tennessee engineer

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COE Alumnus and Professor are Honored by NAE

University of Tennessee College of Engineering (COE) alumnus Charles (Chad) O. Holliday Jr. (*BS/IE '70*), Chairman and CEO of E.I. Dupont de Nemours, Inc., and Dr. C.T. Liu, an adjunct professor affiliated with the COE's Department of Materials Science & Engineering, have been elected as members of the National Academy of Engineering (NAE).

NAE brings together committees of experts in all areas of scientific and technological achievement. These experts serve pro bono to address critical national issues and to provide consultation to the federal government and the public. Election to the NAE is one of the highest professional distinctions accorded to an engineer, and the exclusive group numbers around 2, 200 members.

Holliday received his B.S. in industrial engineering in 1970, and began his career after graduation at DuPont's Old Hickory plant in his hometown of Nashville, Tenn. Holliday subsequently held a range of manufacturing, marketing and business assignments with DuPont, including leadership roles for DuPont Asia Pacific.

Holliday assumed the position of DuPont's Chairman and Chief Executive Officer in 1998, and is the youngest person in this century to hold that title with the 202-year-old global chemical giant.

"I never dreamed I would be selected to this prestigious group of great engineers," Holliday said. He added that it was a special honor because already-established members of the academy elect the new members.

Holliday was recognized for leadership in DuPont's transformation to sustainable growth through biotechnology, high-performance materials, improved safety and consumer protection.

Holliday received the Nathan W. Dougherty Award, the college's most prestigious alumni award, in 2000. The award salutes an engineer who has brought honor and distinction to the college through his or her achievements, and who has made significant contributions to the engineering profession through exemplary professional activities.



Charles O. "Chad" Holliday



Dr. C.T. Liu

Liu received his B.S. in mechanical engineering from National Taiwan University and his M.S. and Ph.D. degrees in materials science from Brown University. In addition to his association with UT, Liu has been employed at the Oak Ridge National Laboratory (ORNL) since 1967. He is currently the leader of the Alloying Behavior and Design Group in the Metals and Ceramics Division.

Established as a world authority in the field of structural intermetallics, Liu's extensive research work has been rewarded with numerous awards and recognitions, including election as a Fellow of the World Technology Network in 2003; an award as a World Highly Cited Researcher in Materials Science; a Distinguished Inventor of Battelle Memorial Institute recognition; and designation as an author on the list of "1000 Most Cited Physicists" from 1981 to 1997. Liu was recognized for advancing ordered metallic compounds from the laboratory to practice.

Liu, an outstanding researcher, was elected from ORNL, which has a staff of more than 2,000 working in research and development, and he is only the third UT-affiliated professor to receive the NAE award. Dr. Jack Dongarra, a University Distinguished Professor with the Department of Computer Science, and Dr. Way Kuo, the current College of Engineering dean, are both NAE members.

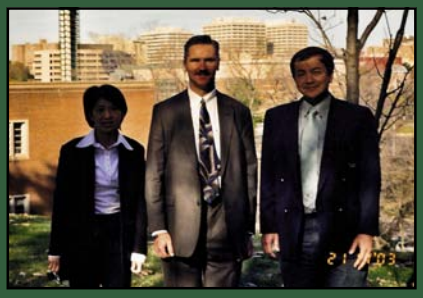
"We are honored that one of our graduates and one of our adjunct professors have both received this recognition," said Kuo. "Election to the National Academy of Engineering is one of the highest achievements an engineer can accomplish. This is a testament to the quality of our engineering education and research efforts."

Academy memberships honor those who have, according to NAE guidelines, made "important contributions to engineering theory and practice," and those who have demonstrated accomplishment in "the pioneering of new fields of engineering, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

The full list of newly elected members and foreign associates can be accessed at the NAE web site, **http://www.nae.edu**.

Story by Kim Cowart

Snap Shots



Dr. Richard Komistek (center), biomedical engineering professor, welcomed Chitraporn Kanogsirima (1), Senior Franchise Manager with Johnson & Johnson Medical Thailand and Keerati Chareancholvanich, M.D.(r), a member of the Department of Orthopaedic Surgery at the Faculty of Medicine Siriraj Hospital in Bangkok, Thailand to the COE in November. The two visitors flew in from Thailand to consult with Dr. Komistek about his advances in biomedical engineering research.



Jim McEwan (l), master distiller and production director for Bruichladdich Distillery in Islay, Scotland, visited Knoxville in October for several events, including a "Scotch and Cigar Dinner" at Club Le Conte. McEwan is hosting COE students from the Department of Chemical Engineering in an international engineering graduate study program that illustrates the principles of whiskey-making. McEwan also made a public presentation on the making of Scotch whiskey at UT's University Center.



Lee Kintzel (center), President of the Roddy Foundation, was recently the guest of the COE. Welcoming Ms. Kintzel are (from left) Cathy Dodge, Engineering Development Director; Masood Parang, Interim Director of the Department of Mechanical, Aerospace & Biomedical Engineering; Wayne Davis, Associate Dean for Research & Technology; and Way Kuo, COE Dean and University Distinguished Professor.

