



Excellence, *named*

ANNUAL REPORT, 2017



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DEAN'S NOTE

Annual reports are a chance to tell a story in a powerful but brief way. This past year has been the most exciting I've ever seen in my 46 years at the University of Tennessee—our college has moved forward in many ways, positively affecting our faculty, staff, students, and programs.

As you read through these stories of our honors students tackling global challenges; as you read about how we're preparing cohorts of students to graduate ready to lead at the apex of business and engineering; as you read about our team of faculty who are about to change the look of aviation; as you hear about the difference one gift can make, I hope you'll agree that engineering at UT—no, the Tickle College of Engineering at UT—is making a noticeable, impactful difference.

Changes are coming as the university searches for a provost, vice chancellor for research and engagement, and dean of engineering. Yes, after some 46 years at UT, I will retire as dean next spring.

Serving in this capacity has been the most fulfilling role of my career. The people in this college are making progress in ways that former deans also dreamed of, but I've been fortunate enough to see many of those dreams realized. So much of that is because of you—our alumni, friends, and corporate partners. Thank you for the integral part you have played and will continue to play in engineering excellence at UT beyond anything we imagine today.

Wayne T. Davis
Wayne T. Davis Endowed Dean's Chair in Engineering

Dean, **Wayne Davis**, **Wayne T. Davis Endowed Dean's Chair**
Executive Director of Development, **Dorothy Bryson**
Director of Communications, **Christie Kennedy**

Designer, **Mitchell Williamson**
Writers, **Randal Brown**, **David Goddard**
Printer, **University Printing & Mail**

EXCELLENCE, NAMED

Naming colleges: When and how this phenomenon began is fuzzy*, but we in the Tickle College of Engineering can tell you it is a game changing experience. It is especially powerful when the donors give with only one restriction: make Tennessee Engineering greater.

That latitude of trust opens opportunities to make unconstrained impact. The gift was put to immediate use in three main areas:

- Undergraduate professional advisors. Expert, individualized academic plans and regular 8-to-5 office hours: just two of the benefits professional advisors provide. Our 3300+ undergraduate students have been assigned a professional advisor to guide them through the requirements of every major, helping them find time to study abroad, take a business minor, maximize co-op assignments, and participate in other career-building activities—all leading to more on-time graduations.
- We recruit graduate students from the very best universities. Thirty new Tickle Graduate Fellowships will offer stipends to supplement GRA and GTA offers, making us more attractive in the highly competitive national market.
- Excellent students expect excellent professors. We have them, but in the competitive environment of the profession, it becomes more challenging to keep those faculty members or to hire them in the first place. The Tickle Professorships are now among those endowments that give us leverage.

The college is honored to be named for John D. Tickle ('65 ISE), who is known for his integrity, business acumen, and deep love for education and all things Tennessee. In this endeavor, as in all of the Tickle's philanthropy, Ann Tickle is an equal partner and strong advocate and our enduring thanks go out to both of them.

Ours is the second college at Tennessee to be named, and the Tickle's extraordinary gift is funding a quantum leap. However—and it's a big however—we cannot stop there. To rest on this remarkable gift would soon put us behind and that must not happen. So, our quest for investments renews. More opportunities to shape the future begin now.

**The Wharton Business School (arguably one of the most recognizable) was named in 1881, the Thayer School of Engineering at Dartmouth in 1867, and the first public college of engineering to be named appears to be Cullen at the University of Houston in 1947. The trend escalated in the late 1990s as states scaled back financial support and public institutions began the search for substantial resources to replace those declining funds. Naming colleges is one way to say thank you to individuals who invest for the future.*

“There’s only one restriction: make Tennessee Engineering greater.”
— John D. Tickle



RANKINGS UPDATE

The college is progressing in many ways, including enrollment, research expenditures, programs offered, and academic support. Take a look at how we're doing.

Academics

Ranked 34th (undergraduate) and 33rd (graduate) among public colleges of engineering (*U.S. News & World Report 2018*).

Seven departments with nationally ranked programs and seven internationally known research centers.

Total Full-Time Enrollment

Undergraduate: 3,393
 Graduate, MS: 407
 Graduate, PhD: 748
 Total: 4,548

Degrees Granted

Bachelor of Science: 612
 Master of Science: 167
 Doctor of Philosophy: 111—the highest ever
 Total: 890

Undergraduate Students

88 percent undergraduate student growth since 2005.

40 percent of undergraduate students participate in internships and co-ops.

Incoming students have an average ACT of 30.6 and an average GPA of 4.1.

20.4 percent of undergraduates are female—female enrollment has increased 50 percent since 2005.

12 percent underrepresented minority students.

Graduate Students

40 percent growth in PhD enrollment since 2012. It's now the **22nd largest** PhD program among public schools of engineering (30th overall) and one of the fastest growing.

22.3 percent currently enrolled females.

12.6 percent underrepresented minority students.

