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College of Engineering

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New COE Facilities Will Allow State-of-the-Art Training for Future Engineers

The College of Engineering is currently in the process of designing and constructing three new buildings. This unprecedented opportunity will allow the COE to expand research and classroom space and offer state-of-the-art training for future engineers.

Construction has already begun on the 150,000 square foot Min H. Kao Electrical Engineering and Computer Science Building. Groundbreaking for the facility took place on May 16, 2007. The building is being constructed at a total cost of $37.5 million, $12.5 of which was initially provided by Dr. Min H. Kao, CEO of Garmin and a University of Tennessee alumnus. Kao’s total gift of $17.5 million, the largest single gift toward one building in the university’s history, served as the cornerstone of a public-private partnership with the State of Tennessee, which provided the additional $25 million for the facility. The remaining $5 million of Kao’s donation was used in a dollar-for-dollar match with other private gifts to create a $10 million endowment for the Min H. Kao Department of Electrical Engineering and Computer Science (EECS). The department was created through a merger between the Department of Electrical and Computer Engineering in the COE and the Department of Computer Science in the College of Arts and Sciences in July of 2007.

The department will be housed in the new building, which will feature classrooms, laboratories, a clean room and a 2,500 square foot auditorium. The facility will be the first on the UT-Knoxville campus to be built for Leadership in Energy and Environmental Design (LEED) certification, which requires using environmentally sound materials, positioning the building to make the best use of natural lighting and using indoor lighting that is both cost-and-energy-efficient. Bullcock, Smith and Partners and Lindsay and Maples Architects are the primary architects. Other participating companies include Ross Bryan Associates, Inc. (Nashville), IC Thomasson (Knoxville/Nashville) and Vreeland Engineers, Inc. (Knoxville), who are responsible for the structural engineering design and electrical engineering design, respectively. The building is scheduled for completion in August, 2010.

The college has also updated plans for the new Civil and Environmental Engineering Building. After the state provided $16.5 million in funding for Estabrook Hall, the second-oldest building on campus, an architectural review showed that the facility had serious structural issues that would hamper reconstruction efforts. A new site has been selected behind Pasqua Hall on the current Campus West site for the new building.
College Information

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opportunities to more students. Our entering freshmen math ACT scores are the highest ever at 28.5 and these students have an average entering GPA of 4.0 (thanks in part to Advanced Placement courses and the impact of the state’s HOPE scholarship program, and our ability to attract students from across the state and nation).

This newsletter also summarizes our progress on three new engineering buildings. These are in the process of being built or in the design phase at a cost of approximately $95M. This new space will provide an additional 340,000 square feet of teaching and laboratory facilities for the college. I stand in awe of the progress that is being made on so many fronts within our college. Yet, this would not be possible without the concerted efforts of our faculty; administrative and student staff; students; campus and system administration; state, federal and private funding agencies; and, without question, the generosity of our alumni and friends who have made and continue to make both the leadership and transformational contributions to further the college’s mission.

These are clearly challenging economic times, but this is the “Best of Times” to be provided the opportunity to be the lead spokesperson for our college as Interim Dean. I have a deep commitment to the college and am honored to be a part of this great team.

SAFElight Update

ERA end collisions cause more property damage and, worse, more injuries ($322 billion in 2003) than any other type of auto accident in the United States according to federal studies. Drivers to address such dire safety and financial concerns, UT alumni Ben Jordan, Tony Spezia and Nathan Davis, with help from their engineering professor, the late Frank Speckhart, developed the SAFElight system to significantly decrease a driver’s likelihood of being a victim in a rear-end collision. The team’s SAFElight achieves this aim through its patented accelerometer technology. SAFElight’s method has proven effective at increasing the reaction time of following drivers by emitting bright bursts of light to warn drivers of “emergency braking.”

Jordan, Davis and Spezia developed this groundbreaking system as part of the University of Tennessee’s MS-MBA dual-degree program. The three inventors have trademarked their device and are now distributing it directly to the public via wwwSAFElightstore.com. They give credit to the MS-MBA program for their current success.

“The program gives engineers the tools to stick their heads out of the engineering trenches,” Jordan said. “What other program could offer students the opportunity to graduate with their name on a utility patent, a position on the board of directors of an incorporated company, and the potential of being at the helm of a very competitive technology startup company?”