HOPE Scholarship Offers New Opportunities

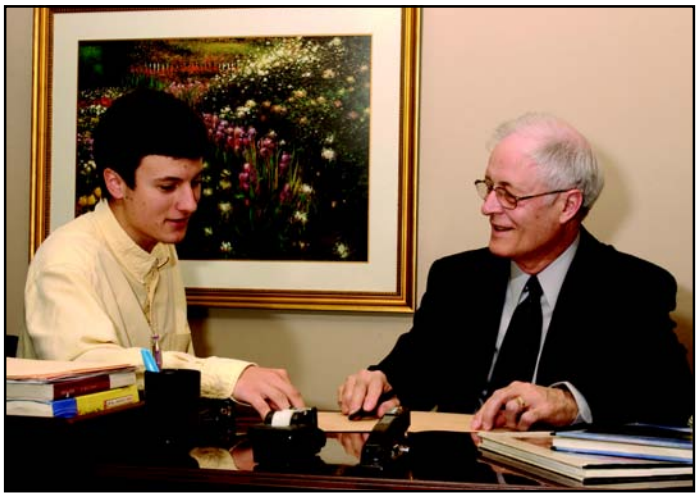
On Tuesday, January 20, history was made in the state of Tennessee as the first lottery tickets went on sale to the general public. The Official Tennessee Lottery was established to create the new Tennessee Education Lottery Scholarship Programs, which include the Tennessee HOPE scholarship, the General Assembly Merit Scholarship, the Need-Based Supplemental Award, the Tennessee HOPE Access Grant and the Wilder-Naifeh Technical Skills Grant.

The first Tennessee HOPE Scholarships will be awarded this year for the fall 2004 semester, which will begin August 18 at the University of Tennessee. Students who were freshmen in the fall 2003 semester may also qualify after meeting specific criteria.

"The HOPE Scholarship is basically a program for Tennessee residents who are graduating from high schools or from home-schooled situations within the state," said Jeff Gerkin, Assistant Dean and Director for Financial Aid and Scholarships. "The basic criteria applies to all students, although additional scholarship money will be made available to individuals with a greater financial need, or those who have demonstrated significant academic achievement."

In order to be eligible for the Tennessee HOPE Scholarship award, an entering freshman student must meet the following criteria:

- Graduate from a Tennessee high school in the class of 2004 or later
- Qualify as a Tennessee resident for one year prior to application
- Enroll in a Tennessee public college or university; enroll in a Tennessee private college or university accredited by the Southern Association of Colleges and Schools (SACS); or enroll in a Tennessee Technology Center.



Dr. Luther Wilhelm consults with a student on HOPE Scholarship information.

- Score at least 19 on the ACT entry test or 890 on the SAT test–or
- Earn a 3.0 unweighted overall grade point average (GPA) and college core GPA out of a possible 4.0, and attempt all required college core courses, including English, math, science, social studies, foreign language, fine arts, wellness and electives
- Home-schooled graduates must score at least a 23 ACT or 1060 SAT

The amount of the scholarship awarded depends on the funding from the Tennessee Lottery and the type of institution the student chooses to attend. If the student selects a four-year private or public school, the Tennessee HOPE Scholarship is $3,000 per year. If the student attends a two-year private or public school, the HOPE Scholarship is $1,500 per year.

Students must remain continually enrolled to keep the scholarships, and a freshman has to finish his or her first 24 semester hours, the minimum full-time load for a year, with a 2.75 grade point average. Additionally, the student has to maintain at least a 3.0 average at the end of his or her sophomore year to keep the lottery scholarship, and that requirement remains in place until the student graduates or reaches 120 attempted credit hours.

"It is important to remember that if the grades drop below the scholarship requirement, the student will lose the scholarship," Gerkin added. "Once the eligibility for the scholarship is not met, the student cannot get the scholarship funding back."

The level of interest is encouraging to Luther Wilhelm, Associate Dean for Undergraduate Academic Affairs for the COE.

"We are definitely seeing an increase in our applications," Wilhelm said. "Our freshman scholarship applications in 2003 numbered at 495; for the fall of 2004, we are already up to 570 applications, and it most likely will be 580 or more before we complete the admissions process. This is an increase of more than 15 percent. I am also hoping that the HOPE Scholarship will allow us to reach more in-state students that we have previously lost to other institutions."

Another benefit of the HOPE Scholarship is that there are few restrictions on awarding additional scholarship money to deserving students.

"The HOPE Scholarship has no impact on what additional funds we can award students," Gerkin said. "We do have a total limit of approximately $14,600, which is the annual cost of atten-

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Dean's Message

A Message to College of Engineering Alumni:

I am pleased to inform you that, as of January 1, I am now established in the College of Engineering on a full-time basis.

Dr. Wilhem, Dr. Davis and I visited all of the college's departments last semester, and listened to the presentations made by both professors and department heads. I appreciate the efforts of these individuals and their dedicated services to the college. Although individual departments are different in terms of their curriculum and research needs, there are some common concerns to which we will need to devote special attention. The following is a list of major initiatives that are currently being carried out:

1. An undergraduate recruiting task force has been appointed; after several meetings, the committee has recommended a number of specific action items for implementation.
2. The GRE test is now being required by all departments; also, reviews of departmental graduate curriculums and Ph.D. requirements are currently underway.
3. The undergraduate curriculum committees in each department are almost finished with their review of present undergraduate courses, including the number of credits required for graduation.



Dr. Way Kuo

4. A college committee is currently conducting an extensive review of the Engage program. The goal is to improve the coordination between Engage and the other engineering degree programs while offering continued flexibility for COE faculty.
5. Searches are currently being conducted for the Associate Deans for Academic Affairs and Undergraduate Studies. Once the searches are closed out, a new search for a contract liaison administrator will start immediately.
6. Space issues are being reviewed, and new construction/ renovation projects are being seriously considered.
7. A new Office of Engineering Communications has been established, with full responsibility for publications, public relations, recruiting activities and web site design and maintenance. We have added another full-time staff member to assist with communications efforts.
8. New MS/MBA and BS/MS degree programs are being developed, and will be managed by the Associate Dean for Academic Affairs.

Please feel free to communicate with my office with your suggestions on how to make this an improved place for faculty and staff to work, a desirable choice for our students for their engineering education, and a prime college for the recruiting of our graduates by top businesses and industries.

