Attracted by UT’s vision to become a Top 25 public research university, I stepped into the position of dean of the College of Arts and Sciences in January 2012. The college is the university’s largest; it has the most faculty members, teaches the most students, and provides the backbone for UT’s educational, research, and creative missions. The quest for greater national standing necessarily presents us with both great opportunities and challenges. Our faculty and staff have embraced the Top 25 vision, and the results—as you will see in this report—provide much reason for optimism about our future. I look forward to leading this great college at this juncture in UT’s history.
I arrived to find the college thriving despite the economic challenges the nation’s institutions of higher education have faced in recent years. As this report details, our faculty, staff, and students are resourceful, resilient, extraordinarily talented, and highly productive. As a complement to the hard work of our faculty and staff, the college has pursued efficiencies and maximized its use of fiscal and personnel resources to become a model of lean operation in many areas. Yet, to continue to grow and to maintain our competitive edge in hiring and retaining the best faculty and attracting and educating the best students, we will need additional resources, and we will need to be strategic in our use of new personnel and financial resources.

During the past year, the college embarked on a period of assessment leading to the development of strategic plans, not only for the college, but also for each of the departments and schools. These plans will guide our choices as we seek improvements in all aspects of our mission. The strategic plan for the college focuses on goals and metrics for assessment in five key areas—undergraduate education, graduate education, research, faculty and staff, and resources—aligned with the university’s Top 25 priorities.

The college’s annual report is organized around these five strategic priorities and is intended to provide a snapshot of our progress to date in these key areas of our operation. We invite readers to explore the pages of this report and celebrate our successes and accomplishments.

We are proud of the progress the college has made this year with the support of the state, the Board of Trustees, the university administration, the Dean’s Board of Advisors, and our many alumni, friends, and donors. With continued support and the great effort of our faculty, staff, and students, we are confident we can advance the college on all fronts.

I am happy to have put down roots in Tennessee and am fully committed to the future of the University of Tennessee and to leading the College of Arts and Sciences in UT’s journey to the Top 25.

With best regards,

Theresa M. Lee
Dean
THE COLLEGE’S ROOTS ARE DEEP IN TENNESSEE TRADITION.

Ayres Hall on the Hill
Approaching the UT campus from any direction, the eye is immediately drawn to the Hill, where Ayres Hall marks the highest point on campus. A campus icon, Ayres Hall is home to the administrative and student advising offices of the College of Arts and Sciences and houses the Department of Mathematics. Appropriately, the college’s online magazine for alumni and friends acknowledges the location with its title, Higher Ground.
The history of UT’s College of Arts and Sciences stretches back to the founding of Blount College, chartered in 1794, which aimed to broaden the intellectual capacities of students rather than to train them in a specific vocation. This aspiration remains central to today’s “liberal arts” education and is the basis for the college’s broad academic reach, which stretches across the humanities, the social sciences, the natural sciences, and the visual and performing arts.

Blount College underwent several name changes before it became the University of Tennessee in 1879. President Brown Ayres began reorganizing the university into “colleges” in the spring of 1905, but he did not use the term “college” to denote an independent, separately administered academic unit. For example, the dean of the College of Liberal Arts at that time, James D. Hoskins, oversaw all academic programs. In 1913, President Harcourt Morgan decided that administrative responsibilities needed to be divided, so Dean Hoskins was joined by deans of engineering, agriculture, law, medicine, and dentistry. This separation of responsibilities anticipated UT’s future as a comprehensive academic institution in which the College of Liberal Arts (renamed the College of Arts and Sciences in 1994) functions as the university’s academic core, providing both general education and specialization in the college’s four divisions: humanities, social sciences, natural sciences, and the visual and performing arts.

The College of Arts and Sciences today remains the gateway to knowledge for every undergraduate student who enrolls at UT. Our faculty provide students with the foundational instruction that will nurture their lifelong learning.

THE COLLEGE TODAY
The College of Arts and Sciences is the oldest, largest, most comprehensive, and most diverse of UT’s eleven colleges. The college features twenty-one academic departments and schools, seven centers and institutes, and twelve interdisciplinary programs.

More than 7,500 undergraduate students have an academic home in one of the college’s sixty-plus undergraduate majors and pre-professional programs. The college also offers more than fifty graduate programs to about 1,400 graduate students. More than 430 tenure-line faculty members and more than 170 full-time, non-tenure-line, instructional faculty members serve the college’s academic programs. In addition to their instructional role, the faculty of the college pursue vibrant programs of research, scholarship, and creative activity.

GOALS
1. Provide a diverse undergraduate student body with an excellent education.
2. Recruit well-prepared graduate students from diverse backgrounds and educate and mentor them effectively.
3. Promote, support, and reward faculty excellence in scholarship and creative activity.
4. Continue to build, support, and retain a world-class faculty and staff.
5. Increase the resource base that the college has available to accomplish its goals.
The college’s faculty members also provide UT’s entire undergraduate student body with introductory instruction in the humanities, social sciences, natural sciences, and the visual and performing arts.

As UT’s academic foundation, the college is the central driver of the university’s academic accomplishments and the largest contributor to all aspects of the university’s missions of instruction, research, and service to society. Through our exemplary contributions to these missions in both quality and quantity, we aim to help advance our university to Top 25 status.