Bill Hamel, head of the Department of Mechanical, Aerospace and Biomedical Engineering, noted, “One of the keys of our dual degree program is to equip engineers with the tools they need to pursue new business ventures. We are very proud of the SAFElight project in this regard. They solved significant technical challenges and developed a sound business plan at the same time. Such synergy is essential for bringing new ideas to the marketplace.” For more information about SAFElight Inc., contact SAFElight at 865-531-0418 or view the website at wwwSAFElightstore.com.

Chad Holiday, Volunteer of the Year

Chad Holiday is the university’s top alumni award. Holiday was the first recipient of the recognition. The distinction is reserved for alumni who have excelled at the national or international level in their profession, whose achievements have benefited their fellow citizens and have brought great credit to the University of Tennessee.

After graduating from UT, Holliday began working for DuPont in his hometown of Nashville. He advanced quickly through various manufacturing and supervisory assignments, which included product planning and marketing, and eventually executive assignments, including president and chairman of DuPont Asia Pacific.

In 1999, he was appointed DuPont’s Chief Executive Officer. He became Chairman of the Board of Directors in 1999 and in the 18th century to lead the company in the 21st century.

Holliday established a mission to achieve sustainable growth – increasing shareholder and societal value while decreasing the company’s environmental footprint.

As a result, DuPont has moved from being a chemical company to a science-based products and services company. In 2007, DuPont reported revenues of $29 billion and employed more than 60,000 people around the world.

Last year, Holliday visited nearby Loudon, Tenn. in June for the official opening of the DuPont Titan and the Biomass Products Facility, one of the largest biomaterials processing facilities in the world and the only one of its kind.

Holliday was elected in 2004 as a member of the National Academy of Engineering and became chairman of the Business Roundtable’s Task Force for Environment, Technology and Economy. He is past chairman of the World Business Council for Sustainable Development (WBCSD), The Business Council and the Society of Chemical Industry – American Section.

Holliday is also serving as co-chair of the Campaign Leadership Committee for UT’s College of Engineering.

In remarks at the Development Council dinner, Internal Chancellor Van Simek said, “We credit Chad for helping to create a strong bond between DuPont and UT. The company has contributed almost $4 million to UT over the years in support of programs in the College of Engineering and Institute of Agriculture.”

–Story by Kim Cowart
Dr. Wesley Hines, professor in the Department of Nuclear Engineering, has been named Interim Associate Dean for Research and Technology for the College of Engineering. He will be replacing Dr. Wayne Davis, who previously held the position and who was designated to be the COE’s interim dean in May. Dr. Hines received his B.S. in electrical engineering from The Ohio University, Athens, in 1985; his M.S. degree in nuclear engineering and an M.A. degree from The Ohio State University in 1992; and his Ph.D. in nuclear engineering from The Ohio State University in 1994. Hines also attended the Nuclear Power School at the U.S. Navy, Bethesda, Md., in 1986 and served as a U.S. Naval Officer on Naval nuclear submarines from 1985-1990. Hines started his career at UT in the nuclear engineering department in 1995 as a research assistant professor. In 2005, Hines was promoted to professor in the nuclear engineering department. Hines has received numerous recognitions from the COE, including the 2005 College of Engineering Research Fellow Award, the 2005 Brooks Distinguished Professor Award; the 2004 COE Teaching Fellow Award; the 2004 Lions and Nancy Cole Superior Teaching Award; and the 2001-2002 Allen and Hoshall Engineering Faculty Award.

The major thrust of Hines’s research is the development of new functional materials for radiation detection. He will be continuing his previous research on the development of new functional materials for radiation detection.

Dr. Wesley Hines
Dr. Maldonado and Dr. Hayward to Lead Million Dollar Research Projects Funded by the U.S. Nuclear Regulatory Commission

Two professors in the COE Department of Nuclear Engineering (NE) are leading research projects with a total funding of over $1 million from the U.S. Nuclear Regulatory Commission (NRC). Dr. Ivan Maldonado, an associate professor in the NE department, and Dr. Jason Hayward, an assistant professor, are involved in the effort, along with colleagues from Texas A & M University and Prairie View A & M University in order to distribute the educational materials to a wider and more diverse audience.

The graduate program will award up to 20 one-year scholarships for the study of nuclear engineering over the next two academic years. The most talented undergraduate and graduate students, Dr. Maldonado said, “are already having a direct impact upon our records and awardees will be periodically announced.”