Faculty (T/TT)

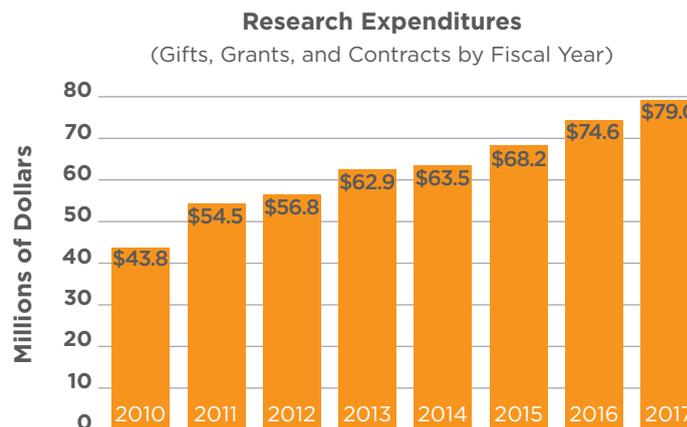
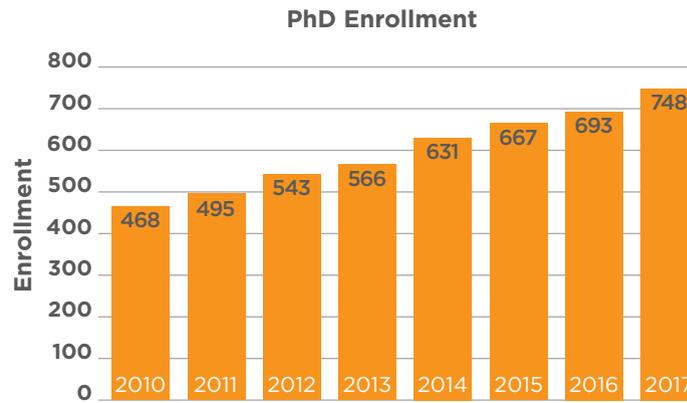
Professors: 92
 Associate Professors: 45
 Assistant Professors: 44
 Total: 181

Research

\$79M in annual research expenditures.

Alumni

27,000+ alumni across all 50 states and 80 countries.



FIGHTING THE FLU

Ferguson Fellow and Associate Professor of Chemical Engineering Cong Trinh has earned the DARPA Young Faculty award from the US Department of Defense for his role in developing the Virulent Pathogen Resistance program, or ViPaRe.



When flu outbreaks occur, their severity can differ because variations in the strain make it time consuming for officials to figure out exactly which one they are facing and produce the correct vaccine.

“It’s key to have a rapid response ready since we live in an age when pathogens can be a weapon,” said Trinh. “Our goal is to be able to identify and target such threats within weeks rather than years, while at the same time not harming the host.”

By using Trinh’s idea, medical personnel could take blood samples, identify the particular strain by

analyzing its genetic code, and work to eliminate it quickly before an outbreak occurs.

Doing so requires a complex blend of statistics, computer science, mathematics, chemistry, and biology. Trinh’s goal is to develop specialized software and incorporate machine learning to dramatically reduce diagnosis and response times.

Taking such a targeted, specialized approach to fighting pathogens could also combat the rise of antibiotic-resistant microbes, since Trinh’s method attacks such organisms at their genetic core. It even allows treatment to change as diseases mutate, eliminating potentially hazardous new outbreaks of old illnesses.



SERVICE ABROAD

The college is dedicated to graduating students with a global perspective and a desire to make a positive impact in the lives of others.

This summer, five students traveled to Ecuador through the college’s Global Initiatives program. Bordering the Amazon Rainforest, the town of Puyo is home to Yana Cocha, an animal and wildlife conservation center. The students worked with mechanical engineers, reserve employees, and other volunteers to build a bridge and connect a trail along a fish lagoon.

“Building the bridge and trail put into perspective the amount of perseverance and tenacity required to run and maintain a place such as Yana Cocha,” said Hannah Landau, a senior in chemical engineering. “The respect they have for the environment, the animals, and their cause was a truly humbling and eye-opening experience.”

Some of UT's top engineering students gained a helping hand this year in their quest to shape the world, all thanks to someone who was once in their position.

Through the support of Joe Cook ('65 ISE) and his wife, Judy, the Joseph C. and Judith E. Cook Grand Challenge Honors program was created to help bring new perspectives, opportunities, and practical experiences for those select students.

That focus on challenge-based engineering is an outgrowth of efforts of the National Academy of Engineering (NAE) and engineering colleges around the country to tackle the world's most pressing issues of the twenty-first century.

"Solution-driven education and research will be vital to adapt, confront, and conquer some of these challenges," Cook said. "By refining our honors program in such a way to deal with issues that impact lives on a global basis, students will get to participate in and observe the effects of their research and studies on the real world."

Program components include research experiences, service learning, and coursework in business, ethics, and public policy. The idea is to alter the view of participants so that they aren't solely focused on engineering a product or service at hand, but what impact that can have around the world and in the future.

With a focus on interdisciplinary collaboration, global experience, and travel, it's easy to see how the program can shape students for both their—and humanity's—benefit.