Best regards,
Way Kuo,
Dean of Engineering and
University Distinguished
Professor

Faculty Focus

Dr. J. Douglas Birdwell

Machines are a part of our lives, from the simplest drink machine to complex computers and telecommunication systems that make up the Internet. Yet how do all of the parts of each machine work together to accomplish that for which they are designed? The answer is simple. Each machine must have a *control system* to oversee the operation of the various parts, in the same way that senior management must observe and direct each division of a corporation towards accomplishing a unified goal.

Department of Electrical and Computer Engineering (ECE) professor Dr. Doug Birdwell, who has both a bachelor and master's degree in electrical computer engineering from UT and a Ph.D from the Massachusetts Institute of Technology, is a control systems expert. He is currently serving as president of the Control Systems Society (CSS) of the Institute of Electrical and Electronics Engineers (IEEE). He is also the director of the Laboratory for Information Technology (LIT) at UT, which supports students and faculty from the ECE and ChE departments as well as from computer science.

Birdwell explained how control systems are used in applications beyond simple vending machines. "An example of a very complex control system is that which allows for the connection of millions of cooperating computers, such as through the Internet," he said. "This structure uses multiple cooperating computers to solve small parts of a larger problem, and is called *parallel computing.* At some point in the system, there has to be a controller directing the processes of communication within and between the computers, or else there would be chaos."

For science applications, especially such as those investigated by the LIT, parallel computing is used to solve extremely large and complex problems relatively quickly.



Dr. Doug Birdwell and Dale Stansberry work with a software program that helps to analyze and classify DNA profiles.

"People do not normally use single computers to solve large problems anymore. One person can now use multiple cooperating computers to solve the same complex problem in far less time. What we have is a virtual supercomputer that is much faster than a single unit," Birdwell added.

The LIT is currently working on research for federal agencies, including a project using parallel computing to discover similarities between information in different databases, called *clustering*.

Birdwell pointed out that control systems experts are looking at ways to make parallel systems work more efficiently.

"In large and complex systems, the delays between the computers become very important," he said.

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Research News

Wayne Davis is Appointed Associate Dean for Research & Technology

After 28 years as a faculty member and researcher at UT, Dr. Wayne Davis is changing direction. He has accepted the position of Associate Dean for Research and Technology at the UT College of Engineering, a decision that did not come easily.

Why would a professor of civil and environmental engineering, involved in five major research contracts with nearly $2 million in funding, want to become an administrator? "My experience in the research arena and in working with the UT administration allows me to assist the COE in a much greater way than if I were to remain as a faculty member," Davis explained.

In his new role, Davis will be working to expand the college's research opportunities by drawing on his accumulated knowledge. "I believe my previous experience with research contracting issues will help alleviate some of the frustration and obstacles faculty members often face related to research contracts and proposals," Davis said. He sees himself as a "watchdog" that can break down some of the barriers and act as a link between the UT Office of Research Administration (which assists UT faculty in securing sponsorships for research) and the UT Research Foundation (which deals with marketing and commercialization of UT research and intellectual property).

"Research increases visibility, allows faculty to get published, and is a mechanism of support for graduate students," Davis added. The COE currently enjoys nearly $22 million in restricted research funding, which is nearly 25 percent higher than last year.

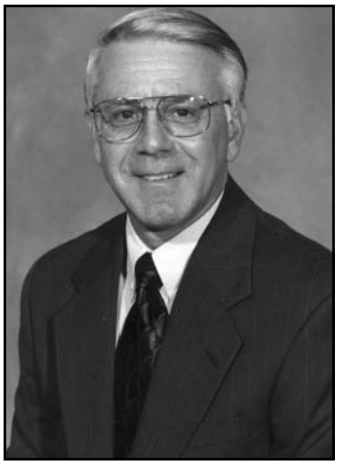
Another important function of Davis' new position is to locate and manage the space where research is conducted. This entails organizing existing space, such as the 45,000 sq. ft. of the Science and Engineering Research Facility occupied by COE faculty, while effectively relocating some projects and resources. Davis is working with the UT Space Allocation Committee to define future development of new space as well as renovations to existing buildings. "We must be able to accommodate the needs of current and new faculty members with prior research contracts so they can continue to be productive," Davis said.

Davis, who began conducting research as a graduate student at UT in 1971, says he enjoys the challenge of solving these complex problems and welcomes the chance to interact with different groups of people. "I believe my office will provide a high level of service to the university," Davis noted.

One of his main goals is to enhance the COE's competitiveness for National Institute of Health (NIH), National Science Foundation (NSF), U.S. Department of Defense (DOD), and U.S. Department of Energy (DOE) contracts by interacting more effectively with these agencies. Davis plans to hire a Director of Research and a contract specialist to help develop research efforts, especially with government agencies.

Another goal is to increase efficiency within the UT research community by developing an online database of equipment in storage. Davis said there are many items in storage that might be beneficial to a professor's research if the equipment was readily accessible. The advantage of developing an online inventory will allow faculty from all areas of the university to access and search for items they need without having to spend money.

Bearing in mind all that UT has done for him, Davis now relishes the opportunity to serve the university. " I was offered a number of opportunities to leave UT after I became a faculty member in 1975, but the East Tennessee area is a great place to live and work and the COE has consistently met all my needs," Davis added. With the bulk of his research dealing with air pollution and waste management, Davis has worked with various agencies such as the Tennessee Valley Authority (TVA), Oak Ridge National Lab (ORNL), U.S. Environmental Protection Agency (EPA), DOE, and NSF. He has published numerous papers and is the editor of the Air and Waste Management Association's *Air Pollution Engineering Manual* (Second Edition) published in 2000.



Dr. Wayne T. Davis

Davis also held the positions of Dean and Associate Dean of the UT Graduate School from 1985 to 1991, allowing him to become more familiar with the administrative functions of the university. He feels this experience is vital to his transition from research to administration. "I really enjoy working with people as well as doing research," Davis said. He will continue to perform some research at a reduced rate, spending approximately 10 percent of his time editing and updating research texts while devoting the other 90 percent to furthering the COE's research agenda.

