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Fall 2003

## Tennessee Engineer Fall 2003

College of Engineering

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# Engineering

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## Dr. Way Kuo Named COE Dean

**D**r. Way Kuo, the Royce E. Wisenbaker Chair of Engineering in Innovation at Texas A & M University and former Associate Vice Chancellor and Executive Associate Dean of Engineering at Texas A & M, was named Dean and Distinguished Professor of the College of Engineering at the University of Tennessee in June. Kuo is also a tenured professor in the COE Department of Industrial and Information Engineering and the Department of Electrical and Computer Engineering.

Kuo succeeds Dr. Fred D. Tompkins, who had been acting as Interim Dean since December 2001. Tompkins, the former COE Associate Dean of Administration, Research and Graduate Education, was named interim dean after the sudden death of Dr. Jerry Stoneking in November 2001.

A native of Taipei, Taiwan, Kuo grew up with the dream of someday becoming a college professor. He began his career by pursuing a bachelor's degree in nuclear engineering from National Tsing-Hua University in Taiwan.

A fellow engineering student during his school years at Tsing-Hua was Dr. Peter Liaw, who is now a professor in the COE's Department of Materials Science and Engineering. Liaw, an internationally respected researcher who holds the Ivan Racheff Chair of Excellence at UT, remembers Kuo well from their university days.

"The National Tsing-Hua University was one of the best science and engineering schools in Taiwan," Liaw said. "Way Kuo was one of those students that everyone just knew—he was very active on campus, an outstanding student, he organized a newsletter for engineering students—and he was very respected. Way even had a scholarship."

Liaw and Kuo frequently ran into one another on campus and at sporting events at the university.

"I was in the physics program, and we had more ladies than the nuclear engineering department," Liaw recalled. "Our group was popular because the guys from nuclear engineering liked to have an opportunity to meet the ladies—their department only had about one or two female students." Kuo received his B.S. in nuclear engineering in 1972.



Dr. Way Kuo

Shortly afterwards, he entered military service, becoming a Second Lieutenant in the Taiwanese Marine Corps' Amphibious Landing Armored Regiment.

After release from the service in 1974, Kuo decided to continue his pursuit of an academic career by entering a new field of interest—industrial engineering. However, industrial engineering was a fairly unknown discipline in Taiwan at that time, so Kuo decided to come to the United States for a master's degree. He enrolled in Kansas State University's graduate program for industrial engineering.

"I went to Kansas State because they gave me an assistantship, and to get financial support was very important to me," Kuo commented. "There's another reason: even today, to get a higher education degree, the U.S.A. is still the best place—it's absolutely true for industrial engineering."

After receiving master's degrees in both industrial engineering and statistics, Kuo stayed on at Kansas State for his Ph.D., which he received in 1980.

Kuo worked in the private sector for several years, including stints with Bell Laboratories and Ames Labs. He returned to academia as an assistant professor in 1984 at Iowa State University. Kuo eventually became the Professor and Founding Chairman for the Department of Industrial and Manufacturing Systems Engineering at ISU.

In 1993, Kuo accepted a position as Professor and Department Head of the Department of Industrial engineering at Texas A & M.

*Continued on page 2*

## A Letter to COE Alumni from Dr. Loren Crabtree

**D**ear College of Engineering Alumni, Donors and Friends: The resignation of John W. Shumaker as president of the University of Tennessee on August 8, 2003, dealt a powerful blow to our esteemed institution. While we regret the circumstances leading to Dr. Shumaker's decision, we need to remember that the university is far larger than a single individual. We will surmount this difficult time because of the skill and dedication of our faculty and staff and because of our strong commitment to our students and to the people of the state of Tennessee.

When our students arrived for the many important activities preceding the opening of classes in August, we were ready for them.



Dr. Loren Crabtree

For the first time in the history of UT, the incoming freshmen are reading and discussing with the faculty a book in common, James McBride's *The Color of Water*. This "Life of the Mind" experience will introduce our new students to the high intellectual expectations we have for them. Our faculty have stepped up in unprecedented numbers to participate in this innovative program.

The Knoxville administration is fully staffed during this new semester, and we have capable system administrators in place to assist us. Many outstanding new faculty have joined us this year, and our seasoned faculty are ready, as usual, to teach their students in their customary high-quality fashion. Budgets, while not robust, are adequate to the needs of the institution, and we will be prudent stewards of the public purse throughout the year.

All of us here at the University of Tennessee look forward to an excellent academic year as we enhance our fundamental missions of teaching, research, creative activity, service and outreach.

To each of our alumni, donors and friends, we express gratitude for your ongoing support and appreciation for your dedication to the College of Engineering and the University of Tennessee.

Loren Crabtree, Chancellor



Office of Cooperative Engineering and Professional Practice Assistant Directors Mary Jo Fairbanks (l) and Joyce Reed (r) join with Darold McCray, Project Engineer, Nonwovens Engineering, with the Kimberly-Clark Corporation to welcome back engineering students at the sixth annual Kimberly-Clark Cookout in September. Over 800 students, faculty and staff enjoyed barbeque with all of the trimmings.



Dr. Anthony English (far l), an associate professor in the Department of Mechanical, Aerospace and Biomedical Engineering, uses a blood oxygenator during a biomedical device demonstration to illustrate the application of engineering principles to medicine. The group of high school students are from the 2003 Governor's School, which was held on the UT campus.



Jim Woroniecki (l center), Senior Vice President of Human Resources and General Administration of Denso Manufacturing Tennessee presents a check for \$50,000 from the Denso North America Foundation to COE Interim Associate Dean Wayne Davis (r center). Other attendees at the presentation included: (l to r) Masood Parang, Interim MABE Department Head; Russell Bearden, Supervisor of Staffing, Denso; Barbara Wertheimer, Program Officer, Denso North American Foundation; Adedeji Badiru, IIE Department Head; and Cathy Dodge, Engineering Development Director. The funds will be used for the purchase of laboratory equipment.

During 1993 through 2000, the department received consistently high ratings from the *National Research Council's Research-Doctoral Programs* and *U.S. News and World Report* in both undergraduate and graduate rankings. Kuo served as associate vice chancellor for engineering and executive associate dean for Texas A & M's Look College of Engineering from 2000-2002 before being named as dean of the UT College of Engineering in 2003.

Kuo has held appointments as a National Research Council senior research associate and as a senior Fulbright scholar. He is an elected member of the U.S. National Academy of Engineering and the Republic of Taiwan's National Academy of Sciences and is an Academician in the International Academy for Quality.

He is widely recognized for his work in nano-electronics and for developing methods to reduce infant mortality. Sponsors of his research include the National Science Foundation, the U.S. Department of Energy, IBM, Motorola, AT&T and Intel.

A co-author of five engineering textbooks, Kuo has been in-

vited to speak at more than 100 conferences and symposiums.

Dr. Jan Williams, dean of the UT College of Business, chaired the COE dean's search committee.

"It's common to have another dean chair academic searches," Williams commented. "This provides independence from other factors—for example, I don't have to worry about another dean being my future boss—and also allows me to interact with the candidates as peers. The rest of the committee were from the engineering college, with the exception of one faculty member from computer science and a member of the college's Board of Advisors. We had 75 applications, and after a long process, we narrowed it down to five individuals."

Although the firm of Korn-Ferry, which was previously utilized in the search for UT presidential candidates, provided assistance to the dean's search committee, Williams stated that Korn-Ferry's sole involvement was to provide additional candidates in order to broaden the search.

"I made a strong condition that I would only act as chair of

(Continued from page 1)

the committee if the search firm was utilized appropriately. Candidates from both the standard search and the firm's list were incorporated in the final group, and all applicants were treated equally. The presentations given by the final five candidates were open to everyone, including faculty, staff and students. The candidates also met individually with university administrators, department heads and college program directors," Williams added.

Williams was impressed with Kuo's qualifications.

"I've seen a lot of interviews, but I've never seen anyone present as well before—Dr. Kuo had thought everything out and provided such strong evidence that he had done his homework," Williams said.

"I thought he had an impressive professional background, both as a researcher and administrator," commented Dr. Loren Crabtree, UT Chancellor. "He has an extraordinary intelligence. He also has two things that are important for an administrator—honesty and integrity. The College of Engineering has been blessed with two previous deans who exhibited these qualities.

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## COE Interim Dean Fred Tompkins Appointed Interim Director of UT Research Foundation

**F**red D. Tompkins, professor and interim dean of the College of Engineering, has been named interim executive director of the newly formed University of Tennessee Research Foundation (UTRF).

Tompkins will oversee daily operations of UTRF, which was established in April by UT's Board of Trustees as a non-profit corporation to commercialize UT research and technology. The Tennessee General Assembly enacted legislation in 2000 authorizing creation of the Research Foundation. The UTRF replaces the UT Research Corporation, formed in 1934 to license UT intellectual properties.

The goals of the research foundation include growing the University of Tennessee research enterprise; harvesting, managing and marketing UT intellectual property; encouraging and supporting entrepreneurial education

and ventures by faculty, staff, students and commercial partners/affiliates of the university; and contributing to the well-being of the state through economic development.

"As a land-grant university, there are three important facets of our institutional mission: teaching, research and service," Tompkins said.

"The UT Research Foundation will contribute to the teaching mission through its emphasis on entrepreneurial education. Research at the university is the generator of intellectual ideas that can fuel the economic engine. As for the service component, I cannot imagine a greater way to serve our state and region than to create jobs, facilitate the

generation of wealth, expand the tax base, and make important new technologies available to our citizenry."

