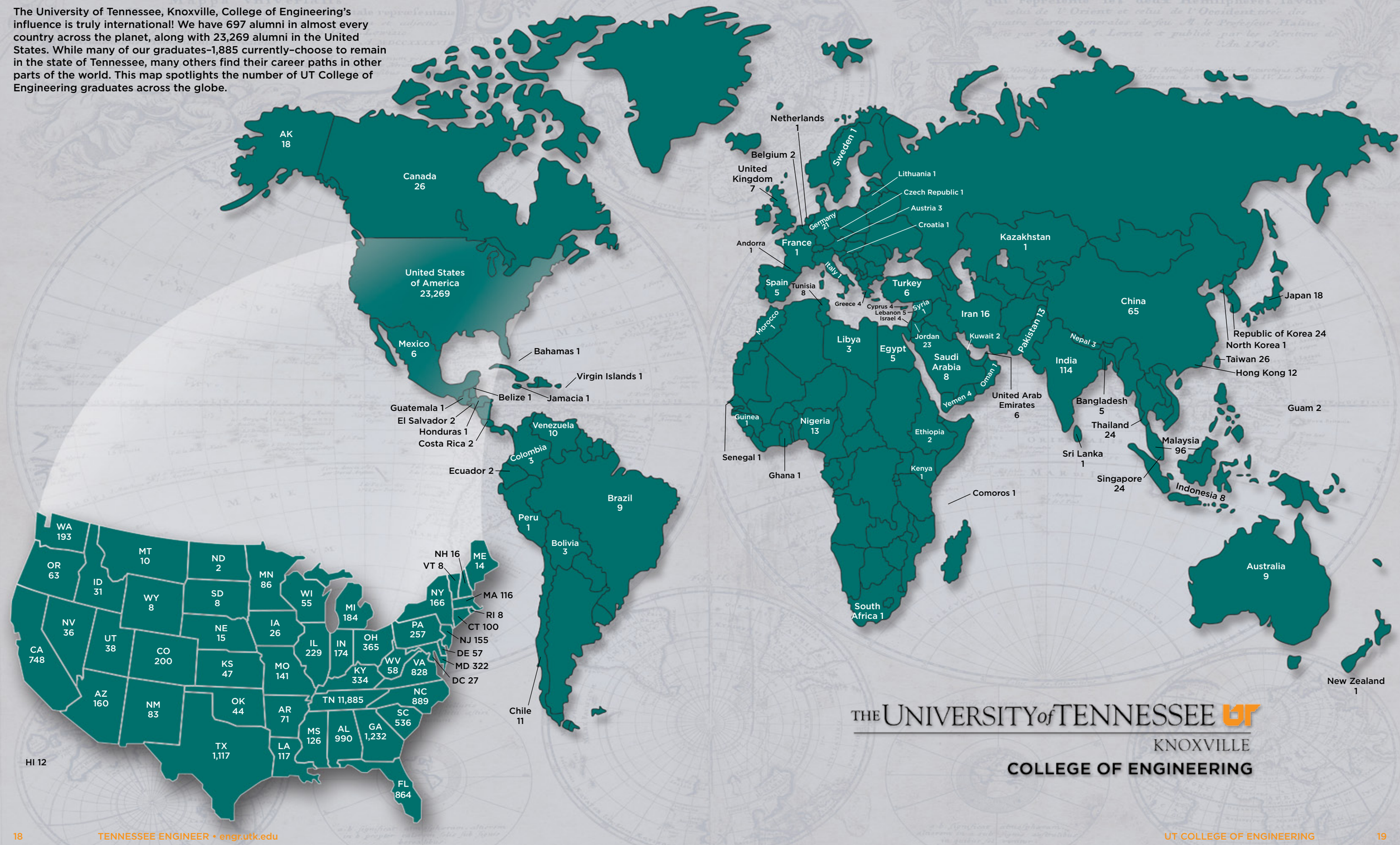
John Tickle, *(BS/IE '65)*
Chairman
Strongwell Corporation
Bristol, Virginia and Tennessee



Bill Snyder, *(BS/ME '54)*
Campaign Annual Giving Chair
Chancellor Emeritus
The University of Tennessee, Knoxville
Knoxville, Tennessee

College of Engineering Alumni Across the World

The University of Tennessee, Knoxville, College of Engineering's influence is truly international! We have 697 alumni in almost every country across the planet, along with 23,269 alumni in the United States. While many of our graduates–1,885 currently–choose to remain in the state of Tennessee, many others find their career paths in other parts of the world. This map spotlights the number of UT College of Engineering graduates across the globe.



