college seeks to increase RESEARCH FUNDING
Cover Story: College Seeks to Increase Research Funding
Dr. Timothy Haskew (far right) with three of his graduate students working on what looks like a truck, but is actually EmSyL’s “rolling laboratory.”

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Vision for the University of Alabama College of Engineering
The University of Alabama College of Engineering first will be the preferred engineering college in the state for students to obtain a world-class engineering education and to develop into the leaders of tomorrow; second, our faculty will advance the boundaries of knowledge through interdisciplinary research; and third, we will improve the lives of the citizens of Alabama through research and service.
The University of Alabama College of Engineering is fortunate to be part of a state that is experiencing tremendous economic growth. Alabama has leveraged its physical location in the heart of the fastest growing region in the United States – a region that has in the recent past accounted for approximately 45 percent of all job growth in the country – to help attract a variety of engineering-related industries. This economic momentum points to improved lives for citizens of the state and most certainly requires a flagship institution of higher learning to meet the educational needs associated with this growth. The University of Alabama is that institution!

President Robert E. Witt has established a vision for The University of Alabama as a student-centered research university educating the best and brightest of tomorrow’s leaders. Achieving this vision will be a challenge; however, doing so will provide a tremendous spark to the economic development and life-changing improvements being made in Alabama. The College of Engineering will play a critical role in The University of Alabama reaching these ambitious goals.

Our vision for the College of Engineering is tied closely to the University’s vision: The University of Alabama College of Engineering first will be the preferred engineering college in the state for students to obtain a world-class engineering education and to develop into the leaders of tomorrow; second, our faculty will advance the boundaries of knowledge through interdisciplinary research; and third, we will improve the lives of the citizens of Alabama through research and service.

This vision has led to some very specific goals related to enrollment, research, and development:

- The University of Alabama College of Engineering will enroll 2,100 students by the year 2010.
- The University of Alabama College of Engineering will increase sponsored research funding to $18 million by 2010.
- The University of Alabama College of Engineering will provide one-third of undergraduate students with competitive scholarships and will double its number of endowed and chaired professorships through the University’s capital campaign, “Our Students. Our Future.” The College of Engineering’s goal is to raise $15 million by 2009.

As the first university in the state to offer engineering classes and one of the first five in the nation to do so, the College of Engineering has a rich history of educating young people and expanding the boundaries of knowledge. This is truly an exciting time to be a part of this college, this university and this state. The College of Engineering is poised to help the University take the next step toward building a better quality of life for our future generations.

This issue of the Capstone Engineer highlights our new vision for the College and how the specific goals we have set for ourselves will further that vision. Although I have been on this campus for a quarter of a century, I am still excited by the changes that occur continually in engineering — within our college as well as out in the field. Given the opportunities provided by interdisciplinary research and the challenge of training graduates who will thrive in the demanding world of the professional engineer, our new vision will make us the preferred engineering college in the state and a proud partner of its university of choice.

Charles L. Karr, Ph.D.
Dean
The College of Engineering enrolled 1,900 students – including 1,614 undergraduate and 286 graduate – in fall 2005. That total included 396 freshmen, an increase of 10.65 percent over fall 2004’s freshman enrollment of 358 students and 98 transfer students.

The University as a whole experienced record enrollment this year – a total of 21,750 students – and the College of Engineering was pleased to be a contributor to that growth. In keeping with UA President Robert E. Witt’s plan for enrollment growth, the College of Engineering hopes to enroll 2,100 students by 2010, representing growth of 41.4 percent over the next five years. Our plan is to increase the freshman class each year by 7.2 percent and transfers by 5.2 percent. Our goal for fall 2006 is 424 freshmen and 111 transfers. The University’s stated goals call for total enrollment of 28,000 students by 2013.
While these goals are challenging, we have a recruitment strategy that should enable the College to meet them. Only two colleges on campus have a staff member dedicated to student recruitment, and I am pleased to be one of them. I spent most of the fall semester attending college and career fairs and speaking in schools across the state. Along with Dean Chuck Karr; Dr. Kevin Whitaker, associate dean for academic programs; Greg Singleton, director of engineering student services; and Miranda Carlisle, multicultural engineering program coordinator, I attended scholarship receptions in Birmingham, Montgomery, Huntsville, Mobile, Tuscaloosa, Atlanta and Memphis. In the spring, Dr. Witt will host out-of-state receptions in Florida (Tampa, Orlando and Jacksonville) and Texas (Houston and Dallas), and in-state receptions in Tuscaloosa, Mobile, Montgomery, Huntsville and Birmingham.

In addition to these receptions, the College participates in University Days, university-wide open houses held four times a year. We host our own open house, E-Day, annually in October. E-Day offers

**Engineering often appeals to the best and brightest students.**

At The University of Alabama, 20 percent of all honors students are engineers – the largest concentration of any college on campus!

prospective students the opportunity to visit campus and see hands-on demonstrations in our labs led by students and faculty. This is a great opportunity for them to learn about the College and all the excellent programs we have to offer.

Student Introduction to Engineering (SITE) is another recruitment tool that educates prospective students on the many facets of engineering. SITE is a weeklong summer program for rising juniors and seniors who think they might be interested in a career in engineering. They live on campus, take courses led by UA faculty, and participate in a design contest. SITE participants tour all eight engineering departments and take a plant tour. In 2005, we toured the Honda plant in Lincoln, Ala. SITE is a great experience for these students; not only do they learn more about engineering as a profession, but they also get a taste of what it’s really like to be an engineering student at The University of Alabama.

