



University of Tennessee, Knoxville
**Trace: Tennessee Research and Creative
Exchange**

Tennessee Engineer Newsletter

Engineering

Spring 2011

Tennessee Engineer Spring 2011

College of Engineering

Follow this and additional works at: <http://trace.tennessee.edu/utk-tennengineer>

Recommended Citation

College of Engineering, "Tennessee Engineer Spring 2011" (2011). *Tennessee Engineer Newsletter*.
<http://trace.tennessee.edu/utk-tennengineer/3>

This Newsletter is brought to you for free and open access by the Engineering at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Tennessee Engineer Newsletter by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

Meet the New University of Tennessee President!



Dr. Joe DiPietro

Dr. Joe DiPietro was elected the 24th president of the University of Tennessee by the Board of Trustees on October 22, 2010. He officially took over the position from Interim President Jan Simek on January 1, 2011.

DiPietro was the chancellor of the UT Institute of Agriculture from 2006 to 2010. He is a trained veterinarian, with an emphasis in veterinary parasitology. He earned his bachelor's, master's and doctor of veterinary medicine degrees at the University of Illinois, Urbana-Champaign. Prior to coming to UT, DiPietro served as dean of the College of Veterinary Medicine at the University of Florida from 1997 to 2006.

DiPietro is enthusiastic about the future of the university and has already established a number of long-term goals.

"First of all, I want to maintain the current system that was set up under Dr. Simek prior to my coming into office," DiPietro said. "The chancellors should have the operational duties for their individual campuses. We've found that this works better long-term for everyone. Secondly, I want to make sure that we do an in-depth analysis for each unit, to make sure we are working to meet the goals that have been established. Thirdly, we want to garner additional resources as the economy continues to improve. I'm particularly concerned with compensation issues, since we are falling behind our peer institutions with what we pay our faculty and staff. We've set up a five-year plan with the Compensation Advisory Board (CAB) to review these issues."

DiPietro comes into the president's office after one

Continued on page 2

UT and COE Host National TLSAMP Research Conference



Dr. A. James Hicks, LSAMP Program Director and keynote speaker for the conference, greets students at the opening night reception for the conference.

The University of Tennessee was host to the 8th Annual Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) Research Conference on November 4 and 5, 2010. The national event included over 270 attendees, including students from TLSAMP's participating educational institutions: Tennessee State University, The University of Tennessee-Knoxville, Middle Tennessee State University, the University of Memphis, LeMoyné-Owen College and Vanderbilt University.

The conference began with a networking reception and poster presentation at the Women's Basketball Hall of Fame on Thursday evening. On Friday, November 5, plenary sessions, oral presentations and breakout sessions took place at the Carolyn P. Brown University Center's Volunteer Ballroom on campus.

Dr. A. James Hicks, director of the national Louis Stokes Alliance for Minority Participation (LSAMP) and an executive with the National Science Foundation (NSF), which provides funding for TLSAMP, was the keynote speaker for the Friday morning session. Dr. Tyrone B. Hayes, a professor in the Department of Integrative Biology



Dr. Tyrone B. Hayes, an integrative biology professor and director of the Laboratory for Integrative Studies in Amphibian Biology at the University of California, Berkeley, was the keynote speaker for the Friday luncheon event.

at the University of California, Berkeley, was the keynote speaker for the closing luncheon.

Additional speakers and breakout session leaders included Dr. Wesley Hines, Interim Vice Chancellor for Research; Dr. Lonnie Sharpe, TLSAMP Executive Director; Dr. Carolyn Hodges, Vice Provost and Dean of the Graduate School at UTK; Dr. Christine Boake, Associate Dean of the College of Arts and Sciences; and Dr. Wayne Davis, Dean of the College of Engineering.

Conference survey results on the event were very positive, and included these comments:

"UTK was a great host!"

"Thoroughly enjoyed the networking session. Vendors had a wealth of information that is vital to my post-bachelor's degree."

"A really fun and beneficial conference!"

Travis Griffin, director of the college's Engineering Diversity Programs

(EDP), was happy with the outcome of the event.

"I was very pleased with this year's conference, especially the closing keynote speaker's presentation," Griffin said. "Dr. Hayes' comments captured the audience's attention and got the students excited about undergraduate research and how it can lead to outstanding breakthroughs."

The goal of the TLSAMP program is to increase the enrollment and graduate rate of underrepresented ethnic minority students (Hispanic, African-American, American-Indian, Alaskan Native and Pacific Islander) in science, technology, engineering and mathematics (STEM) by at least 100% at the end of a five-year funding period by NSF. The TLSAMP represents one of 41 such programs sponsored by the NSF.

For more information on TLSAMP or the college's EDP programs, visit <http://www.engr.utk.edu/diversity/>.



Students enjoy the TLSAMP networking reception at the Women's Basketball Hall of Fame.

From the Dean's Desk



Dr. Wayne Davis

As I drive in to work each morning, I usually get a good dose of bluegrass music on XM radio to start my day off! Yes, I am a bluegrass fan and play guitar and mandolin and a little bass to keep my feet on the ground. One of the expressions often heard on XM14 is, "Be sure to you know where

you came from, and look out where you're going." Another way of saying this is "look back, but move forward."

Our college has a great history, with its beginnings in 1838 when the university's then-President Joseph Estabrook hired a group of distinguished professors to teach STEM courses in chemistry, geology, mineralogy, trigonometry and civil engineering—and we have come a long way. At latest count, we have approximately 3,250 students in the college today—approximately 12% of the UT Knoxville enrollment—and we have 23,000 alumni located in all 50 states and 64 different countries. Our enrollment in the Freshman Engage program and our Ph.D. programs grew by 30% and 25%, respectively, this year, and as best as I can tell from our historical data, we are at an all time high enrollment.

Another thing that I learned as a bluegrass picker is that you can never go back—if you make a mistake while picking a tune with a group, you just keep on going as the rest of the group will carry you forward. Engineering teamwork is very much that way. Our college continues to make major steps forward in the number and quality

of students that we are able to educate because the faculty, staff and the administration act as a team. If someone makes a mistake, we hopefully continue to move forward as a team. We teach the team approach all the way from our Freshman Engage program to the research laboratories where our faculty/students team to conduct state-of-the-art research. You (our alumni and friends) are also an integral part of our team. You and the many alumni who came before you have collectively created scholarships, provided opportunity for student, faculty and staff awards, created professorships and provided funds that have assisted us with new buildings and renovations that are all critical to our moving forward.

I have never been prouder of being a part of the engineering team than I am today, and I hope that each of you feels the same as you browse our newsletter that highlights many of the great things that are happening. Please let us hear from you and share with us the accomplishments that you have made in helping make a positive impact on the world.

Meet the New President *continued from page 1*

of the worst economic recessions in history, and he follows three predecessors who all left office under troubled circumstances.

However, DiPietro views the challenges he faces as part of the job, and feels confident that he can work to make a change for the better.

"I believe in the 'servant leadership' management style," he commented. "For me, it is all about the team. I want to build teams here at UT that can sit at the table with me and tell me what is right—not what they think I want to hear."

One of the university's biggest challenges is to overcome the 20% cuts that will be coming up in the next budget cycle as a result of the end of federal stimulus funding. DiPietro wants to focus on expanding development efforts through privatizing the UT Foundation, which will allow the university to hire additional development officers who will be able to raise more private dollars.

DiPietro views the UT College of Engineering (COE) as a vital component of the university.

"A strong, vibrant engineering program is an important part of any land-grant institution," DiPietro commented. "I want to see the UTK engineering college get bigger and better all of the time. We are very fortunate to have the alliance with Oak Ridge National Laboratory (ORNL), which adds a significant boost to our research program."

DiPietro also wants to see the ORNL connection expand to other collaborations with the UT Health Science Center in Memphis and the SimCenter: National Center for Computational Engineering at

UT-Chattanooga. He is an enthusiastic supporter of the new Center for Interdisciplinary Research and Graduate Education (CIRE), a joint effort between UT and ORNL focused on renewable energy that grants fellowships to graduate students.

DiPietro is also excited about the number of new facilities being constructed on campus, including the COE's Min H. Kao Electrical Engineering and Computer Science Building, the John Tickle Engineering Building and the Joint Institute for Advanced Materials (JIAM) Building, which will be the first structure on the new Cherokee Farm Campus.