THE UNIVERSITY of TENNESSEE KNOXVILLE
COLLEGE OF ENGINEERING

UT Recognizes Outstanding Engineering Alumni



Amy Millslagle

The University of Tennessee, Knoxville, Alumni Board of Directors recognizes outstanding UT alumni at an annual awards dinner. This year's event took place on Sept. 9, 2011, and three College of Engineering (COE) alumni were presented awards for their achievements.

The Alumni Promise Award was given to Amy Akard Millslagle (*BS/ChE '00*). This award recognizes alumni forty years of age or younger who have demonstrated distinctive achievement in their career, civic involvement, or both. Millslagle is the current marketing director for one of the world's largest brands, Dow Chemical. While serving in this role, she was selected by the chief marketing officer to integrate the sales and marketing functions of a $9 billion acquisition, including creating an entirely new organizational structure and defining an integrated global marketing strategy.

Millslagle was also appointed to lead Dow's strategy in the retail market segment, where she defined Dow's go-to market strategy, expanded distribution, and repositioned Dow's products to be more appealing to the target market.



Ralph Heath

Ralph Heath (*BS/EE '70, MBA '75*) received the Alumni Professional Achievement Award, which recognizes alumni who have attained a high level of success in their chosen field of endeavor. Heath is the Executive Vice President of the Aeronautics Business Area for Lockheed Martin Corporation. Lockheed is the industry leader for the design, development, manufacturing, and full-service logistics for many aircraft used in the U.S. and worldwide.

Heath directs the company's military aircraft division, which employs more than twenty-six thousand people in nine locations. He oversees aircraft production programs such as the F-22 raptor, F-16 Fighting Falcon, and the C-130J Super Hercules.



Joe Cook

Joe Cook (*BS/IE '65*) received one of the university's most prestigious recognitions, the Distinguished Alumnus Award. This award acknowledges alumni who have achieved extraordinary distinction and success in their chosen field of endeavor and have contributed to the betterment of their fellow citizens.

Cook is a longtime member of the COE Board of Advisors. He was employed with Eli Lilly Pharmaceuticals in a number of senior positions for almost thirty years. After retiring from Eli Lilly, Cook began working in the biotechnology industry as a strategy consultant and later as chairman and chief executive officer of a San Francisco-based company directing the development of new diabetes drugs.

In 2002, Cook co-founded a private equity firm, Mountain Group Capital, LLC, focused on companies based in the Southeast.

The college congratulates these distinguished alumni on their achievements and these recognitions from the UT Alumni Board of Directors.

Alumni News

1960s

Daniel F. Jennings (*BS/IE '61*) received a Distinguished Teaching Award from Texas A&M University.

Dr. Chi Hau Chen (*MS/EE '62*) retired from the University of Massachusetts at Dartmouth as Chancellor Professor Emeritus. He taught at the university for forty-three years. Dr. Chen published (authored and edited) thirty books in his areas of research, including signal and image processing for remote sensing, pattern recognition with application to underwater acoustics and ultrasonic nondestructive evaluation, computer vision, time series analysis and neural networks. He was elected to the Fellow of the IEEE (1988), of which he has been a Life Fellow since 2033; Fellow of the International Association of Pattern Recognition (1996); and is a full member of the Academia NDT International (2008). He chaired a number of international conferences and workshops and is currently a Board Member of the Pattern Recognition Journal.

John Ellington (*BS/ChE '67, BS/ME '67, MS/EngAdmin '80*) was elected a Fellow of the American Institute of Chemical Engineers, the highest rank for the membership, in 2011. He joined AIChE as a student member at UTK. This follows his selection as the Central Florida AIChE Engineer of the Year in 2009. Mr. Ellington is process manager for PennPro, Inc., an engineering firm in Mulberry, Fla.