Another summer program, Engineering Math Advancement Program (EMAP), is for students who have been admitted for the fall semester, but whose math back-
ground is insufficient. EMAP allows them to build their math skills so that they can begin taking core engineering courses their first semester.

The Freshman Engineering Program (FEP) provides me with another recruiting tool. Prospective students (and often their parents) can be overwhelmed by the size of UA. The FEP reduces that number to about 400 (our freshman enrollment in 2005) and smaller groups of 20 to 30 for the general engineering studies courses. By becoming part of a small cohort, freshman engineers find it easier to manage the demands of academics and to develop a sense of community, two critical factors in retaining students and growing future enrollment.

Engineering often appeals to the best and brightest students. At The University of Alabama, 20 percent of all honors students are engineers – the largest concentration of any college on campus! In recognition of this fact, Dr. Bob Taylor was recently appointed director of engineering honors to coordinate our departmental honors programs with the University Honors College and explore additional opportunities for outstanding students.

In addition, we generously reward students for scholastic achievement through academic and leadership scholarships. One-fifth of all engineering students are on some type of scholarship and 20 percent of university-wide scholarships are awarded to our students. This year matching presidential and college scholarships are being offered to those students with exceptional ACT scores and high GPAs.

And finally, we rely on our Capstone Engineering Society Board and alumni to support us by helping to convert admitted students into enrolled students. The efforts provided by the College of Engineering’s alumni and friends are vital to our recruitment efforts. We welcome your assistance and look forward to working with you as we recruit outstanding students to the University of Alabama College of Engineering.
One year ago, while serving as interim dean of the College of Engineering, UA’s vice president for research, Dr. Keith McDowell, shared his vision and goals for the College and the University with the readers of the *Capstone Engineer*. Quite simply, his goal was to see the College of Engineering achieve a top-50 college ranking. This goal, he said, “is absolutely essential to any plans we make to transform UA into a tier I research institution.”

When Associate Dean Chuck Karr was appointed dean of the College last summer, he had been working with McDowell on a draft of a plan to do just that. Today, two of the three aspects of Karr’s vision for the College involve research: first, faculty are committed to “advance the boundaries of knowledge through interdisciplinary research” and, second, the College is charged to “improve the lives of the citizens of Alabama through research and service.” The goal driven by this vision is to increase sponsored research funding to $18 million by 2010.

Working with centers of excellence such as the University Transportation Center for Alabama and the Center for Advanced Vehicle Technology, Karr said researchers in the College have increased the national knowledge base and made Alabama a better place to live through their work in such fields as traffic safety and emissions control. Through inter-university collaboration, progress has been made in the area of cancer treatment research.

In the past, the College of Engineering has focused on five research areas: transportation, manufacturing, information systems, materials and environment. In order to expand the future scope and depth of the College’s research efforts, Karr said these five traditional academic disciplines will be evaluated. Key factors to be identified include resources within the College, as well as faculty who have secured funding and the amounts obtained. “While examining what the College is doing effectively, we also need to explore how we can use our successes to uncover potential funding sources, find additional partners within the
University system, and stimulate the growth of our research activity,” Karr said.

To meet the goal of increasing sponsored research funding, Karr plans to study several multidisciplinary research areas that complement the College’s current focuses. These will include water resources, aging infrastructure, automotive and nanobiological systems and space technology applications. Karr said this is in sync with the needs of the state of Alabama as well as the trends in engineering globally. Growth is anticipated, particularly in the electromechanical arena, because of the central role that field plays in materials and nanobiological engineering.

The College’s goals also call for doubling the number of endowed and chaired professorships. Recruiting high-profile professors to provide breadth to the current faculty will help create the critical mass needed for successful research and teaching partnerships, Karr said. The presence of the Alabama Institute for Manufacturing Excellence (AIME) and the Alabama Technology Incubator offer an added inducement: the protection of intellectual property rights, so critical to anyone doing research.

Engineering is a laboratory-intensive discipline. More investment in new buildings and laboratories is essential to the College’s future. Both U.S. Sen. Richard Shelby and UA President Robert Witt have indicated that they recognize the importance of such infrastructure to the College. “Given Senator Shelby and President Witt’s interest in funding a $200-million revitalization of the College, the timing is excellent for the College to position itself to become one of the premier engineering colleges in the nation,” Karr said.
Researchers

Dr. Marcus Ashford, assistant professor of mechanical engineering, finds that the project method creates the best learning environment. “Most students come to mechanical engineering to be industry-prepared,” he said. Yet with the field itself being almost multidisciplinary and most commercial processes being proprietary, and therefore inaccessible, the department’s educational goal is to teach students how to learn and learn quickly. To select the best projects, Ashford looks to what interests industry research and development.

Some of Ashford’s former colleagues at Ford Motor Co. have given him some good advice on what to pursue next – the area of hydrogen-fueled internal combustion engines, for instance. Ashford (opposite page, standing) and Michael Alff, a graduate research assistant, are studying hydrogen dispersion and subsequent combustion in a constant volume combustion chamber. Using a Rainbow Schlieren Deflectometry apparatus, they can non-intrusively discern density and/or temperature gradients in an otherwise invisible sample. The project is multidisciplinary, relevant, and, Ashford admits, exciting even to him.