"We owe Min Kao and John Tickle an enormous debt of gratitude for their incredible generosity," DiPietro said. "These new engineering buildings will be a tremendous asset to our campus. We hope to begin the construction of the JIAM building this spring once the infrastructure is in place."

DiPietro understands that he has a number of daunting tasks ahead of him, but he is ready to take the lead.

"I've come to know and love the state of Tennessee and its people," he said. "I think I've finally got the 'orange' right—I know I have the skills and experience to take on the role of president and lead the university to a better future. It will be a big challenge, but hey, I like to drink from the fire hose occasionally."

For more information about UT's new president, visit the online version of Tennessee Alumnus at <http://alumnus.tennessee.edu/>.



Dr. Howard Hall

Governor's Chair Professor to Serve on National Academies Committee

Dr. Howard Hall, Governor's Chair Professor for Nuclear Security in the Department of Nuclear Engineering, has been asked to serve on a committee for The National Academies: Advisers to the Nation on Science, Engineering and Medicine.

The project title is "Assuring a Future US-based Nuclear Chemistry Expertise," and will examine supply

and demand for nuclear chemistry expertise in the U.S. compared with the production of experts with these skills. The project will last 18 months.

The National Academies organization produces reports that have helped shape sound policies, inform public opinion and advance the pursuit of science, engineering and medicine.

Hall was appointed as the third University of Tennessee-Oak Ridge National Laboratory Governor's Chair in 2009. He also serves as a professor for the Center for Interdisciplinary Research and Graduate Education (CIRE).

For more information on The National Academies, please visit www.nationalacademies.org.



Dr. Haitao Liao

Dr. Haitao Liao Wins the 2010 William A. J. Golomski Award

Dr. Haitao Liao, a joint assistant professor in the Department of Nuclear Engineering and the Department of Industrial and Information Engineering, recently received the 2010 William A.J. Golomski Award for his outstanding paper, "Spare Part Inventory Control Driven by Condition Based Maintenance," in the proceedings of the 2010 Annual

Reliability and Maintainability Symposium (RAMS).

This award honors an outstanding RAMS paper authored or co-authored by a member of the Institute of Industrial Engineers (IIE). Liao was



recognized at the 2011 RAMS in Lake Buena Vista, Fla. from Jan. 24-27.

Contents

College Information	2
Faculty News.....	3
Faculty Focus	4
Department Focus	5
Special Features.....	6
Student Feature	7
Research Information	8-9
Special Feature	10
Alumni Profile	11
Development News	12
Alumni News	13
Memorials	14
Events & Awards	15
Calendar and Contact Info	16

Newsletter Production

Published by
Office of Engineering Communications
College of Engineering, The University of Tennessee
207 Perkins Hall • Knoxville, TN 37996-2012

Editor/Writer

Kim Cowart

Graphic Design

Mitchell Williamson

Writer

Julie Stansberry

Contributing Photographer

Nick Myers, UT Creative Services

CEE Professor Named Vice Chair of Task Group on Bridges

Dr. QiuHong Zhao, an assistant professor in the Department of Civil and Environmental Engineering (CEE), was recently named as the Vice Chair of the Task Group on Bridges: Stability of Steel Bridges (TG04) of the Structural Stability Research Council (SSRC).

This honor recognized her research contributions to the stability

and safety of steel bridges under construction, as well as the stability of steel structures under seismic events. The SSRC is the leading world technical organization that offers guidance to specification writers and practicing engineers by developing procedures for the solution of stability problems, as well as facilitating and promoting economical and safe design.

Zhao leads the Steel Structure Group, a research group of CEE students interested in steel and composite structures. Together, Zhao and her research group have published five journal papers on the topic of stability of steel girder bridges under construction in the past two years.



Dr. QiuHong Zhao

Governor's Chair Elected Fellow of American Physical Society

Dr. William Weber, Governor's Chair professor in the Department of Materials Science and Engineering, was elected a fellow of the American Physical Society (APS) in December of 2010.

Weber was nominated for his seminal contributions and scientific leadership in the materials physics of defects, defect processes, ion-solid interactions and radiation

damage processes in ceramics. He was nominated through the Division of Materials Physics.

Weber was named the eighth University of Tennessee-Oak Ridge National Laboratory Governor's Chair for Radiation Effects on Materials in March 2010.



Dr. William Weber

Dr. Chris Cherry, Department of Civil and Environmental Engineering



Dr. Chris Cherry leads a discussion in one of his civil engineering classes.

Dr. Chris Cherry, an assistant professor in the Department of Civil and Environmental Engineering (CEE), is intrigued by China's transportation system and its environmental, economical and safety characteristics.

More specifically, Cherry is passionate about researching electric two-wheelers in China, which began when he was a graduate student in 2005. Starting in 1998, he had already made several trips to China as an undergraduate and became interested in the country's transportation system. On his return in 2005 to search for a dissertation topic, he noticed that cities were full of the electric two-wheelers.

"Even more interesting was the policy debate that was swirling around them," Cherry said.

In Cherry's article, published in the fall of 2010, "Electric Two-Wheelers in China: Promise, Progress and Potential," he discusses the growth in electric two-wheelers—a category that includes vehicles ranging from electric bicycles to electric motorcycles—that has increased substantially in the last decade.

"I think this mode of transportation will continue to grow, particularly as gas prices continue to climb," Cherry said. "I think that policies in China will become stricter (or more strictly enforced), but I expect them to strongly influence transportation in China for many years to come.

Whether they spill beyond China depends a lot on infrastructure, social and economic issues. We are seeing quite a few electric bicycles in the U.S. and Europe now."

Cherry is currently exploring behavioral and environmental issues related to electric bikes, scooters and larger electric vehicles. He is working on developing an electric bike sharing system on campus as a pilot research platform to address a lot of the performance, environmental and behavioral research issues within the transportation system. He is also researching other sustainable transportation topics such as bicycle and pedestrian safety, hydrogen bus planning, truck and bus safety and bus system design.

Cherry received his bachelor's (2000) and master's (2003) degrees in civil engineering from the University of Arizona, and his Ph.D. from the University of California, Berkeley, in 2007. He joined the UT College of Engineering as an assistant professor in 2007.

Knoxville's quality of life, along with many other factors, attracted Cherry to UT.

"The department, and specifically the transportation program, has strong activity and is relatively large and diverse," Cherry said. "Coupled with the Center for Transportation Research, Southeast Transportation Center and the National Transportation Research Center,

Inc., there were a lot of resources to utilize to be successful in research in education."

In the classroom, Cherry teaches his students that transportation systems are always changing.

"I hope that my students will understand that we don't have all of the answers," Cherry said. "Even if what we know is printed in a textbook or manual, that doesn't make it the final word. Our transportation systems are dynamic and constantly evolving because people are participating. As such, what we understood about transportation a few years ago might not be the complete picture today. We need to always keep learning."

"Dr. Chris Cherry represents the vision of the current faculty and the leadership of the Department of Civil and Environmental Engineering,"

said Dr. Dayakar Penumadu, CEE Department Head. "CEE faculty dedicate themselves to solve complex inter-disciplinary problems of international significance, create new knowledge, effectively integrate research into education to become a true teacher-scholar with highest integrity, and inspire young minds at the university to be life-long learners to make a difference to this community and the great state of Tennessee."

Cherry received the 2009 Faculty Environmental Leadership Award designed to recognize demonstration of strong and continuing commitment to environmental stewardship on campus. For Cherry, the award reflected his commitment to advancing sustainability education and research.

Cherry's passion in research and education stems from the impact transportation has on the entire world.

"Transportation is often on the cover of every newspaper, and it impacts everyone's life," Cherry said. "It is a topic where we can make a tangible difference in society, for better or worse."

Outside the classroom, Cherry enjoys fishing, traveling, snowboarding and camping with his wife, Julie, and his daughters, Avah (6) and Kylie (4).

To read Cherry's research article, please visit www.uctc.net/access/access.shtml.

New Department Head has Vision for Future of Industrial Engineering

The future is looking bright for the College of Engineering's (COE) Department of Industrial and Information Engineering (IIE), and there are several reasons for this renewed optimism.