1980s

Joseph Lee Brickey (*BS/EE '85*) was honored with the 2011 Secretary of Defense Employer Support Freedom Award for his company, Integrity Applications Incorporated, for supporting employees who serve in the Army National Guard and Reserve.

Edward D. Lanquist Jr. (*BS/CE '85, JD (law) '88*) was elected a fellow of the Tennessee Bar Foundation and was named "*Nashville Best Lawyers Litigation—Patent Lawyer of the Year.*"

1990s

Arup Bandyopadhyay (*MS/EnvE '94*) began working in December, 2011, with Environ International Corporation in Brentwood, Tenn. (*MS/EnvE '93*).

2000s

Seth Elliott (*BS/CS '11*) and business partner Joey Natour (*BS/Management '11*) received a $10,000 Boyd Venture Fund grant for their company DineTouch LLC. The company's software platform allows for electronic ordering in restaurants. The seed-funding grant is administered by the Anderson Center for Entrepreneurship and Innovation in the UT College of Business Administration.



Randy Boyd (left) with Boyd Venture Fund Grant winners (left to right) Joey Natour and Seth Elliott.

Memorials



Eunice Hinkle (center, on bench) with engineering students.

Eunice Hinkle, who spent thirty years in the College of Engineering assisting students, faculty and staff, died on December 22, 2011. Mrs. Hinkle's dedication and caring touched thousands of students during her career. The Eunice Hinkle Biomedical Engineering Scholarship was created in her honor and it has provided support for numerous aspiring engineers for many years.



Henry C. Goodrich

Henry Calvin Goodrich (*BS/CE '43*), whose working life stretched from growing up in Depression-era Fayetteville, Tennessee, to leading two of the nation's largest companies as their top executive, died on December 11, 2011. He was a resident of Birmingham, Ala.

He paid for his college education through the co-op program, a mix of school and work that launched his career with jobs at the Tennessee State Highway Department. Goodrich was a member of Tau Beta Pi during his years at UT. Goodrich was Chairman and Chief Executive Officer of Inland Container Corporation headquartered in Indianapolis, Indiana, where he worked from 1968-1979. He also was Chairman and Chief Executive Officer of Sonat, Inc., headquartered in Birmingham, Ala., where he worked from 1979-1985. Goodrich and his late wife also created a formal structure for their charitable donations, the Goodrich Foundation. Donations from the foundation have supported the colleges of education and engineering at the University of Tennessee.

Goodrich received numerous awards over the years, both for his business achievements and his civic contributions, including the 1973 Nathan W. Dougherty Award, the University of Tennessee, Knoxville College of Engineering's most prestigious honor; the Best Chief Executive in the Gas Industry in 1981; induction into the Alabama Academy of Honor in 1986; and the Boy Scouts of America Silver Beaver Award in 1987.



Ronald Green

Ronald Green (*BS/EPh '70, MS/EA '78*) the Chairman of Advatech, LLC and a long-term member of the University of Tennessee College of Engineering's Board of Advisors, died on October 26, 2011. He was a resident of Charlotte, N.C.

During a long and distinguished career in the power generation industry, Green worked with companies including Duke/Fluor Daniel and Duke Engineering and Services. He also led the American Centrifuge Program for U.S. Enrichment Corporation. In 2005, Green established the Ronald F. Green Engineering Scholarship Endowment to encourage young people to enter the field of engineering. In 1996, Green was presented with the Nathan W. Dougherty Award from the COE for his numerous contributions to engineering, the college, and the University of Tennessee.

Events & Awards

Retirement Reception Honors Lee Dodds

Dr. H.L. "Lee" Dodds, who was head of the Department of Nuclear Engineering (NE) for over fifteen years, was recognized at a reception in his honor at the University Club on Monday, Feb. 20. The event was attended by almost one hundred people, including Dodds' University of Tennessee colleagues as well as guests from ORNL, Y-12, TVA, and area nuclear engineering companies. COE Dean Wayne Davis, current NE department head Dr. Wesley Hines, and one of Dodds' former students, Jeff Johnson, all lauded Dodds for his achievements and gave several amusing anecdotes. Hines presented Dodds with a framed photo of the interior of Thompson-Boling Arena.