Tompkins hopes that the presence of the UTRF will encourage entrepreneurship, and that professors will view the foundation as a valuable resource for marketing and licensing intellectual property.

"We will continue to aggressively market University technologies to businesses outside the University. However, some entrepreneurial-minded faculty and staff may themselves want to lead commercialization efforts for certain of their technologies," Tompkins added.



Dr. Fred Tompkins

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*Dr. Way Kuo*

**I**t is a great honor to join the University of Tennessee as the dean of Engineering. I would like to acknowledge Chancellor Loren Crabtree for his strong support for the betterment of the College of Engineering, and to express appreciation to Dr. Fred Tompkins for taking good care of the college as the interim dean. Although I am not yet assuming my full-time responsibility in the office until January 2004, I will be present on the UT campus on a monthly basis and will make every possible effort to keep the college progressing forward without delay.

Here is a brief report on some of the plans and recent activities:

- 1. Personnel and Organization:** Dr. Luther Wilhelm has been appointed as Associate Dean for Academic Affairs. Dr. Wayne Davis, a professor in the Department of Civil and Environmental Engineering, has been appointed as Interim Associate Dean for Research and Technology. We have also recently completed a new COE organizational structure chart, which has been presented to faculty and staff.
- 2. Information Update:** I began formally visiting each of the departments in September. I also attended a July retreat, along with several COE colleagues, with Dr. Jan Williams, Dean of the College of Business (COB),

and several of their college's department heads, to discuss joint efforts between the COB and the COE.

- 3. Development:** I plan to work with Cathy Dodge, our Engineering Development Director, to become immediately involved in development activities. These will include meetings with engineering alumni and with the college's external advisory board in late October. Space for laboratories and offices is a key issue; therefore, I plan to devote a great deal of effort toward solving this difficult problem. We also plan to establish endowments for new four-year scholarships, Ph.D. fellowships and faculty research fellows in the near future.

- 4. Academics and Research:** Increasing our efforts in faculty and student recruitment will be a high priority. I have also asked the departments to review and update the undergraduate curriculum and to review the graduate curriculum when appropriate. We are currently searching for new faculty in the areas of biomedical engineering, nanotechnology and information technologies. As for research, I plan to hold regular meetings with the leaders of Oak Ridge National Laboratory to discuss joint faculty appointments, research opportunities and other potential alliances. Additionally, I have asked Dr. Davis to search for a director of the tentatively named Applied

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## Faculty Focus

**I**t has happened to all of us, and, almost always, at the worst possible time. While on our way to work, every single stoplight is red, even on the major roads, and it only gets worse as we enter the city limits. The radio tells us that freeway traffic is backed up for miles because of a major accident; but even to get to the freeway, we have to get past the railroad crossing, where a train has been slowly passing for the past five minutes!

Help is on the way—in the form of technology and computer logic being researched and developed by a team of researchers, led by Dr. Tom Urbanik of Civil and Environmental Engineering.

“What we’re doing today in transportation is only slightly different than what we were doing 50-70 years ago,” Urbanik said. “Technology has improved. We now use a computer, where we used to use a synchronous motor with a gear to turn the light yellow, red, and green. However, the underlying logic has not

improved significantly in the last 50 years.”

“Think about an overturned truck on the interstate; if you knew about it before you left home, you could make a decision to either abandon the trip or take an alternate route,” he added.

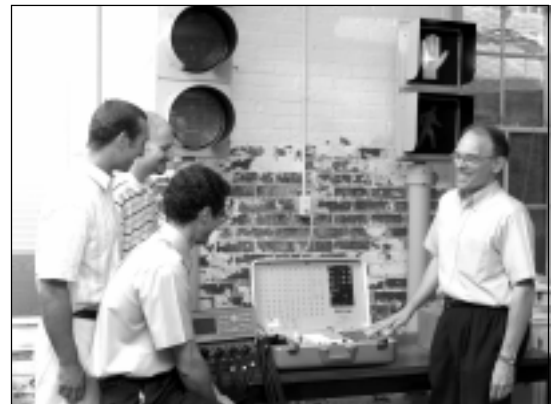
Urbanik proposes a seamless system, which will gather more real-time information about all forms of transit and road conditions, and transmit it to transportation and safety agencies. The new “Intelligent Traffic Systems” (ITS) will rely on advanced sensors and better logic within the system, such as that which allows for a broader range of responses from the traffic controller. While current sensors do little more than tell the controller that there is a vehicle on them, enhanced sensors can detect surface conditions (dry vs. wet) and the type of vehicle over the sensor (18-wheeler vs. car). With this information, a computerized controller adjusts the timing of a signal to avoid putting trucks or other ve-

hicles into the “dilemma zone.”

“Drivers are in the dilemma zone if, when they see the yellow indication, they lack adequate distance to stop before the intersection, or are too far away to enter the intersection before the red indication,” Urbanik remarked.

Other conditions—such as number and type of vehicles entering an intersection, precise locations of trains and city buses, and sites of accidents—can be instantly delivered to a network of transportation officials, allowing them to provide a more efficient delivery of normal and emergency service to the customer.

## Dr. Thomas Urbanik



*Dr. Thomas Urbanik utilizes equipment in his transportation laboratory to instruct CEE students (from top) Scott Beard, Andrei Neiciulescu and Jacob Yohe.*

“The idea of ITS is that we can begin to break down the seams between the various parts of the existing system, by sharing information. But that is easier said than done. The real challenge going forward is tying these systems together, so they work on behalf of the traveler,” Urbanik stated.

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## Dean's Message

(Continued from page 3)

Research Institute in order to assist our faculty in acquiring large-scale research projects from Department of Defense organizations and industry.

In conclusion, I appreciate the dedication of our alumni, donors, and friends of the college to the COE and to the university. I look forward to meeting as many of you as I can on a personal basis, and hope to have an opportunity to communicate with others of you via mail, phone and e-mail.

As dean of the College of Engineering, I offer you my strongest support and enthusiasm for our efforts to jointly provide the best educational and research opportunities that we possibly can to our students and the region.

Please feel free to send your comments, ideas and suggestions to me at [coe@enr.utk.edu](mailto:coe@enr.utk.edu).

*Way Kuo*

## Dr. Way Kuo

(Continued from page 1)

Jerry Stoneking was a marvel to work with, and Fred Tompkins was the same type of administrator—straightforward, hardworking and trustworthy. I believe that Way Kuo is another leader that the college can trust; he has these same qualities."

Liaw was surprised to hear that his former schoolmate was one of the candidates for the COE dean's position, but not by his selection as the final choice.

"He's very hardworking and sincere, and takes good care of the people who work for him," Liaw commented.

Liaw also mentioned that Kuo has a "secret hobby."

"He's a very good cook, and has even done Chinese cooking lectures and demonstrations," Liaw said, adding, "Although I think he still likes to go to McDonald's occasionally."

Kuo will assume full-time dean's responsibilities in January 2004. He and his wife, Suzanne, have two daughters.

*Story by Kim Cowart*

## Faculty Focus

Urbanik and his team of researchers have begun a project, funded by the National Cooperative Highway Research Program (NCHRP), which is, Urbanik said, "...about taking out a fresh sheet of paper, and examining how we would do this (ITS), if we weren't looking at how we've done it in the past, and if we had better information." NCHRP hosted a workshop on July 30 in Portland, Ore., to provide the team with an opportunity to present its vision for the project to industry leaders. Urbanik said that the feedback was very positive, and that the team has been charged with moving ahead on its plans for development of improved logic and better information-gathering devices.

"This project is the culmination of many years of work on a variety of fronts, and it makes me feel good to win this project. It has a variety of components of things I've been working on over the last ten years, specifically for this project, and others throughout my career. Part of my excitement comes from having a great team. These are some of the premier people in the transportation field who are working on this project," Urbanik added. The project began on April 25 of this year, and is set for completion in May of 2005.

Urbanik came to UT in 2001, after almost 25 years at Texas A & M University (TAMU).

"I went to Texas A & M to get my Ph.D.," Urbanik said. "I just stayed for an extra 20 years."

While at TAMU, Urbanik served most recently as an Adjunct Professor and as Associate Agency Director of the Texas Transportation Institute. Coming to UT provides him with more of an opportunity to interact with students, and to be more involved in the technical side of engineering.

"One of the downsides of being successful in any organization is that you tend to move up the ladder and away from the technical side," he added. "This allows me to get more into the technical side, instead of just discussing issues. It is a new opportunity, and a new challenge."

Urbanik occupies the Henry C. Goodrich Chair of Excellence

(Continued from page 3)

in Civil Engineering. This Chair of Excellence was funded by friends and colleagues who wished to honor Goodrich, a 1943 civil engineering graduate, and a winner of the prestigious Nathan W. Dougherty Award from the College of Engineering. This chair honors his outstanding contributions to business and industry. Goodrich and his wife, Billie Grace, are long-time supporters of the college and the University of Tennessee.

Dr. Urbanik's degrees include a B.S. in Forest Engineering (New York State College of Environmental Science and Forestry); B.S., Civil Engineering (Syracuse); M.S.C.E., Transportation (Purdue University); and Ph.D., Transportation (TAMU). His career spans over three decades, during which he has authored or co-written over 125 articles, book chapters and conference papers.