Marla Hampel (below), a senior in chemical and biological engineering, explains her research poster, which won second place at the 2005 national AIChE meeting, to some other members of the Biomagnetism Research Group. They are (left to right) Indu Ankareddi, doctoral student in chemical and biological engineering; Jennifer Phillips, a junior in chemical and biological engineering; Dr. Chris Brazel, associate professor of chemical and biological engineering; Hitesh Bagaria (seated) doctoral student in chemical and biological engineering; Dr. Dave Nikles, professor of chemistry; and Dr. Duane Johnson, associate professor of chemical and biological engineering.

Commenting on the rewards of working in interdisciplinary fields, Johnson said, “This project is an excellent example of how the training and expertise of an engineer can be used to solve non-traditional problems. For example, we are using the knowledge we gained from developing new magnetic recording media (for example, new hard drives) and combining these with genetically modified viruses to detect and treat cancer. This project involves the chemical engineers, chemists, physicists, and material scientists who have worked on the magnetic material technology and the biologists, geneticists, and doctors who are developing cancer treatments.” To which Brazel added, “When working with an interdisciplinary team, we have to first learn to speak the language of our research partners, and not be afraid to ask really basic questions so that we can all learn and approach challenging problems with the added ability to think about the problem from different perspectives.”
Dr. Haskew and his students (pictured above) are converting a standard combustion engine from gasoline to electric. What makes the truck a laboratory is the on-board computer that provides testing instrumentation and the operating system for the vehicle. Rather than stopping the truck and getting out the socket wrenches, researchers can switch fuel sources or make changes in the performance of the engine using the computer’s software.

The Electromechanical Systems Laboratory is much more than lab space; it is a collection of physical resources — components, instrumentation, equipment — that “draws human and intellectual resources to its sandbox,” said Haskew, who is an associate professor of electrical and computer engineering and director of EmSyL. It draws funding as well. From 2001 through 2005, the Lab received support from the National Science Foundation’s EPSCoR program. New partners include a private corporation, Thortek Laboratories, and the Center for Advanced Vehicle Technologies.

UA’s CARE Research & Development Laboratory uses leading edge technologies to offer products and specialized software development services in a variety of areas, particularly traffic safety intervention, electronic traffic citation and various homeland security projects, to name a few, said Dr. Allen Parrish, professor of computer science and director of CARE Research & Development Laboratory.
YOU might be a UA ENGINEER if...

- you know Coach Bryant's stats just like you know pi to the 100th decimal.
- you average the gymnastics scores before the computer finishes.
- you set your watch by Denny Chimes.
- you measure land in relation to the size of the Quad.
- you know where MIB is.
- you calculate the height, arc and length of time the ball was in the air after every free throw in Coleman Coliseum.
- you know how to cast an iron elephant.
- your closest food source for four years was the Ferg.

BUT YOU KNOW YOU ARE A UA ENGINEER WHEN . . .

- you help shape the future of UA Engineering by supporting your College financially.

There are many ways to help—become a member of the Capstone Engineering Society, or donate gifts of cash, appreciated property or equipment for labs.

Take pride in the knowledge that your contributions make UA's College of Engineering stand out in the eyes of the nation. For more information, call us at 1-800-333-8156.

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The University of Alabama celebrated its 175th anniversary on April 12, 2006, and events commemorating this significant date are planned throughout the year. The anniversary year also marks the beginning of a $500-million capital campaign titled “Our Students. Our Future.”

Dr. Chuck Karr, dean of the College of Engineering, says a successful campaign is vital to fulfilling his vision of building UA’s College of Engineering into one of the nation’s leading engineering schools.

“Our College of Engineering’s campaign goal is $15 million,” Karr said. “We have developed specific funding initiatives of $10 million for student scholarships and $5 million for faculty enhancements.”

While it may be easy to see how funding for scholarships fits the campaign theme – more scholarships offered equates to higher enrollment of the best students – Karr said he realizes the link between endowed professorships and faculty enhancements and the campaign theme might not be as obvious at first glance.
Faculty members who hold endowed professor positions are extremely productive and lead the College in obtaining funding for their research programs, he said.

“Of the 93 engineering faculty members, six hold endowed positions,” Karr said. “On average, these six generate 22 percent (or $633,000) of the College’s research funding.” Since endowed and chaired professorships help attract national experts who have proven records of improving and expanding research programs, doubling the number of such positions to 12 signals the College of Engineering’s intention to expand research, Karr said.

Additional faculty enhancements will provide support for faculty research throughout the College. “Increasing our research will also be a tremendous boost for our students. Research creates opportunities for students to get involved with faculty members, to experiment in laboratories and to discover new knowledge. These opportunities enrich their education,” he said.

Bragging Rights
Whenever an individual’s extraordinary achievement is linked to The University of Alabama, most UA graduates take pride in their connection to that individual through their alma mater. When the extraordinary individual is a UA engineering graduate, that feeling of pride is even greater, said Karen Baldwin, director of the College’s Office of External Affairs and Development. She cited the College of Engineering’s most recent celebrity alumnus, astronaut Jim Kelly, as a clear example of
this phenomenon.

“When Col. Kelly piloted the Space Shuttle Discovery in July, many UA engineers watched the launch and tracked the progress of the mission with special interest. Alumni and friends of the College of Engineering were proud to claim Kelly as a fellow graduate,” Baldwin said. “We hope all 12,000 of our alumni are equally proud to be graduates of the College of Engineering.”