ABOUT ARTS AND SCIENCES EDUCATION

Studies in the arts and sciences embrace the broad range of disciplines offered by the college and reflect its breadth, scope, and diversity. The disciplines of the humanities are studies of human values, capacities, and achievements, while the arts are written, visual, and performed interpretations of the physical, emotional, and psychic worlds in which we find ourselves. The social sciences explore the relationships among human beings with areas of study concentrating on individual, economic, political, and social behavior. Lastly, the natural sciences examine the structure and components of the natural world and the universe. The college’s programs emphasize not only the importance of the world around us, but also the challenge of the intellectual process, the need for communication skills, and the ability to respond to change.

While other colleges at UT have a practical focus on training for specific careers or professions, the College of Arts and Sciences emphasizes a broad, holistic education that can be channeled in many directions as students prepare for a lifetime of productive work and service to society. Our graduates are prepared to think critically, communicate effectively, separate fact from fiction, understand diverse perspectives, live and work in a global community, and arrive at solutions to complex problems—skills that are never outdated. Thus, we prepare students not only for their first job, but also for a series of jobs during their lifetime.

VALUES
Committed to the traditions of the liberal arts, the college seeks to promote the values of free and bold intellectual inquiry, vibrant and effective civic engagement, respect for diversity, and an understanding of our nation’s and the world’s rich cultural heritages.
**DEPARTMENTS OF THE COLLEGE OF ARTS AND SCIENCES**
**LISTED BY DIVISION**

**Humanities**
- Classics
- English
- History
- Modern Foreign Languages & Literatures
- Philosophy
- Religious Studies

**Natural Sciences**
- Biochemistry, Cellular & Molecular Biology
- Chemistry
- Earth & Planetary Sciences
- Ecology & Evolutionary Biology
- Mathematics
- Microbiology
- Physics & Astronomy

**Social Sciences**
- Anthropology
- Geography
- Political Science
- Psychology
- Sociology

**Visual & Performing Arts**
- Art
- Music
- Theatre

**Programs**
- College Scholars
- Interdisciplinary Programs (Africana Studies, American Studies, Asian Studies, Cinema Studies, Comparative Literature, Global Studies, Judaic Studies, Latin American Studies, Linguistics, Medieval Studies, Women’s Studies)
- Language & World Business Program

**MISSION**
The college is a diverse community of teachers, learners, and scholars from across the nation and around the world who work together to advance the frontiers of human knowledge and creative activity across a wide range of academic disciplines while serving communities beyond the campus through professional service and public engagement. The college seeks to uphold the highest standards of academic freedom and to cultivate in students the critical thinking skills, intellectual inquiry, and understanding of diverse human cultures that are necessary to become engaged global citizens. By emphasizing core values of a liberal arts education, lifelong learning, and adaptability, the college’s academic programs provide students with the intellectual foundations for a rich, fulfilled, and engaged life and career.

**VISION**
The college will attract a diverse student population and provide both an excellent liberal arts education to undergraduates and an excellent professional education to graduate students. The college will be a leader among public research universities in the humanities, social sciences, natural sciences, and creative arts by rewarding the scholarly and creative productivity of its members; by promoting increased extramural support for research, scholarship, and creative activity; and by supporting outreach to the state, the nation, and the world.
We provide a core liberal arts education that fosters the development of the critical skills necessary for lifelong learning in a changing, global environment. We also give our students opportunities for research and creative activity, international and intercultural study, and engagement with communities across the world.

As part of UT’s general education curriculum, all students receive core instruction from the college in the humanities, the performing and visual arts, and the social and natural sciences. We deliver nearly three-quarters of the credit hours in UT’s general education curriculum and about one-third of the credit hours required for typical four-year degrees in business, engineering, and nursing.
As a student juggling a biochemistry major, a theatre minor, and the effects of juvenile diabetes, recent graduate Andy Rogers had an undergraduate life that was nothing short of complex. Nonetheless, he enthusiastically took it all in stride.

Now, through a one-of-a-kind independent project spanning the boundaries of art and science, music and medicine, and education and entertainment, he has found a way to use his multifaceted reality to inspire others to not let obstacles—even disease—stand in the way of realizing a dream.

Having a father who is a doctor and a mother who is a singer and songwriter, Rogers naturally took an interest in medicine and musical theatre and chose to pursue both in college, becoming the quintessential arts and sciences student. In the fall of 2010, Rogers decided to pursue an independent study unlike any that his research mentor and advisor Beth Mullin had ever seen.

After several months of lab research, songwriting, and composing, Rogers had created a musical reflection of his research paper on juvenile diabetes, titled Andy and the Beats. He wanted the musical not only to educate the public on the daily struggle, lifelong fight, and long-term consequences of a serious disease, but also to give a sense of shared community and hope to juvenile diabetics.

“I wanted to give families an opportunity to share laughter, pain, struggle, triumph, and hope—all in one musical that has the ultimate potential to spark the community to advocate for intense research for the juvenile diabetic cure,” says Rogers.

Rogers starred in the four performances of his musical production held at the Clarence Brown Lab Theatre in February 2011. The musical features a seemingly healthy 12-year-old boy named Andy (played by Rogers) who learns he has diabetes after his pancreas falls prey to a virus. Andy’s future is manageable, but he feels trapped inside his own body and all alone. He has almost given up all hope when he discovers other children who are in the fight, too (played by children who actually live with diabetes), and together they decide to move forward, take one step at a time, and beat the “dia’BEATS.”

In addition to educating the public about the realities of juvenile diabetes, the musical was also a way to advocate for the Walk to Cure Diabetes fundraiser, and a total of $1,800 in donations was given to the Juvenile Diabetic Research Foundation.