Urbanik said that his wife, Cindy, is the most important person in his life.

"She is really a true partner in all that I do. People are sometimes surprised at her understanding of what I do."

Though no longer practicing, Mrs. Urbanik has had a successful career as a nurse in a variety of areas, such as cardiac and intensive care. The Urbaniks have two grown sons.

Urbanik loves to travel with his wife, and especially enjoys seeing the national parks of the United States. He said there are only a few which they have not seen. Urbanik's favorite mode of transportation is the automobile.

"I'm an explorer of sorts, so I enjoy going places that I visited before. I think that is the classic reason why the automobile has been so successful, because of its mobility and ability to go so many places," he said.

"Beneath my stern exterior, you will find a marshmallow," Urbanik commented. "Because of the intensity of what I do, and my passion for my work, some people are intimidated by me."

In his time outside of work, Urbanik still makes time to mentor former students, and enjoys walking in the mountains.

*Story by Curtis J. Owens*

## Tompkins

(Continued from page 2)

Tompkins is excited about the challenges presented by the UTRF, and envisions the foundation as a long-term benefit for the state of Tennessee.

"We can improve the economic base of our state as we turn the intellectual products of University research into business opportunities," Tompkins added.

Tompkins joined the university as a faculty member in the then-Department of Agricultural Engineering in 1974. He became a full professor in 1984, and was named department head in 1991. Tompkins served as a professor and Associate Dean for Academic Affairs and Student Services, and then as Associate Dean for Administration, Graduate Education and Research in the College of Engineering from 1994 to November 2001. He was named Interim Dean in December 2001.

Tompkins is a member of the Board of Directors for the National Transportation Research Center (NTRC), a joint venture of the University of Tennessee and the Oak Ridge National Laboratory. He is a member of the Knoxville Area Chamber Partnership Board of Directors, where he serves on the Economic Development Committee. Tompkins also serves on the Advisory Board of Fairview Technology Center, a business incubator for technology companies. Additionally, he serves on the Board of Technology 2020, an economic development organization. Tompkins occupies seats on the boards of a number of start-up companies.

Tompkins, who earned his B.S. in 1971 and Ph.D. in 1974 at the University of Tennessee, is a professor of biosystems engineering and a registered professional engineer licensed in Tennessee. As a professor, he has published about 150 articles, technical papers, and scientific reports and has received numerous awards for teaching and research.

*Story by Kim Cowart*

## Biosystems Engineering & Environmental Science

**Dr. Ronald Yoder**  
BEES Department Head

A crowd of concerned citizens from across the state participated in the recent opening of the Tennessee Onsite Wastewater Training Facility. On July 24, more than 75 engineers, wastewater managers, community planners, environmentalists and regulators toured the new site and examined the state-of-the-art displays of wastewater renovation technologies.

Located at the University of Tennessee's Middle Tennessee Experiment Station, the Tennessee Onsite Wastewater Training Facility will promote the successful use of decentralized wastewater technologies to minimize the risk wastewater poses to human and environmental health.

The Comprehensive Nutrient Management Plan (CNMP) Certification Program for Technical Service Providers has been selected as the 2003 national winner in the class "Learning Module/Notebook" by the National Association of County Agricultural Agents (NACAA).



Winners Robert Burns, Lara Moody and George Grandle

The recipients of the award are **Robert Burns, Lara Moody and George Grandle**. Initially, the entry was submitted to the Tennessee Association of County Agricultural Agents (TASAA) where it won at the state level. After winning at the state level, the program was entered into the national competition.

**Visit us online:**

<http://bioenr.ag.utk.edu/>

## Chemical Engineering

**Dr. John R. Collier**  
ChE Department Head

**Joshua Brock Thomas**, a Whittle Scholar in ChE, was awarded the "Torchbearer" award at the annual Provost's Honors Banquet last April. Thomas has also served as a UT Ambassador, and as president of the UT chapter of the American Institute of Chemical Engineers.



Joshua Thomas

Graduate student **Samuel Morton III** received special recognition for campus leadership and service during the Provost's Honors Banquet. Morton has served as a leader of the Graduate Student Association, and actively supported fundraising for the library. He was also a participant in the recent collaboration between COE and Bruichladdich Distillery in Islay, Scotland (*see article on page 9, this issue*).

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## Civil & Environmental Engineering

**Dr. Greg Reed**  
CEE Department Head

The student chapter of the American Society of Civil Engineers (ASCE) was represented at the Zone 2 Workshop for student chapter leaders. Participants included **Keith Carpenter, Kelly Haerer, Jessica Swanson and Erin Cope**. The students returned with new ideas for strengthening the chapter and its outreach activities. **Dr. Eric Drumm**, ASCE faculty advisor, accompanied the group.

**Jon Storey** won first place in the Tennessee Section of the Institute of Transportation Engineers' (ITE) Student Paper Competition. The UT Student Chapter of ITE also won the Robert Stammer Student Chapter Award. The UT Student Chapter of the American Society of Civil Engineers (ASCE) received an Honorable Mention from ASCE for outstanding activities during 2002-2003. This award was in recognition of the chapter's "enthusiasm and hard work."

The department has established a transportation teaching laboratory that will allow students to gain hands-on experience with advanced control technology, including video imaging and processing, fiber-optic communications and the latest in advanced transportation controllers.

**Dr. Richard Bennett** has received the ASTM Alan H. Yorkdale Memorial Award for his paper "In-Plane Analysis of Masonry Infill Materials." This award is given annually to the author or authors of the best paper concerning clay, shale, concrete and sand-lime masonry. The award-winning paper is the culmination of a series of papers over the past decade by the authors, based on their research on the influence of masonry as an infill material to provide lateral strength and stiffness to steel structures.

**Dr. Dave Goodpasture** presented a paper entitled "Full-Scale Tests of Steel Piles Supporting Integral Abutments" at the International Conference on Extending the Life of Bridges, Concrete Composites, Buildings, Masonry and Civil Structures which was held in London, England. The paper was the result of research being conducted by **Drs. Ed Burdette, Hal Deatherage, David Goodpasture and Earl Ingram**.

The water resources program in CEE has developed strong collaborative ties

with other interdisciplinary researchers on campus.

Since arriving this past fall, **Dr. Randall Gentry** has become a member of the Center for Environmental Biotechnology (CEB) and is a senior researcher with the Hydrogeology Research Group.

These collaborative efforts are focused on environmental tracer research in ground water systems, an evaluation of the movement and causation of pathogen movement in impacted watersheds, and an evaluation of water quality in select streams and of habitat requirements associated with certain fish species in the Cumberland Gap National Park. These projects were conceived in collaboration with Dr. Larry McKay (geological sciences and the CEB), Dr. John McCarthy (CEB), Dr. Alice Layton (CEB) and **Dr. Bruce Robinson** (CEE).



Dr. Gentry

The Tennessee Department of Transportation Commissioner recently sought the help of university faculty to review the department's practices and recommend fundamental improvements to its decision processes. CEE faculty participating were **Drs. Arun Chatterjee, Gregory Reed, Steve Richards, Tom Urbanik and Fred Wegmann**.

**Dr. Gregory Reed** received the President's Citation from the Tennessee Society of Professional Engineers for his outstanding service to the society over several years.

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# Department News

## Electrical & Computer Engineering

**Dr. Samir M. El-Ghazaly**  
ECE Department Head

Dr. Leon Tolbert received the 2003 Professional Promise Award at the Provost's Honors Banquet. Tolbert's current research focuses on improving the efficiency of electric power systems to help reduce environmental pollution and conserve natural resources.



Dr. Tolbert

In 2001, Tolbert received the prestigious National Science Foundation's CAREER Award.

### Visit us online:

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## Industrial & Information Engineering

**Dr. Adedeji Badiru**  
IIE Department Head

The Department of Industrial Engineering has changed its name to reflect a new strategic integration of information model-

ing and optimization into the department. The new name is the "Department of Industrial and Information Engineering."

This enhanced focus demonstrates a recognition of the importance of information technologies and their incorporation into all levels of industrial processes. This application will differ from conventional information science programs by concentrating on engineering processes, systems integration, enterprise systems, cross-functional information system design and related topics.

This change offers a much-needed means of creating cross-disciplinary studies of information in the world of industry. Inter-departmental collaboration will be aggressively pursued. Plans are currently underway to cohort with computer science, computer engineering, information science and management information science.

Jeanette Myers, the former principal secretary in the department, was named IIE Budget Assistant in July.

Denise Bauer, a master's degree candidate in IIE, received a Graduate Teaching Award at the 2003 Provost's Honors Banquet. Bauer was one of four graduate teaching assistants honored at the event.

Dr. Gary Coleman, Associate Professor of Industrial Engineering at the University of Tennessee Space Institute (UTSI), has been chosen President-Elect of the Society for Engineering and Management Systems (SEMS), the largest society within the Institute of Industrial Engineers (IIE), with approximately 1000 members.

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## Materials Science & Engineering

**Dr. Raymond Buchanan**  
MSE Interim Department Head

Dr. Randall Bresee is one of four researchers to win the 2002 Best Paper Award in the International Nonwovens Technical Association conference, which was held in Atlanta, Ga. Bresee will receive the award at the 2003 conference in Baltimore, Md. The Technical Association of the Pulp and Paper Industry is a co-sponsor of the annual conference.