Dr. Lee Dodds (center) with two of his former staff members, Lydia Salmon-Wright (left) and Kristin England (right).



Dr. Lee Dodds (right) shows his retirement gift, a framed poster presented by Wesley Hines.



Lee Dodds (right) shares a laugh with Dean Davis (left).

ME Student Wins Woman of Color in STEM Community Awards



Shaunte Hunter

Shaunte Hunter, a junior majoring in mechanical engineering, was selected as a student recipient of the Women of Color in Science, Technology, Engineering and Mathematics (STEM) Community Award. Hunter was recognized for her outstanding work in and out of the classroom.

Hunter works with the Minority Enhancement for UT (ME_4UT) to inform high school juniors and seniors about STEM majors as part of an effort to recruit potential engineering students.

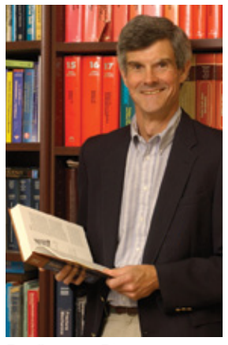
Hunter's award was featured in SWE, the magazine of the Society of Engineers, in the winter 2012 edition.

NE Students Win Coryell Award for Undergraduate Research



Ben Farr (left) and Jeremy Townsend

Nuclear engineering students Ben Farr and Jeremy Townsend received the Charles D. Coryell Award in Nuclear Chemistry on Aug. 29, 2011. The award is presented annually by the American Chemical Society's Division of Nuclear Chemistry and Technology (ACS-DNCT) to recognize undergraduate excellence in nuclear chemistry research. Farr and Townsend received the award and a five hundred dollar prize check at the national Meeting of the American Chemical Society in Denver. Farr and Townsend's research supports the acquisition, installation, and testing of a hybrid K-edge densitometer/X ray fluorescence (HKED) system that is being installed in the Radiochemical Engineering Development Center at Oak Ridge National Laboratory (ORNL) for training purposes and algorithm development. HKED systems are used for verification measurements at nuclear fuel reprocessing plants throughout the world. Farr and Townsend received their Bachelor of Science degrees in nuclear engineering in 2011 and are continuing as graduate students with Dr. Howard Hall's research group in the Department of Nuclear Engineering.



Dr. George Pharr

MSE Professor and JIAM Director is Named Fellow of MRS

On Feb. 9, 2012, the Materials Research Society (MRS) Fellow Subcommittee of 2011-12 announced the selection of George M. Pharr for recognition as MRS Fellow in the 2012 class. The new Fellows will be formally recognized at the forthcoming spring meeting in San Francisco, and in announcement literature and displays at that meeting. Recognition will also appear in the MRS Bulletin and will be presented on the MRS website.



Laboratory in Tickle Building Named for Esteemed CEE Faculty Member

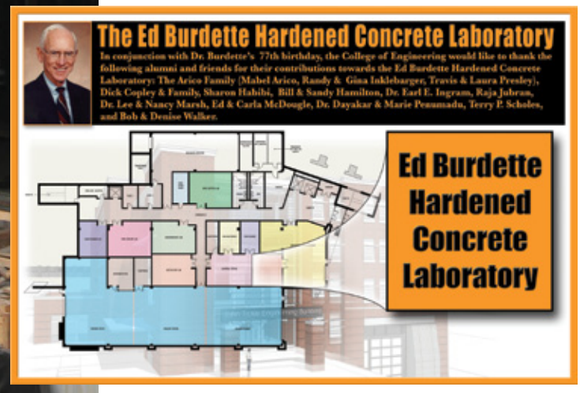


Dr. Ed Burdette (center) at the naming of the Ed Burdette Hardened Concrete Laboratory with donors (from left) Mabel Arico, Gina (Arico) Inklebarger, Randy Inklebarger and Laura Arico Presley.