The graduate program will provide up to 13 one-year graduate fellowships for the next four academic years. The fellowships will also be awarded to students with outstanding academic records and awareness will be periodically reviewed for continued satisfactory performance. “The U.S. NRC scholarships and fellowships are already having a direct impact upon our department’s ability to attract, recruit, and retain their best students,” Dr. Maldonado added. “Additionally, we encourage the NRC to highlight the role that we are an institution they should continue to support in the next generation of nuclear engineers and scientists.”

The COE NE department is ranked 10th in public universities with a doctorate program, according to U.S. News and World Report’s America’s Best Colleges designation.

Dr. Christopher S. Penke has been appointed to the position of director of the College of Engineering Honors Program. He will be responsible for the operation of the departmental common aspects for the college’s honors programs, including teaching of the college’s honors freshmen and sophomore Fundamentals (EF) 157 and 158. He will also work to expand and enhance the college’s honors offerings through development of new departmental courses or college courses as well as coordinating with the Chancellor’s Honors Program (CHP) and other interested faculty to expand the CHP’s offerings of advanced honors courses specifically developed for engineering students.

Penke has been a UT faculty member since 1993 and is currently an associate professor in the MAE department. In 1996, Penke was also appointed to the Basic Engineering Renovation Team (BERT), formed by the late COE Dean Stoneking to redesign the first year experience in the engineering college. In 1997, he was appointed the founding director of the Engage program, which resulted from the BERT team’s efforts, and served in that capacity until August 2008. Penke has numerous teaching awards, including the University of Tennessee Alumni Association Outstanding Teaching Award, which he received in 2007. He is a registered professional engineer in the state of Tennessee.

College of Engineering Transitions

Several transitions have recently occurred in the College of Engineering’s academic support programs.

The budget, which is designated for a three-year period, includes support for new course development, developing proposals for research, equipment stipends, participation in professional society meetings, preparation of project reports, and other startup costs. The goal of this program is to attract highly-qualified faculty members, who develop innovative curricula, modules, and teaching and retain them to enhance the department’s capabilities.

“Dr. Maldonado and Dr. Hayward obviously wrote excellent proposals for these awards, and they are to be commended for their efforts,” Dr. Lee Dodds, NE department head, said. “The UT nuclear engineering program is one of only four nuclear programs in the U.S. that were funded by all NRC solicitations to nuclear engineering programs during the past year, which clearly confirms the outstanding quality of proposals written by our faculty.”

“It is a thrill to be entering this position at a time when the demand for quality nuclear engineers is tremendous,” Hayward added. “Additionally, we encourage the NRC to recognize that we are an institution they should continue to support in the next generation of nuclear engineers and scientists.”

The scholarships will be awarded to students who are consistently outstanding performers on a semester-by-semester basis. The graduate program will provide up to 13 one-year graduate fellowships over the next four academic years. The fellowships will also be awarded to students with outstanding academic records and awareness will be periodically reviewed for continued satisfactory performance. The COE NE department is ranked 10th in public universities with a doctorate program, according to U.S. News and World Report’s America’s Best Colleges designation.

—Story by Kim Cowart
After his workday has ended and his TENNESSEE work as a design engineer, he was hired at Texas Instruments Inc., where he was initially assigned to design calculators, and we had large notebooks to record the results. It was a "dark days." Later, I worked as a technician on a test range that was building circuits.

"I am very happy with the choice that I made at that time," Clardy said. "I secured a job in the Department of Electrical Engineering working on government contracts, primarily doing research on antennas. Engineers today would not believe one of the tasks was to calculate antenna patterns using a mechanical calculator. Several of us were called 'student engineers,' and we had large notebooks to record the results. It was a perfect job for students because we could work any time that we wanted—after all you had to do was just get a notebook and start calculating wherever the last person finished. Obviously, we did not have computers in those 'dark days.' Later, I worked as a technician on a test range that was located on an island in the river, working with Mr. T. Vaughn Blalock," Clardy enjoyed his years at UT, and spent most of his time studying. However, he had three friends, also from Clarksdale, who were, in Clardy's words, "unorthodox and nerdy.

"The big event each week was to have one beer and a pepper boiled egg at a bun, Clardy recalled. "I always like to think about those years at UT and how we enjoyed that Saturday night ritual."

Clardy also appreciated his classes under former COL Dean Charles Weaver, who he remembers as an outstanding and innovative teacher who loved his work.