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## Mechanical, Aerospace & Biomedical Engineering

**Dr. Masood Parang**  
MABE Interim Department Head

Dr. Arnold Lumsdaine recently received a \$222,000 grant from the National Science Foundation's Civil and Mechanical Systems Division for his proposal, "Topology Optimization for Passive and Active Damping Materials Using Homogenization." Lumsdaine used a novel approach for developing optimal shapes for vibration damping using both traditional passive materials and intelligent materials.



Dr. Lumsdaine

Dr. A. J. Baker was recently elected as a Fellow of the International Association for Computational Mechanics. He was installed in a formal ceremony at the tri-annual international symposium in Vienna, Austria.

Dr. Joe Iannelli recently directed the 2003 Tennessee Governor's School for Manufacturing.

Iannelli is also leading a research team to establish a vascular biomedical engineering and computing center at the university. Last spring, Iannelli's center pre-proposal to central administration was selected from among 11 UT entries to be one of the five accepted for submission to the National Science Foundation (NSF) under the Science and Technology Center program. A complete pre-proposal has been submitted to NSF to establish a center that also involves the COE's growing biomedical engineering program, the UT Medical Center, ORNL and St. Luke's Roosevelt Institute, the teaching hospital for Columbia University in New York.

Dr. Jack Wasserman has continued research efforts in the area of human vibrations as Director of the Institute for the Study of Human Vibration. He traveled to Las Vegas, Nev.



Dr. Wasserman for the American National Standards Institute (ANSI) committee meeting in August before the September meeting in Berlin for the International Standards Organization (ISO). He is one of four U.S. delegates to the TC 108 (technical committee) of human vibrations, and has been appointed a project director for development of the informative standard on the "definitions for the coupling forces for hand-arm transmitted vibration."

He is also serving on the planning committee for the 2004 International Hand-Arm Vibration meeting to be held in Las Vegas next June.

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engineer**

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Please let us know what you think about the revised format or give us an update for Alumni News.

Look for the next issue in Spring 2004

## Nuclear Engineering

**Dr. H. Lee Dodds**  
NE Department Head

Two NE student teams have been selected as finalists in the 2003 National Student Design Contest sponsored by the American Nuclear Society. Members of the undergraduate team are **James DeGolyer, Thomas Woody, Marcus Balanky, Amanda Desmone and Robert Bivins**. Members of the graduate team are **Steve Bell, Russ Willis, Steve Frederiksen, Scott Holcombe and Brye Mitchell**. This year marks the 27<sup>th</sup> consecutive year that the American Nuclear Society has conducted the contest.

The department has been a finalist in 25 of the past 27 years, which is a record that is un-

matched by any other nuclear engineering program in the U.S. **Dr. Fred Mynatt**, NE Research Professor, supervised both student teams.

Visit <http://www2.ans.org/honors/recipientsaward.cgi?id=studesign> for more details.

Graduate student **Thomas Miller** has received a \$3,000 Fellowship Award from the American Nuclear Society (ANS). Fellowship awards from ANS are selected from a national pool of nuclear engineering graduate students. This is the second time Thomas has received a Fellowship Award from ANS. His research advisor is **Dr. Larry Townsend**.

Graduate student **Jarrod Edwards** received a \$1,000 award for the Best Student Paper at the annual meeting of the Institute for Nuclear Materials Management. Jarrod's research advisor is **Dr. John Mihalcz**.

**Dr. Belle Upadhyaya** and **Dr. Wes Hines** participated in an International Workshop on Moni-

toring and Diagnosis, held at IPEN, Sao Paulo, Brazil, in August. The workshop was organized as part of an NSF-sponsored International Research Cooperation between NE and the Institute for Nuclear Energy Research, IPEN, Brazil.

**Dr. Martin Grossbeck**, a recent ORNL retiree, has joined the department as a research professor. Dr. Grossbeck specializes in nuclear materials including both fusion reactor materials and neutron absorbers for fission reactors.

NE alumni, colleagues, students, and other friends of the department are encouraged to participate in our weekly colloquium program, which is described at <http://www.engr.utk.edu/colloquia/>. The colloquia are webcast live on the Internet, and the cyber audience may ask questions in real time via email to [utne@utk.edu](mailto:utne@utk.edu).

The colloquia are also permanently archived on the website at <http://www.engr.utk.edu/nuclear/colloquia/Archive/>.

**Visit us online:**  
<http://www.engr.utk.edu/nuclear/>

## Applied Visualization Center

**Dr. Dan Koch**  
AVC Director

**Dr. Dan Koch**, director of the AVC and associate professor of ECE, presented a paper on October 12 at the IEEE International Carnahan Conference on Security Technology. The meeting was held in Taipei, Taiwan. The paper was titled, "3D Visualization to Support Airport Secu-



*Dr. Upadhyaya*

urity Operations," and summarized the work the AVC has completed for the Transportation Security Administration (TSA).

The AVC has received a grant from the National Safe Skies Alliance of \$160,000 to consolidate its three airport security software tools into a single application to be called "Airport Viz." The tools were developed for the TSA, and allow various security operations to be visualized graphically via computer simulation. More information is available on the AVC web site.

**Visit us online:**  
<http://viz.utk.edu>

## Center for Materials Processing

**Dr. Carl McHargue**  
CMP Director

CMP Director **Carl J. McHargue** delivered the opening lecture at the 12<sup>th</sup> International Conference on Radiation Effects in Insulators (REI-12) in Gramado, Brazil on September 1. He also presented two papers at the conference which were based on the dissertation research of Lawretta

Ononye and collaboration with scientists at the Nuclear and Technological Institute, Sacavem, Portugal. **Professor Roberto Benson**, Department of Materials Science and Engineering, presented a paper based on the research of current students **C. P. Stephens, X. Ling, H. Song and H. J. Ham**.

The Center welcomes two new research faculty members

## Department News

who will conduct studies as guests at the Oak Ridge National Laboratory. **Dr. S. Golubov** will use molecular dynamics techniques to model irradiation effects in fusion reactor materials. **Dr. S. Sathiyamurthy** will use sol-gel processing techniques to prepare high-temperature superconducting compounds.

**Visit us online:**  
<http://www.engr.utk.edu/cmp/>

## Maintenance & Reliability Center

**Tom Byerley**  
MRC Director

Several new companies have joined the Maintenance and Reliability Center over the past few months. MRC is pleased to welcome IsoPur Fluid Technologies and Electric Power Research Institute (EPRI). MRC membership has now grown to 29 companies.

The Center's 7<sup>th</sup> annual conference, MARCON 2003, was held May 4-7 at the Radisson Hotel in downtown Knoxville. This very successful conference attracted nearly 150 attendees and featured some 60 papers in three tracks. Dick Pettigrew, Director of Reliability Programs for Rohm & Haas Company, key-noted the conference.

Nine member companies hosted 19 engineering students this summer as part of the MRC Intern program. The interns are engineering students who are applying for a Maintenance and Reliability Certificate along with their traditional B.S. degree in engineering. Certificates are



*Dr. Boulet (far r) and the MRC Interns.*



# Department News

earned by maintaining a 3.0 GPA, taking two maintenance and reliability courses; attending two weeks of intensive training; and working at least two summers with a member company. **Dr. Toby Boulet** is the intern advisor.

The MRC has a partnership with Monash University in Australia to deliver graduate courses in maintenance management and reliability engineering via distance education. In August, MRC conducted its annual Residential School, bringing together students from all over North America and the Monash faculty.

### Visit us online:

<http://www.engr.utk.edu/mrc/>

## Measurement & Control Engineering Center

**Dr. Kelsey Cook**  
MCEC Director

The MCEC Fall 2003 Industrial Advisory Board Meeting took place October 2 through October 3, 2003 at the Knoxville Marriott. The meeting included a special "prospective members" session, an overview of UT engineering research presented by Interim Associate Dean for Research and Technology **Wayne Davis** and research information presentations from UT, ORNL and partner Oklahoma State.

### Visit us online:

<http://www.mceec.engr.utk.edu>

## Cooperative Engineering and Professional Practice

**Walter Odom**  
OCEPP Director

Efforts to register incoming students proved successful for the Cooperative Engineering and Professional Practice faculty and staff over the past months. During the summer and continuing into the fall, the office has had a great number of students sign up with the Co-op Program. As the push carries on, plans are in place for enrollment growth to continue.

Co-op Ambassadors traveled to Roswell, Ga. August 18 and 19 for an Ambassador Leadership Training hosted by Kimberly-Clark. The two-day seminar covered a wide span of topics preparing the ambassadors to assume their roles as campus leaders just before the beginning of the fall semester.

The Co-op Engineering Fair took place September 29-30 in the University Center Ballroom. The 9th Annual Co-operative Engineering Employer Luncheon was hosted at the University Center on September 29th, and interviews were held all day on Tuesday, September 30.

### Visit us online:

<http://www.coop.utk.edu>

## The Jerry E. Stoneking Engage Program

**Dr. Roger Parsons**  
Engage Program Director

Professor **Will Schleiter** has successfully upgraded and implemented the Engage web course management system for a 400+ student, 15-section course. Among the new features is on-line testing capability.



*Will Schleiter*

**Dr. Dick Bennett, Dr. Raj Raman, Professor Will Schleiter and Dr. Chris Pionke** have made significant commitments to providing video instructional materials to students in the Engage program. They have blended lecture video with smartboard images and posted the material on the course web management system. The group has developed online videos for instruction of computer graphics, computer programming and sample homework. These have proved valuable in providing additional student resources as well as improving graduate teaching assistant training.