Dr. Rapinder (Rupy) Sawhney, who has been a faculty member with IIE for almost two decades, was named as head and Weston Fulton Professor in 2010. He is also a faculty member of the Center for Interdisciplinary Research and Graduate Education (CIRE), a joint effort between UT and Oak Ridge National Laboratory (ORNL) focused on renewable energy. Sawhney, who has received numerous teaching and research awards during his career at UT, including the prestigious COE Teaching Fellow Award and the COE Research Fellow Award, is fully dedicated to the revival of the department.

"The College of Engineering and IIE faculty and staff have worked together to develop a vision, an associate plan and the fortitude for implementing change," Sawhney said. "The theme is being 'relevant to society,' which will balance our changes with the strengths of industrial engineering."

Sawhney added that the plan is based on four primary objectives: develop department infrastructure/capabilities; enhance research productivity; design an optimal student educational experience; and develop stakeholder partnerships.

Departmental Infrastructure/Capabilities

The department will be moving into the John Tickle Engineering Building, which is currently under construction, in a little over two years. IIE is also in the process of expanding its faculty, with three searches currently in progress. Sawhney plans to add two more faculty members at the associate professor level, and is coordinating with Dr. Buddy Moore, executive director of the UT Space Institute (UTSI), to hire a joint faculty member between IIE and UTSI. In addition, the department has increased the size of its research and adjunct faculty by involving ORNL, Y-12 and industry experts.

One of Sawhney's priorities is to have a department that is managed by efficient systems that serve all stakeholders well. Dr. Hal Aikens, an IIE professor and a quality and organizational expert, is leading this effort with Kristy Walker, the new IIE business manager, and James Berry, the department's accounting specialist.

"Our goal is to automate all of our department metrics and to streamline how we function," Walker said. "Since IIE is focused on systems, we need to look at how we do things internally as well."

Enhance Research Productivity

The department has seen improvements in its research funding, publications and enrollment/graduation of Ph.D. students in the past several years. To continue this trend, the department is focused on creating the fundamentals for sustained research growth.



IIE Department Head Dr. Rupy Sawhney works with Kaveri Thakur, an industrial engineering student.

Dr. Lee Martin, a COE mechanical engineering graduate and former member of the college's Board of Advisors, is now a research professor in IIE and the head of the department's Research Interest Committee. Martin is working with Dr. Xueping Li, Dr. Haitao Liao and Dr. Xiaoyan Zhu to create the Ideation, Systems Analysis and Application Center (ISAAC). ISAAC's mission is to bridge the chasm from concept to marketplace, using 21st century systems and networks to enhance the economic potential of ideas generated by students and faculty at UT.

The department also is focused on increasing the number of laboratories. IIE faculty have recently created the RFID Supply Chain Laboratory; redesigned the Work Methods Laboratory, utilizing the COE's car simulator; purchased ProModel simulation software; and are currently negotiating the creation of a reliability laboratory with industry.

Educational Experience

"We want to not only do a better job of teaching industrial engineering, but also to graduate young people who will become leaders in society as well as successful engineers," Sawhney commented. "It is our goal to make students understand that industrial engineering is all about systems—health care, homeland security, immigration—so they can formulate the problems within these systems and create solutions."

Sawhney and his faculty colleagues have already made significant changes in the undergraduate curriculum and are currently reviewing the graduate curriculum for updates as well. The Student Interest

Committee, under the leadership of IIE professor Dr. Alberto Garcia, has realigned the department's teaching mission to view industrial engineering as not primarily focused on manufacturing, but more allied with systems such as health care, transportation, energy, supply chain and communications. The Student Interest Committee includes Aikens, Dr. Greg Sedrick and Dr. Joe Wilck. Wilck has put a lot of energy and hard work into organizing the student Industrial Engineering Conference that will take place in Knoxville this year.

"We are bringing in speakers for our graduate seminars who are looking at real-world problems," Sawhney commented. "The department has included in this series an executive from the Summit Medical Group, the president of HGTV, administrators/researchers from ORNL, TVA and Y-12, and we have also sent out an invitation to the Knoxville Chief of Police and the City of Knoxville mayor to be a part of the series."

Another exciting new initiative in the department is the Engineering Entrepreneurship Program (EEP), headed by Martin. EEP offers both an undergraduate minor and a master's credit. Martin, a successful entrepreneur himself, is enthusiastic about the opportunities the program offers students.

"First, it is a chance for direct exposure of our students to technical entrepreneurs in our area—folks that have sat in their seats years ago and found a way to create value from their ideas," Martin said. "In a word, we INSPIRE students that may desire this career path but do not have a vision of what it looks like. Secondly, we begin to expose them to the

Continued on page 6

Area High School Students Participate in Engineers Day 2010



COE alumna and professional engineer Kristin Qualls addresses the crowd during the opening session of the 2010 Engineers Day.

On Thursday, Oct. 28, 2010, more than 600 students from 34 area high schools traveled to the University of Tennessee, Knoxville campus to learn more about engineering fields. Undergraduate engineering classes were dismissed for the day

to allow university students and faculty to interact with students while participating in competitions, exhibits and presentations—a tradition that has lasted nearly 100 years.

Engineers Day features three competitions for visiting students, which include the Quiz Bowl, Egg Drop Competition and High School Balsa Wood Bridge Competition. For more information and pictures of the 2010 event, including competition rules and results, please visit <http://www.engr.utk.edu/>.

“Engineers Day 2010 was a very successful event,” said Dr. Masood Parang, Associate Dean of

Engineering Academic and Student Affairs. “As part of the Engineers Day exhibits, students had the opportunity to view the various robots that several area high school students had built through their participation in FIRST Robotics competitions. This was well received by all the participants. They learned a lot about engineering and what engineers do.”

Kristin Qualls, a graduate from the Department of Civil and Environmental Engineering at UT, was the keynote speaker for the event. Qualls, a registered professional engineer, works for the Tennessee

Department of Transportation in the construction division. She is directly involved in the oversight of several road and bridge projects in East Tennessee and officially took over the SmartFIX40 project to build Hall of Fame Drive and reconfigure James White Parkway. Qualls oversees road projects in Oak Ridge, on Lovell Road, Pleasant Ridge Road and Western Avenue.

The College of Engineering would like to thank all the students, sponsors, judges and organizations that made Engineers Day 2010 so successful. Engineers Day 2011 will be held on Thursday, Oct. 27.

COE Hosts 2010 Student and Donor Appreciation Luncheon



COE Dean Wayne Davis (right) introduces Bill Landry as the luncheon's guest speaker.

The College of Engineering (COE) held its 2010 Student and Donor Appreciation Luncheon on Thursday, Sept. 23 in the University Center Ballroom.

More than 130 COE faculty, staff, students, donors and guests attended the event, which allowed donors and scholarship recipients to converse over lunch.

Dr. Masood Parang, Associate Dean for Academic and Student Affairs, was master of ceremonies for the event. Ben Farr, a senior in the Department of Nuclear Engineering, made student appreciation remarks to the guests. COE Dean Wayne Davis introduced the guest speaker, Bill Landry of WBIR, who gave attendees a glimpse into his *Heartland Series* tales and a



Scholarship donors Robbie Nutt (far left) and Robert Nutt (far right) enjoy the luncheon with Nutt Scholarship recipients Allison Davis, Brady Miller and Andrew Kaminsky.

short excerpt from his latest one-man play, “Einstein the Man.”

The Student and Donor Appreciation Luncheon, first held in 2008, was



Joyce Reed (left), assistant director of the Engineering Professional Practice Office, and scholarship student Grace Biggs enjoy a laugh at the annual luncheon.

established as an annual opportunity to recognize outstanding students while thanking donors who provide financial support.

Industrial Engineering continued from page 5

tools of the trade—how you incorporate, protect intellectual property, find financial resources, determine the size of a market, take an idea to the marketplace, and so forth.”

Specific skills included in the program are methods for innovative thinking, brainstorming, idea protection (how to file a provisional patent and a trademark), how to incorporate a company and what form it should take, how to identify and find key resources (both financial and personnel) and how to write a specification/funding proposal/business plan. The master's program credit requires graduate students to complete an extra project for credit. These range from preparing the filing papers for a patent, to creating a product (iPhone app, product mockup) or attending 10 entrepreneurial presentations and creating their own blog from what they learned.