Away from the university, Davis enjoys hiking, playing bluegrass mandolin and guitar, and cultivating his vegetable garden. He resides in Alcoa with his wife and two sons.

Story by Craig Cook

HOPE Scholarship

(Continued from page 2)

dance at the University of Tennessee."

"We have a number of significant scholarships available, with more being added," Wilhelm commented. "Currently, at least three or four new awards have been established, both named scholarships and multiple awards. The HOPE Scholarship will allow us to offer significant financial incentives that were not previously available."

The COE awarded $161,000 in scholarships to freshmen in 2003; transfer students were awarded $21,000, and continuing students received $352,000, for a total amount of $534,000.

In order to quality for the HOPE Scholarship and other financial aid, students must first complete the Free Application for Federal Student Aid (FAFSA). The FAFSA is online at **http://fafsa.ed.gov** and the application priority date for completion is May 1, 2004 to qualify for the HOPE Scholarships.

Story by Kim Cowart

Financial Aid Web Sites

Free Application for Federal Student Aid (FAFSA):
http://www.fafsa.ed.gov

University of Tennessee Financial Aid:
http://web/utk.edu/~finaid

College of Engineering Financial Aid:
http://www.engr.utk.edu/coe/undergraduate/new_scholarships.html

Faculty Focus

(Continued from page 3)

Central processors must communicate with their own hardware and each other; decide about where to send the pieces of work; and error checking has to occur so accurate information is processed and sent across the communication networks. The time it takes for the system to do this takes computing power and network capacity away from solving the problem, slowing down the process.

"We all know that computers don't work all the time. That's just the nature of them," he observed. With dozens–or even millions–of computers on a network, the amount of lost time due to these factors can add up quickly.

"One of the great things about engineering at UT is the level at which undergraduate students can be involved in research. With the projects we have at the LIT, we have them working right alongside the graduate students, faculty and staff, gaining insight that is not readily available from a classroom," Birdwell noted.

Students are encouraged to explore ideas in pursuit of solutions to the complex problems which the LIT confronts on a daily basis, offering a broader base of knowledge and creativity to the process. Since its beginning in 1995, the LIT has conducted over $7 million of outside funded research for entities such as BellSouth and the Office of National Drug Control Policy.

Birdwell has used his understanding of parallel computing to guide the LIT's students, faculty and staff in the development of several crime-fighting tools, which are currently being used by state and federal authorities. Some of these have been implemented in western Florida and at the New York/New Jersey High-Intensity Drug Trafficking Area (a federally-funded joint law enforcement task force). One of these, developed in conjunction with the LIT, is a rapid DNA profiling tool used by the FBI. This system can work with the national DNA database, which contains profiles for convicted felons from states requiring blood samples. The system is designed to allow field agents and other agencies to identify DNA samples from crime scenes. Control systems, applied to this process, accounted for a significant increase in the speed the information is available and useful. A second project helps DNA forensic scientists resolve the contributors to DNA sample mixtures.

Because Birdwell shares time between his responsibilities at UT and as president of CSS, free time is at a premium.

"Apart from my normal workload of teaching and research, it takes about 15 hours each week to best serve the CSS," he said. During his time as president of CSS, he has already been responsible for implementing changes in the financial operation of the society to aid its viability and improve the level of service to its more than 8,000 members worldwide.

Birdwell is very proud of his family. His wife, Tse Wei Wang, is an associate professor in chemical engineering at UT. Alex, his son, is a senior in mechanical engineering at Georgia Tech, where he is involved with mountain biking and road racing teams, and the Tech Ultimate Frisbee team. Nicole, his daughter, is a sophomore at Oak Ridge High School and is a member of the varsity Oak Ridge Rowing Association team.

Birdwell's favorite hobby is "spending too much on camera equipment." He does, however, love to take pictures, and has since he was five years old.

For information about the LIT, visit **http://www.lit.net.**

Story by Curtis J. Owens

Special Feature - Ethics In Engineering

Current scandals in the business world have led to increased concerns about ethics in the workplace. For over three years, Dr. Christopher Pionke of the COE's Jerry E. Stoneking Engage Engineering Fundamentals Program, and Dr. Glen Graber, of the Department of Philosophy, have been teaching a course for engineering students which addresses critical ethical issues in engineering.

"We are looking at the normal engineering decisions that are made day-to-day, and the ethical implications of them," Dr. Pionke said. "We are not focusing on the obvious decisions, but on the gray areas that may have shades of right and of wrong. To aid in this, Dr. Graber spends some time discussing the philosophical underpinnings of ethics, such as the utilitarian or pragmatic view."

Pionke's course brings a mix of different engineering disciplines to class, offering a broader range of perspectives to the students. The class is typically composed of about one-third non-engineering students, which further challenges the students to think about how their engineering decisions affect the public.

As greater importance is being given to ethics by professional organizations like the Accreditation Board for Engineering and Technology (ABET), Dr. Pionke would like to see this course become part of the general education requirements for graduation.

"However, I envision that this one course will not be just a 'check the box so I can graduate' class, but will be merely a start," he said. " I would like to see the departments build upon this class and talk about ethics throughout the education process."

Some departments currently require ethics courses from outside the COE, while others include ethics workshops or incorporate the discussion into senior-level design projects.

The Office of Cooperative Engineering and Professional Practice currently offers an ethics workshop each semester. Director Walter Odom shared his perspective on the importance of these seminars.

"In some departments, the student is exposed to ethics in the junior or senior year, and that may be too late," Odom commented. "In our normal conversations with students, and through our workshops, we are able to bring this in front of the students three times before the sophomore year. This discussion gives the students latitude to participate in the on-going conversation about ethics, and helps them establish good habits early on. Dr. Pionke's class is another step in that process."