The capital campaign gives alumni and friends an excellent opportunity to contribute to the success of their College in achieving top ranking nationally. “Consider how much more valuable an engineering degree becomes when a graduate can claim not only to have a diploma from a college with our rich tradition, but a degree from one of the top-ranked engineering institutions in the country,” Karr said. “Making a contribution to the creation of this future is one way to ensure that our bragging rights are merited.”

Our Students. Our Future.

The College has set goals concerning its students, its faculty and its future as a world-class organization. None of this comes without commitment to significant investment. Supporters who have contributed so generously before can take the opportunity presented by the capital campaign to increase existing endowments or create new ones – and those who have not given before are urged to join fellow alumni and friends in supporting the College today, Karr said. “The College needs all its alumni to help underwrite this ambitious endeavor – for our students and our future.”
Help keep us
The South’s
best
Engineering School
Join the Capstone Engineering Society today!

why join CES?

- Increase the prestige and value of your engineering or computer science degree.
- Help us achieve higher rankings through increased alumni participation.
- Provide much-needed financial support for our students and the College.
- Stay in touch with friends. Receive updates and information about the College.
- Receive the Capstone Engineer.
- Receive invitations to the homecoming football pre-game event.

Call Angelia Knight at 1-800-333-8156, e-mail aknight@coe.eng.ua.edu, or visit the website at www.eng.ua.edu.
Tuscaloosans Endow Memorial Scholarship

The parents of Dayton Robinson III honored the memory of their son by endowing a scholarship in his name to be awarded to students interested in industrial safety. Dayton Robinson III (pictured left) died as the result of an industrial accident. Residents of Tuscaloosa, Ala., Dayton and Helen Robinson Jr. wanted to see the College and meet with members of the faculty who teach industrial safety. The Robinsons were honored at an Oct. 27 luncheon held at the College.

The Boeing Co. Funds Three Scholarships

Dean Chuck Karr (second from right) accepts a check from Daniel E. Beggs, senior accounting manager with Boeing. Also present at the September presentation were John A. Caddell* (far left), attorney with Harris, Caddell & Shanks PC, and Tina Branch (second from left) from Boeing, representing community and education relations. The gift funds two engineering scholarships and one multicultural engineering scholarship.

Jerry F. Wilson Jr. Family Support Fund Endowed

Dean Chuck Karr (far right) accepts a check from Jerry F. Wilson Jr. (center). With them is Kenneth J. Fridley, head of the Department of Civil, Construction, & Environmental Engineering. Judith F. Wilson, of Hamilton, Ala., and Jerry F. Wilson Jr. of Birmingham, Ala., have made a generous pledge in support of the College’s civil, construction and environmental engineering program. Mother and son want part of the endowment to be used for undergraduate scholarships and for graduate research fellowships in housing and construction.

College Receives Scholarship Funds From Chevron

Despite the impact of Hurricane Katrina on Chevron refineries, company representatives met with Dr. Kevin Whitaker (seated left), associate dean for academic programs, to present a check to be used for scholarships in the mechanical engineering and chemical and biological engineering departments. Brian Campbell (seated right), routine maintenance team leader, and Ashley Holland (center), process engineer, presented the annual scholarship check.
We appreciate our recent partners in UA's College of Engineering family for their support of our students:

- 3M Co. for continuing support of the 3M Co. Scholarship Fund
- Boeing Co. for continuing support of the Boeing Co. Scholarship Fund and multicultural scholarships
- Chevron for continuing support of mechanical and chemical engineering scholarships
- Mr. and Mrs. L. Earl Crittenden for continuing support of the Elna Russell Crittenden and Earl Crittenden Endowed Engineering Scholarship
- Eastman Chemical Co. for continuing support of cooperative education and chemical engineering scholarships
- Mr. Edward L. Englebert and Dr. Betty B. Englebert for continuing support of the Edward L. and Betty B. Englebert Endowed Chemical Engineering Scholarship
- Mr. and Mrs. Ernest Adams Fite for continuing support of the Ernest A. and Carol S. Fite Endowed Scholarship
- Mrs. Mildred Hire Fleming for continuing support of the James M. Hire Jr. and Mildred Ray Hire Design Clinic Laboratory Endowed Support Fund
- Lane, Bishop, York, Delahay Inc. for continuing support of the LBYD Inc. Civil and Structural Engineering Endowed Scholarship
- Mr. and Mrs. Rick MacKay for continuing support of the Rick and Barrett Brock MacKay Chemical Engineering Scholarship
- McAbee Foundation for continuing support of the McAbee Foundation Scholarship
- NASA/Marshall Space Flight Center for equipment given to metallurgical and materials engineering
- Mr. and Mrs. Terry L. Neeley for establishing the Terry L. and Eva C. Neeley Endowed Engineering Scholarship
- Mr. M.A. Oztekin for establishing the Oztekin Family Endowed Scholarship
- Ms. Jacqueline D. Pirkle for continuing support of chemical engineering
- Primavera Systems Inc. for software given in support of civil, construction, & environmental engineering
- Mr. Charles M. Rampacek and Mr. George Rampacek for establishing the Carl Rampacek Endowed Engineering Scholarship in honor of their father
- Mr. and Mrs. Mark A. Roberts for continuing support of the Mark A. and Chrystine B. Roberts Endowed Engineering Scholarship
- Col. and Mrs. Dayton Robinson Jr. for establishing the Dayton Robinson III Memorial Endowed Scholarship in memory of their son, Sonny
- Mrs. Miriam K. Still, Dr. Sandra Still, and Mr. and Mrs. Barry N. Still for continuing support of the A. John and Miriam K. Still Endowed Engineering Scholarship
- Streamline Automation LLC for support of mechanical engineering
- Tektronix Inc. for equipment donated to mechanical engineering
- United States Steel Corp. for support of the Mechanical Engineering Advisory Board Corporate Scholarship
- Volkert & Associates Inc. for continuing support of the Volkert & Associates Inc. Endowed Engineering Scholarship
- Dr. and Mrs. James V. Walters for support of the Donald H. McLean Endowed Engineering Scholarship
- Dr. and Mrs. Stephen L. Weinrib for support of the Dr. James V. Walters Endowed Civil and Environmental Engineering Scholarship
New Jordan Chair Named

The University of Alabama College of Engineering recently named Dr. Samit Roy as the William D. Jordan Endowed Chair in Engineering.