Fact: 16 of our students have graduated as NAE Grand Challenge Scholars. Support from the Cooks is part of Dean Wayne Davis's effort to increase this number in the future.



Sarah Davis

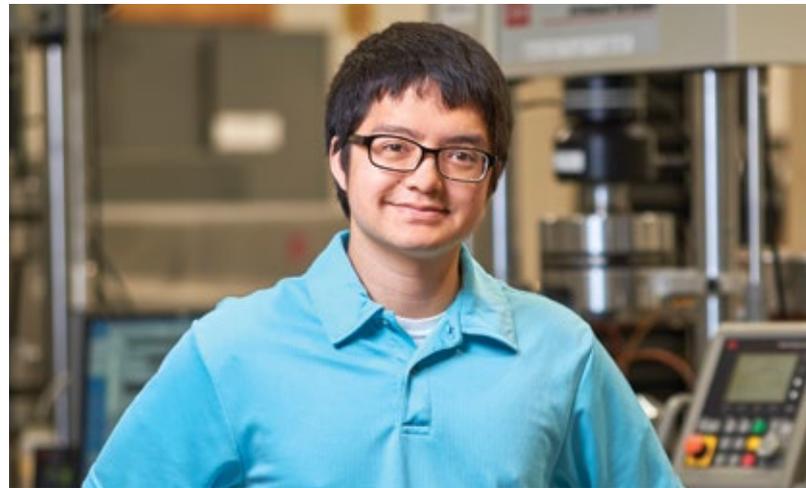
Major: Nuclear Engineering

Grand Challenge: Preventing Nuclear Terror, Engineering Better Medicine

Notable research: Working on nuclear and security-related issues at ORNL

“ The NAE Grand Challenge Scholars program has definitely pushed my boundaries. I have taken interdisciplinary classes that I wouldn't have normally chosen, I got to present at an international conference in Washington, DC, and I have the opportunity to teach kids as part of the service learning pillar. Once I got involved with this program I noticed that I was pushing myself to do better and learn more so that I could actually make an impact with my research. ”

What's next? Graduate school, then either becoming a nuclear instructor in the Navy, working in nuclear security, or pursuing a doctorate focusing on proton therapy for cancer research.



Austin Ngo

Major: Materials Science and Engineering

Grand Challenge: Engineering the Tools of Scientific Discovery

Notable research: Working on the corrosion of superalloys at ORNL

“ The program has allowed me to see how new alloys and materials would actually be put to real use—particularly in space—rather than just looking at how to make them. It makes me consider various points and counterpoints of my research and ideas, which helps in projects and classes beyond just engineering. By challenging my mindset and encouraging travel and entrepreneurship it really makes me a different person. ”

What's next? Taking knowledge of materials into development of new rocket engines and parts for NASA.



Christopher Neal

Major: Chemical and Biomolecular Engineering

Grand Challenge: Make Solar Engineering Economical

Notable research: Solving issues relating to scalability of solar batteries

“ The most important hurdle to implementing the technology at this point is the ability to store energy for times of no sun in the form of large batteries. The program has helped me realize that tackling large challenges is not a trial for engineers alone, and that each of the Grand Challenges requires assistance from businesspersons, from global leaders, and more broadly skilled professionals from numerous backgrounds. ”

What's next? Pursuing a master's in computer science and a doctorate in nuclear engineering

TOP STORIES

In 2017, the college celebrated a number of firsts through new programs as well as some major milestones. Here's a glimpse of what we are doing.



Butch Wilmore in 2014 during a six-month mission aboard the International Space Station

Vols in Space

The college recently passed a milestone, with graduates of its UT Space Institute now having spent more than 1,000 days in space. Randy “Komrade” Bresnik helped set the mark after launching to the International Space Station in late July. All told, UTSI has sent nine astronauts into space across the last 35 years, beginning with the late Hank Hartsfield’s flight on the Space Shuttle *Columbia* in 1982, just the fourth-ever shuttle flight.

Integrated Leadership

The new Integrated Business and Engineering program gives a select cohort of business and engineering undergraduates a systems approach to decision making. From day one, graduates will be better prepared to lead companies at the apex of business and engineering.

Students will spend three years together in joint classes in business leadership, communications, and process thinking to help students from each college better understand the other. A final capstone class will work to solve an identified industry problem at the intersection of business and engineering.

UT Continues Recruitment of Top Researchers

The joint UT-Oak Ridge National Laboratory Governor’s Chair program began with the idea of bringing top researchers from around the world to the two institutions, positioning both as leaders in select fields.

Now, a decade into the program, 12 of the 15 Governor’s Chairs have at least some affiliation with the college, covering topics as diverse as nuclear security and clean water.

The research and funding brought in by those professors is measured in the tens of millions of dollars, while the research done under their watch has benefitted doctoral, graduate, and undergraduate students.



UT-ORNL Governor’s Chair for Power Electronics Yilu Liu



Big Data

UT and ORNL’s new data science and engineering doctoral program is just the third in the US and the only one to pair a university with a national laboratory.

Students will graduate ready to help address key challenges facing society in the areas of business analytics, engineering, healthcare, and national security.