"Most companies, like Kimberly-Clark, already have a code of ethics, and take the subject seriously," Pionke observed. " But what they are starting to ask is, 'Are we getting the message across?' They're also looking to the schools and saying, 'Are you teaching this to the people who are going to work for us in the future?' That is part of why ABET has placed a new emphasis on ethics and professional responsibility."

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E.T. Collinsworth Jr.: The Road to Success

Even T. Collinsworth (*BS/ChE '43*) remembers his first visit to New York City well.

The University of Tennessee and Harvard MBA graduate had just begun his career when business took him to the Big Apple.

"I only had a minute of culture shock," Collinsworth commented. "I was riding the subway, and when I came up the stairs, at the intersection of 42nd Street and 5th Avenue, I saw a pickup truck with a telescope in the back. The guy who owned the truck had the telescope trained on the Empire State Building, and was charging people to look at it. I never saw so many hicks in my life, and I thought, this is a place where I can make money."

Collinsworth has gone through most of his life with the same positive attitude. A Knoxville native, Collinsworth attended Park Lowry Junior High School and graduated from Old Knox High School in 1939. When he began his degree program in chemical engineering at the UT College of Engineering, the college was one of only ten schools in the nation to have a program in that discipline. A noted Cornell professor, Dr. Dusty Rhodes, had established the chemical engineering program.

Collinsworth recalled that the course of study was rigorous.

"Dr. Frank Borst, he worked us very hard," Collinsworth commented. "In fact, Harvard Business School was a breeze for me after studying with Dr. Borst!"

"Education is important... In the complexities of today's business environment, it is necessary to have a college education. We also need to place more of an emphasis on foreign languages, as our society and the world becomes increasingly more global. Today's workplace is much more culturally diverse."

E.T. Collinsworth Jr.

Collinsworth's fellow classmates at UT included Henry Goodrich and William B. Stokely Jr., both of whom would also go on to achieve significant business success after graduation from UT.

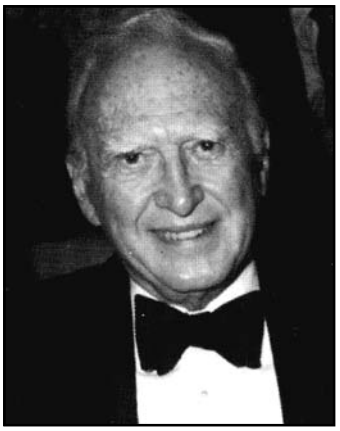
Collinsworth applied to Harvard Business School in 1949; at the time, there were 14,056 applicants for only 700 positions. Undaunted, he persevered and was accepted.

"I always wanted to go to Harvard," Collinsworth said. "Although I loved engineering, I didn't necessarily want to be a full-time engineer. The Harvard Business School was absolutely the best place to go at that time."

After graduating from Harvard, Collinsworth began what would become an illustrious career. He initially started with the Velsicol Chemical Company, the largest privately-owned chemical company in the U.S. at that time. Collinsworth received his first big break when he became company president at the age of 32.

In 1964, Collinsworth joined the Armour Company and served in several positions before becoming Executive Vice President and then Director in 1968. When Armour merged with the Greyhound Corporation in 1970, Collinsworth became Vice President for Administration and Corporate Development for the parent company. One of his responsibilities was to divest Armour of its chemicals division that was subsequently purchased by Akzona Corporation.

Additional career highlights included tenure as president and CEO of Bliss and Laughlin, later named AXIA Inc. to reflect the diversified company that was developed under his stewardship. He also was director of numerous corporations including NICOR Inc., the Bucyrus-Erie Corporation, the Sunstrand Corporation and the Beloit Corporation.



E.T. Collinsworth Jr.

Collinsworth also has served on the board of directors of numerous distinguished entities, including stints as a member of The Chicago Council on Foreign Relations; a Public Member of the Hudson Institute; Past Chairman and President of The Library of International Relations; and a Trustee for The American Graduate School of International Management.

Collinsworth firmly believes in the importance of higher education.

"Education is important," he said. "In the complexities of today's business environment, it is necessary to have a college education. We also need to place more of an emphasis on foreign languages, as our society and the world becomes increasingly more global. Today's workplace is much more culturally diverse."

After retirement, Collinsworth had what he calls a "decompression period," where he changed his focus to supporting more personal goals, such as his love for the arts. He is a member of the Board of Directors of the Sarasota Opera Association and the Sarasota Ballet as well as the Finance Committee of the Community Foundation of Sarasota County.

Collinsworth is also an avid sailor, and still loves being out on the water.

Continued on page 8

COE Alumni Support Academic Achievement with Scholarships

Over 700 students in the College of Engineering receive scholarship assistance each semester via awards distributed by the college, its departments and/or the University of Tennessee. With the average award less than $1,000, and with the ever-increasing cost of higher education (currently one year of full tuition, fees, and room and board for in-state undergraduate students tops $15,000) the Engineering Development Office continues to rank the need for more scholarships–both in quantity and award amount–as one of its top fundraising priorities.

While the establishment of the Tennessee State Lottery's HOPE Scholarship will assist us toward meeting our goal of raising the number of assisted students to 1,000 and boosting their average annual awards towards the $2,000 level, it will not alleviate the need for funding assistance to those students who are either currently enrolled in the college and are not eligible for the state's newest higher education financial resource; or, for transfer and non-traditional students who are seeking an engineering education. To tackle these needs the college continues to look to alumni, friends and corporate partners for support.

When talking with donors about scholarships, conversations often focus on the increasing cost of tuition, fees, books and housing–something that is generally remembered with great compassion. Malcolm Bayless (*BS/EE '77*), takes into account that he had no scholarships and was fortunate to be able to support his undergraduate education through his own side business.