“Before conducting this independent study, I thought that art and science were at odds because art transcends logic and reason, while science embraces logic and reason,” says Rogers. “But I discovered that at the crux of their overlap, they actually complement each other rather than clash. And through the combination of the two, people are more likely to listen to what you have to say.”
JENNY BLED SOE: RENAISSANCE WOMAN
If it were not for Jenny Bledsoe’s visionary leadership and passion for medieval history, the Marco Institute for Medieval and Renaissance Studies might not have hosted its first undergraduate conference, “Mysticism, Heresy, and Witchcraft” in the spring of 2011.

The conference was a huge success, as thirty undergraduate speakers—eight from UT and twenty-two from other universities, including Harvard, Northwestern, Ohio State, and the University of Virginia—presented their research.

A 2011 graduate from Selmer, Tennessee, Bledsoe majored in religious studies and English literature and also completed minors in Latin and history. She was also a Chancellor’s Scholar, and her honors thesis project highlighted the life of St. Margaret of Antioch in late medieval England. This project led her to conduct field research in England, France, and Italy.

Bledsoe served as editor-in-chief for The Daily Beacon, as editor-in-chief of Pursuit: The Journal of Undergraduate Research at the University of Tennessee, and as a representative on the Dean’s Student Advisory Council. She also was named a Torchbearer, the university’s highest student honor, and she accepted a graduate fellowship to Harvard University.

WILLIAM ALEXANDER CROWE: CONQUEROR OF THE KEYS
At six-foot-four, William Alexander Crowe is a fiercely talented player—of the piano, not basketball.

A Jane and Lowry Kline Music Scholar and winner of the 2009 National Piano Scholarship Competition, Crowe has received recognition as a gifted performer and an outstanding representative of the School of Music.

A senior from Shady Side, Maryland, Crowe majors in piano performance and serves as a Dean’s Student Advisory Council representative. During the summer of 2010, Crowe was sponsored to participate in the InterHarmony Music Festival in Swartzwald, Germany, where he gave several local performances.

Crowe serves as a School of Music student ambassador, meeting with prospective students, taking them on tours of the school’s facilities, and talking to them about offered programs. He represents the School of Music at various recruitment fairs and activities on campus and assists with auditions and the annual School of Music Open House—all because he hopes to encourage current and future students to pursue their passion for music and experience all the opportunities the School of Music has to offer.
SETH WALKER: AIMING TO MAKE HIS MARK

After spending two years at Pellissippi State Community College, Seth Walker came to UT to pursue a major in honors political science and a minor in economics with the ultimate goal of one day becoming a college professor. Alongside his schoolwork and participation in several academic honors societies at UT, he volunteered with the League of Women Voters of Knoxville/Knox County and worked part-time at a locally owned restaurant, all while maintaining a 4.0 GPA.


Walker’s involvement at UT didn’t end with his 2012 graduation. He has been awarded a graduate teaching assistantship for the 2012–2013 school year and plans to obtain a Master of Arts in political science. He was a recipient of the prestigious J. Wallace and Katie Dean Fellowship for first-time graduate school enrollees.

Walker hopes to continue studying the scientific approach to public policy and analysis and further polish his skill set by obtaining a PhD in political science with specialties in methodology and American government. Ultimately, he wants to pass on this knowledge to future students and create another generation of sound researchers.

DEGREES GRANTED BY UNIT, AY 2010–2011
The college attracts high-quality graduate students from diverse backgrounds with excellent prior education and relevant experience. Once accepted, these students are provided with strong curricula and effective advising and mentoring from faculty members who supervise their research progress. We offer more than fifty graduate programs to about 1,400 graduate students.

Our faculty’s commitment to enhancing graduate education has led to the development of programs that offer opportunities for minorities to pursue graduate study, as well as programs that afford special opportunities for graduate students to collaborate with scientists at Oak Ridge National Laboratory.
Andrea Meltzer, a doctoral candidate in experimental psychology, drew international attention after publishing a study demonstrating the relationship between spouses’ body weights and marital satisfaction. A large body of research indicates that both men and women prefer partners with thin bodies. However, Meltzer’s study of newlywed couples suggests that the difference between spouses’ body weights, rather than their absolute body weights, is a better predictor of sustained marital satisfaction. Meltzer’s research is significant in that it highlights the importance of adopting a dyadic (or two-fold) perspective to understand how spouses’ qualities are likely to affect established relationships.

In collaboration with one of her co-authors, James McNulty, associate professor in the Department of Psychology, Meltzer followed 169 newlywed couples for a four-year period. She conducted repeated assessments of the couples’ marital satisfaction and examined the relationship between spouses’ relative initial body mass indexes (BMIs) and the trajectory of both spouses’ marital satisfaction.

After controlling for factors such as depression, income level, education, and whether the relationship ended in divorce, Meltzer found that in marriages where the husband’s BMI was greater than the wife’s, both spouses reported higher levels of marital satisfaction over the course of the four-year study. This was true regardless of the two partners’ absolute BMI values.

“Our study shows that marital satisfaction is associated more strongly with relative differences in body weight, rather than with a spouse’s absolute level of thinness,” Meltzer says. “Women of any size can have a satisfying relationship if they have the right partner. Accordingly, educating women about these findings may help alleviate the pressures to be extremely thin that plague women today.”