ORNL’s computing prowess will be used to enhance the analytical side of the program, while courses in entrepreneurship and policy making will round out the experience.

The Future of Manufacturing

Eight of the college’s UT-ORNL Governor’s Chairs are focused on advanced manufacturing or advanced materials, highlighting the importance of both and the expertise available at UT.

As the lead institution on IACMI—The Composites Institute, UT has formed collaborations with states, universities, and centers that have increased opportunities and exposure.

With dedicated laboratories and research covering everything from carbon fibers and composite materials to the latest in 3D printing technology, the college is positioned as an international player in this emerging area of global importance.



UT-ORNL Governor’s Chair for Advanced Composites Manufacturing Uday Vaidya

Up, Up, and Away

A new NASA project is looking to UT to reshape the look and feel of flight.

By David Goddard



Humanity's fascination with flight dates back at least two millennia, with the Greek myth of Daedalus and Icarus serving as an early example of the dreams—and dangers—of human flight.

Now, the latest NASA project is looking to UT for guidance in that ever-present pursuit of flight, albeit with a much higher safety component than those early Hellenistic fliers.

A UT-led team, headed up by Department of Mechanical, Aerospace, and Biomedical Engineering Assistant Professors James Coder and Stephanie TerMaath, will focus on producing a more aerodynamically capable aircraft, with NASA providing \$9.9 million for their efforts—believed to be the largest NASA award for a UT-led project.

James
Coder

Stephanie
TerMaath

The NASA-commissioned concept called the Subsonic Ultra Green Aircraft Research (SUGAR) Freeze aircraft. Created by Boeing, the aircraft runs on liquid natural gas and burns significantly less fuel than current planes.



“In a sense, we’re not improving current aircraft as much as we are creating a new building block for aircraft...this is a game changer for aviation.” —Coder

Over the next five years, UT will lead a team of researchers from Penn State University, Texas A&M University, the University of Illinois Urbana-Champaign, Old Dominion University, the University of Wyoming, and two aviation companies—the Boeing Corporation and Airfoils Inc.

“To have our department chosen to lead such a prestigious endeavor and group of universities is a validation of the faculty, research, and students that we have,” said Matthew Mench, head of the Department of Mechanical, Aerospace, and Biomedical Engineering. “After all, this is something that won’t just affect us at UT, but the very nature of flight itself.”

Building a Better Wing

UT’s efforts will focus on the development of a new type of wing, specifically in regard to flight systems and the way lift and drag are controlled through flaps. Current flap systems extend and retract various amounts depending on whether the aircraft is ascending, descending, or flying level.

While the system works well enough as is, it requires added bulk—and therefore additional weight—due to the machinery and hydraulics involved.

“Creating a wing that is more efficient, one that also has less drag, is where our research can really make a difference,” said Coder. “We have full confidence in the concept and just need to show how it can be integrated.”

That concept revolves around what is known as laminar flow. The design of most modern aircraft creates turbulence in the air as it passes over the surface, pockets of circulating air that can increase drag, reduce efficiency, and disturb people inside the aircraft. With laminar flow, attributes that contribute to turbulence, including flaps and airfoils, are removed.

By replacing those movable components with ones that remain permanently in place—known as slotted natural laminar-flow airfoils—Coder’s design reduces drag, weight, and the effect of shock waves at high speeds, while also providing extra lift at slower speeds.

While it’s only one design possibility, any leap forward is bound to change the look of aircraft. Early NASA illustrations of Coder’s concept look more like the Pan Am Clippers of yesteryear than modern aircraft, with wing placement returning to an over-fuselage placement rather than midbody.

“In a sense, we’re not improving current aircraft as much as we are creating a new building block for aircraft,” said Coder. “This is a game changer for aviation.”

Holding It Together

While Coder’s part of the team focuses on the design, TerMaath will be focused on the feasibility and reliability of the materials and structure of the aircraft itself. Using materials that are lightweight, durable, and strong without being bulky will be key to the project’s success.

TerMaath said that the team would be open to anything in its quest for the right final product, whether that means adapting existing materials or coming up with something new.

Students will get hands-on experience in testing flow dynamics, designs, and materials, further heightening the value of the project to UT. It might seem daunting, but it’s a process TerMaath is familiar with, having served on the airframe certification team for the military’s F-35 fighter jet.

“There is a major testing component to doing the unknown,” said TerMaath. “We get to be creative in what we come up with, to customize what we do and use. You don’t get an opportunity to start fresh on something every day.”

TerMaath said she expects the team to go through a series of steps that involve trying out new designs, narrowing the best ones down through optimization, testing those options, and finally simply “getting creative” in their approach.

After all, when there’s no blueprint to follow you can make the impossible possible.

FACILITIES & INFRASTRUCTURE

Gateway to Engineering

The UT Board of Trustees and state legislature have approved funding for a new engineering complex that will take the place of Estabrook Hall and Pasqua Engineering Building.