When civil engineering alumni reflect on the quality of their engineering education, many credit Dr. Ed Burdette for conveying unparalleled academic and professional lessons. His former structural engineering students often comment that he was the best teacher they ever had, at any level. Additionally, Dr. Burdette often receives praise for being an individual who enters the lives of his students and fundamentally changes them for the better. When an opportunity came up recently to honor Dr. Burdette with a recognized space within the John Tickle Engineering Building, many alumni and friends wanted to participate.

On Sept. 9, 2011, one day after Ed Burdette's seventy-seventh birthday, the college hosted a surprise celebration to announce the naming of the Ed Burdette Hardened Concrete Laboratory within the John Tickle Engineering Building, a $23.1 million, one hundred ten thousand square-foot facility scheduled for completion in 2013. Ed's wife, Patsy, their five adult children, and three of their grandchildren were in attendance, as were many of the alumni and friends whose philanthropy resulted in the honorary recognition.

Charitable gifts for recognition opportunities within the Tickle Building are allocated to benefit department specific endowments, not the building project itself. The Civil and Environmental Engineering Excellence Endowment ensures the department head will have resources in perpetuity to address the ongoing and evolving challenges that face students and faculty that cannot be addressed by facilities or state-funds alone, such as purchasing technology and retaining excellent faculty who are quality instructors and productive researchers or addressing priorities such as student enrichment and support.



The Ed Burdette Hardened Concrete Laboratory will soon provide faculty with new space to teach undergraduates and conduct research with the assistance of graduate students while strengthening the Civil and Environmental Engineering Excellence Endowment and honoring Dr. Burdette's legacy. Other similar opportunities to recognize alumni, family, friends, or companies, exist in the form of student and faculty offices, classrooms, and laboratories in the John Tickle Engineering Building and Min Kao Building.

Philanthropic gifts from the following alumni and friends are supporting the Department of Civil and Environmental Engineering in honor of Dr. Ed Burdette: the Arico Family, including Mabel Arico, Randy and Gina (Arico) Inklebarger, and Travis and Laura Arico Presley; Jim and Rhonda Copley; Sharon Habibi; Bill and Sandy Hamilton; Earl and Christa Ingram; Raja Jubran; Lee and Nancy Marsh; Ed and Carla McDougle; Dayakar and Marie Penumadu; Terry Scholes; and Bob and Denise Walker.

The Annual Alumni Homecoming BBQ on the Hill

Nov. 5, 2011.

The College of Engineering hosted the Annual Alumni Barbeque on the Hill Nov. 5, 2011. The BBQ commenced three hours prior to the kickoff of the Homecoming football game in which the University of Tennessee took on Middle Tennessee State University.

Dead End BBQ—co-owned by Electrical Engineering graduate Robert Nutt—catered the festivities.

This year over two hundred fifty attendees attended the event, which has yet again grown from the previous year. Eleven student organizations were present and alumni enjoyed viewing their current projects and chatting with students.

The highlight of the event was a series of tours of the new Min Kao Electrical Engineering and Computer Science building, which took place throughout the day. Tours were led by the College of Engineering Student Ambassadors and were a great success.

Alumni and children enjoyed playing various games and getting their faces painted.

The College of Engineering looks forward to an even bigger and better Alumni Homecoming BBQ in 2012 and plans to continue the student-led tours of the Min Kao Building.



UT President Joe DiPietro (right) chats with engineering alumni at Homecoming 2011.



Student organizations hosted information tables at the event.



Engineering alumni and their guests enjoy the barbeque luncheon.

Attendees line up at the barbeque buffet during the COE Homecoming 2011.



Fast-Growing Engineering Annual Fund Supports Student Success

The University of Tennessee, Knoxville, College of Engineering is gratified by the many generous contributions made to the college's annual fund this year. Your support allows our engineering students to take on new challenges and advance their academic careers. COE Dean Wayne T. Davis is proud to use proceeds from this fund to exclusively support student programs and initiatives that directly impact engineering students. Here are a few examples of the varied ways that your support has made a difference in the lives of these students:



Tia Tabors

"My name is Tia Tabors, and I am a senior in chemical and biomolecular engineering.

Growing up in a single parent household with two other college-aged siblings, college would not have been a reality for me without scholarships. University scholarships, as well as outside scholarships, have made a college education possible for me.