Meltzer points out that a key finding of her research is that a dyadic approach to analyzing marital satisfaction can help researchers—and couples—better understand how personal characteristics such as income, level of education, or earning potential can affect a couple’s relationship. This can, in turn, provide a married couple with new insights into maintaining a mutually satisfying marriage.

Meltzer’s work was published in the July 2011 issue of the journal *Social Psychological and Personality Science*. Contributing authors include James McNulty from UT; Sarah Novak from Hofstra University; Emily Butler from the University of Arizona, Tucson; and Benjamin Karney from the University of California, Los Angeles.
GAVIN ENCK: FROM BLACK BELT TO BIOETHICS
A black belt in jiu jitsu is not all Gavin Enck, a doctoral candidate in philosophy, has to brag about.

Recently, he was awarded the Clinical Ethics Fellowship by the University of Texas MD Anderson Cancer Center in Houston. This highly competitive and prestigious fellowship offers Enck a tremendous learning and professional opportunity. The fellowship provides intense clinical and research experience in ethics to individuals with advanced degrees in related fields, which enables them to practice bioethics in a health care setting or effectively teach bioethics in an academic setting. Enck has engaged in clinical ethics work through the department and has taught ethics modules for hospital staff at East Tennessee State University’s Quillen-Dishner School of Medicine.

Following the completion of the fellowship at MD Anderson, Enck will return to UT to begin writing his dissertation on the ethics of cognitive enhancement under the supervision of Jon Garthoff, assistant professor of philosophy.

‘PEER’ PROGRAM ENABLES PHD CANDIDATE TO PURSUE HIS DREAM
Because of the support Quentin Johnson has received from UT’s Program for Excellence and Equity in Research (PEER), he is one step closer to attaining his dream of one day becoming a faculty member at a public research university.

PEER seeks to grow the number of PhDs from underrepresented groups in the science, technology, engineering, and mathematics disciplines. Cynthia Peterson, professor and head of the Department of Biochemistry and Cellular and Molecular Biology, leads the PEER program at UT. The program is funded by the National Institute of General Medical Science, a unit of the National Institutes of Health.

“I know of only one other family member who has a bachelor’s degree,” says Johnson, who is pursuing a PhD in genome science and technology. “I’m trying to take this as far as I can go so that I can set the standard.”
LESLIE GROSSMAN: INSPIRED BY PATTERNS

Patterns are apparent everywhere and appear in many forms: naturally, synthetically, mathematically, psychologically, biologically, and more. They can be found in one’s surroundings, behaviors, religion, and daily routines. Patterns permeate every aspect of life.

That’s why Leslie Grossman believes it is important to observe and catalog the roles they play in defining one’s individuality. Her artwork revolves around the study of patterns and their impact on characterization.

Grossman is working on her Master of Fine Arts degree in the School of Art’s printmaking program, which was recently ranked third in the nation by U.S. News and World Report. She came to Knoxville after receiving her bachelor’s degree in printmaking from Western Michigan University. She is a graduate teaching associate and director of Gallery 1010, a UT student gallery.

JENNIFER RIBBECK: UT–ORNL SCHOLAR OF MATHEMATICS

Shortly after graduating from Louisiana State University, Jennifer Ribbeck headed to UT to pursue a PhD in mathematics. Ribbeck is among the first class of students selected to participate in the UT–Oak Ridge National Laboratory (ORNL) Distinguished Graduate Fellowship Program, made possible by the newly founded Bredesen Center for Interdisciplinary Research and Graduate Education.

The Bredesen Center combines the resources of UT and ORNL to provide opportunities for graduate students in energy-related science and engineering to foster scholarship and innovation, to advance multidisciplinary research, and to accelerate development and deployment of new technologies.

Ribbeck is working with Steven Wise, assistant professor of mathematics, and Katherine Evans, a scientist with the Computational Earth Sciences Group at ORNL, on studies of numerical methods for understanding nonlinear fluid flow and related problems in materials sciences. Ribbeck is already making progress in her research and was co-author of “A Discrete Model for Resonance Near Embedded Bound States,” an article which appeared in the Institute of Electrical and Electronic Engineers’ Photonics Journal.

DEGREES GRANTED BY UNIT, AY 2010–2011

The departments of Classics and Religious Studies do not have graduate programs.

<table>
<thead>
<tr>
<th>Department</th>
<th>Number</th>
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<tbody>
<tr>
<td>Anthropology</td>
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The total number of graduate degrees granted is 279.
The college’s faculty and students contribute every day to UT’s research efforts, both in subject areas that have the potential to attract substantial external grant funding and in subject areas where substantial external funding is uncommon or nonexistent.

Research grant awards received by college faculty totaled $41.3 million in FY 2011 (a 7.4 percent increase over FY 2010). Despite the loss of federal stimulus funding and continuing reductions in funding of federal research agencies, the number of research grants awarded to faculty in the college has increased each year from 2009 to 2011. The college continues to place budget priority on factors that support research success, such as graduate student recruitment and funds for research-related travel for faculty.
The number of deaths attributable to Alzheimer’s disease, Parkinson’s disease, and other neurodegenerative disorders shows no signs of slowing, and health experts expect the problem to grow as the population of the world continues to age. Jeremy Smith, Governor’s Chair for molecular biophysics, believes one key area of research on these diseases centers on misfolded proteins and their role in the formation of harmful brain structures called plaques.