**Drs. Elaine Seat, Roger Parsons and Chris Pionke** were invited to speak on the Engage program at the Second ASEE International Colloquium on Engineering Education this summer.

### Visit us online:

<http://www.engr.utk.edu/efd>

## Engineering Diversity Programs

**James Pippin**  
EDP Director

A total of 44 new minority freshman students majoring in engineering attended the first Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) Bridge Summer Program. The students spent two weeks prior to the opening of the fall semester engaged in sessions to help them be successful in the College of Engineering. Several current engineering students and faculty from the Departments of English and Chemistry participated in the bridge program as instructors and facilitators.

The goal of the TLSAMP program is to increase the number of underrepresented science, technology, engineering and mathematics students by 100% at the end of five years. Minority engineering students participating in the program will have an opportunity to engage in undergraduate research programs with ORNL, Sandia National Laboratories, Bechtel Jacobs Company and BWXT Y12.

The Office of Engineering Diversity Programs hosted a team from Alcoa High School in the Southeastern Consortium for Minorities in Engineering's Summer Institute technical competition, held on the campus of Tennessee State University July 20-25. EDP director **Jim Pippin** represented the UT-COE at the university council meeting held in association with the institute.

### Visit us online:

<http://www.engr.utk.edu/edp>

## Memorial Tribute: Dr. Robert Krane



*Dr. Krane*

Dr. Robert J. Krane, a faculty member in the Department of Mechanical, Aerospace and Biomedical Engineering for 27 years, died on August 28, 2003. Dr. Krane received his advanced degrees from the University of Southern California and the University of Oklahoma. He was a member of the faculty at West Virginia University before joining UT in 1976. His research activities attracted external funds from such government and industrial sources as NSF, Martin Marietta Corp. and Control Data Corp. He was an active member of the American Society of Mechanical Engineers and served as an associate editor for the ASME Journal of Energy Resources Technology between 1991-1998. His scholarly activities included more than 40 journal articles and conference presentations, including presenting as a Distinguished Lecturer to the NATO Advanced Study Institutes on various energy topics. Dr. Krane made many significant contributions to the MABE department including the recent introduction of up-to-date technology into classroom teaching. Dr. Krane's passing is a sad occasion for his colleagues and a great loss for the College of Engineering.

# Chemical Engineering Students Gain Work Experience in Scottish Distillery

**S**cotch whisky may not be the first thing that comes to mind when thinking about engineering, but a group of current and recently-graduated COE students have discovered that the process of making Scotch whisky involves several operations within the field of chemical engineering.

May 2003 BS graduates Jose Alfaro and Joy Watson; MS student Ben Rogers; and Ph.D. student Sam Morton—all from ChE—joined in an international study of engineering through a new course offering through the Department of Chemical Engineering

Preliminary instruction in the whiskey-making course was conducted at UT by Professor John Collier (ChE Department Head) and Professor Tim Rials (Director of UT Forest Products Laboratory) as well as ChE faculty members Drs. Brian Edwards, David Keffer, Charlie Moore, and Paul Frymier. Dr. Nicole Labbe of Forest Products, and ChE alumnus and distillation expert Tom Clark assisted in the introductory class time.



*Jim McEwan, master distiller and production director for Bruichladdich Distillery (l) shakes hands with Dr. John Collier (r), Professor and Head, Department of Chemical Engineering.*

After the initial lectures, the team traveled to the Bruichladdich distillery facilities in Islay, Scotland, for a two-week hands-on apprenticeship in the making of Scotch whisky. The course was facilitated by internationally-recognized Master Distiller Jim McEwan, who is a three-time winner of the International Whisky Academy's (IWA) "Distiller of the Year," most recently receiving the award in 2002. Bruichladdich was honored as "Distillery of the Year" in 2001 by the IWA.

The goal of the course is to provide students with access to various aspects of engineering in an international environment. The team spent two weeks in the distillery participating in the different stages of the process, including grinding the malted barley; digging peat; operating the mash tun (which extracts the sugars from the barley); overseeing the charging and cleaning of washbacks (fermentors); operating the two-stage stills; cask filling; reducing; bottling; and nosing and tasting. The understanding of the entire process of producing whisky was sharpened by having each participant work in the warehouse, rolling barrels and working a single shift from 6 p.m. to 6 a.m. Near the end of this shift, students were encouraged to take a bottle and glasses out on the pier to watch the sunrise over Loch Indaal.

While in Islay, the group visited other distilleries, the Port Ellen malting plant and a wave power generation facility and toured the island. The team also participated in a Celihdh on the weekend. This traditional Scottish social gathering—which included Scottish country dancing—served to broaden the students' understanding of the culture and deepen the relationship between the engineering students and the islanders.

The UT students also treated the Scots to a round of "Rocky Top" which closely resembles Scottish traditional music.

"'Big Orange' references on Islay now include East Tennessee, rather than just Northern Ireland, which is only 28 miles away. Some of the 3,200 Islay residents are now familiar with—and can sing—*Rocky Top*," Dr. John Collier pointed out. Boudleaux and Felice Bryant would be proud.

The experience did not end as the students left Islay. The two graduate students, Samuel Morton and Ben Rogers, are conducting chemical analysis on samples gained at various stages of the process. The first set of samples was collected at 10-minute intervals throughout the two batch distillation stages. The second set of samples is made up of similar dis-

tillations that have matured at various lengths of time. Professors Collier and Rials will use the information from the second set to study the interactions between the casks and the liquor while it is aging. Rogers will use the information gathered to create a computer model of the distillation process. Morton will be assisting Drs. John Collier and Robert Counce in the direction of four senior ChE students on a project related to the distillery. The four senior students are David McCollum, Jason Campbell, Chris Tyree, and Oleg Melnichenko.

McEwan and Duncan McGillivray, Distillery Manager and Engineer, will be closely involved in the projects through the newly-acquired video-conferencing and web-based instruction facility in the department.

For this year, the cost to students was greatly reduced through the generosity of the attending professors.

COE's involvement in this partnership was coordinated by Professor John Collier, Department Head of ChE, and his wife, Professor Billie Collier of MSE, who is Interim Associate Vice President for Research, Chief Research Officer of UTK and Director of TANDEC. The two received no pay for instruction during the course, and paid both for their own expenses and for the shipping of the test samples back to the U.S. Generous gifts from interested ChE alumni covered a portion of the travel expenses for the students. Bruichladdich also aided in this international collaboration by charging only half of its normal cost.

"We all now have a special place in our hearts and memories for Islay and Bruichladdich," Dr. Collier said. "We were fortunate to experience a much different culture, while simultaneously experiencing many of the operations studied in chemical engineering."




*ChE students Jose Alfaro (l) and Sam Martin (center) and Canadian engineer Simon Reid (r) dig peat as a part of their training at Bruichladdich Distillery.*

In October, Jim McEwan will visit Knoxville and the university for several special events. McEwan will meet with business administration faculty and MBA students to discuss marketing and distribution for his product on October 23.

A "Scotch and Cigar Dinner," which will feature a tasting of Bruichladdich whiskeys, will take place at 6:30 p.m. that evening at Club LeConte in downtown Knoxville. McEwan will be featured speaker for the event. Cost for the dinner is \$25.00, and reservations can be made by contacting Engineering Development Director Cathy Dodge at (865) 974-7692.

On October 24, McEwan will meet chemical engineering faculty and students in two events: a videoconference which will include fellow distiller Duncan McGillivray; and later that day, a technical discussion about the distillery and its processes. McEwan will also make a public presentation, "Single Malt: the Spirit of a Nation," at the University Center on October 24.

For more information about future international alliances, including opportunities for alumni participation in the course, or to help with student costs, contact Dr. Collier at collier@utk.edu. 

*Story by Curtis J. Owens with contributions by Dr. John Collier, Cathy Dodge and Kim Cowart*

## Alumni Profile

# Dr. Lee Martin Innovator, Entrepreneur, Educator

**L**ee Martin (BS/ME '78/Ph.D./ME '86) always knew his destiny was to study engineering at the University of Tennessee.

"My dad was 'Big Orange,' Martin said. "Although he studied electrical engineering at UT, he did not finish his degree. I never got the actual story on why he didn't complete his program—he said it was because he had to get a job during the Great Depression, but my mother always said it was because he couldn't pass English!"

Determined to fulfill his dad's dream of becoming an engineer, Martin, a Murfreesboro native, entered UT as an undergraduate in the mechanical engineering program in 1974.

"I was impressed at how smart most of the professors were—these were guys you really wanted to emulate," Martin commented. "I looked up to Joel Bailey, Mancil Milligan—I held those professors in awe. They were strictly no-nonsense, they always spoke their minds, but they'd tell you exactly what you needed to know."

Martin enjoyed his years as an undergraduate at UT, particularly his experience as a member of the Pride of the Southland Marching Band under the direction of the legendary Dr. W J Julian.

"Those four years in the band under Dr. Julian were great," Martin said. "I learned a great deal from him about how to be a leader. I also realized that hard work and fun can often go hand-in-hand."

Martin received his bachelor's degree in 1978, and went on to graduate school at Purdue University.

"I wanted another experience," Martin added. "I knew that I had received an excellent education at UT, but I wanted to attend another university for contrast. However, I finished my master's in just one year—I didn't want to spend another year in Indiana. It was a bit too cold for this Southern boy."