The State Building Commission has approved the full budget for the 228,000-square-foot building to proceed with design and construction. With \$90 million in state funding and a further \$39 million in university and donor support, the building will house the sixth-ranked Department of Nuclear Engineering as well as the college's freshman *engage*TM Engineering Fundamentals and Cook Grand Challenge Honors programs, earning it the unofficial title of the "Gateway to Engineering."

High-End Learning Opportunities

- An offshoot of the college's growth and research has been a surge in laboratory construction, whether in new buildings or in renovating existing space.
- The **Fibers and Composites Manufacturing Facility and Engineering Annex** emerged out of the former Textiles and Nonwovens Development Center on White Avenue, allowing for more advanced manufacturing research.
- The entire top floor of the Nathan W. Dougherty Engineering Building has been converted into **state-of-the-art laboratory and research spaces** for mechanical, aerospace, biomedical, and materials science and engineering researchers and students.

Gateway to Engineering



15,800+ sq-ft
Student Design & Innovation Labs



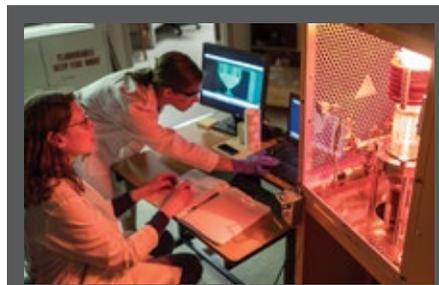
20,800+ sq-ft
Stoneking *engage*TM Fundamentals & Cook Grand Challenge Honors



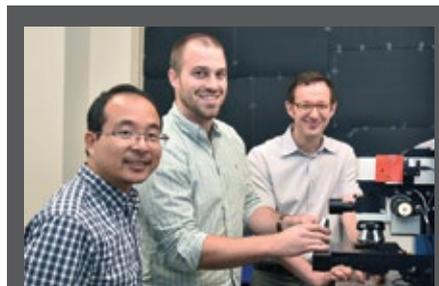
8,900+ sq-ft
Academic Affairs & student commons



5,900+ sq-ft
public spaces



43,700+ sq-ft
Flexible research labs & offices

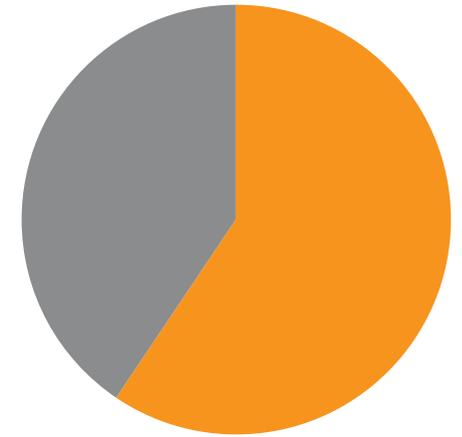


38,200+ sq-ft
Department of Nuclear Engineering

FINANCIAL UPDATE FISCAL YEAR 2017

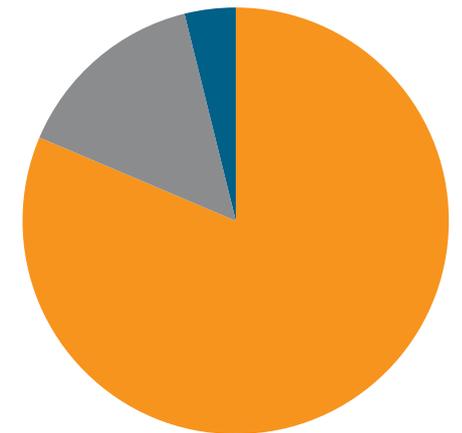
Total Expenditures \$133 Million

Externally Funded Gifts, Grants & Contracts	\$79,047,502
Recurring & Nonrecurring State Funds	\$53,905,553



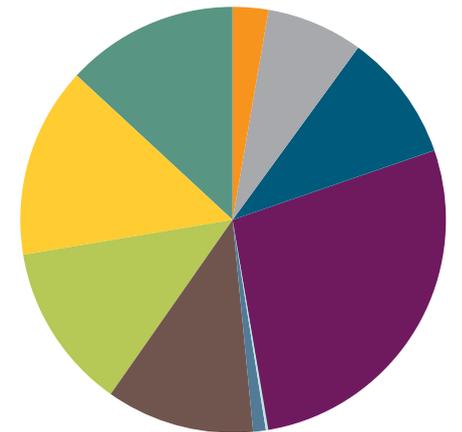
Resources: Recurring & Nonrecurring State Funds \$54 Million

Salaries & Benefits	\$43,918,397
Miscellaneous Operating Expenses	\$7,889,257
Equipment & Software	\$2,097,899



Gifts, Grants & Contracts by Department/Center \$79 Million

Administration	\$2,069,302
Chemical & Biomolecular Engineering	\$5,799,758
Civil & Environmental Engineering	\$7,666,812
Cook Grand Challenge Honors Program	\$4,978
Electrical Engineering & Computer Science	\$21,938,182
Engineering Fundamentals Division	\$87,489
Industrial & Systems Engineering	\$805,750
Materials Science & Engineering	\$8,899,546
Mechanical, Aerospace & Biomedical Engineering	\$9,953,573
Nuclear Engineering	\$11,420,084
Research Centers	\$10,402,027