“Industrial engineering is the bridge between engineering and business,” Martin commented. “IE converts one-of-a-kind products into a supply

chain that can effectively provide thousands of units on demand. Entrepreneurs need access to this expertise that looks at a product not only from a technical feasibility standpoint, but also from a financial viability standpoint. As production means become more virtual, the expertise of supply chain logistics becomes essential to the 21st century technology entrepreneur, and IE is at the heart of this transformation.”

Stakeholder Partnerships

Sawhney and the IIE faculty are also developing the department's network.

“We are knocking on doors to introduce our department to the community around us. As a result, we have been working on multidisciplinary projects with the UT Center for Transportation Research, UT-Battelle, the Department of Energy in Oak Ridge and Y-12,” Sawhney said. “We also have projects with Children's Hospital to streamline its programs to deliver better, more efficient health care to its patients.”

Industrial engineering students have also been caught up in the new energy that surrounds the department.

“We are now split into specialty groups, which is much more interesting,” Gagan Rajpal, a fourth-year Ph.D. student, said. “The students are really working right now to help the department achieve its goals.”

Anna Thamai, an IIE graduate student, agrees. “Since I joined the department last year, I've seen changes in just one semester,” she commented.

Sawhney views all of the recent developments as part of the progress.

“Everything works together—the new building, the renewed energy, the improvements in our standings across the board. We must transform the perception of IIE. This is not just a one-year or two-year improvement—but a continuous journey. We will all see a significantly different department in the future,” Sawhney said. “We have a vision for this department, and it is one that we are dedicated to making a reality.”

COE Student, Business Partner Win mtvU-NYSE Business Competition



COE industrial engineering student Aeron Glover (left) and College of Business student Kaliv' Parker (right) were winners of the mtvU business competition.

It all started when Aeron Glover, a junior in the Department of Industrial and Information Engineering (IIE), studied abroad in Spain in the summer of 2009.

“I lived with a host family for nearly two months, and afterward, I realized that there was no way of getting in-depth, student generated feedback on this family before moving in with them,” Glover said. “I had to rely on broad information provided by a company who paired me with the family.”

When he arrived back in the United States in January 2010, Kaliv' Parker, a junior in the College of Business, and Glover started writing the business plan for *HowTheLiving.com*, a Web site whose mission is to “help you make informed housing choices while at school, attending a university in the U.S. or abroad.”

Glover and Parker then entered their plan into the 2010 Undergraduate Business Plan Competition sponsored by the Anderson Center for Entrepreneurship and Innovation in the College of Business, where they received guidance to further develop their plan. They were featured on four episodes of mtvU's *Movers & Changers* and had the opportunity to attend the New York Stock Exchange (NYSE) Movers & Changers Forum, ring the bell at the NYSE and present their plans to a panel of industry executives.

“The experience of being at the NYSE at the financial capital of the world was unreal,” Glover said. “Early on, I realized the significance of the NYSE, but actually being on the trading floor and opening up the day's trading gave me an even deeper understanding and appreciation.”

The final episode of *Movers & Changers*, which aired on Dec. 15, 2010, revealed that Parker and Glover won the grand prize of \$25,000 to further develop their company. They defeated two other finalists.

With the seed money grand prize, Parker and Glover are reinventing their Web site. They receive feedback from students and others every day concerning Web site additions that would make the user experience more enjoyable. Because of that, they plan to build their database of universities and student housing. Their growth milestone

schedule outlines a strategy that will add to their database thousands of universities both in the U.S. and in other top countries where U.S. students study abroad. They also plan to hold different promotional contests to draw students to the site to analyze their feedback.

Glover credits a lot of his entrepreneurial characteristics to his engineering background.

“One of the cornerstones of an engineering education is a solid critical thinking and analytical foundation,” Glover said. “My ability to plan, create and grow *HowTheLiving.com* depends largely on my ability to foresee future obstacles and to think through complex strategies. My industrial engineering education has helped me with this and has also given me glimpses of both the technical and business sides, which is always helpful in creating and growing an Internet start-up company.”

The College of Engineering's Entrepreneurship program played a large role in Glover's success. In the spring of 2010, Glover enrolled in Engineering Fundamentals 130: Survey of Technology Entrepreneurship. In this class, he was exposed to many of the area's top entrepreneurs, and he got the chance to hear about their experiences first-hand. Dr. Lee Martin, research assistant professor in the IIE department, taught the course.

Martin was recently hired by the UT College of Engineering to create the Engineering Entrepreneurship Program. He is a holder of 20 U.S. patents, author of the book *Techonomics*, and is a mentor for many area entrepreneurs.

“Dr. Martin has been a valuable resource and mentor throughout the process,” Glover said. “He allowed Kaliv' and I to practice our presentation and to get valuable feedback from students in another one of his courses. It was great preparation for the final pitch in front of the CEO judges in New York City.”

Martin was able to see Glover and Parker's plan unfold from the beginning and looks forward to the direction it will take them in.

“I am extremely excited to see the opportunity that is unfolding for Aeron and Kaliv',” Martin said. “They have demonstrated great energy and resourcefulness in their efforts to date. The mtvU award was well deserved!”

Glover plans to graduate in the spring of 2012, although he admits that deadline could change to ensure that he keeps a healthy balance of classes and growing *HowTheLiving.com*, along with other campus responsibilities. After graduation, Glover and Parker plan to pursue *HowTheLiving.com* full time as they work toward their goal of becoming the de facto standard in student housing reviews.

Glover offered up a piece of advice to aspiring entrepreneurs: “The achievement of your entrepreneurial and life goals requires an on-fire mindset and on-fire actions. Have passion, and love what you do,” he said.

Episodes of mtvU's *Movers & Changers* can be viewed online at <http://www.moversandchangers.com>. To learn more about the Engineering Entrepreneurship program, visit <http://www.engr.utk.edu/eep/eep.html>.



The HowsTheLiving Web Site

COE Researchers Play Role in Winning \$20 Million EPSCoR Grant

UT College of Engineering researchers are playing a key role in a recently awarded five year, \$20 million program devoted to increasing Tennessee's research base in renewable energy technologies.

The Experimental Program to Stimulate Competitive Research (EPSCoR) program was established in the 1970s. The mission of EPSCoR is to assist the National Science Foundation (NSF) in its efforts to strengthen research and education in science and engineering throughout the United States. EPSCoR's goals are to provide strategic programs and opportunities for EPSCoR participants that stimulate sustainable improvements in their research and development capacity and competitiveness and to advance science and engineering capabilities in EPSCoR jurisdictions for discovery, innovation and overall knowledge-based prosperity.

EPSCoR districts are defined as states that receive less than 7.5% of federal research funding. Tennessee was designated as one of five EPSCoR districts four years ago. This designation means that both public and private universities within the district can compete for federal grants. However, the educational institutions must compete as a statewide block for the funding.

In October of 2010, the Tennessee State EPSCoR partnership officially received a grant for a proposal submitted by the University of Tennessee System, the Tennessee Board of Regents System, Vanderbilt University and the Tennessee Independent Colleges and Universities Association. The overall goal of the proposal is to improve the competitive standing of Tennessee Science, Technology, Engineering and Mathematics (STEM) researchers by creating and enhancing a culture of collaboration within Tennessee's research base.

Titled "Tennessee Solar Conversion and Storage using Outreach, Research and Education (TN-SCORE)," the proposal focused on outreach and education. The total of the grant awarded through EPSCoR was \$20 million, \$10 million of which was designated for the University of Tennessee, Knoxville. A total of 14 entities applied for the grant and seven received the funding, which will be spread out over a time period of five years. The State Economic Development Office oversees distribution of the EPSCoR funds, while the overall coordination of the program is supervised by Dr. David Millhorn, Executive Vice President and Vice President for Research and Economic Development, the Principal Investigator of the project.

The overall theme of the TN-SCORE was alternative energy technologies, which complement several recent statewide research and demonstration initiatives and industry recruitment successes.

The proposal was separated into three main scientific thrust teams:

Thrust 1: Advanced Solar Conversion and Innovation, featuring the development of highly effective, hybrid active layers to improve the efficiency and sustainability of solar cells.

Thrust 2: Components and Devices for Energy Storage and Conversion, focusing mainly on the development of primary technologies, electrochemical energy storage (batteries, supercapacitors) and conversion (fuel cells) devices, to address critical areas of national interest and need.