Smith specializes in interdisciplinary work in computational biology, biophysics, and chemistry. Recently, Smith and two Italian collaborators examined the mutant protein for Gerstmann-Sträussler-Scheinker (GSS) syndrome, a rare but fatal neurodegenerative disorder that usually develops in a person’s 50s. Symptoms include loss of memory, difficulty speaking, and unsteadiness and lead to progressive dementia and then death within a few months or years. There is presently no cure or treatment.

Using high-performance computer simulations of normal and GSS mutant proteins, Smith and his colleagues found how the protein’s misfolded shape can foster the formation of amyloid plaque.

Though GSS is relatively rare, understanding the link between plaque formation and protein structure can possibly help researchers develop treatments for other neurodegenerative diseases believed to be triggered by protein misfolding.

“We think that a similar line of investigation should prove beneficial in understanding the origins of other amyloid diseases, such as Alzheimer’s, Parkinson’s, and rheumatoid arthritis,” Smith says.

“Once the origin is understood at molecular detail, strategies to rationally prevent and cure a disease can be conceived.”

The disappearing tundra and rainforests affect more than just the plant and animal life native to those regions and the surrounding areas. Their loss could mean a massive increase in carbon dioxide levels for
Every year, developing countries lose hundreds of thousands of vaccination doses due to inadequate storage conditions. Finding a way to inexpensively preserve vaccines, medicines, and other treatments for use in resource-limited settings is an important challenge in medicine today, according to Alexei Sokolov, Governor’s Chair for polymer science.

Sokolov’s research involves studying molecular motion in polymers. Recently, his work has focused on glass transitions in biological systems. While simply freezing organic material like cells or tissues may extend their lives by slowing down the molecular motion within them—and thus slowing the rate of decomposition—this causes the water within the material to crystallize, which can lead to tissue damage. In addition, even frozen materials do not stay intact very long, and proper freezing can be costly, particularly in hotter, poorer areas.

But Sokolov says there are now alternative preservation methods that involve glass-forming liquids, which do not crystallize and thus do not damage the material like simple freezing would.

“We’re going to be doing more on climate change and the effects that might have in terms of carbon cycling, stressors, water, and temperature,” he says. “Will it increase the number of pathogens in general? Increase or decrease the home range for different organisms? We’ll take a systems biology approach and look at what affects the environment from the molecular level to the global level.”

Two key areas of Hazen’s focus will be the tundra and the rainforest, both of which are major carbon sinks for the earth, in that they absorb large levels of carbon dioxide. However, research has found that climate change has hampered—and even occasionally reversed—this absorption by depleting the permafrost and trees that ingest and store carbon dioxide.

Hazen says that identifying conditions that cause ecological stressors will help scientists figure out ways to minimize their harmful effects, possibly by manipulating the surrounding environment to create more favorable conditions.

ALEXEI SOKOLOV AND VACCINE PRESERVATION

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“We are trying now to develop similar types of technology for vaccines and cells,” Sokolov says. “If you can do that for people in places like Africa, where it is hard to keep or transport vaccines, it will be very beneficial.”

Eventually, Sokolov hopes advances in his field reach the point that vaccines, tissues, and even organs will be preserved for far longer periods of time, giving millions of people better access to life-saving treatments.
Some of the most innovative tools in environmental remediation have, in fact, been around for eons, quietly cleaning up our messes more efficiently than we ever could.

Microbes—single-cell organisms found throughout the ecosystem—have been degrading naturally occurring gases and compounds that are toxic to humans and other animals for millions of years, and Frank Loeffler, Governor’s Chair for microbiology and civil and environmental engineering, is currently examining how these microorganisms will help curb the ever-growing problem of manmade pollution.

Loeffler’s research focuses on the role of microbes in the degradation of toxic materials, such as chlorinated solvents or heavy metals. Certain microbes are able to use organic toxic materials as a source of energy, much like humans use oxygen. In this metabolic process, the dangerous material is broken down by microbes and transformed into harmless compounds.

“Over the last ten or twenty years, it became very apparent that nature produces a large amount of chlorinated chemicals and halogenated compounds in general,” Loeffler says. “Microbes have been degrading these materials for billions of years; we just hadn’t noticed. Now, we’re challenging microbes with much higher concentrations of these chemicals—and maybe with compounds they’ve never seen before—and we’re taking advantage of them for bioremediation.”

Loeffler is also looking at how microbes can be transferred to contaminated environments, as well as ways environmental elements can be manipulated to stimulate microbial function. He stops short of advocating the creation of artificial microbes in the laboratory.

“For now, the idea of scientists creating microbes that will be able to quickly detoxify—for example—a large oil spill is a fairy tale,” Loeffler says. “Nature is doing a pretty good job, but we have to understand Mother Nature better so that we can take full advantage of what she has to offer for bioremediation.”
Center for the Study of Social Justice promotes scholarly cooperation for worldwide benefit

Some problems are just too big for one or two people to solve. Our world faces a number of pressing social problems, and our Center for the Study of Social Justice brings together scholars from all parts of the university to address some of those problems.

The center promotes interdisciplinary research in areas that inform scholars and policy makers about what is fair, equitable, and beneficial for people. The center offers a forum for faculty and graduate students to share their expertise, collaborate on research projects, and disseminate their work to a broader audience.

The center fosters research and teaching related to social justice beyond the boundaries of individual departments and colleges at UT. More than sixty-five UT faculty members from twenty-two departments in seven colleges are affiliated with the center as research fellows.