Roy works primarily in computational solid mechanics with an emphasis in composite materials. He has been working in the development of analytical and numerical models of various solid structural systems for almost 20 years. As the Jordan Chair, Roy will provide leadership in the solid mechanics group and expand the research areas, particularly in composite materials.

The donors who established the endowment are Thomas L. and Carolyn L. Patterson of Birmingham, Ala. Their contribution is in honor of Professor Emeritus William D. Jordan to support excellence in teaching, research and service.

Dr. William D. Jordan, recognized as an eminent engineer in the field of education, service, and practice, retired from the College in 1987.

College Announces Holiday Card Winner

The College held its second holiday card design contest. Students submitted many creative entries and the College chose a whimsical illustration and design by Tiffany Monique Cooper, a senior in the Department of Computer Science. Cooper received a $150 award for her entry.

CoE Director of Public Relations Wins Medallion Award

Mary Wymer, director of public relations for the College of Engineering, recently received a Medallion Award for Special Publications from the Public Relations Council of Alabama for her work on the Dean Karr Announcement Card.

ChBE Professor Appointed Associate Dean

Dr. John Wiest, professor of chemical and biological engineering, has been named associate dean for research and graduate studies at the University of Alabama College of Engineering.

“I believe Dr. Wiest’s notable experience in working on multi-disciplinary teams, his long-term involvement with the University’s graduate school, and his understanding of national funding agencies will be extremely valuable in this position,” said Dr. Chuck Karr, dean of UA’s College of Engineering.

As associate dean for research and graduate studies, Wiest will be responsible for working with research funding agencies, assisting engineering faculty with research proposals and budgets and coordinating the engineering graduate programs. Wiest’s engineering research deals with transport phenomena in polymeric and structurally complex systems with emphasis on molecular theories. He is an interdisciplinary researcher with ongoing projects through UA’s Center for Materials for Information Technology (MINT) and the Alabama DOE/EPSCoR program.

Wiest has actively worked to enhance the quality of education offered at the Capstone by serving on numerous committees, from being the College’s representative on the University’s Graduate Council to working on the MINT executive committee.
AEM Professor Named UA Alumni Association 2005 Teaching Award Winner

Dr. Stanley E. Jones, Cudworth Professor in Aerospace Engineering and Mechanics, recently received an Outstanding Commitment to Teaching Award, the Capstone’s highest honor for excellence in teaching.

Dr. Stanley E. Jones began his teaching career as a high school mathematics instructor. After receiving a doctorate in computer science from the University of Delaware, he joined the faculty at the University of Kentucky. Jones came to UA in 1987, was named University Research Professor in 1990 and named Cudworth Professor in Aerospace Engineering and Mechanics in 2001. He received the Charles Henry Radcliff Award for Outstanding Undergraduate Teaching in Engineering Science and Mechanics in 2002 and Outstanding Professor in the College of Distance Education Award in 2004.

Jones has authored or coauthored more than 130 research papers. During the past 25 years he has concentrated on high strain-rate constitutive modeling, high-rate testing of materials and penetration mechanics. This work has resulted in the construction of the Impact and Penetration Mechanics Laboratory. In this facility, students have designed experiments, reduced data and written papers related to terminal ballistics.

“He is an outstanding teacher both inside and outside of class. Dr. Jones understands how to utilize undergraduate students in research so that the student makes a meaningful contribution to the project while gaining significant knowledge of the problem being researched,” said a former student.

ME Professor Named Director of Engineering Honors

Dr. Bob Taylor, professor of mechanical engineering, was recently selected to serve as director of engineering honors. In this position, Taylor will recruit the best and the brightest high school students to the College, and nominate top students for national awards. Taylor will also promote and coordinate honors programs within the College and in conjunction with UA’s Honors College as well as identify and help develop new opportunities for honors students both in and out of the classroom.

In announcing the new part-time position, Dr. Kevin Whitaker, associate dean for academic programs, said, “I am excited about the opportunities we have in the College of Engineering to recruit, nurture, and innovatively educate our honors students. Bob’s experience and expertise will be a tremendous asset to us in these efforts.”

Engineers Without Borders Student Chapter Established

A new college-wide student organization called Engineering Students Without Borders is being formed at The University of Alabama by several engineering students and advisors Drs. Pauline and Philip Johnson. The student organization, which is a chapter of Engineers Without Borders–USA, will partner with disadvantaged communities around the world to design and implement engineering projects to improve the quality of life in these communities.
CoE Offers New Construction Engineering Minor

The College of Engineering recently announced it will offer a new construction engineering minor effective immediately. Engineering students will be required to complete 21 hours of construction engineering coursework, including an approved construction internship or a co-op providing on-the-job experience, prior to graduation.