Throughout my college career, I have participated in various student organizations and programs. The Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) was the first organization I joined here at the University of Tennessee. Through their engineering summer bridge program, I was able to come to campus two weeks before my freshman year to get a jump-start on engineering courses, calculus, and chemistry classes. I am also actively involved in The National Society of Black Engineers (NSBE), where I hold two executive board positions; publications chair and programs chair. I am also a member of The National Society of Women Engineers (SWE) and The American Institute of Chemical Engineers (AICHE). I have had the opportunity to help my community by being a part of Clinic Vols, and develop my leadership skills as a Engineering Co-op Ambassador.

I have also had the opportunity to further my education through a co-op and an internship. After my sophomore year, I started my first co-op rotation with ExxonMobil Corporation. I had the opportunity to complete three co-op rotations in Baytown, TX. The summer before my senior year, I had the opportunity to complete an internship with Eastman Chemical Company in Kingsport, TN.

Because of scholarships, I am proud to say I am graduating this spring 2012."



Aeron Glover

"Due to the resources provided through the Engineering Annual Fund, I've been able to direct most of my focus to the pursuit of internships and co-ops instead of having to search extensively for external scholarships and research funds. These experiences that I've gained with these companies have significantly enriched my academic and professional experiences both in the College of Engineering and overall at the University of Tennessee!"



Tiffany Pui-Yeung Tsui

"Being a part of student organizations has provided me many opportunities to broaden my horizons and to learn about things that cannot be taught in classrooms. Thanks to the Engineering Annual Fund, students in SWE (The Society of Women Engineers) and WiN (Women in Nuclear) have been given the opportunity to attend conferences, have successful engineers from different prestigious programs as guest speakers, participate in projects to serve the community, and take part in holding events to inspire future engineers from local high schools."

Support the UT College of Engineering Annual Fund and continue to enhance the college experience for students like Aeron, Tia, and Tiffany. Visit http://www.engr.utk.edu to make your gift today, and join the COE Facebook Group at **http://www.facebook.com/coe.utk**!

The University of Tennessee, Knoxville
College of Engineering
207 Perkins Hall
Knoxville, TN 37996-2012

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Calendar

Fall 2012

Classes Begin	Jan 11
MLK Holiday	Jan 16
1st Session Ends	Feb 29
2nd Session Begins	Mar 1
Spring Break	Mar 19-23
Spring Recess	April 6
Classes End	April 27
Exams	May 1-4, 7-8
Commencement	May 9-11

Summer 2012

Classes Begin	May 9
Memorial Day	May 28
Full & 1st Session Begin	May 31
1st Session Ends	July 3
Independence Day Holiday	July 4
2nd Session Begins	July 5
Full & 2nd Sessions End	August 7
*Official Graduation Date	August 15

**There is no commencement in the summer. This is the offical graduation date that will appear on the transcript.*

Contact Information

Senior Administration

Dr. Wayne Davis,
Dean of Engineering

Dr. Bill Dunne,
Associate Dean for Research & Technology

Dr. Masood Parang,
Associate Dean for Academic & Student Affairs

Departments

Chemical & Biomolecular	974-2421
Civil & Environmental	974-2503
Electrical & Computer Science	974-3461
Industrial & Information	974-3333
Materials Science	974-5336
Mechanical, Aerospace & Biomedical	974-2093
Nuclear	974-2525

Administration & Programs

Communications	974-0533
Dean's Office	974-5321
Development	974-2779
Engineering Advising Services	974-4008
Engineering Diversity Programs	974-1931
Engineering Fundamentals	974-9810
Engineering Professional Practice	974-5323
Engineering Research	974-8360
Engineering Student Affairs	974-2454
Finance & Admin. Affairs	974-5279

Research Centers

Materials Processing	974-0816
Maintenance & Reliability	974-9625
Scintillation Materials	974-0267
Transportation Research	974-5255
Intelligent Systems and Machine Learning	974-5803
CURENT	974-9720
Innovative Computing Laboratory	974-8295

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The John Tickle Engineering Building under construction.
http://www.engr.utk.edu/tickle/index.html