COLLEGE PROFILE

Leadership Team

Wayne T. Davis

Dean, Wayne T. Davis Endowed Dean's Chair

William Dunne

Associate Dean for Research and Facilities

Masood Parang

Associate Dean for Academic and Student Affairs

Lynne Parker

Associate Dean for Faculty Affairs and Engagement

Richard Bennett

Director, Jerry E. Stoneking *engage*™ Engineering Fundamentals program

Dorothy Barkley Bryson

Executive Director, Engineering Development

Travis Griffin

Director, Engineering Diversity Programs

Christie Kennedy

Director, Communications

Kevin Kit

Director, Cook Grand Challenge Honors program

Kimberly McCulloch

Director, Finance and Administrative Affairs

Todd Reeves

Director, Engineering Professional Practice

Margie Russell

Director, Advising Services

Department Heads

Chris Cox

Civil and Environmental Engineering

J. Wesley Hines

Nuclear Engineering

Veerle Keppens

Materials Science and Engineering

Bamin Khomami

Chemical and Biomolecular Engineering

John E. Kobza

Industrial and Systems Engineering

Matthew M. Mench

Mechanical, Aerospace, and Biomedical Engineering

Leon Tolbert

Electrical Engineering and Computer Science

Affiliated Heads & Directors

Julie Carrier

Department head, Biosystems Engineering and Soil Science*

Mark Whorton

Executive Director, University of Tennessee Space Institute

Faculty Profile

National Academy of Engineering Members

Mark Dean, John Fisher Distinguished Professor

Robert Dodds, Research Professor

Jack Dongarra, Distinguished Professor

Yilu Liu, UT-ORNL Governor's Chair for Power Electronics

Steven Zinkle, UT-ORNL Governor's Chair for Nuclear Materials

Distinguished Scientists

Takeshi Egami

University Distinguished Professors

Jack Dongarra

Bamin Khomami

UT-ORNL Governor's Chairs

Suresh Babu, Governor's Chair for Advanced Manufacturing

Easo George, Governor's Chair for Advanced Alloy Theory and Development

Howard Hall, Governor's Chair for Global Nuclear Security

Terry Hazen, Governor's Chair for Environmental Biotechnology

Yilu Liu, Governor's Chair for Power Electronics

Frank Loeffler, Governor's Chair for Microbiology and Civil and Environmental Engineering

Arthur Ragauskas, Governor's Chair for Biorefining

Uday Vaidya, Governor's Chair for Advanced Composites Manufacturing

William Weber, Governor's Chair for Radiation Effects on Materials

Brian Wirth, Governor's Chair for Computational Nuclear Engineering

Thomas Zawodzinski, Governor's Chair for Electrical Energy Conversion and Storage

Steven Zinkle, Governor's Chair for Nuclear Materials

Endowed Chairs

Matthew Mench, Robert M. Condra Chair of Excellence in Computer Integrated Engineering and Manufacturing

Fred Wang, Robert M. Condra Chair of Excellence in Power Electronics Applications

Kevin Tomsovic, CTI Chair in Electrical and Computer Engineering

Wayne T. Davis, Wayne T. Davis Endowed Dean's Chair in Engineering

Audris Mockus, Ericsson-Harlan D. Mills Chair of Software Engineering

Stephen Paddison, Gibson Chair

Thanos Papanicolaou, Henry Goodrich Chair of Excellence in Civil and Environmental Engineering