“Construction engineering is a growing market in which many of our civil engineering students pursue employment, and we’re excited to now offer a concentrated minor to enhance their civil engineering degrees,” said Dr. Ken Fridley, professor and head of civil, construction, & environmental engineering. “We expect engineering students from other related disciplines, including mechanical and industrial engineering, to enroll in the new minor as well.”

The College is moving forward with the approval process for a major in construction engineering and hopes to be able to offer it in fall 2006. Currently only seven institutions in the country offer an accredited B.S. degree in construction engineering.

Retirements

Dr. Doru Stefanescu

Dr. Doru M. Stefanescu, Cudworth Professor of Metallurgical and Materials Engineering and Director of the Solidification Laboratory, retired in August after serving the College for 25 years.

Born and educated in Romania, Stefanescu came to the University in 1980. He has published 340 scientific and technical publications including 28 invited papers and 29 books and chapters in books. Dr. Ramana Reddy said that “Dr. Stefanescu has been a positive influence and great inspiration to countless engineers, their sons, and daughters, by his dedication to and excellence in engineering education.” Stefanescu has been recognized for his excellence in service and teaching with numerous awards including UA’s Burlington Northern Foundation Faculty Achievement Award, UA’s Burnum Distinguished Faculty Award, UA’s Blackmon Moody Outstanding Professor Award, the American Foundry Society Director’s and Foundry Educational Foundation Award, as well as several NASA certificates of recognition for the creative development of a technical innovation, and best paper awards at the American Foundry Society national conventions.

Linda Dunn

Linda Dunn, executive secretary in the Dean’s Office, retired in September from the College. Dunn began her service at the University in 1991 and moved to the Dean’s Office in 1992. She received the McKinley Award in October 2004 and her nominator said that “She is one of those special people who make a major difference in the College of Engineering, as well as The University of Alabama.”

Rea Kelly

Rea Kelley, office associate II, in the chemical and biological engineering department, retired for the second time from the University in December. Head of the department, Dr. Gary April, said that Kelley will be missed by everyone, but most especially by the students, whose requests she not only filled, but often anticipated.
Col. James Kelly, who earned his master of science in aerospace engineering from The University of Alabama in 1996, delivered a presentation about the recent Space Shuttle Discovery Return to Flight mission on Nov. 10 to the University community and the public.

Kelly served as pilot on STS-114. During the Return to Flight mission, the crew tested and evaluated new procedures for flight safety, shuttle inspection and repair techniques. Discovery’s mission, the 114th flight of a space shuttle, also included carrying a multi-purpose logistics module, a replacement control moment gyroscope and the orbiter boom sensor system, which helped the astronauts inspect the shuttle’s thermal tiles and panels.

Kelly, UA’s first astronaut, earned his master’s degree through UA’s video-based distance learning program QUEST, Quality University Extended Site Telecourses. His first trip to the campus in 1996 was for a special graduation ceremony where he was awarded his degree.

This was the second space mission for the U.S. Air Force officer. Kelly was also the pilot on STS-102 in March 2001 and has logged more than 643 hours in space. A former military test pilot, Kelly has logged more than 3,800 flight hours in over 35 different aircraft. More than 2,400 people applied for NASA’s 1996 astronaut class, and Kelly was one of 44 members and one of only 10 pilots selected.

Dean Chuck Karr met with more than 30 UA engineering alumni at Vulcan Park on Sept. 14. Dean Karr revealed his vision for the College of Engineering and shared his goals for growing enrollment, increasing faculty numbers and expanding scope of research.
2005 Homecoming Tailgate Party a Success

More than 300 people enjoyed the CES tailgate party on the Quad before the game on Oct. 29. Engineering alumni and friends savored catfish and barbecue provided by Bottomfeeders while talking about old times and anticipating victory over the Aggies of Utah State.

3M Plant Site of Huntsville/Decatur Alumni Event

More than 50 UA Engineering alumni and friends met on Nov. 3 at the 3M plant in Decatur for a plant tour and lunch. Mr. David Courington, 3M operations manager and Capstone Engineering Society board member, shared information about the history of the plant and the materials manufactured at the Decatur location. This popular event ended with a barbecue lunch and door prizes.

SITE 2006 Dates Set

Eighty rising high school juniors and seniors will have the opportunity this summer to attend a weeklong residential program designed specifically for students who are interested in science, mathematics and engineering. UA’s Student Introduction to Engineering (SITE) incorporates mini-courses taught by faculty, teaming and communication exercises, a plant tour, design competition, and panel discussions with professional engineers, engineering students and University staff. There are two sessions scheduled: July 9-11 and July 16-21.

For detailed information about SITE or to receive an application, contact Miranda Carlisle by phone at (205) 348-4267 or e-mail at mcarlisle@eng.ua.edu or Bethany Forrest at (205) 348-2547 and bforrest@eng.ua.edu.
Colgan Hobson Bryan Sr.

Colgan Hobson Bryan Sr. died Jan. 4, 2006. Bryan came to the Capstone in 1942 at the request of President George Denny to instruct American, French and English pilots in navigation, aerodynamics, aircraft mechanics and other subjects during World War II. He served as head of the Department of Aerospace Engineering and Mechanics from 1952 to 1968. Bryan retired from full-time teaching in 1980 but continued to teach part time in the department and the University’s external degree program until August 2005.