Fellows recognize the importance of bridging disciplinary boundaries to generate science-based solutions to everyday problems. To address important social problems facing our world, the center is divided into sixteen divisions:

- Community informatics
- Crime and justice
- Critical theories of social justice
- Culture, ecology, and literacy
- Deliberative democracy
- Disasters
- Economic justice, basic income, and welfare
- Environmental justice
- Globalization
- Health disparities
- Human rights
- Indigenous peoples’ rights (and the modern world system)
- Law and culture
- Migration and refugee studies
- Racial and ethnic injustice
- Sex, gender, and justice
## FY11 Externally Funded Research Expenditures by Division

### Research Expenditures by Division

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<tr>
<th>Year</th>
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<th>Natural Sciences</th>
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*Visual and Performing Arts, Educational Advancement Program, Governors School & Special Programs, Urban & Regional Planning, Other

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## Centers & Institutes

### College of Arts and Sciences Centers and Institutes

- Center for the Study of Social Justice
- Center for the Study of War and Society
- Forensic Anthropology Center
- Institute for Environmental Modeling
- Marco Institute for Medieval and Renaissance Studies
- Planetary Geosciences Institute
- University of Tennessee Humanities Center
The college is home to an outstanding group of talented faculty and staff. For example, National Endowment for the Humanities fellowships awarded to our faculty have placed UT in the top ten of all institutions—public or private—over the last five years. In addition to their achievements in teaching and scholarly productivity, our faculty play a large role in outreach, public service, and leadership in professional organizations.

In courses with topics ranging from evolutionary biology to the scholarly study of Islam, college faculty teach students that politically sensitive topics are still legitimate areas of inquiry and that rigorous, evidence-based scholarship is at the core of the university’s academic mission.

Our 220 dedicated staff make significant contributions to our instructional, research, and public service missions in a variety of ways that support our students and enable our faculty and administrators to accomplish their goals.
In July 1099, several thousand European warriors climbed over Jerusalem’s walls, sacked the city, and massacred its Muslim defenders. As the fighting raged on, many of the soldiers broke away from the mayhem and crowds and walked penitently barefoot through the ancient city’s blood-stained streets, aiming to pray before Christ’s tomb in the Church of the Holy Sepulcher.

For the last ten years, John D. and Catherine T. MacArthur Fellow Jay Rubenstein, associate professor of history and member of UT’s Marco Institute for Medieval and Renaissance Studies, has been working to reconstruct the military and imaginative worlds that surrounded these transformative and terrifying events. In 2011 his research reached important milestones with the publication of two books.

First, he completed a new narrative history of the First Crusade titled *Armies of Heaven: The First Crusade and the Quest for Apocalypse* (Basic Books, 2011). Aimed at both popular and scholarly audiences, *Armies of Heaven* retells the events of the First Crusade through the prism of medieval apocalyptic theory.

“When I began this project, I intended to write two or three articles at the most, mainly with the goal of showing how little impact apocalyptic thought had on the First Crusade,” Rubenstein says. “The evidence forced me to change my mind.”

Working mainly with twelfth-century Latin chronicles—but also with letters, sermons, biblical commentaries, travel logs, and one encyclopedia—Rubenstein was surprised to see how often medieval commentators used prophetic ideas and language to explain the conquest of Jerusalem. Manuscript archives also shaped his conclusions.

“It was remarkable how often medieval scribes would attach prophecies about Antichrist and Armageddon to crusade narratives,” he says. “Warriors fought not just to save their own souls, but also to fulfill God’s plans for salvation history.”

At the same time he was working on *Armies of Heaven*, Rubenstein was collaborating with Joseph McAlhany, a professor of classics at Carthage College, on a translation of two books by the twelfth-century monk Guibert of Nogent. Guibert (c. 1060–c. 1125), who was the subject of Rubenstein’s first book, *Guibert of Nogent: Portrait of a Medieval Mind* (Routledge, 2002), wrote the first fully realized autobiography in the medieval world. Guibert also famously wrote a lengthy and extremely unusual treatise criticizing abuses associated with the veneration of saints’ bones. McAlhany and Rubenstein together translated both of these works, now published by Penguin Classics and titled *Monodies and On the Relics of Saints: The Autobiography and a Manifesto of a French Monk from the Time of the Crusades*.

Preliminary reaction to both books has been positive, garnering praise from Crusade historians and literary critics. Rubenstein is beginning work on a textbook for Bedford-St. Martin’s on the First Crusade and is putting together a scholarly companion to *Armies of Heaven*. 
CATHY LEACH:
HERALDING THE TRUMPET

There are few occasions when Cathy Leach, a professor in the School of Music, is not playing, performing or teaching trumpet.

A popular soloist and clinician, Leach has exhibited her talent locally in the thirty-one years she has performed as principal trumpet with the Knoxville Symphony Orchestra and the UT Brasswind Quintet. In addition, she has performed recitals and solos at venues across the nation.

She is a member of Monarch Brass, with whom she has toured and recorded and a member of Stiletto, an all-female brass quintet. As Director of the UT Trumpet Ensemble, Leach has conducted the group at International Trumpet Guild (ITG) Conferences in the U.S. and abroad. She has served ten years on the Board of Directors for ITG and is president and founder of the “Smokey” Mountain Trumpet Guild, an affiliate chapter of the ITG that aims to promote communication among trumpet players in East Tennessee.

Equal to her talent for performing is her talent for teaching. Leach has been awarded a Chancellor’s Citation for Excellence in Teaching, the Tennessee Governor’s School Award for outstanding Teachers, and the 2007 James R. and Nell W. Cunningham Outstanding Teaching Award.