Philip Rack, Leonard Garfield Penland Chair

Peter Liaw, Ivan Racheff Chair in Materials Science and Engineering

Endowed Professors

Bamin Khomami, Beaman & Granger Distinguished University Professor

Kurt Sickafus, Alvin and Sally Beaman Professor

Ben Blalock, Blalock, Kennedy, Pierce Analog Electronics Professor

Baoshan Huang, Dr. Edwin G. Burdette Professor

Chris Cox, Robert M. Condra Professor

Lawrence Townsend, Robert M. Condra Professor

Vacant, Dongarra Professor

Mongi Abidi, Cook-Eversole Professor

Mark Dean, John Fisher Distinguished Professor

Peter Liaw, John Fisher Professor

Vacant, Weston Fulton Professor

Hairong Qi, Gonzalez Family Professor

David Mandrus, Jerry and Kay Henry Professor

Leon Tolbert, Min H. Kao Electrical and Computer Engineering Professor

Ken Kihm, Magnavox Professor

Aly Fathy, James McConnell Professor

S. Kamrul Islam, James McConnell Professor

Vacant, Jack and Dorothy McKamey Professor

Dayakar Penumadu, Fred N. Peebles Professor

Philip Rack, Leonard G. Penland Professor

Wesley Hines, Charles P. Postelle Distinguished Professor in Nuclear Engineering

Gila Stein, Dr. John Prados Chemical and Biomedical Engineering Professor

Richard Komistek, Fred Mason Roddy Professor in Biomedical Engineering

Vacant, Jessie Rogers Zeanah Faculty Fellow

Vacant, Richard Rosenberg Endowed Professor in Mechanical Engineering

Endowed Faculty Fellows

Cong Trinh, Ferguson Faculty Fellow

Jason Hayward, UCOR Outstanding Faculty Fellow in Nuclear Engineering

Rupy Sawhney, Heath Endowed Fellow in Business and Engineering

Professors of Practice

Sankar Raghavan, Eastman Professor of Practice in Chemical Engineering

Yan Xu, Eastman Professor of Practice in Electrical Engineering

Matthew Young, Eastman Professor of Practice in Mechanical Engineering

David Icove, Underwriters Laboratory Professor of Practice

CAREER Development Professors

Eric Boder

Mohamed Mafouz

Chancellor's Professors

Lawrence Townsend

COLLEGE PROFILE

Board of Advisors

Todd A. Apple

BS/ChE '87, JD '00
(Nashville School of Law)
Director, Channel Marketing–NA
Residential, Masonite International

Terry K. Begley

BS/ChE '69, MS/EA '74
(University of Tennessee)
Vice President, Global Supply Chain, Chief
Procurement Officer (retired), Eastman
Chemical Company

Barbie S. Bigelow

BS/ChE '82 (Tusculum College), MS/EECS
'85 (University of Tennessee)
Senior Vice President & CIO, Jacobs

Kathy J. Caldwell

BS/CE '84 (University of Tennessee)
President, Caldwell Cook & Associates

Wayne A. Coleman

BS/NE '63, MS/NE '65, PhD '69
(University of Tennessee)
Corporate Vice President (retired),
Science Applications
International Corporation

Joseph (Joe) C. Cook Jr.

BS/IE '65 (University of Tennessee)
Founder and Principal,
Mountain Group Partners

Mark K. Cox

BS/ChE '89, MBA '02
(Northwestern University Kellogg School
of Management)
Senior Vice President, Chief
Manufacturing and Engineering Officer,
Eastman Chemical Company

Michael C. Crabtree

BS/EE '73, MS/EE '75, MBA '87
(University of Tennessee)
President, Crabtree Ventures LLC

Bennett Croswell

BS/ME '79, MBA/Aviation
(Embry Riddle Aeronautical University)
President, Military Engines,
Pratt & Whitney

William L. Eversole

BS/EE '73, PhD (Southern
Methodist University)
CEO and President, Bandspeed Inc.

Jim K. Flood

BS/CE '80 (University of Tennessee)
Vice President, Artic/Eastern Canada,
ExxonMobil Development Company

Kimberly S. Greene

BS/ES '88, MS/BioM '90 (University of
Alabama-Birmingham),
MBA '96 (Samford)
Executive Vice President and Chief
Operating Officer, Southern Company

Sharon S. Habibi

BS/Arch '75, MS/CE '77,
EMBA '89 (University of Tennessee)
Former CEO/President. Syscom
Technologies Inc.

John Hanula

BS/Arch '83, MS/CE '84,
(University of Tennessee)
Senior Vice President, MWH Los Angeles
(now part of Stantec).

Ralph D. Heath

BS/EE '70, MBA '75
(University of Tennessee)
Executive Vice President (retired),
Lockheed Martin

Pete Hoffman

BS/ME '82 (University of Tennessee-
Martin), MS/ME '84 (University of
Tennessee Space Institute), MS/MfgE
(Washington University–St. Louis),
Master of International Business
(St. Louis University)
Vice President, Intellectual Property
Management, The Boeing Company

John Howanitz

BS/Psychology/Criminal Justice '81
(King's College, Wilkes-Barre)
General Manager, Nuclear Security
& Operations, Bechtel National Inc

Burkhard J. Huhnke

PhD '99 (Technical University of
Braunschweig, Germany)
Vice President, Product Innovation,
VW Group of America Inc.

Jerry L. Johnson

BS/ChE '94 (University of Tennessee),
MBA '98 (Harvard Business School)
Managing Director, RLJ Equity Partners

Kenneth (Ken) Huntsman

BS/CompSci '74 (Pennsylvania State
University), MS/CompSci '77 (University
of Tennessee)
Co-Founder, America Online

Misty D. Mayes

BS/IE '88 (University of Tennessee)
President, Management Solutions LLC

Cavanaugh Mims

BS/NE '86 (University of Tennessee)
President, Visionary Solutions LLC

Ronald T. Morris

BS/EE '69 (University of Tennessee)
Senior Consultant (Contractor), DuPont

Jeff Nichols

BA/Math '78, BA/Chem '78 (Malone
College), PhD '83 (Texas A&M University)
Associate Laboratory Director,
Computing and Computational Sciences
Directorate, ORNL

Warren C. Oliver

BS/MSE '77 (University of Tennessee),
PhD '81 (Stanford University)
President, Scientific Director, Co-Founder,
Nanomechanics Inc.