The EPSCoR team (back row, left to right): Dr. Stephen Paddison, Dr. Shane Foister, Dr. Pete Counce and Dr. Jimmy Mays; (front row, left to right) outreach coordinator Kat Forst, Dr. Zawodzinski and outreach coordinator-technical Gabriel Goenaga.

Thrust 3: Nanostructures for Enhancing Energy Efficiency, encompassing the development and use of nanostructures to synthesize, fabricate, characterize and implement nanostructures with the aim of enhancing energy efficiency in solid state lighting and solar energy conversion.

Dr. Tom Zawodzinski, the UT Governor's Chair in Electrical Energy Storage, was the co-thrust leader for Thrust 2. Dr. Cindy Rice-York, a professor at Tennessee Technology University, was the other co-thrust leader.

"We wanted to have leaders for the thrusts from both universities that were research-oriented and from smaller academic institutions that were less focused on research," Zawodzinski said.

Zawodzinski's original thrust team includes UT professors and Department of Chemical and Biomolecular Engineering colleagues Dr. R.M. "Pete" Counce and Dr. Stephen Paddison as well as Dr. Jimmy Mays, a UT Distinguished Scientist

based in the Department of Chemistry. Professor Shane Foister in the chemistry department has also joined the team. Researchers from Vanderbilt and Memphis round out the group.

"There are a number of opportunities, with some flexible funding, for us to add other researchers from UT and other institutions as well," Zawodzinski said. "What makes EPSCoR unique is that the program's goal is to increase statewide resources, using the primary educational resources for outreach with an emphasis on STEM."

When a previous effort to attain EPSCoR funding was unsuccessful, Zawodzinski led efforts to augment the research focus with a battery and fuel thrust.

Leaders of Thrust 1 were Dr. Barry Bruce from the College of Arts and Sciences' Department of Biochemistry and Cellular and Molecular Biology and Dr. Kane Jennings from Vanderbilt. UT participants in the solar conversion and innovation team included Department of Chemical and Biomolecular Engineering professors Dr. Ramki Kalyanaraman, Dr. Paul Frymier, Dr. Eric Boder, Dr. Stephen Paddison and department head Dr. Bamin Khomami; Dr. Gerd Duscher, Dr. Bin Hu and Dr. Phil Rack from the Department of Materials Science and Engineering; and many collaborators from other state and private universities and colleges.

University of Tennessee participants in Thrust 3 included Dr. Aly Fathy from the Department of Electrical Engineering and Computer Science. A faculty contingent from Vanderbilt, as well as other academic institutions in the state, was also involved. Dr. Sandy Rosenthal of Vanderbilt leads this Thrust.

Each thrust team will contribute to the technology innovation base being developed in Tennessee to add value to the research enterprise in the state. Also, each thrust includes an aggressive outreach and workforce development approach designed to enhance research capacity while creating a culture of collaboration across the state, educating the next generation of scientists in the classroom and providing opportunities for students and faculty that might otherwise not be available.

Workforce development programs under the EPSCoR grant include both summer and year-round undergraduate research programs; college faculty summer research programs; a Council for Undergraduate Research Workshop; a secondary school science teacher summer program; industry summer internships; and "Meetings in Miniature," two conferences that will involve all TN-SCORE participants, one at the beginning and end of each summer.

Continued on page 10

Real Problems Make for Real Learning

Breast cancer, battery design, solar houses, Alzheimer's disease, mobile food irradiation and bridge expansion are just a few examples of the COE's capstone design projects.



Capstone design projects are collaborations between the UT College of Engineering and local, national and regional businesses and government entities. These projects allow unique opportunities for students to be involved in hands-on, complex research under the direction of engineering faculty.

"Theoretical problems are essential for learning principles," said Dean Wayne Davis, "However, engineers like to make things and solve real problems. Capstone projects connected to industry partners enable our students to delve into real engineering issues."

The Electric Power Research Institute (EPRI) supports several student design projects, including one in the Department of Chemical and Biomolecular Engineering (CBE). A joint project involving 10 students, the project was proposed by CBE's Dr. Pete Counce, Governor's Chair Professor Tom Zawodzinski and adjunct faculty member Dr. J.S. Watson. The project focuses on various aspects for redox flow battery design.

Another long-term capstone design project in CBE is the collaboration with Eastman Chemical Company, which has been facilitated by Dr. Charlie Moore for more than 20 years. The department sends five to 10 senior chemical engineering students to work on a process control issue for Eastman in exchange for class credit.

Eastman also has coordinated with the Department of Mechanical, Aerospace and Biomedical Engineering (MABE) on several capstone projects supervised by MABE professor Dr. Don Dareing.

Dr. John Schwartz and his students in the Department of Civil and Environmental Engineering are currently collaborating on a capstone design with the Tennessee Department of Transportation (TDOT) on a road realignment and bridge expansion over Little Turkey Creek at Kingston Pike and Everett Road intersection in Farragut, Tenn. The objective is to develop a set of TDOT roadway construction plans that include a five-lane curb and gutter facility and

sidewalks. The bridge structure will also be widened to accommodate the additional lane, sidewalks and curbs.

The Department of Industrial and Information Engineering (IIE) has several capstone design projects in conjunction with area hospitals and health care providers including East Tennessee Children's Hospital, Covenant Health and St. Mary's Medical Center (now Mercy Hospital). Projects include operating room sterile processing review; a pharmacy chemotherapy investigation; a review and study of the efficiency of a medication administration process; and procedures used for processing patients in an emergency room setting.

IIE has also coordinated capstone design projects with EPRI, American Safety Razor and American Accessories International.

In the Department of Electrical Engineering and Computer Science (EECS), several capstone projects are in progress. One notable example is the Solar Decathlon 2011 Competition project for the design, construction and testing of a complete solar house for the U.S. Solar Decathlon Competition that will take place in Washington, D.C. in September. Supervised by EECS professor Dr. Leon Tolbert, the design includes an optionally connected DC power storage system to allow the house to be used in a stand-alone configuration when disconnected from the grid. EECS professors Dr. Paul Crilly, Dr. Michael Berry, Dr. Jens Gregor, Dr. Kevin Tomsovic, Dr. Fran Li, Dr. Greg Peterson, Dr. Mongi Abidi, Dr. Syed Islam, Dr. Seddik Djouadi, Dr. Ben Blalock and Dr. Hairong Qi are involved in capstone projects ranging from electric vehicles to android-based robot control to a wireless dog leash.

Dr. Carl Lundin supervised several capstone design projects for students in the Department of Materials Science and Engineering (MSE). Corporate supporters of the projects provided funding and in-kind contributions and included Lear Corporation, Metal-Tech, Homesteader Trailers and John Deere. The MSE department collaborated with the MABE department on the Homesteader Trailers project,

which involved a study of the breakdown design for a utility trailer.

In the MABE department, Dr. Mohamed Mahfouz and Dr. Bill Hamel collaborated with UT Medical Center on several capstone design projects, including developing a touch-sensitive breast phantom for use in the training of medical professionals in clinical breast examinations and designing and improving a laparoscopic timing device in a simulation lab. Mahfouz also supervised projects in coordination with Oak Ridge National Laboratory (ORNL) to create an epilepsy seizure forewarning system and an analysis method for early detection of Alzheimer's disease.

MABE faculty member Dareing, adjunct professor Dr. Steve Foster and Dr. Butch Irick have worked with Denso Corporation, Accu-Router, Lexmark, Republic Plastics and Carlisle Tire on several capstone design projects for mechanical engineering.

In the Department of Nuclear Engineering (NE), research professor Dr. Martin Grossbeck is heading up several capstone design projects, including a mobile food irradiation facility, a small mobile reactor designed to fit into a truck for rapid assembly in remote areas and an instrumented dry fuel storage cask.

"Companies who sponsor capstone projects are among our many corporate partners, and we are grateful for their support," remarked Davis. "It's a win-win situation for both the businesses which get the power of our creative student minds and the students who develop a better understanding of corporate challenges."

Companies who want to explore ways to partner with the College of Engineering may contact Marc Gibson, Director of Corporate Development at 865-974-7592/ mgibson4@utk.edu, Dr. Bill Dunne, COE Associate Dean for Research and Technology, (865) 974-3608/ wdunne@utk.edu, or you may visit <http://www.engr.utk.edu> for individual department contact listings.