HAP MCSWEEN:
PIONEERING MARS RESEARCH

Unlike many geologists, Harry “Hap” McSween is drawn to rocks falling from the heavens rather than those already underfoot.

A Chancellor’s Professor and Distinguished Professor of Earth and Planetary Sciences, McSween has, for nearly forty years, studied meteorites and their implications for understanding how the solar system formed and evolved.

In 1997, McSween began participating in NASA spacecraft missions as a member of the science team for the Mars Pathfinder rover and later for the Mars Global Surveyor orbiter. In 1999, he led a team of researchers who discovered geologic evidence on a meteorite that water existed deep in Mars’s crust. Now, he is co-investigator for the Mars
Odyssey spacecraft mission, which is mapping the mineralogy and geochemistry of the Martian surface from orbit; the Mars Exploration rovers, which are analyzing rocks and soils at two landing sites; and the Dawn spacecraft mission, which began orbiting asteroid Vesta in 2011 and will subsequently explore Ceres, the largest asteroid.

Recently, McSween was awarded the prestigious J. Lawrence Smith Medal by the National Academy of Sciences for his pioneering studies of the parent planets of meteorites and his work on the geological history of Mars.

**SHIH-LUNG SHAW: TRACKING HUMAN MOVEMENT AND TRANSPORTATION**

With modern information and communications technologies, it is becoming easier to track individuals and their activities. Using space and time data, scientists like Shih-Lung Shaw, professor in the Department of Geography, can uncover hidden patterns of behavior to make predictions about future actions or link people with events in the past.

Shaw specializes in the rapidly changing field of geographic information science (GIS), which analyzes geographic data and other information about human movement and transportation. By investigating when and where people travel and any patterns that emerge, he can gain a better understanding of society to develop solutions for problems like traffic congestion, the spread of infectious diseases, and homeland security.

Shaw is constantly exploring new technological developments that are affecting human activity and interaction patterns. In 2006, he was the principal investigator of a three-year National Science Foundation grant to develop a computer GIS program, which is now available online. The program’s site has been accessed by more than 150 universities and by government agencies and private companies from more than seventy-five countries and territories around the world.
Jeffrey M. Becker, a professor and head of the Department of Microbiology, has received funding from the National Institutes of Health for more than thirty years. His research focuses on the function of peptides and their receptors, membrane transport, and medical mycology.

Sally Horn, professor of geography, examines the effect of human activity and climate change on the vegetation of the Latin American tropics. She is currently investigating the long-term environmental history of rainforest, dry forest, and high montane environments in Costa Rica and the Dominican Republic. When not on campus, Horn and her graduate students are likely to be found hiking to remote areas to extract sediment samples from the bottoms of tropical lakes.

Susanne Lenhart is professor of mathematics and associate director for education, outreach, and diversity at UT’s National Institute for Mathematical and Biological Synthesis (NIMBioS). Her mathematical biology research has helped devise HIV drug treatments, recommend CPR chest pressure changes, and combat environmental problems.

Beauvais Lyons, the James R. Cox Professor of Art, is an expert in printmaking, contemporary art, art parody, mock documentation, and art censorship. He is frequently featured in national media, and his work can be seen in the Smithsonian Museum of American Art in Washington, DC.

Harry “Hap” McSween, Distinguished Professor of Earth and Planetary Sciences, has been a highly respected member of the UT faculty for more than thirty-five years. He is especially proud to be the namesake for asteroid “5223 McSween.” McSween has served twice as interim dean of the college and twice as head of the Department of Earth and Planetary Sciences. (Read more about McSween on page 24.)
Academic advisors are prime example of college’s stellar staff

Our experienced advising staff provides students with knowledge and resources that empower them to make academic planning decisions that, if followed, will lead to timely graduation. The mission of Advising Services is to guide our diverse undergraduate population in developing and implementing sound educational plans that are consistent with students’ values and academic and career goals. Advisors serve as resources for students as they navigate the policies and procedures of the university, aiding them in developing sound educational plans that align with their values and their academic and career goals.

The goal of the advisors is to encourage students to become self-directed learners and decision makers. Advising meetings help students decide what majors match their interests, goals, and strengths and promote the academic planning that is a key part of student persistence to graduation. In addition, advisors work closely with UT’s Career Services staff to identify opportunities—internships, additional classes in business, volunteer positions—that will give the college’s students an edge and equip them for a broad range of potential jobs.
The state’s contribution to the college’s budget has been steadily declining as a percentage of our total sources of funds. Thus, expanding our resource base by seeking external funds from a variety of sources has become imperative. We value the support of our donors and continue to pursue initiatives that enable us to maximize our fiscal and personnel resources.

Thankfully, private support has increased as our generous alumni and friends continue to invest in the college’s future. As our strategic plan guides our journey to the Top 25, philanthropy is increasingly critical to the college’s efforts as it enables us to leverage our funding base—thereby improving the margins of excellence we can achieve.
For almost a year, longtime UT supporter Jim Powell worked on a secret project that would honor Sandy, his bride of almost fifty-five years.

He finally told her what he had been up to: He made a $1 million gift commitment to establish the School of Music Excellence Endowment as a tribute to his wife. In recognition of his gift, UT will name the state-of-the-art, 400-seat performance venue in the new Natalie L. Haslam Music Center the Sandra G. Powell Recital Hall. The recital hall will be the “jewel” of the Haslam Music Center, scheduled for completion in 2013.