Martin returned to the Knoxville area and worked at Oak Ridge National Laboratory (ORNL) for

several years while working toward his Ph.D. degree at UT in the evenings.

After receiving his Ph.D., Martin came to a crossroads with his career. He had long wanted to start his own company, but was also drawn toward teaching at the university.

During his tenure at ORNL, Martin had become acquainted with Dr. Charlie Weaver, former dean of the UT College of Engineering and a professor in the Department of Electrical Engineering. Martin was impressed by Weaver's grasp of mathematics and his quick mind.

"Charlie Weaver really served as a mentor to me," Martin stated. "I asked his advice about what I should do. He said that he wouldn't tell me which path to take, but suggested that I go into a quiet room and write out both the best and worst that could happen in each of the three instances. I knew I could stay at ORNL, and have a long-term career. Teaching offered independence, the opportunity to work with students. However, when I thought about starting my own company, I realized that almost anything could happen. Even if I failed, I could always go back to plan A or B. So that's when I decided to start TeleRobotics International."

Martin's first foray into business was initially established as a small government contractor dealing with robotics and imaging.

"We had only a few government contracts at first, mainly with DOE," Martin commented. "Once we were about three years into the company, I knew this business approach wasn't sustainable in the long-term. We had eight people, all of them doing different jobs, and we were using a 'shotgun' approach, trying a little of everything. I decided at that point to narrow our focus to imaging."

Martin and his team renamed the company Omniview and focused on interactive, immersive imaging. The company was later

re-named iPIX®, becoming an imaging software and services provider that delivers mission-critical solutions for a wide variety of applications and markets, including security and observation; real estate, auctions and classifieds; and digital content providers. iPIX® technology captures, processes, hosts and distributes high-value visual content for a wide spectrum of businesses, including clients such as eBay® and Realtor.com®.

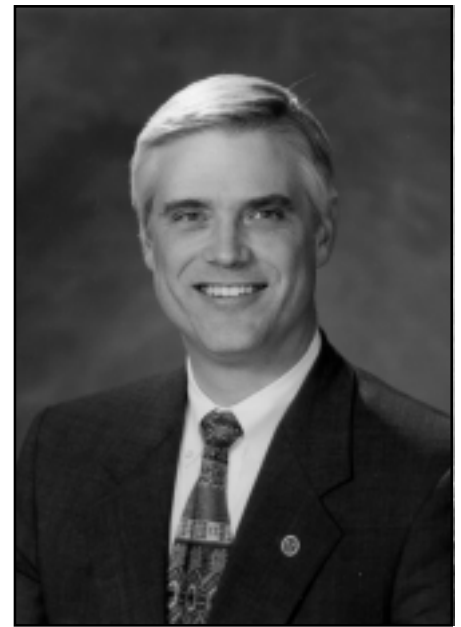
iPIX® revolutionized the interactive nature of the burgeoning World Wide Web. The company was an international business success, eventually becoming a publicly traded company (Nasdaq: IPIX) headquartered in Oak Ridge with co-headquarters in San Ramon, Calif.

The success of iPIX®, although gratifying, left Martin wondering about his next challenge.

"Once we brought in Jim Phillips, after a nationwide search, we had an expert marketer in place," Martin commented. "I decided it was time to move on to new opportunities. At that point, I was asked to head up the Tennessee Technology Development Corporation, which was set up by the state in 1999 to grow the technological sector in Tennessee."

After two years at TTDC, Martin worked with the university to establish the Technopreneurial Leadership Center. The program was created to provide an educational opportunity for future entrepreneurs to develop Tennessee-based companies around world-class technologies facilitated by ORNL.

"I love mentoring entrepreneurship opportunities," Martin commented. "We've had several successes out of that TLC class, including Qgenics Biosciences



Dr. Lee Martin

Inc., established by Chuck Witkowski."

Martin is currently serving on the College of Engineering's Board of Advisors and is also on the advisory boards of several startup companies and nonprofits, including the Knox Area Rescue Ministry. He is also writing a column for *The Knoxville News-Sentinel* on entrepreneurship, which, he said, "allows me to encourage area entrepreneurs and share economic opinions." A recent column on health care generated quite a bit of feedback, Martin stated, and he hopes to generate interest on other relevant topics.

Martin is the founder of Clarity Resources, a mentor capitalist firm that provides mentoring for start-up companies.

"The majority of the start-ups don't realize that their problem is usually not money," Martin commented. "It's structure, marketing, problems with technology. The people who realize that are the ones who will eventually make it."

Martin also stays busy with his family, wife Carla and his three children.

"Chasing after those kids keeps me in shape," Martin said. "I feel that my life has truly been blessed." 🍀

## COE Mourns Passing of Distinguished Alumnus: A Tribute to Herschel "Abe" Brand

**O**n July 4, 2003, the College of Engineering lost a treasured alumnus, donor and friend with the passing of Herschel Crofford Brand. Known to all as "Abe," Mr. Brand's unwavering support of the COE and especially, our Co-operative Engineering and Professional Practices Program, touched faculty, staff, and students—especially the many scholars who received financial support through the Herschel C. and Louise Runion Brand Scholarships.

Several weeks before his death, Mr. Brand was presented with the "Outstanding Philanthropist of the Year Award" by COE's Development Director, Cathy Dodge, and Co-op Director, Walter Odom, to acknowledge a most prestigious milestone—\$1 million in overall gifts to the college. In 1996, as part of the 21<sup>st</sup> Century Campaign, Mr. Brand made a significant gift to establish the Brand endowed scholarship. As he stated then, "My aim is to perpetuate my late wife's name. After all, college life brought us together, and in this way, we can perhaps help someone else accomplish their dream."

As his health was failing in June, Mr. Brand made first one gift commitment of \$350,000—and then another of \$150,000—after meeting two Brand scholars who attended a surprise birthday party in his honor. Over the years, he proudly displayed letters he received from Brand scholars and delighted in hearing from them as they began and continued their careers. Meeting them in person, especially this time, had an enormous emotional impact on Mr. Brand and as a result, he decided to make an additional gift so that his overall giving would equal \$1 million.

Through the Brand scholarship, over 30 students have received more than \$55,000 in scholarship awards. Both of these amounts will increase dramatically through Mr. Brand's recent gifts. The Brand Scholarship Endowment continues to be the college's largest endowment for scholarships established through a single donor.

Mr. Brand graduated from the University of Tennessee with a bachelor's degree in electrical en-



*Abe Brand (l) enjoys a Big Orange football game with former COE Dean and UT Chancellor Bill Snyder.*

gineering in 1938. He was a star on the UT basketball team, which won the SEC Championship in 1936, and was active in other student activities including serving as president of Lambda Chi Alpha Fraternity. He was among the college's earliest Engineering Co-operative students. His first assignment was with the Bureau of Public Roads; he later switched to and stayed with Tennessee Electric Power Company for the duration of his college years.

Upon graduating, Mr. Brand worked for Schlumberger Well Surveying Corporation serving as field engineer, location manager, and division manager for the Caribbean and Southwest United States until his retirement in 1967 when he became a petroleum consultant.

Mr. Brand received many accolades during his career. He was chosen for "Who's Who in U.S. Oil," and was selected to serve on President George H. Bush's commission to assist with petroleum processing in the Soviet Union, among others. Mr. Brand was most proud, however, of his induction into Tau Beta Pi engineering society as an eminent engineer in 1997. To him, being an engineer was one of the most important aspects of his life.

Abe, we miss you. 🌱

*Story by Cathy Dodge*

## Development Update

### Using Planned Gifts to Fund Scholarships

**E**state planning is not necessarily an activity that many people anticipate with great enthusiasm. However, planned gifts and bequests can provide alumni with an effective vehicle for tax advantages (increasing current tax deductions and/or decreasing estate taxes) while enabling the College of Engineering to provide scholarships to deserving students now and into the future.

The COE recently has received notification of several estate commitments by alumni and friends—Herschel "Abe" Brand, Jack McKamey and Helen Jubin—all of which will be used for undergraduate scholarships or graduate fellowships. Our only regret is that Mr. Brand, Mr. McKamey and Mrs. Jubin will not be able to see the effect that their generosity has on our Engineering students. Some of our alums with estate commitments have decided to establish scholarships in advance—so that they can witness the result of their philanthropy.

We know that a number of our alumni have included COE in their wills and for that, we are very grateful. If you have, we would love to know in order to recognize you for your thoughtfulness and generosity—and ensure that all paperwork is in place so that your intent is realized. If you have not, it might be helpful to know that the Engineering Development Office—working with the UT planned giving office—can help you with facilitating your charitable plans. 🌱

*Cathy Dodge*

### Development Staff Updates

**I**f you have visited or phoned the College of Engineering Development Office during the last ten years, you've probably been greeted by **Betty Carver**, the development office's administrative assistant. Betty has now joined the staff of the biomedical engineering office and is assisting **Dr. Richard Jendrucko**, head of the biomedical program. If you would like to say hello to Betty, her new office location is located in 310 Perkins Hall.



*Betty Carver*

The development staff would like to thank Betty for

her many years of service, and we wish her well in her new job.

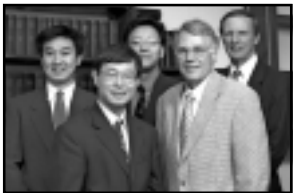
**Diana Gosnell** has joined the development office as an administrative specialist. Diana is returning to the university after having worked as the manager and staff coordinator of The Academy of Gymnastics, which she and her husband own. Previously, Diana worked in the Finance Department in the College of Business Administration.