"In fact, had I not been able to support myself, I am not sure that I would have been able to attend UT. But as a UT graduate who did not have scholarships, I have a strong sense of how valuable scholarship assistance can be to serious, committed, students who do not have the means to cover the cost of their education," he said.



COE Dean Way Kuo discusses class schedules with a student.

To the student, obtaining a scholarship to meet their financial burden for education can be elusive, for a variety of reasons. Most students understand that these financial resources have a pre-set list of criteria, which they must meet in order to be considered in the applicant pool. This is compounded by the reality that the college does not have enough broad-range scholarships to meet the needs of our many students. In any given year, the COE offers approximately 100 active scholarships through which a student can receive financial assistance.

Ultimately, scholarships are established to ease the financial burden of students pursuing an educational degree–but what is the driving force behind those that give? There is no single answer. Donors give for many reasons: to recognize an individual or family member; to honor a professor, mentor or department; to memorialize a family legacy; and even to recruit young talent to industry. When asked why it is so important to encourage the ongoing quality of education through scholarships, Bayless replied, "In a perfect world, every qualified applicant who wants to attend UT in the ECE department would be able to do so regardless of his or her personal financial need. The Bayless Family Scholarships were created to help achieve this goal. We want to encourage academic excellence, while at the same time allowing two students to spend their full time concentrating on their academic studies."

The COE anticipates the new HOPE Scholarship will have a positive impact on our students. However, to help fill the gap for those students who do not have adequate financial resources, and to help the college aggressively recruit exceptional students, the need for privately supported scholarships will continue.

Many of our engineering alumni have established scholarship funds, and we thank you most sincerely for your commitment and generosity.

If any of our *Tennessee Engineer* readers wish to learn more about funding an annual or endowed scholarship, please contact **Patty Shea,** Assistant Director of Engineering Development or **Cathy Dodge,** Director**,** at (865) 974-2779.

Story by Patty Shea

Peg Schneider Is New Member of Development Office Staff

The College of Engineering Development Office is pleased to welcome **Peg Schneider** as Administrative Specialist. Peg has a B.A. degree from the University of New Mexico and a diverse background that includes extensive work as a curator for several museums and galleries. Peg managed large national and international exhibits and couriered an exchange exhibit to Caen, Normandy, Tennessee's sister state in France.



Peg Schneider

Peg moved to Knoxville three years ago and worked with the Center for Disability and Employment and the Measurement and Control Engineering Center prior to joining the development staff.

"Peg brings a wealth of skills and expertise that will complement the operation of the development office," said Cathy Dodge, Engineering Development Director. "We are delighted that she has joined our team and look forward to working with her on our many diverse projects."

Peg may be reached at (865) 974-2779 or at mcschnei1@utk.edu.

COE Establishes New Office of Engineering Communications

As part of the ongoing reorganization of the College of Engineering, a new Office of Engineering Communications has been established. The office will be responsible for all internal and external communications activities for the college and will report directly to the dean of the college. The communications office will also continue to publish *Tennessee Engineer*, the COE's alumni newsletter.

Dr. Way Kuo has named **Kim Cowart**, former Communications Specialist for the college, as the Communications Manager and supervisor of the department. Cowart has been with the COE since 1998. She received her B.S. in communications from Murray State University and an M.S. in communications from the University of Tennessee. Cowart has a diverse background that includes radio broadcasting, advertising, computer graphic design, public relations and marketing. Cowart has also won numerous marketing and advertising awards, including the American Society of Engineering Education 2001 Conference "Best of Show" Award for a multi-media presentation on the Engage program; four national awards from *Healthcare Marketing Report* magazine; a Deep South Region 7 Addy Award from the National Federation of Advertising Clubs; and 14 Addy Awards from the Greater Knoxville Advertising Club. Originally a native of Milan, Tenn., Cowart has lived in Knoxville since 1979.


Kim Cowart

Joining Cowart on the staff as the new Communications Specialist is **Craig Cook**. Cook received a bachelor of arts degree in journalism from the University of Pittsburgh at Johnstown, Penn., and has an extensive background in web development, administration and design; graphic design and production; and technical writing and editing. Cook was previously the Communications Manager with Performance Communications Associates in Reston, Virginia. Cook is a native of Woodbridge, N.J., and has been a resident of Knoxville for three years.


Craig Cook

"We are excited about the new opportunities for the Office of Engineering Communications," Cowart said. "Dean Kuo has tasked us to enhance the profile of the college on a local, regional, national and international level and we have many challenging and creative projects that we are working on towards achieving that goal."

The Office of Engineering Communications is currently located in 114 Perkins Hall. For more information, contact the office at (865) 974-0533/ kcowart@utk.edu.

Synopsys Donates $24 Million Software Gift to COE

Computer software valued at more than $24 million has been donated to the UT College of Engineering's (COE) Department of Electrical and Computer Engineering (ECE) by the California-based firm Synopsys. The company has donated other significant software gifts to the ECE department, including a $6.2 million software package in 1995.

The current Synopys software package allows students more capability to integrate the design process fully. Previously, projects which were created in the Synopsys program had to be completed in another software package. However, ECE students will now have the ability to design integrated circuits and electronic systems utilizing the Synopsys software from start to finish. Currently, over 80 students in the department use the Synopsys program as part of their training.

The Synopsys university program offers industry leading tools and technology plus technical support, expert training and curriculum development for classroom instruction and academic research purposes to over 900 leading universities worldwide, helping ensure that graduates enter into industry skilled in the use of advanced tools and techniques.