Mills Scholar to Spend Summer at the Fraunhofer IESE, Kaiserslautern, Germany



Dr. Jesse Poore, professor in the Department of Electrical Engineering and Computer Science, works with computer science student Geno Lamb, the recipient of the Mills Scholarship.

Eugene “Geno” Lamb, senior in computer science, has been selected as the first Mills Scholar. This new award, named for Mrs. Luella Mills and her late husband, Dr. Harlan Mills, is sponsored by the Harlan D. and Luella C. Mills Scholarship Endowment. It will provide a semester or summer visitation with a distinguished software engineering center, high-quality software industry team, or distinguished software engineer. Visitation invitations will be sought worldwide and will be designed to give the student professional connections and a superlative academic experience.

The 2011 host will be Dr. Dieter Rombach, Executive Director of the Fraunhofer Institute for Experimental Software Engineering (IESE) in Kaiserslautern, Germany. Dr. Jesse Poore, Ericsson-Harlan D. Mills Professor, chairs the selection committee and notes that this first assignment is especially fitting since Dieter Rombach and Harlan Mills were colleagues at the University of Maryland. Recognized as one of the foremost research institutes in the area of software and systems development, the Fraunhofer Institute develops software technologies for a range of industries and with small companies as well as large corporations.

“Harlan was a brilliant man whose mathematics career began when one of his professors at Iowa State presented the class with a supposedly

unsolvable problem from Princeton University’s math faculty,” Poore said about his friend and colleague. “At the next class, Harlan thought he had obviously made an error because he had solved the problem; except Harlan had solved the problem.”

He was awarded a Ph.D. in mathematics from Iowa State University in 1952 and then joined the Princeton Institute for Advanced Study. Mills became the first president of the company Mathematica in 1958, and was with IBM from 1964 to 1987. For 15 years, he held the prestigious title of IBM Fellow. Mills’ connection with the University of Tennessee, Knoxville came through Poore with whom he cofounded Software Engineering Technology, Inc., later acquired by an Ericsson subsidiary.

Together Luella and Harlan—who were high school sweethearts—traveled the world. She is a professionally trained singer and continues to be active in the Vero Beach music community.

Lamb currently works with Poore’s Software Quality Research Lab (SQRL) and is helping to design and develop software engineering tools to implement methods developed by our recent doctoral students. He will be affiliated with the embedded systems group at the IESE. Upon return to UTK, Lamb will enter graduate school and resume his work with SQRL.

A Mills Scholar will be selected each year from among highly qualified computer science majors based on the best invitation-student interest match.



Mathematician and software engineering pioneer, Dr. Harlan Mills, is renowned as the originator of clean room technology and the chief programmer team concept as methods for producing high quality computer software.

“Our intent is for the Mills Scholar award to recognize excellence and provide a unique educational experience,” said Dr. Kevin Tomsovic, CTI Chair and head of the Department of Electrical Engineering and Computer Science. “Dr. Poore’s global connections provide the opportunity that coupled with the Mills Scholar support could transform a student’s career. Dr. Poore has a long history of innovation at the University of Tennessee.”

Poore received the 2001 IEEE Computer Society software engineering research award.



Luella (left) and Harlan Mills (right).

Zawodzinski said. “We deposited fuel cell catalysts onto these fibers to see if they work in tandem.”

In addition to the research advancements offered through the EPSCoR funding, Zawodzinski envisions long-term developments at UT.

“We are planning to create a lab on the second floor of Dougherty which will be called the ‘BRANE Lab,’” Zawodzinski commented. “It will combine functions as a research, training and teaching lab where students can do advanced fuel cell and battery design, construction and testing and other more complex research. We’re already working on the design.”

Professor Matt Mench, the college’s recently hired Condra Chair of Excellence in Mechanical Engineering, is Zawodzinski’s partner in this effort.

Zawodzinski is excited about the possibilities for the future.

“The best thing that EPSCoR does is to create a collaborative network of faculty, students and researchers,” he said. “When we all work together, that makes the research environment in our state even stronger. This area of effort also has high potential for creating spin-off companies.”

A Life’s Journey



Bill (left) and Jenny Eversole (right) on graduation day in 1973.

It’s a long way from the coal mining town of Hazard, Kentucky to the sophisticated high-tech city of Austin, Texas, but for Dr. Bill Eversole it is all part of an interesting life’s journey.

Eversole was born in Hazard, and while he was growing up, his family lived in several small southeastern Kentucky towns. Eventually, the Eversoles moved to Whitesburg, Kentucky when Eversole was a junior in high school.

He attended the University of Kentucky Extension in Hazard to prepare for a degree in the University of Tennessee’s electrical engineering program. After his freshman year in the program, Eversole and his high school sweetheart, Jenny Bowen, decided to get married. The young couple moved in with Jenny’s mother, who lived in Knoxville, and Eversole transferred to UT.

“My best memories from UT include finishing my non engineering ‘electives’ so I could concentrate on engineering courses,” Eversole said. “I also recall turning in punch cards at the computer terminals in the basement of Ferris Hall, and the program actually worked! I remember joining the ‘work study’ program in the microbiology lab, attending football and basketball games, walking the hill to Ayres Hall, and especially receiving my diploma at Stokely Athletic Center, with Governor Winfield Dunn speaking.”

After graduation in 1973, Eversole joined Texas Instruments (TI). Although the Eversoles initially thought his salary of \$1,000 per month was all the money in the world, even in the early seventies it didn’t take them long to figure out that wasn’t the case.

Eversole’s first assignment at TI was designing charged couple devices (integrated circuits) for advanced signal processing applications. Over the years, he worked on many cutting edge sensor and electronic technologies to apply embedded signal processing into avionics systems for military applications including tanks, jet fighters and helicopters. In 1992, he headed a group evaluating military technology for consumer applications and finished his TI career leading the development of DSL ICs in the Broadband Access Group. Since 2002, Eversole has worked in start-up companies—one in Atlanta, Ga. and currently one in Austin, Texas, Bandspeed, Inc.

Eversole credits the university with providing him with a strong engineering education and the training to advance in his career.



Jenny and Bill Eversole today.

“UT provides a very hands-on environment that gave me the knowledge and confidence to tackle difficult engineering problems,” Eversole commented. “My engineering degree has provided me the core EE skills and problem solving techniques that I still use today. The education I received from the University of Tennessee College of Engineering (COE) has served me well.”

Eversole is a member of the College of Engineering’s Board of Advisors, a group of high-level managerial and technical executives from government, education, business and industry. The Board of Advisors serves in an advisory capacity to the dean, administrative staff, department heads, faculty and students of the COE.

“Being a member of the COE Board of Advisors affords me the ability to stay in touch with the different engineering departments, to observe the vast changes that the university and the COE are experiencing, and to share my industry knowledge with the university that made a good life possible for me,” Eversole said.

The Eversoles have recently committed to a \$1 million estate gift to the COE as part of their ongoing support of the university and engineering education.

In addition to working with Bandspeed, Inc., Eversole serves as chairman of the board for RF Monolithics, Inc. in Dallas. He and Jenny have been together almost 41 years and enjoy traveling. The couple has worked on Habitat for Humanity buildings together and has served as hospice volunteers in different capacities.

“We’ve learned over four decades how to stay BFFs,” Eversole added. “The decision made by the heart all those years ago turned out to be correct.”

Investment Partners



The COE development staff, from left to right: Nathan Zipper, Assistant Director; Adlai Hurt, Assistant Director; Dorothy Bryson, Senior Director of Development; Christina Parsons, Advancement Specialist I; Julie Wichlinski, Annual Giving & Alumni Relations Coordinator; Kathleen Baker, Advancement Assistant III; and Brian Shupe, Director.

If you are reading this newsletter, then I suspect you consider education to be important. So do I, and the more I am immersed in this college, the more I am energized by both the content and approach of the engineering degree. Rigorous and intellectual, practical and useful—engineering education produces a mindset that applies to anything that needs solution or innovation.

This is why I am proud to work with the college's leadership to secure philanthropic investments that will propel the College of Engineering forward. Every donor at every level to any account in the College of Engineering is our investment partner. In calendar year 2010, that includes 102 Dean's Circle members who gave an annual gift of \$1,000 or more to the College Fund for Engineering or to one of our parallel department funds.