The office also welcomes back Assistant Development Director **Patty Shea**, who returned from maternity leave on October 1. Patty and her husband, Tom, became parents of a daughter, Michael Marie, on June 15th. 🌱

tennessee  
**engineer**  
online

Check out the  
College of Engineering's  
online newsletter:

[http://  
TNengineer.engr.utk.edu](http://TNengineer.engr.utk.edu)



**Spring 2003 issue**  
featuring materials research



**Fall 2002 issue**  
featuring the Engage program



**Spring 2002 issue**  
featuring tribute to Jerry Stoneking

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Department News  
UT/COE Special Events**

[http://  
TNengineer.engr.utk.edu](http://TNengineer.engr.utk.edu)

## BWXT Y-12 Establishes UTK Engineering Scholarship




*Dennis Ruddy (l, center), president and general manager of BWXT Y-12, presents the scholarship check to Dr. Way Kuo (r, center) and Dr. Loren Crabtree (l). Other event participants included Pamela Horning (far l), Director of the BWXT Y-12 Engineering Division, and UT Interim President Dr. Joe Johnson (far r).*

BWXT Y-12 has endowed a \$40,000 scholarship fund at the UT College of Engineering that will provide an annual scholarship for a UT engineering student.

The new partnership was highlighted in a ceremony at the university on October 14. Dr. Loren Crabtree, UT-Knoxville Chancellor; Dr. Way Kuo, College of Engineering Dean; and Dennis Ruddy, president and general manager of BWXY Y-12 will were speakers at the event.

Other attendees included Dr. Joe Johnson, UT Interim President; Jack Williams, Vice-President for Development and Alumni Affairs; Linda Davidson, Associate Vice-President for Development; BWXT Y-12 Public Relations Director Mike Neuhart; Government and Public Affairs Representative Sandra Plant; and Cathy Dodge, Engineering Development Director.


BWXT Y-12, a partnership between BWX Technologies Inc. and Bechtel National Inc., operates the Y-12 National Security Complex for the National Nuclear Security Administration. BWXT Y-12's goal is the safe and efficient operation of the Y-12 complex to ensure long-term capability to meet national security missions. 

## "The Quest for Discovery"

### 2002-2003 College of Engineering Honors Banquet Recognizes Success

The College of Engineering's annual Honors Banquet was held Tuesday, April 15, 2003, in the University Center Ballroom. The evening's theme was "The Quest for Discovery." Dr. Fred Tompkins, interim dean of the COE, welcomed guests and honorees and introduced the evening's line-up of speakers, including G. Wayne Burchette, Director of World-wide Engineering and Construction, Eastman Chemical Company; James David Martin, COE student speaker; and Dr. Ronald Nutt, guest alumni speaker and Founder of CTI PET Systems, Inc.

The evening was sponsored by Eastman Chemical Company, with CTI PET Systems as a contributing sponsor. Musical entertainment was provided by the Estabrook Ramblers, a bluegrass group primarily consisting of engineering students, led by Engage Program Facilitator Dr. Elaine Seat. Chancellor Emeritus and former COE dean Dr. William Snyder provided beautiful piano music during an intermission.

The most prestigious award of the evening, the Nathan W. Dougherty Award, was presented to UT alumnus and Oak Ridge National Laboratory researcher Dr. Everett E. Bloom. 



*College-wide award winners included: (l t r) Dr. Eric Drumm, CEE, the Charles Ferris Award; Richard Bailey, College-Wide Support Staff Award; Dr. Brian Edwards, ChE, Outstanding Faculty Advisor; Dr. Donald Bouldin, ECE, Allen & Hoshall Engineering Faculty Award; Dr. Hairong Qi, ECE, Leon and Nancy Cole Superior Teaching Award; Dr. Frank Speckhart, MABE, and Dr. Peter Liaw, MSE, the Moses E. and Mayme Brooks Distinguished Professor Award. Dr. Fred Tompkins, COE interim dean, (far r) served as the evening's emcee and awards presenter.*

*Keynote speaker G. Wayne Burchette (l) presents the Eastman Chemical Co-op Scholar Award to Ryan Stargel.*



*Dr. Ronald Nutt, Founder of CTI PET Systems, Inc., was the 2002-2003 Honors Banquet's guest alumni speaker.*

## 1930s

**Robert T. Davis** (*BS/EE '39*) retired after a career as a registered professional engineer and corporate officer for Corbett Industries. He retired from the military as a colonel and was awarded the bronze star.

## 1960s

**Edgar L. Mohundro** (*BS/ChE '62, PhD/ChE '70*) is self-employed as a chemical consultant in Loudon, Tenn.

**Charles L. Gardner** (*BS/EE '64, MS '68*) retired and is now consulting in Lexington, Ky.

**Walter H. Delashmit Jr.** (*MS/EE '68*) received his Ph.D. in Electrical Engineering from The University of Texas at Arlington on May 10, 2003. His dissertation was entitled "Multilayer Perceptron Structured Initialization and Separating Mean Processing."

**Craig G. Ross** (*BS/EE '68*) is a senior engineer with Honeywell Inc. and resides in Tarpon Springs, Fla.

**Kinya Aoyama** (*MS/AE '69, PhD/AE '71*) works for the Japanese Defense Agency as director general, Technical Research and Development Institute. He resides in Akiruno Tokyo, Japan.

## 1970s

**Robert Scott Lyons** (*BS/ChE '70*) is employed at Fluor Corp. as the Dallas, Texas client resident project manager. He resides in Houston, Texas

**R. Chris Brown** (*BS/EE '72*) is a self-employed engineering consultant. He resides in Stafford, Texas

**Stan J. Raichlen** is president of Timberline Computing. He resides in Mountain View, Calif.

**Robert L. Easterly** (*BS/IE '73*) owns Edgefield Interiors in Nashville, Tenn.

**John M. Braly** (*BS/EE '74*) is vice president of TTX Co. of Chicago, Ill. He resides in Glen Ellyn, Ill.

**David C. Martin** (*BS/EE '74*) is self-employed as a principal engineer. He resides in Harriman, Tenn.

**Michael Alan Waller** (*BS/CE '74*) is vice president of Barge, Waggoner, Sumner & Cannon Inc. of Knoxville. He resides in Lenoir City, Tenn.

**Henry Lynn Phillips** (*BS/CE '76*) is employed at OMI Inc. of Birmingham, Ala., as regional business manager. He resides in Hoover, Ala.

**Thomas F. Christian Jr.** (*MS/EA '76*) was named chief of the software engineering division at the Warner Robins Air Logistics Center, Robins AFB, Ga., where he manages 640 personnel including 426 engineers and computer scientists supporting a variety of USAF weapon systems. He resides in Warner Robins, Ga.

**Mike Cupples** (*BS/EE '72*) is an electronics engineer with the U.S. Army Aviation Technical Test Center at Fort Rucker, Ala., where developmental tests are conducted on Army aircraft and aviation systems. He resides in Ozark, Ala.

**Gregory W. Parks** (*BS/ChE '78*) has joined Deeks & Co. in Stone Mountain, Ga. as VP of Sales. He resides in the Atlanta, Ga. area.

## 1980s

**Gregory B. Johnston** (*BS/EE '80*) is senior engineer for Nashville Electronic Service. He resides in Mt. Juliet, Tenn.

**Shigeyuki Toki** (*PhD/MSE '81*) is a research associate in the chemistry department at State University of New York.

**Hiroshi Ashizawa** (*MS '82*) is division manager at Degussa Japan Co. Ltd. in Shinjuku-Ku, Tokyo Japan. He resides in Tokyo, Japan.

**Cesar J. Rapposelli** (*BS/NE '82*) is president of Geosystems C.A. in Valencia, Carabobo, Venezuela. He resides in Naguanagua, Carabobo.

**Philip Dean Cruce** (*BS/ME '83*) is senior staff engineer with Lockheed-Martin. He resides in Houston, Texas

**Patrick M. Murphy** (*BS/CE '83*) is vice president of civil engineering at Thompson-Litton in Wise, Va. He resides in Big Stone Gap, Va.

**William R. Weigeshoff** (*BS/ChE '85*) is a lieutenant colonel in the U.S. Army stationed at Ft. Gordon, Ga. He resides in Evans, Ga.

**Jeffery L. Barnett** (*BS/EE '88*) is owner and president of Power & Communication Services Inc. of Jackson, Tenn.

**Paul J. Gagnon** (*BS/IE '88*) is business unit manager with 3M Corp. in Austin, Texas. He resides in Austin.

**Stanley C. Jones** (*BS/IE '88*) is a lieutenant commander with the U.S. Navy and is pursuing a master's degree at UTSI. He resides in Lemoore, Calif.

**Susan Watkins Borenstein** (*MS/MetE '89*) is principal corrosion engineer at Aptech Engineering in Houston, Texas. She resides in Houston.

## 1990s

**Richard "Ricky" D. Lambert** (*BS '90*) is manager of development projects for Smith and Nephew of Memphis. He resides in Germantown, Tenn.

**Akihiko Fukadab** (*MS/PolyE '91*) is employed with Nippon Shokubai Co. Ltd. in Japan as a research manager. He resides in Nishinomiya, Hyogo, Japan.