After graduating from UT in 1957, Clardy began working at Arnold Engineering Development Center, Tennes., designing instrumentation systems for jet and rocket engine testing. After two years, he was hired at Texas Instruments Inc., where he was initially assigned work as a design engineer.

"When I moved to Texas Instruments, the job was detail circuit design, but because of my years at AEDC, I wanted to know the entire system and thus extra time learning everything's jobs. In the end, I always knew more about the system than most of the other engineers. As a result, naturally evolved into managing the projects and the die was cast for me to go into management instead of design."

Clardy spent 21 years at Texas Instruments, rising through the ranks until he was finally tapped to head the company's Latin American division. After leaving Texas Instruments, Clardy became a major player in Austin's growing technology scene coming into contact with Cory Baun. Clardy's decision in 1994 to bring in superstar engineers from other companies to create exciting new advances. Crystal became one of the world's leading suppliers of high-performance mixed signal integrated circuits with annual sales of $250 million.

Clardy left Crystal in 1997, and shortly afterward was asked to become a partner with Austin Ventures. He is currently on the board of five Austin technology startups and has also served as interim President for Nanoscales, Inc., Nensciences, Inc., D/2Audio, Inc. and Cold Wait Inc. "The availability of capital for engineers to start high tech companies in Austin comes from having a premier venture capital firm such as Austin Ventures in our city," Clardy said. "It is the largest venture partnership in the state of Texas."

Entrepreneurs and company owners who turn to Clardy for advice had better be prepared for complete honesty and frank assessments of their situations.

"I believe that a straightforward style gets things done. It is the essence of any success that I have enjoyed," Clardy added. "The quicker people get focused on the issue to be resolved, the better all around. There is no gain to game playing or soft-peddling things."

Clardy believes that his education at UT was the starting point for his years of success.

"To my knowledge, I was the first person in my Clardy lineage to obtain a college education. It gave me the technical skills to compete in the high tech world and the opportunity to afford a quality education," Clardy said. Although Clardy's knowledge and guidance is greatly in demand in high-tech circles, he also finds time for his large family, including his wife, Joanne; children Dean Clardy, Melissa Hendy, Mary Beth, James, Jill, and Terri Potts, and his 11 grandchildren.

"It is hard work, dedicated and unbounded in yourself with combined with great ideas that make start-ups and people succeed," Clardy said. "It seems to me that this is what happens to a great extent when you're a student soldier such as Lt. mening."

Penna, Professor, and intern department head of UT's Civil and Environmental Engineering, says Jeremiah "represents the spirit of our department." "Distance education is one of the tools that allowed his remote interaction with professors in the classroom and provides us with a unique opportunity to bring some bit of normality back in the life of student soldiers such as Lt. mening," Penna, Professor, and intern department head of UT's Civil and Environmental Engineering, says Jeremiah "represents the spirit of our department." "Distance education is one of the tools that allowed his remote interaction with professors in the classroom and provides us with a unique opportunity to bring some bit of normality back in the life of student soldiers such as Lt. mening."

Dr. Mark E. Dean (BSEE ’79) IBM Fellow and President J. T. Watson Research Center Yorktown Heights, N.Y.

Ms. Katherine Barth (BSEE ’00) Director, Composite Manufacturing Center, Boeing Company, Austin, Tex.

Mr. Ron Green (BS/MA ’79) Director, BP Pittsburgh, Pa.

Ms. Kimberly S. Greene (BS/MS ’77) President/Owner American Accessories, Inc. Nashville, Tenn.

Mr. Dwight N. Hutchins (BME ’83) COO Denark Construction, Inc. Knoxville, Tenn.

Mr. Andrew K. Phelps (BS/IE ’84) President/Owner American Accessories International Knoxville, Tenn.

Mr. Eric L. Zoloth (BSEE ’94) President Owner American Accessories International Knoxville, Tenn.

Mr. Michael W. Howard (BSEE ’83, MEng ’86) Senior Vice President for R & D Electric Power Research Institute Charlotte, N.C.

Mr. Mark A. Medio (BME ’69, MEng ’67) President and CEO Control Technology, Inc. Knoxville, Tenn.

Mr. Howard E. Chambers (BSEE ’65) President and CEO Global Foundry Technology, Inc. Nashua, N.H.

Mr. Edwin A. McDougle (BS/ME ’69, MBA/Ind. Eng. ’71) COO Foundation in Miami, Fl.