Synopsys, Inc. develops, markets and supports high-level design automation models and software for designers of integrated circuits and electronic systems. The company pioneered the commercial development of synthesis technology, which serves as the foundation of the company's high-level design methodology. Synopsys offers a comprehensive set of synthesis, simulation, test and design re-use solutions.

Alumni Profile

(Continued from page 6)

"I'm still enjoying boating, although I'm not into racing any longer," he added.

Collinsworth has three very accomplished grown children. His daughter, Eden, lives in Manhattan and is Vice President of Corporate Development for the Hearst Corporation. Eden is also the mother of Collinsworth's only grandchild. His oldest son, Even, lives on a ranch in the Arizona mountains and works on contract with the U.S. Forestry Service. Sean, Collinsworth's younger son, is retired from the Los Angeles Sheriff's Department, where he began the "Cops On Bicycles" crime-fighting program; he currently lives in Chicago and is a legal consultant for law firms on bicycle accidents.

"All three of my children are good citizens," Collinsworth added. "I'm very proud of their accomplishments."

Collinsworth lives in Longboat Key, Florida, and still keeps track of activities in the business world.

"I read *The Wall Street Journal* every day," he said. "When you're retired as long as I've been, you try not to lose touch."

Story by Kim Cowart

tennessee engineer

e-mail: kcowart@utk.edu

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

Look for the next issue in Fall 2004

1960s

Harold T. Conner Jr. (*BS/ChE '68, MS/ChE '78)* has been promoted to Chief Operations Officer for the Westinghouse Savannah River Company. He resides in Knoxville.

1970s

Dr. Thomas S. Kress (*BS/ME '56, MS/ME '65, PhD/ES '71)* has been appointed to a fourth four-year term on the Advisory Committee on Reactor Safeguards. He resides in Oak Ridge, Tenn.



Dr. Thomas Kress

1980s

Rebecca Hartman-Baker (*BS/ME '84)* is operating the Kingsport Stained Glass retail store in Kingsport, Tenn. The business stocks glass, tools and other supplies for hobbyists.

Andrew D. Mead (*BS/ME '85)* has established a law practice focusing on intellectual property law after receiving his J.D. from Temple University Law School in 2002. He resides in Brownstown, Pa.

1990s

Tony Alley (*BS/ESM '92)* is Business Development Manager for the Detection and Protection Systems division of General Dynamics in Crystal City, Va. The company's market sector includes biological and chemical warfare agent detection systems as well as explosive detection systems, enhanced optics and vision systems.

Shahrin H. Shahuddin (*BS/ME '95)* has been promoted to Maintenance Section Manager with BP Chemicals in Malaysia.

Memorials

Godwin Williams Jr. (*BS/EE '36*) died on April 7, 2003. He was a resident of Signal Mountain, Tenn.

Edward M. Dougherty (*BS/CE '42*) died on October 15, 2003. He was a resident of Maryville, Tenn.

Richard J. Makla (*BS/ChE '44*) died on May 2, 2003. He was a resident of Camden, S.C.

Fred Smith Vreeland (*BS/EE '47*) died on June 26, 2003. He was a resident of Mandeville, La.

John H. Debusk (*BS/EE '51*) died on May 15, 2003. He was a resident of Knoxville.

Robert L. Whitaker (*BS/CE '54*) died on December 26, 2003. He was a resident of Nashville, Tenn.

Leopold "Lep" Andrew Wenzler Jr. (*BS/ME '58*) died on June 14, 2003. He was a resident of Decatur, Ala.

Joe F. Hurst (*BS/EE '59*) died on June 27, 2003. He was a resident of Farragut, Tenn.

Wilson G. Blazer (*BS/IE '65*) died on April 12, 2003. He was a resident of Maryville, Tenn.

Editor's Note on the Newsletter

The Spring 2004 edition of *Tennessee Engineer* marks a five-year milestone since our re-design of the publication in 1998. Originally established as *Engineering News*, the College of Engineering newsletter has been regularly published since 1987.

You may have noticed some changes in this issue; for example, the "Department News" section has been eliminated. Since many of our departments are already mailing out newsletters that feature updates on specific departmental activities, this decision was made to avoid duplication of information and also to allow more of a focus on college activities in our primary alumni publication.

We are planning additional changes in the future. Beginning with the Fall 2004 issue, the newsletter will be re-designed and new, more topical columns will be established. We'll also continue current features such as "Alumni News" and "Alumni Profile."

As a COE alumnus, supporter and friend, your feedback is very important to us. We want to know what you like–or don't like–about *Tennessee Engineer*. If you have new ideas for features, or comments about our content, please feel free to contact us via phone or e-mail.

We also need your information and updates for "Alumni News." Many of our newsletter recipients tell us that they enjoy this section, which allows them to catch up on the professional activities of classmates and acquaintances.

We are undergoing a time of transition at the University of Tennessee and the College of Engineering that is both challenging and exciting, and we want to be certain that you stay informed about your alma mater.

Please contact me with your information, comments and suggestions at kcowart@utk.edu, (865) 974-0686.

We appreciate your support, and look forward to hearing from you.

Sincerely,
Kim Cowart
Tennessee Engineer Editor

A Special Tribute to Robert L. Whitaker

The College of Engineering mourns the recent passing of Robert L. Whitaker (*BS,/CE, '54*), our longtime friend, advocate, and special donor. Before his sudden and untimely death, Bob was approaching two 50-year milestones–the anniversary of his marriage to his beloved wife, Glenda, and five decades of employment with Ross Bryan and Associates, a civil engineering firm in Nashville, Tenn. For many years, Bob was one of the principal engineering consultants for structural renovation and construction projects on the UT Knoxville campus. One of those of which he was particularly proud was the erection of the Jumbotron in Neyland Stadium. Bob was also a generous philanthropist who personally supported the Jerry E. Stoneking Engage Engineering Fundamentals Program and helped convince colleagues at Ross Bryan to make a significant five-year corporate gift to it as well. Bob, we miss you and wish you were here so that we could thank you again for all that you have done for our College of Engineering.