**Brent A. Wallen** (*BS/EE '91*) is director of business development for CCS. He resides in Sevierville, Tenn.

**Nathan Lee Wood** (*BS/ME '91*) is a mechanical engineer with the Detroit Department of Transportation. He resides in Novi, Mich.

**Kevin Lane Johnson** (*BS/AE '92*) is aerodynamic engineer with Lockheed Martin Corp. of Marietta, Ga.

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865-974-2779, or visit us online at [www.engr.utk.edu](http://www.engr.utk.edu).**

# Alumni News

**Paula Nicole Thomas** (BS/EE '92) is employed by T3 Technical Sales of Santa Clara, Calif., as a sales engineer. She resides in San Jose, Calif.

**Tracy Lee Keel** (BS/EnvE '93) works for the U.S. Army Corps of Engineers in Louisville, Ky., as a civil engineer. He resides in LaGrange, Ky.

**Lt. David H. McAlister** (BS/CE '93, MS/CE '94) is a lieutenant in the U.S. Navy. He resides in Pearl City, Hawaii.

**Richard "Rick" D. Korynta** (MS/NE '95) has worked the past 15 years for the Department of Energy. He is site engineer for the Jefferson National Laboratory in Newport News, Va.

**Stanley "Stan" M. Spence** (BS/EE '95) is project manager with Honeywell in Las Vegas, Nev. He resides in Henderson, Nev.

**Lewis G. Chilton** (BS/IE '97) is employed by Accenture of Toronto, Ontario, Canada.

**Garth Mark Forde** (MS/NE '97) is system operator for Orange & Rockland, Consolidated Edison of New York. He resides in Poughkeepsie, N.Y.

**Melinda Carlisle Johnisee** (BS/CE '98, MS/CE '99) is business development director for Consoer Townsend Envirodyne Engineers in Nashville. She resides in Whitehouse, Tenn.

**Shannon Clark Motter** (BS/CE '98) is an engineer with Gilbert Southern Corp. in Peachtree City, Ga. She resides in Sharpsburg, Ga.

**David C. Paulus** (BS/ME '99, MS, IE '01) is a graduate researcher, teaching assistant and Ph.D. candidate at Colorado State. He resides in Fort Collins.

**Dian Frederick Rahming** (BS/EE '98) is an electrical engineer with DMJMHN engineering firm. She resides in Kennewick, Wash.

**Jacob Shea Chandler** (BS/CE '99, BS/EnvE '98) is a civil engineer with the city of Durham, N.C., where he also resides.

**David M. Huelsman** (BS, IE '99) works for Rockwell Automation in Carrollton, Texas., as inside sales manager. He resides in Little Elm, Texas.

## 2000s

**Raymond E. Henshaw** (MS/ES '00) is employed at Arnold Air Force Base in Lynchburg, Tenn., as an environmental engineer.

**Brittany L. Yates** (BS/IE '00) is an engineer with Bridgestone/Firestone NAT, LLC.

**Jerome Henderson Jr.** (BS/CE '01) is roadway design engineer at URS Corp. in Atlanta.

**John S. Kaley** (BS/CE '01) is a civil engineer with the Federal Aviation Administration in Atlanta. He resides in Chattanooga, Tenn.

**Jan-Paul Salamat** ('01) is logistics analyst with Best Buy Co. Inc. in Eden Prairie, Minn.

**Benjamin C. Zoeller** (BS/CE '01) is staff consultant for Professional Service Industries Inc. He resides in Memphis, Tenn.


**Jerry W. Smith** (BS/ChE '02) is a reserve engineer with Exxon Mobil in Spring, Texas.

## Memorials

**Robert Bertan Stotz** (BS/ME '34) died on April 14, 2003. He was a resident of Chipley, Fla.

**James Martin Condry** ('38) died on March 2, 2003. He was a resident of Knoxville.

**Herschel Crofford "Abe" Brand Jr.** (BS/EE '38) died on July 4, 2003. He was a resident of Newport, Tenn.

**Lt. Col. Charles E. Murphy** (BS/EE '44) died on March 17, 2003. He was a resident of Marietta, Ga. 

## College of Engineering • Board of Advisors

**Dr. Norbert J. "Bert" Ackerman Jr.** (BS/NE '65, MS/NE '67, PhD/NE '71)  
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Knoxville, Tenn.

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Knoxville, Tenn.

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

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

**Mr. Jerry R. Repass** (BS/ChE '65, MS/IE '72)  
Vice President and General Manager  
Tennessee Operations  
Eastman Chemical Co.  
Kingsport, Tenn.

**Mr. Donald Schenck**  
Director, Engineering  
Exide Technologies  
Bristol, Tenn.

**Mr. Richard T. Snead** (BS/IE '73)  
Chief Operating Officer-International  
Carlson Restaurants Worldwide  
Dallas, Texas

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



**Dr. George Pharr**, professor in the Department of Materials Science and Engineering, has been selected for the Institute of Scientific Information's listing of the 214 most highly cited materials science researchers around the world. Pharr's research areas include mechanical behavior of materials, nanoindentation and thin film mechanical properties. The listing is available online at: [www.ISIHighlyCited.com](http://www.ISIHighlyCited.com)>  
**Materials Science**



**Spruell Driver Jr.** (*BS/IE '87*) has been chosen as president-elect of the University of Tennessee National Alumni Association. He will be president in 2004-2005. Driver is an associate at Miller & Martin law firm in Nashville, and is a member of the UTNAA Board of Governors and a former member of the COE Board of Advisors.



**Sherica Matthews**, a graduate student in electrical engineering, received the Gene Mitchell Gray Pioneer Award for outstanding contributions by a student who promotes cultural diversity on campus. The Gray Award is named for the first African-American graduate student at UT. Matthews received the award at the Provost's Honors event last spring.



*Brandice Green*



*Stacy Hutchens*

**Brandice Green**, a graduate student in materials science, and **Stacy Hutchens**, a graduate student in biomedical engineering, were part of a group of seven University of Tennessee students recognized by the National Science Foundation for their classroom work and academic research in the fields of science, mathematics and engineering. The two were awarded fellowships which include a \$27,500 stipend and a \$10,000 cost-of-education allowance. The NSF gives fellowships and recognitions each year to promote graduate research leading to a masters or doctoral degree.



COE Interim Dean **Dr. Fred Tompkins** presents the Nathan W. Dougherty Award to **Dr. Everett Bloom** (*MS/MetE, Ph.D./MetE*), Director of the Materials and Ceramics Division at Oak Ridge National Laboratory, at the 2002-2003 College of Engineering Honors Banquet. During a career spanning four decades, Bloom has received numerous honors and authored or co-authored thousands of pages of ground-breaking and corrective research regarding mechanical properties of alloys, effects of irradiation on the physical and mechanical properties of metals, alloys and ceramics, and development of structural alloys for service in fission and fusion reactors. The Dougherty Award is the college's most prestigious honor.



# Calendar

## 2003

Fall Break ..... October 16-17  
 Homecoming ..... November 1  
 Thanksgiving ..... November 27-28  
 Classes End ..... December 2  
 Fall Commencement .... December 14

## 2004

Classes Begin ..... January 12  
 King Holiday ..... January 19  
 Spring Break ..... March 8-12  
 Spring Recess Day ..... April 9  
 Classes End ..... April 28  
 Spring Commencement ..... May 8

### Contact Information

#### Administration & Programs

Academics ..... 974-2454  
 Communications ..... 974-0533  
 Co-op Engineering ..... 974-5323  
 Dean's Office ..... 974-5321  
 Development ..... 974-2779  
 Engineering Diversity ..... 974-2454  
 Engage ..... 974-9810

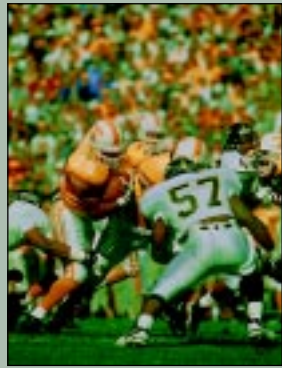
#### Departments

Chemical ..... 974-2421  
 Civil & Environmental ..... 974-2503  
 Electrical & Computer ..... 974-3461  
 Industrial & Information ..... 974-3333  
 Materials Science ..... 974-5336  
 Mechanical, Aerospace &  
 Biomedical ..... 974-5115  
 Nuclear ..... 974-2525

#### Centers

Applied Vis. Center ..... 974-9585  
 Materials Processing ..... 974-0816  
 Maintenance & Reliability .... 974-9625  
 Measurement & Control ..... 974-2375

# You are cordially invited to Homecoming 2003



**Saturday,  
 November 1, 2003  
 UT vs.  
 Duke University**

**College of Engineering  
 Alumni Barbeque  
 11:00 a.m. - 3:00 p.m.  
 Courtyard of Ferris  
 and Perkins Halls**

**The Minority/Diversity Engineering Scholarship  
 Program's 30th Anniversary Celebration  
 October 29 - November 1, 2003**

### Activities include:

#### October 30

- Corporate Workshop
- Alumni Roundtable

#### October 31

- 30th Anniversary Banquet

#### November 1

- 4th Annual Black Cultural Center Festival
- College of Engineering Barbeque
- UT Football game
- Black Alumni Associates Dance

**For more information contact:  
 Engineering Development Office: (865) 974-2779  
 engrdev@engr.utk.edu**

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### Senior Administration

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 Dr. Luther Wilhelm, Associate  
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 Dr. Wayne T. Davis, Interim Associate  
 Dean, Research & Technology

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