Bryan graduated from the University of South Carolina in 1932 with a bachelor’s degree in chemical engineering. He earned masters’ degrees in physics education and aeronautical engineering from Duke and Georgia Tech, respectively. His honors for teaching excellence are many, and honors by his peers include being named the 1986 Engineer of the Year by the National Society of Engineers. In 2002, Bryan was named a Distinguished Engineering Fellow by the College.

Donations in honor of Professor Bryan may be made to the Colgan H. Bryan Aerospace Engineering Scholarship, The University of Alabama, Box 870200, Tuscaloosa, AL 35487-0200.

James L. Byers

James L. Byers died June 19, 2005. He received his bachelor’s degree and master’s degree in mechanical engineering in 1962 and 1963, respectively. Byers was a retired senior research engineer for the U.S. government. He and his wife, Kathryn, have endowed a scholarship in mechanical engineering.

Larry Godden

Larry Godden died Oct. 15, 2005. He recently retired from the University with more than 21 years of service to the College of Engineering. In his position as electronics technician senior, Godden provided electronics and computer systems support.

Glenn R. Grimes

Glenn R. Grimes died Aug. 29, 2005. A 1962 graduate of the University, Grimes worked as an engineer at Bell Helicopter for 37 years.
Roy William Killingsworth

Roy William Killingsworth died Aug. 12, 2005. Killingsworth graduated from the Capstone in 1948 with a degree in civil engineering. He then began his long career at The University of Alabama as a graduate assistant pursuing his master’s degree. Killingsworth was named assistant to the dean of engineering in 1952. He became assistant dean of the College of Engineering in 1956. In 1963, Killingsworth became a full professor, and he was promoted to associate dean in 1967. He was named director of physical planning and facilities for UA in 1970. Killingsworth retired as professor emeritus of civil engineering, and he served as a consulting engineer and civil engineering professor until 1990.

R. Wayne Masters

R. Wayne Masters died Feb. 3, 2005. Masters graduated from the Capstone in 1938 with a degree in electrical engineering. In 1941, he joined RCA in New Jersey as a senior advanced development engineer. From 1950 to 1952, he was chief consultant to RCA for the design, specification, development and installation of the Empire State Building Multiple TV Transmitting Antenna System. Masters was named a Distinguished Engineering Fellow in 1988.

Joseph Burton Moore


Listed in Who’s Who of Engineering, Moore made many important contributions to the aerospace field. He received the George Mead Gold Medal for Engineering Achievement in 1972, and was made a member of the National Academy of Engineering in 1987. Moore was the director of engineering for Pratt and Whitney Aircraft and the holder of six patents.

Moore’s family requests that donations in his memory be made to the College of Engineering, The University of Alabama, Box 870200, Tuscaloosa, AL 35487-0200.

Carl Rampacek

Carl Rampacek died Nov. 18, 2005. He earned bachelor’s and master’s degrees in chemistry and a master’s degree in metallurgy. In 1941, he joined the U.S. Bureau of Mines with assignments in Alabama and Arizona. At the Bureau he served as director of the Metallurgy Research Center in Tuscaloosa, Ala., assistant director of administration in Washington, D.C. and assistant director of metallurgy.

After his retirement in 1970, Rampacek returned to Tuscaloosa. He became director of the Mineral Resources Institute of The University of Alabama in 1976; and retired from the University in 1983, but continued to provide consulting services to the Mineral Resources Institute until his permanent retirement in 1989. The holder of a number of patents in the minerals and
Rampacek authored and coauthored numerous publications in the field of metallurgy. He was often recognized for his exemplary professional accomplishments including the Distinguished Service Award, the highest honorary recognition an employee of the Department of Interior can receive, and the 1974 University of Missouri-Rolla Alumni Achievement Award.

Rampacek was married to Mary Caroline Kull for 59 years and was the father of two sons, George B. Rampacek and Charles M. Rampacek. His sons have recently established the Carl Rampacek Endowed Engineering Scholarship in honor of their father.

Clarence W. Scott

Clarence West Scott died June 28, 2005 in Hattiesburg, Miss. He received a bachelor’s degree in chemical engineering from the University in 1929. Scott worked as a chemical engineer for more than 20 years with the International Paper Co. He was a member of the American Chemical Society and was named a UA Distinguished Engineering Fellow in 1988.

The Scotts were enthusiastic supporters of the College and the Department of Chemical and Biological Engineering. They attended receptions, hosted recruiting events, and established scholarships to assist dozens of students each year.

Both of them maintained warm relationships with the “Scott Scholars” over the years.

In 1997, Scott, together with his late wife, Martha T. Scott, endowed a generous support fund for the College of Engineering, and has again shown his dedication to the College with a significant planned gift through his estate.

Preston Lucas Walker II

Preston Lucas Walker II died Nov. 11, 2005. He was an engineer for 45 years with U.S. Steel. Walker graduated in 1947 from the Capstone with a bachelor of science in mechanical engineering.
**ME Inducts Departmental Fellows**

On Oct. 28, the Department of Mechanical Engineering inducted 12 new members. From left to right, starting at the top are Pittman Owen, Dr. William Sutton, department head; Bill Kelly, Jeff Barker, Linda Blevins, Tom Hattemer, Ron Campbell, John Woods, Steve Davis, Earl Foust, George Hopson, Scott Clark and Mike Johns.

**1949**

Henry Beaird, B.S.A.E. ’49, was one of four aviators inducted into the 2005 Alabama Aviation Hall of Fame. Among his many accomplishments, Beaird was chief engineering test pilot for Lear Jet Industries where he piloted the first flights of the Lear Jet prototype.