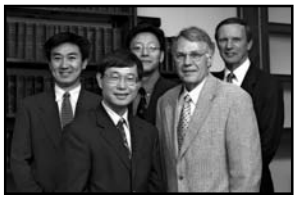
tennessee engineer online

Check out the College of Engineering's online newsletter:

http://TNengineer.engr.utk.edu



Fall 2003 issue
featuring profile of new dean



Spring 2003 issue
featuring materials research



Fall 2002 issue
featuring the Engage program

Miss an issue? Want to re-read a previous issue?

Catch up online!
Alumni News
Department News
UT/COE Special Events

http://TNengineer.engr.utk.edu

Engineering Ethics

(Continued from page 3)

As the faculty members consider the upcoming 2005 curriculum changes, greater consideration is being given to the inclusion of ethics as a module in more engineering courses.

"I sense interest from other departments in what this class is accomplishing," Pionke stated. "Dr. Graber and I have given talks or seminars to several departments and to outside professional organizations that are looking at what we do, including the Institute of Transportation Engineers' statewide meeting, and presentations to the ASCE."

"Because engineers and engineering students are in greater need of experience with ethical considerations, we are challenged with providing opportunities to discuss and think through ethics issues with students before they enter the workplace," Odom said. te

Story by Curtis J. Owens

First COE Official Commencement will be May 8

The University of Tennessee's Spring 2004 Commencement will consist of a short, university-wide ceremony held at 8:30 a.m. on May 8. The College of Engineering official commencement will be held at 2:00 p.m. that afternoon in the Knoxville Convention Center, Exhibit Hall B. For more information, contact the Undergraduate Academic Affairs Office at (865) 974-2454.

College of Engineering • Board of Advisors

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

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President-Mid States Division
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Dr. H. Lee Martin *(BS/ME '78, PhD/ME '86)*
Managing Member
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Mr. Mark A. Medley *(BS/ME '69, MS/Ind. Mgmt./Bus. Ad. '70)*
President/CEO
Control Technology Inc.
Knoxville, Tenn.

Mr. Andrew K. Phelps
Deputy General Manager
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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 E. 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.



The College of Engineering recently awarded the first Engineering Research Fellow Awards to seven outstanding representatives from their individual departments. The group included (*l to r*) **Dr. Belle Upadhyaya** and **Dr. Lawrence Townsend**, Department of Nuclear Engineering; **Dr. Leon Tolbert**, Department of Electrical and Computer Engineering; **Dr. George Pharr**, Department of Materials Science and Engineering; **Dr. Donald Bouldin**, Department of Electrical and Computer Engineering; and **Dr. Dayakar Penumadu** and **Dr. Eric Drumm**, Department of Civil and Environmental Engineering. The awardees received the recognition, which includes additional research funding, at a joint COE faculty/staff meeting in October.

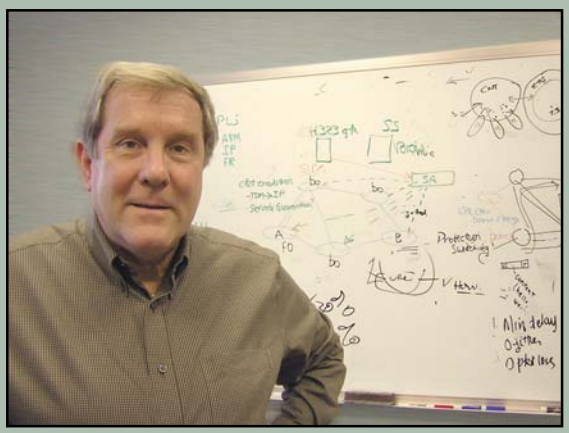




The annual Dow Crawfish boil took place on the engineering campus March 23. COE students, faculty and staff lined up to enjoy a feast of fresh crawfish, potatoes, sausage and corn (*top l*). **Dr. Bill Snyder**, (*bottom r*) former UT Chancellor and COE dean, dropped by on his Segway® to say hello to the event organizer, **Bruce Combs**, (*bottom l*) a Dow executive and UT engineering graduate.



Dr. Wes Hines, associate professor in the Department of Nuclear Engineering, has been chosen as the recipient of the Outstanding Mid-Career Teaching Award by the American Society for Engineering Education (ASEE). Hines received the award at the ASEE's Awards Banquet in April.



Curtis A. Siller Jr. (*BS/EE '66, MS/EE '67, Ph.D./EE '69*) was recently elected as president of the 60,000 member Institute of Electrical and Electronic Engineers Communications Society. Siller, an internationally renowned inventor and electrical engineer spent more than 30 years working on the leading frontier of new research at Bell Laboratories. The UT alumnus is also a respected writer, editor and international speaker in the field of electrical engineering.

Calendar

2004

Spring Recess Day	April 9
Spring Classes End	April 28
Graduate Hooding Cerm.	May 7
UT Spring Commencement	May 8
COE Spring Commencement	May 8
Memorial Day Holiday	May 31
Summer Classes Begin	June 1
July 4th Holiday	July 5
Summer Classes End	August 6
Fall Classes Begin	August 18
Labor Day Holiday	September 6
Fall Break	October 14-15
Thanksgiving	November 25-26
Fall Classes End	November 30

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

Save the date!
Homecoming 2004

Saturday, September 25

UT vs. Louisana Tech







College of Engineering Alumni Barbeque
Time TBA
Courtyard of Ferris and Perkins Halls

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

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Associate Dean, Academics
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Research & Technology

Newsletter Production

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Craig Cook, Assistant Editor
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The University of Tennessee
College of Engineering
114 Perkins Hall
Knoxville, TN 37996-2012

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