Our partners include major corporate and foundation donors II-VI Foundation, Bechtel, Denso, Eastman Chemical Company, Exxon Mobil, MathWorks, Nvidia, URS Corporation and others. Estate donors, endowment donors, and every one of the individuals who gave to the annual funds—all are investment partners.

If you consider your engineering education to be valuable, if it taught you to think more clearly, if it opened doors to a career (or multiple careers), if it enabled you to start a business (or two or three), if it helped you make a living and a life, then we are asking you to become an investment partner with us or to add to the investment you have already made.

You can invest in the college through annual giving at any amount directed to the College Fund

for Engineering or to the Department Fund for any one of our seven departments. The 2011 commemorative medallion celebrating Dean's Circle gifts (\$1,000 or more annually), features the Min H. Kao Electrical Engineering and Computer Science Building. Endowments provide principal from which annual earnings finance professorships, scholarship stipends, or program support. Legacies can be left through Estate Bequests.

Investments are tricky—full of surprises. But I can assure you as an investment partner in the UTK College of Engineering enterprise, you will receive a priceless return on your investment—human futures.

Become a partner.
Dorothy Barkley Bryson, Senior Director,
Engineering Development

The Office of Development
College of Engineering
120 Perkins Hall • Knoxville, Tennessee 37966
Phone: 865-974-2779 • email: engrdev@utk.edu

Visit our website at <http://www.engr.utk.edu/give/> and check us out on Facebook <http://www.facebook.com/pages/University-of-Tennessee-College-of-Engineering/172016882812772>

You may also use the envelope handily tucked in this newsletter!

We had a 35% increase in annual giving to the College Fund for Engineering and parallel department funds—from \$371,855 in 2009 to \$503,415 in 2010.

To make a gift, discover how to create an endowment, learn about trust and annuity options, or how you might benefit the college through your estate planning contact.

Campaign Update

Cultivating Knowledge for a Competitive Edge

Campaign commitments for the College of Engineering now total \$57,838,955, 77%, towards our \$75 million goal.

\$7.9 million in campaign gifts and pledges was received in 2010.



Gary Curtis

Gary Curtis (BS/NE '71) has joined Barge Waggoner Sumner & Cannon, Inc. (BWSC) as Vice President and Director of Energy and Environment with responsibility for the overall direction and strategic oversight of the firm's work with nuclear, fossil and alternative power generation projects. He resides in Nashville, Tenn.



Kimberly Greene

Kimberly S. Greene (BS/ES '88), COE Board Member and the group president of Strategy and External Relations at Tennessee Valley Authority, has been welcomed into the Chancellor's Associates, a group of business, professional and community leaders from the greater Knoxville area, for the 2010-2011 year. She resides in Knoxville, Tenn.

Johnny Moore (BS/ChE '83), assistant manager for science for the U.S. Department of Energy, has been welcomed into the Chancellor's Associates, a group of business, professional and community leaders from the greater Knoxville area, for the 2010-2011 year. He resides in Oak Ridge, Tenn.

Kevin Stooksbury (BS/IE '01) has been named the economic practices coordinator with ExxonMobil Qatar, Inc. He and his wife, Keri, have relocated to Doha, Qatar.

Annual COE Homecoming Allows Alumni to Reconnect



Left to right: Julie Wichlinski with the COE development office, Carl Mims (W. Louis Wood's son-in-law), and W. Louis Wood (BS/EE '49, BS Marketing '50) of Germantown, Tenn. enjoy the homecoming event.

The annual College of Engineering (COE) Alumni BBQ was held at 9 a.m. prior to kick-off of the UT v. Ole Miss football game on Nov. 13, 2010.

There were 302 individuals in attendance, including alumni, faculty, retired faculty and students. Eleven student organizations, as well as the Engineering Professional Practice Office and the Jerry E. Stoneking Engage Program, showcased their projects and research for COE alumni.

"The annual Homecoming Engineering BBQ provides an atmosphere for our alumni and current and retired faculty members to reunite and ask questions about what the COE is doing today," said Dr. Wayne Davis, COE dean. "I love being able to talk with our engineering alumni and their families and provide an opportunity for them to show their families where they went to school and give them a firsthand look into their college experience at the University of Tennessee, along with the many changes that are taking place. Hopefully, we will be able to provide tours of the new Min Kao Electrical Engineering and Computer Science Building next year, as it should be opened by Homecoming 2011."

The event was catered by Dead End BBQ, which is co-owned by Robert Nutt, a COE alumnus.

All alumni and their families are invited to attend next year, so look out for the save-the-date for more information.



Dr. Ed Burdette (right) professor in the Department of Civil and Environmental Engineering, visits with the Tucker family during homecoming activities. Greg Tucker (facing camera) is a second-generation COE alumnus (BS/CE '87, MS/CE '88) who now resides in Birmingham, Ala.

Memorials

R. Theodore Davis (BS/EE '39) died on Sept. 27, 2010. He was a resident of Wilmington, N.C.

Charles C. Lasater (BS/ME '40) died on Oct. 5, 2010. He was a resident of Pascagoula, Miss.

William S. Regenold Jr. (BS/CE '47) died on Sept. 22, 2010. He was a resident of Highlands, N.C.

James Garner (BS/ChE '48) died on Oct. 17, 2010. He was a resident of Plano, Texas.

Harry W. Givan (BS/CE '48) died on July 1, 2010. He was a resident of Port Charlotte, Fla.

James E. Still Sr. (BS/ME '48) died on Oct. 26, 2010. He was a resident of Huntsville, Ala.

Louis H. Sommers (BS/EE '49) died on Aug. 23, 2007. He was a resident of Huntsville, Ala.

Minnis C. Harr (BS/EE '50) died on Sept. 27, 2010. He was a resident of Knoxville, Tenn.

Jack H. Lefler Sr. (BS/IE '50) died on Sept. 15, 2010. He was a resident of Loudon, Tenn.

William B. Robertson (BS/ChE '51) died on Sept. 21, 2010. He was a resident of Kingsport, Tenn.

Dr. Ronald D. Morris (BS/ChE '55) died on Oct. 7, 2010. He was a resident of La Vergne, Tenn.

Charles N. McClanahan (BS/CE '56) died on June 1, 2010. He was a resident of Centerville, Tenn.

William H. Stewart Jr. (BS/ME '57) died on Sept. 22, 2010. He was a resident of Houston, Texas.

Ronald G. Domer (BS/ME '59, MS/ES '65, PhD/ES '73) died on Oct. 25, 2010. He was a resident of Danville, Calif.

Jimmie Pafford (BS/EE '59) died on April 19, 2010. He was a resident of Pocomoke City, Md.

Robert W. Smartt (BS/CE '59) died on April 2, 2009. He was a resident of Nashville, Tenn.

James C. Billingsley (BS/EE '62) died on Dec. 8, 2009. He was a resident of Tullahoma, Tenn.

David S. Fuller (BS/ME '63) died on Sept. 19, 2010. He was a resident of Nebo, N.C.

James R. Jones (BS/EE '74, MS EE '75) died on Sept. 25, 2010. He was a resident of Kingston Springs, Tenn.

Billie M. McAlister (BS/CE '74) died on Feb. 24, 2005. He was a resident of Franklin, Tenn.

Daryl Sinclair (MS/ME '76) died on Sept. 29, 2009. He was a resident of Decherd, Tenn.

Dr. Thomas J. Abraham Jr. (BS/ChE '79, MS/ChE '84, PhD/ChE '85) died on Oct. 28, 2010. He was a resident of Knoxville, Tenn.

Michael K. Howze (BS/CE '82) died on Oct. 5, 2010. He was a resident of Franklin, Tenn.

Jerry D. McCroskey Jr. (BS/ME '84) died on Sept. 10, 2010. He was a resident of Hixson, Tenn.

John F. Conlon III (MS/EnvE '96) died on Oct. 25, 2010. He was a resident of Mystic, Conn.

In Memoriam: Dr. James Hung



Dr. James Hung

Dr. James Hung, a retired professor from the Department of Electrical and Computer Engineering (now the Department of Electrical Engineering and Computer Science) at the University of Tennessee, passed away on Dec. 27, 2010, at the age of 81.