J.D. “Spike” Tickle II

BS/IE '87, MBA '98 (University of North
Carolina-Chapel Hill)
Director, Strongwell Corporation; Three
Horse Investments LLC

Mr. Ronald L. Turner

BS/Aero '68, MS/Aero '72 (University of
Florida), MS/Mgmt (MIT-Sloan Fellow) '77
Managing Director, Turner Aero LLC; CEO,
Ceridian Corporation (retired)

Steven Welsh

BS/EE '87 (University of Tennessee)
General Manager, WW Infrastructure
Services Enablement, IBM Global
Technology Services

Joseph (John) Wimberly

BS/ME '81 (University of Tennessee)
President, I.C. Thomasson Associates Inc.

Jacinda B. Woodward

BS/EE '88 (Auburn University)
Senior Vice President, Transmissions and
Power Supply, Tennessee Valley Authority

Eric L. Zeanah

BS/IE '84 (University of Tennessee)
President/Owner, American
Accessories International

Academic Support Programs

Cook Grand Challenge
Honors program

Engineering Advising Services

Engineering Diversity Programs

Engineering Outreach Office

Engineering Professional Practice

Jerry E. Stoneking *engage*[™]
Engineering Fundamentals program

Tennessee Louis Stokes Alliance for
Minority Participation

Degrees Offered

Bachelor of Science

Aerospace Engineering

Biomedical Engineering

*Biosystems Engineering

Chemical Engineering

Civil Engineering

Computer Engineering

Computer Science

Electrical Engineering

Industrial Engineering

Materials Science & Engineering

Mechanical Engineering

Nuclear Engineering

Master of Science

Aerospace Engineering

Biomedical Engineering

*Biosystems Engineering

Chemical Engineering

Civil Engineering

Computer Engineering

Computer Science

Electrical Engineering

Engineering Science

Environmental Engineering

Industrial Engineering

Materials Science & Engineering

Mechanical Engineering

Dual MS-MBA program

Nuclear Engineering

Reliability and

Maintainability Engineering

Doctor of Philosophy

Aerospace Engineering

Biomedical Engineering

*Biosystems Engineering

Chemical Engineering

Civil Engineering

Computer Engineering

Computer Science

**Data Science & Engineering

Electrical Engineering

**Energy Science & Engineering

Industrial Engineering

Materials Science & Engineering

Mechanical Engineering

Nuclear Engineering

**In conjunction with the
College of Agricultural Sciences
and Natural Resources.*

***In conjunction with the Bredesen
Center for Interdisciplinary
Research and Graduate Education.*

Accreditation

All engineering programs at the University of Tennessee, Knoxville, are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The computer science program at the University of Tennessee, Knoxville, is accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>.

DEVELOPMENT UPDATE

What a year!

We were the first UT college to meet and surpass our Join the Journey campaign goal, closing the year at \$154 million toward the original \$150 million goal. The college's new campaign goal is \$200 million.

Joe Cook (ISE '65), excited by what Tickle Engineering Honors students are doing to apply knowledge to the world's Grand Challenges, is—with his wife, **Judy**—endowing and supporting honors, which we now proudly call the **Cook Grand Challenge Honors program**.

The Edwards Assistant Dean and Director of Integrated Design was endowed by **Tom** (ME '72) and **Elaine Edwards** to fund a new position in the college. This individual will help to create the innovation lab and makerspaces in our 'Gateway to Engineering' building as well as work throughout college to integrate design coursework vertically (freshmen through graduate-level students) and horizontally (across engineering and other disciplines).

The Integrated Business and Engineering Program was launched with a major endowment from **Ralph** (EE '70/MBA '75) and **Janet Heath**. This gift is the stimulus for a game-changing opportunity for select business and engineering students to collaborate in classes and design labs, learning from and with each other. End game: graduates with deep cross-discipline understandings who bring additional value to their employers.

Forty-one percent of our graduating seniors gave—most at the symbolic \$20.17—during Senior Impact 2017, beginning what we hope will be a tradition in their lives. Today's graduate is tomorrow's philanthropist.

Oh, and we named the college.

Contact the Office of Engineering Development

Dorothy Barkley Bryson
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Knoxville, TN37996
Email: dbryson@utk.edu
Ph: 865-974-2779



**One gift, any size,
every year.
It adds up. It makes
a difference.**



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All qualified applicants will receive equal consideration for employment and admission without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, genetic information, veteran status, and parental status. In accordance with 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 of 1990, the University of Tennessee affirmatively states that it does not discriminate on the basis of race, sex, or disability in its education programs and activities, and this policy extends to employment by the university. Inquiries and charges of violation of Title VI (race, color, and national origin), Title IX (sex), Section 504 (disability), the ADA (disability), the Age Discrimination in Employment Act (age), sexual orientation, or veteran status should be directed to the Office of Equity and Diversity, 1840 Melrose Avenue, Knoxville, TN 37996-3560, telephone 865-974-2498. Requests for accommodation of a disability should be directed to the ADA Coordinator at the Office of Equity and Diversity. A project of the Tickle College of Engineering. PAN E01-1301-013-011-18. Job 276236.