**1950**

Raymond Wilkins, B.S.E.E. ’50, received a UA varsity letter in track and field on his 87th birthday. Wilkins’s education and high jumping career were cut short when military service forced him to leave school. When he eventually returned to the Capstone, Wilkins no longer pursued high jumping. As a freshman, his jumps had not officially counted at meets, so he had not earned a letter. On Wilkins’s behalf, Ken Babbington, his pastor at First Baptist Church in Cocoa Beach, Fla., arranged for the athletics department to award Wilkins with a letter more than 50 years after he competed at the Capstone.

**1962**

Dr. Charles D. Haynes, B.S.Min.E. ’62, professor emeritus of civil and environmental engineering, was elected chair of the Alabama Board of Licensure for Engineers and Land Surveyors for 2005-06. Also, the Coalbed Methane Association of Alabama awarded Haynes the Distinguished Service Award for his contributions to the industry.
1964

Thomas E. Doster III, B.S.I.E. ’64, received the 2005 Cornerstone Award from Alabama Construction News, a publication of the Associated Builders and Contractors of Alabama. This annual award recognizes an individual whose personal integrity, business practices, and community involvement reflect positively on the construction industry in Alabama. Doster launched Doster Construction in 1969 as a remodeling firm. Today, it is ranked as one of the nation’s leading contractors with offices in Nashville, Louisville, Mobile, Montgomery, Orlando and Tampa. Doster was inducted as one of UA’s Distinguished Engineering Fellows in 1993 and currently serves on the College of Engineering leadership board.

1971

Bruce H.S. Anderson, B.S.C.E. ’71, was recently named chief operating officer of the National Space Science and Technology Center in Huntsville, Ala. In his new role, Anderson will be a primary NSSTC liaison with NASA, educational institutions and industry.

1979

Jim Lamon, B.S.C.E. ’79, was recently named president of Shaw’s power group in the energy and chemicals division. Lamon brings 25 years of experience in the energy industry to the job. He will oversee all aspects of the company’s power group, including business development and operations management.

1980

Deborah A. Branch, B.S.C.E. ’80, was named vice president of finance for SER Solutions Inc. She will manage the overall direction and control of all financial matters in support of the company’s strategic business objectives.

1982

Charles A. Darby, B.S.E.E. ’82, was named manager for the Payload and Facility Systems Engineering and Integration Office at the NASA Marshall Space Flight Center in Huntsville, Ala. As manager, he will lead the team of engineers responsible for the development of payloads and experiments designed for operation on the International Space Station.

1984

Peter Willemoes, B.S.M.E. ’84, was recently named senior engineer, capital projects at DuPont’s DeLisle plant in Pass Christian, Miss.
1985
Brian C. Davis, B.S.C.E. ’85, was named the new division engineer for the Alabama Department of Transportation’s Third Division in September 2005. The division covers five counties, including the metropolitan Birmingham area with the state’s largest traffic volume and population.

1986
Robert M. Lightfoot, B.S.M.E. ’86, was named manager of the Space Shuttle Propulsion Office at NASA’s Marshall Space Flight Center in Huntsville, Ala. He assumes responsibility for the manufacture, assembly and operation of the primary shuttle propulsion elements: the main engines, external tank, solid rocket boosters and reusable solid rocket motors.

1990
Selina Lee, B.S.E.E. ’90, has been promoted to distribution manager for the eastern division of Alabama Power Co.

1991
Scott Moore, B.S.E.E. ’91, has been promoted to distribution manager for the southeast division of Alabama Power Co.

1994
Jennifer Turner, B.S.Ch.E. ’94, was named a 2005 Technology All-Star by Career Communication Group’s Women of Color magazine and IBM Corp. Technology All-Stars are women who have demonstrated excellence in their work places and communities.

1996
Lori Raines Eastman, B.S.Ch.E. ’96, has been promoted to the position of Six Sigma Black Belt for 3M’s Display and Graphics Division.

1999
Robert Cummings, M.S.C.E. ’99, passed the Alabama Professional Engineer’s Exam.
The Sixth Annual Capstone Engineering Society Golf Tournament is scheduled for Thursday, May 4, 2006, at the beautiful Bent Brook Golf Course between Birmingham and Tuscaloosa. Join area alumni for a fun tournament hosted by the Birmingham Chapter of CES.

The format for the tournament is a modified four-person scramble with a shotgun start. The registration fee of $125 includes green fee, cart, range balls, beverages, meals, and a tournament golf shirt. Registration starts at 11:00 a.m. and the tournament begins at 1:00 p.m.

You may participate in the following ways:

Players:
- Team level ($500)—Team of four with all registration amenities
- Individual level ($125)—Single registration

Corporate Sponsors:
- Ace level ($2,500)
- Eagle level ($1,000)
- Birdie level ($300)

Proceeds from the tournament will benefit the Capstone Engineering Society’s scholarship efforts. Our goal is to have 160 players in the 2006 CES Golf Tournament. Please help us achieve this goal. Sign up today!

If you have any questions about the tournament or sponsorship, call 1-800-333-6216 or e-mail aknight@eng.ua.edu to contact CES Director Angelia Knight for more information.
Matthew Fitzgerald's research on advanced propulsion concepts may one day allow humans to walk on far-away planets. He is just one of the best and brightest at The University of Alabama who walk the College's halls every day. His achievements are a testament to the generous scholarship support he has received. Your generosity can help our students and our future shine a little brighter.