Hung was born in 1929 in Foochow, China, and came to the United States in 1954 to earn his master's and doctorate degrees at New York University. He then joined UT in 1961, where he taught systems and control courses in the ECE department until he retired in 1999.

In the 1970s, he consulted with NASA to build navigation systems for the lunar rover that became known as the "moon buggy."

Hung was the faculty advisor to Dr. Min Kao, chairman and CEO of the Garmin Corporation, one of the world's largest manufacturers of Global

Positioning System (GPS) products. Kao received his Ph.D. from the University of Tennessee in 1975 and stayed in touch with Hung through the years after his graduation.

In 2004, Kao contacted Hung about making a gift of lasting value to the university. Hung suggested donating money for a new electrical and computer engineering building. Kao eventually committed to donating \$17.5 million, \$12.5 of which was designated for the construction of the Min H. Kao Electrical Engineering and Computer Science Building. The other \$5 million went toward matching private donations to generate an endowment for the EECS department.

In his remarks during the groundbreaking ceremony in May 2007, Kao saluted Hung, his longtime friend and advisor, who was instrumental in Kao's decision to give back to the college.

In Memoriam: Dr. E. Eugene Stansbury



Dr. E. Eugene Stansbury

Dr. E. Eugene Stansbury, a retired University of Tennessee College of Engineering (COE) professor, passed away on Feb. 19, 2011, in Alexandria, Va. Stansbury was a professor of Metallurgical Engineering at UT from 1947 until 1985.

Stansbury was instrumental in beginning the COE's metallurgy program, which is now part of the Department of Materials Science and Engineering. He established graduate programs in Metallurgy at both UT and Oak Ridge National Laboratory (ORNL).

Stansbury placed high importance on technology in the field and developed and taught several interdisciplinary courses that covered its advantages. He was the author or co-author of 35 articles and a book on corrosion and was the recipient of many professional and academic awards.

Dr. Stansbury received his bachelor's degree in chemical engineering in 1940 from North Carolina State University. He received his master's and Ph.D. degrees in metallurgical engineering in 1942 and 1946, respectively, from the University of Cincinnati.

Upon his retirement, an endowment fund for scholarships and equipment was established. Donations can be made to the E. Eugene Stansbury Endowment fund at UT (via the Office of Engineering Development, (865) 974-2779/engrdev@utk.edu).

Leadership Awards Bestowed on Engineering Diversity Program Students

Tia Renee Tabors and Aeron Lydell Glover both received the 2011 Community Award at the Black Engineering of the Year Awards (BEYA) Student Leadership and Scholarship Awards on Friday, February 18.



Tia Tabors receives her BEYA award from Shelton Guinn, Director of Strategic Sales at Aerotek, along with the emcees Marc Clarke and Fonzworth Bentley.

The two students were recognized for outstanding academic achievement and leadership. Tabors is a senior majoring in chemical engineering, and Glover is also a senior majoring in industrial engineering.



Aeron Glover receives his award from Rear Admiral Randall M. Hendrickson from the Missile Defense Agency and BEYA awards emcees Marc Clarke and Fonzworth Bentley.

UT ALUMNUS WINS 2011 TIBBETTS AWARD



UT alumnus Hashem Hashemian

Analysis and Measurement Services Corporation (AMS), located in Knoxville, Tenn. and owned by Hashem M. Hashemian (MS/NE '76), recently won a Tibbetts Award for its critical role in research and development for the government and for its success in driving

innovation and creating new jobs. Hashemian was presented with the award in Washington, D.C., in February.

Hashemian, President and CEO of AMS, has 32 years of experience with the company, which began in 1977 when he and Dr. Thomas W. Kerlin, professor emeritus in the Department of Nuclear Engineering, founded AMS. Since then, AMS has provided a unique set of equipment, services and training to the worldwide nuclear industry. These products help nuclear power plants verify that the sensors used to control plant operation and safety functions are working properly.

The Tibbetts Awards are given by the U.S. Small Business Administration. Award recipients are selected based on the economic impact of their technological innovation and whether they have met federal research and development needs, encouraged diverse participation in technological innovation and increased the commercialization of federal research. For more information, visit <http://www.businesswire.com/news/home/20110215006909/en/SBA-Announces-Winners-2011-Tibbetts-Awards>.

Nuclear Engineering Graduate Students Win Contest



Nuclear engineering student award winners (left to right): Susan Hogle, Matthew Cook and Oscar Lastres.

A team comprised of Department of Nuclear Engineering (NE) graduate students won first place in the 2010 Student Design Contest, which is sponsored annually by the American Nuclear Society (ANS). Matthew Cook, Oscar Lastres and Susan Hogle won for their project "Conceptual Design of a Neutron Absorber System for Spent Fuel Pools." Dr. Martin Grossbeck, a research professor in the NE department, supervised the group. UT nuclear engineering students have been finalists, winning either first or second place in either the undergraduate or graduate category of this annual contest in 32 of the past 35 years.

COE Alumna and Olympic Gold Medalist is Keynote Speaker at Diversity Event



Benita Fitzgerald Mosley speaks at the UT diversity event.

Benita Fitzgerald Mosley (BS/IE '84) returned to Knoxville on Tuesday, February 1 as the featured speaker for the kickoff celebration for the 50th anniversary of undergraduate admission by African Americans at the University of Tennessee. Fitzgerald Mosley became the first African-American woman to win an Olympic gold medal in the 100-meter hurdles in the 1984 Los Angeles Olympics. She was a 14-time All-American and five-time national champion while on the Lady Vols Track and Field Team and won nine Southeast conference championships. She currently serves as the Chief of Sport Performance for USA Track & Field. For more information about the diversity event, visit <http://www.utk.edu/intoday/2011/01/25/rescheduled-50th-anniversary-kickoff/>.

UTSI Doctoral Candidate Receives AIAA Special Award



Dr. Joe Majdalani (left) presents the award to Brian Maicke (right) during the AIAA luncheon at UTSI.

Brian Maicke, a doctoral candidate at the UT Space Institute, received the prestigious AIAA Special Award on November 17, 2010 at the American Institute of Aeronautics and Astronautics (AIAA) luncheon at UTSI. The recognition highlights outstanding achievements among AIAA members and salutes spirit, teamwork, outstanding research, mentorship and support in the fields of high-speed propulsion and theoretical modeling of aerospace engineering problems. Maicke has also recently had the results of his research published in both the Journal of Fluid Mechanics and the Proceedings of the Royal Society, Series A. He also was recently recognized with the Outstanding Graduate Assistant Award at UTSI and received a special commendation from the Tennessee State Senate for his research and publication efforts.

Calendar

Fall 2011

Classes Begin	Aug 17
Labor Day	Sept 5
Fall Break	Sept 29-30
Thanksgiving	Nov 25-26
Classes End	Nov 29
Exams	Dec 1-2, 5-8
Graduate Hooding	Dec 8
UT Commencement	Dec 9

Spring 2012

Classes Begin	Jan 11
MLK Holiday	Jan 16
1 st Session Ends	Feb 29
2 nd 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

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

Biosystems	974-7266
Chemical & Biomolecular	974-2421
Civil & Environmental	974-2503
Electrical & Computer Science	974-3461
Industrial & Information	974-3333
Materials Science	974-5336
Mechanical, Aerospace &	
Biomedical	974-5115
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

Intelligent Systems and Machine	
Learning	974-4394
Materials Processing	974-0816
Reliability & Maintainability Center	974-9625
Scintillation Materials	974-0254
Transportation Research	974-5255

The University of Tennessee is an EE/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. All qualified applicants will receive equal consideration for employment without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability or covered veteran status.

Save the Date!

Please mark your calendars now for Homecoming 2011! Saturday, November 5th

The University of Tennessee Volunteers vs. Middle Tennessee State University.

Cheer on the Vols as they take on the Blue Raiders!

The College of Engineering will be hosting the Annual Alumni Homecoming Barbeque on The Hill three hours prior to kickoff.

Join us for a delicious barbeque lunch; exhibits and demonstrations; and reunions with former classmates and faculty.

Details will be available in the upcoming issue of *The Torchbearer*.

For more information, contact the Engineering Development Office at (865) 974-2779 or e-mail Christina Parsons at cparson4@utk.edu.