Powell then went a step further. Since the interest income generated from the new Music Excellence Endowment would take about a year to build, he made an additional commitment of $50,000 so the School of Music could use these funds—right away—to recognize outstanding faculty members. James Fellenbaum, associate professor and director of the UT Symphony Orchestra, and Andrew Skoog, associate professor of voice, became the first recipients of the Sandra G. Powell Excellence Professorships.

Even with these commitments, Powell still had more to do for the School of Music. The Powells are leading the School of Music’s Steinway Initiative, a $3.5 million project to make UT an All-Steinway School. To earn the distinction, 90 percent of the pianos at the School of Music must be Steinways. This means the school needs to purchase sixty-one Steinway pianos to either replace or add to its existing inventory. The Powells have committed $1 million toward the effort.

Being an All-Steinway School “is a big boost and it attracts the better students,” says Sandy Powell. “I look forward to seeing the quality of the students that come here.”

To thank the Powells for their longstanding support of the university, UT officials planted a “wolf eyes” Chinese dogwood at the UT Gardens, the first such honor for university donors.

Powell, who founded Johnson City-based Powell Companies, which deals in construction, says he wants students to have the same opportunity he did. In 1955, he enrolled at UT as a freshman thanks to a $200 scholarship.

“No matter what I do, I’ll never be able to pay that $200 off,” he says.

Sandy Powell didn’t attend college—a priceless opportunity that she says is at the heart of “why we absolutely love giving students a chance to go to college.”

Students who have been beneficiaries of the Powells’ generosity often ask them what they can do in return.

“We have always responded, ‘Sometime down the road, when you’re able, help one other person,’” Sandy says. “Keep the gift of giving going.”
Giving to the College

Many alumni and friends of the college gave generously this year, and the impact of their gifts—individually and collectively—made a very significant difference for increasing the college’s available resource base for meeting short- and long-term objectives. Highlights include:

• A collaborative effort among alumni of the Department of Earth and Planetary Sciences resulted in awards for the department as an effective way to retain exemplary faculty. Participating alumni (and spouses) were Micheal and Joann Maitland, William “Bill” Ross, David Jackson, Donald and Kim Dinh Sickafoose, Roger and Bev Bohanan, Wesley and Cindy Diehl, Mike and Mary Allison, Tom Cronin, and Helen Sestak.

• An estate commitment by David and Vera Mefford will establish the Center for Advanced Civilization within the College of Arts and Sciences, which will promote the study of value theory and its implications across a wide range of disciplines. The Meffords previously made a commitment to establish the Robert S. Hartman Endowment for Value Theory in the Department of Philosophy.

• A gift by William “Bill” Ross was one of the first campus-wide gifts to support the chancellor’s Faculty Support Challenge, which leverages university resources with private funds. Chancellor Jimmy G. Cheek’s office “pays” the interest income for an endowed faculty fund until the fund is fully endowed by the donor, which enables the academic unit to award support to deserving faculty members right away.

• A commitment by Keith Taylor, through the Modest Needs Foundation, established the Marco Graduate Student Promise Award and the Dr. Keith P. Taylor Undergraduate Student Essay Award in the Marco Institute for Medieval and Renaissance Studies. Previously, Taylor established the Dr. Keith P. Taylor Student Drama Enrichment Fund, which provides travel grants to students in the Department of English’s two off-campus drama programs.

The college greatly appreciates the thoughtfulness and generosity of all its donors. For information on how to make a gift, contact the college’s Office of Development at 865-974-2365, or visit www.artsci.utk.edu/development.

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COLLEGE OF ARTS & SCIENCES GIFTS & PLEDGES, FY11

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BASE BUDGET BY COMMITMENT ITEM, FY11

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TOTAL $54,996,189
NET CURRENT RESTRICTED EXPENDITURES

- Research: $25,268,920
- Instruction: $2,499,716
- Academic Support: $2,059,016
- Public Service: $2,015,424
- Scholarships/Fellowships: $961,444
- Total: $32,804,520

NET CURRENT UNRESTRICTED EXPENDITURES

- Instruction: $79,220,912
- Academic Support: $5,238,480
- Research: $4,599,053
- Public Service: $677,318
- Scholarships/Fellowships: $35,000
- Total: $89,770,763

TOTAL EXPENDITURES BY FUNCTIONAL AREA, FY11: $122,575,283

- Instruction: 88%
- Academic Support: 8%
- Research: 77%
- Public Service: 6%
- Scholarships/Fellowships: 3%
- Total: 100%
The University of Tennessee does not discriminate on the basis of race, sex, or disability in its education programs and activities pursuant to the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) of 1990. Inquiries and charges of violation concerning Title VI, Title IX, Section 504, ADA or the Age Discrimination in Employment Act (ADEA) or any of the other above referenced policies should be directed to the Office of Equity and Diversity (OED), 1840 Melrose Avenue, Knoxville, TN 37996-3560, phone (865) 974-2498 (TTY available) or 974-2440. The University of Tennessee, in its efforts to ensure a welcoming environment for all persons, does not discriminate on the basis of sexual orientation in its campus-based programs, services, and activities. Inquiries and complaints should be directed to the UT Office of Equity and Diversity, R01-1001-104-001-13. A project of the College of Arts and Sciences Office of Communication and Public Engagement with the assistance of UT Creative Communications, 91 Communications Bldg., Knoxville, TN 37996.

For more information about these stories and others, visit higherground.utk.edu