Mr. James B. Porter Jr. (BSEE ’65) President of R & D Austin, Tex.

Mr. Richard T. Suddall (BS/MS ’80) President and CEO Carlson Restaurants Worldwide San Antonio, Tex.

Mr. Thomas W. Holsinger (BS/ME ’75) President & CEO Control Technology, Inc. Nashville, Tenn.

Mr. Chris M. Harrison (BS/ME ’80) Chief Financial Officer Tennessee Valley Authority Muscle Shoals, Ala.

Dr. Thomas E. Cook Jr. (BS/MS ’69, PhD ’69) President of R & D Wireline Systems, Inc. Dallas, Texas

Dr. Tony E. Cockrell (BS/MS ’69) Founder and Principal Denark Construction, Inc. Knoxville, Tenn.

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Dr. Tony E. Cockrell (BS/MS ’69)

Dr. Michael W. Howard (BSEE ’83, MEng ’86)
Diversity Office Hosts Luncheon for TLSAMP

The COE Diversity Engineering Programs Office (DEP) hosted an awards luncheon for its National Science Foundation-funded Tennessee Louis Stokes Alliance for Minority Participation (TLSAMP) Summer Bridge Program on Friday, August 8, 2008, at CalBourn’s on the River. The event theme was “Building Bridges-Building Futures” and the keynote speaker was Mr. Mark Burnett, Vice President for Student Affairs at Tennessee Technological University. Awards were presented to students in the TLSAMP Summer Bridge Program. DEP also celebrated the renewal of funding for both the TLSAMP program and the Department of Energy’s Pipeline Engineering Diversity Program. Total funding received for both programs was $926,780. James Pippin is the director of the college’s diversity initiatives.

COE Alumnae Receiving Distinction Award from NASA

Bovino engineer and COE alumna Robert D. Adams (BS/Aero ’90) has received the NASA Spaceflight Awareness Honoree for his research work, which led to the discovery of metal debris in moving parts on the International Space Station (ISS). This award is one of the highest recognitions presented to NASA and industry employees. Adams has been employed by NASA since 1990 and played a lead role in investigations of technical difficulties on a space mission in 2007. Adams received the award on May 31, 2008, at an evening reception after the launch of the Space Shuttle “Discovery” at Kennedy Space Center in Florida.

COE Professor Receives Power Award

COE Intern Dean Wayne Davis (BS/Aero ’90) has been awarded the Ralph E. Power Junior Faculty Enhancement Award. Davis is an assistant professor in the Department of Civil and Environmental Engineering. He was one of the highest recognitions presented to NASA and industry employees for his research work, which led to the discovery of metal debris in moving parts on the International Space Station (ISS). This award is one of the highest recognitions presented to NASA and industry employees. Adams has been employed by NASA since 1990 and played a lead role in investigations of technical difficulties on a space mission in 2007. Adams received the award on May 31, 2008, at an evening reception after the launch of the Space Shuttle “Discovery” at Kennedy Space Center in Florida.

OPP Hosts Annual Welcome Back Cookout

The Office of Professional Practice welcomed over 1,000 new engineering students welcomed during an Open House on Friday, September 12, 2008. The event, open to all new students, featured one of the highest recognitions presented to NASA and industry employees. Adams has been employed by NASA since 1990 and played a lead role in investigations of technical difficulties on a space mission in 2007. Adams received the award on May 31, 2008, at an evening reception after the launch of the Space Shuttle “Discovery” at Kennedy Space Center in Florida.
600 Students Enjoy Engineers Day 2008

Over 600 high school students from 30 schools across the region came to the UT-Knoxville campus on Thursday, October 16, 2008 for Engineers Day. The event is a College of Engineering tradition that has been observed since 1912. Visiting participants enjoy discussions, project demonstrations, exhibits and a great deal of fun with COE students and faculty. Dr. Bert Ackermann, a nuclear engineering graduate and a member of the college’s Board of Advisors, was the keynote speaker at the opening ceremony. The event also included the Quiz Bowl, where teams of four compete in a written examination. Quiz Bowl competition winners for 1st and 2nd place for this year were two teams from Farragut High School and the third place winners were a team from Lenoir City High School. Class 1 winners in the exhibit competition included the American Society of Agricultural and Biological Engineers, the Materials Advantage Society, and the American Society of Civil Engineers student chapter.