A MESSAGE FROM THE DEAN

Welcome to the 2014-2015 edition of the College of Engineering's Faculty Directory. I am honored to present the distinguished individuals who carry on the teaching and research missions of the college. We look to them to continue the valuable work of educating our country’s future engineers and pioneering research activities, methods and products that will keep abreast of technology and bring about added quality of life for our citizens.

Mission Statement

The mission of the UT College of Engineering is:

• To provide high quality education in the major engineering disciplines from the undergraduate through doctoral levels through a creative balance of academic, professional, and extracurricular programs;

• To foster and maintain mutually beneficial partnerships with our alumni, friends, industry and local, state, and federal governments through public services assistance and collaborative research; and

• To be a major contributor to our nation’s technology base through scholarship and research.

Wayne T. Davis
Dean

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. All qualified applicants will receive equal consideration for employment without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, or covered veteran status.

Publication Authorization Number: E01-1301-013-007-16
Date of Publication: 09/15
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Dean
Wayne T. Davis Endowed Dean’s Chair and Professor
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Honors & Affiliations
• BCEEM, American Academy of Environmental Engineering
• Fellow, Air & Waste Management Association
• State of Tennessee Air Pollution Control Board
• Lifetime Achievement Award, Institute of Professional Environmental Practice, 2007
• Chancellor’s Macebeamer Award, 2002
• Moses E. & Mayme Brooks Distinguished Professor Award, 1996
• Chancellor’s Award for Research, 1994
• Lyman A. Ripperter Award, Air and Waste Management Association, 1990
• Editorial Review Board, Engineering, Chinese Academy of Engineering

Masood Parang
Professor and Associate Dean for Academic & Student Affairs
PE, PhD, University of Oklahoma
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Honors & Affiliations
• AIAA Associate Fellow
• NASA-ASEE Faculty Fellowship, 1995, 1996
• Shell Professor of Mechanical Engineering, 2000-2001
• College of Engineering Advisor Award, 2000
• College of Engineering and departmental teaching awards, 1990, 1995, 1999

The development mission is to spark philanthropic support that will propel our goal to become a Top 25 public college of engineering.

The Office of Engineering Communications directs all internal and external communications activities for the college, including web sites, publications, and multimedia presentations.

Richard M. Bennett
Professor and Director, engage™ Engineering Fundamentals Division
PE, PhD, University of Illinois
207C Perkins Hall
Knoxville, TN 37996-2020
Phone: 865-974-9810
E-mail: rmbennett@utk.edu

Honors & Affiliations
• Fellow, The Masonry Society
• Brooks Distinguished Professor Award, 2014
• TLSAMP Faculty Member of the Year Award, 2011
• UT Alumni Outstanding Teaching Award, 2008
• Leon and Nancy Cole Teaching Award, 2006
• ASTM Alvin Yorkdale Award, 2002

The Engineering Fundamentals Division is home to engage™, one of the nation’s most innovative freshman engineering programs.

Korean Federation-Knoxville, 2010
Volunteer Chapter, 2010
Korean Federation-Knoxville, 2014

The Associate Dean for Faculty Affairs provides leadership and direction for the college’s tenure and promotion processes, faculty hiring, faculty mentoring and retention, faculty annual review process, and peer review of teaching as well as assists with the college’s involvement in the selection and recruitment of Governor’s Chairs and the management of the faculty and staff awards processes for the college and campus.

The Associate Dean for Research and Technology administers issues related to facilities, research grants, and technology funding for the college.

Dorothy Barkley Bryson
Executive Director, Engineering Development
MS, The University of Tennessee
118 Perkins Hall
Knoxville, TN 37996-2012
Phone: 865-974-2799
E-mail: dbryson@utk.edu

Honors & Affiliations
• ASEE Engineering Research Council
• Federation-Knoxville, 2014
• Silver Addy Award, Greater Knoxville Advertising Club, 2003

The development mission is to spark philanthropic support that will propel our goal to become a Top 25 public college of engineering.

The Office of Engineering Communications directs all internal and external communications activities for the college, including web sites, publications, and multimedia presentations.
**Honors & Affiliations**

- Member, ASEE, CASE
- Three-time winner of the Society of Professional Journalists Award of Excellence

The Coordinator of Media Relations communicates with both internal and external constituencies of the college, providing information about events, awards, milestones, research, academics, and the general progress of the engineering college while maintaining a focus on its role as an entity of UT.

**Honors & Affiliations**

- Member, ASEE; National Academic Advising
- NACADA Certificate of Merit recipient as an Advising Administrator, 2012
- Region 3 NSBE AE Dedication, 2006
- National Society of Black Engineers (NSBE) Alumni Extension National Leadership, 2006
- Member, NSBE, 2003-Present

The Engineering Honors Program is responsible for all aspects of the college’s honors initiatives and works to expand and enhance offerings through development of new courses and coordination with the Chancellor’s Honors Program.

**Honors & Affiliations**

- Member, Healthcare Financial Management
- Member, Accounting & Financial Women’s Alliance
- Member, Healthcare Financial Management

The Office of Engineering Diversity Programs develops initiatives to increase the number of minority engineering students through recruiting and outreach and helps prepare them for graduate studies and engineering careers.

**Honors & Affiliations**

- National Association of Multicultural Engineering Program Advocates (NAMEPA), 2015-2017
- National Society of Black Engineers (NSBE) Alumni Extension National Leadership, 2006
- Region 3 NSBE AE Dedication, 2006
- Member, NSBE, 2003-Present

The Office of Finance and Administrative Affairs directs and/or coordinates all human resources and fiscal activities of the college.

**Honors & Affiliations**

- Member, Institute of Internal Auditors
- Member, Accounting & Financial Women’s Alliance
- Member, Healthcare Financial Management

The Engineering Outreach Office builds programs that enhance leadership, intercultural and entrepreneurial opportunities, and also promotes the college’s visibility to the next generation of engineering students.

**Honors & Affiliations**

- Holds eight patents in the area of machine conditioning monitoring
- Published more than twenty articles in presentations in various conference proceedings and trade journals
- Member, ASEE
- Member, Southeastern Regional Cooperative Education Conference

The Engineering Professional Practice office partners with employers to provide educationally relevant, paid co-op and internship opportunities for UT engineering students.

**Honors & Affiliations**

- Published more than twenty articles in educational journals and conference proceedings in various conference proceedings and trade journals
- Member, ASEE
- Member, National Academic Advising
- UT Most Courteous Employee Award; UT Team Excellence Award, 2006

The Engineering Advising Services Office provides academic program planning services to undergraduate students in the College of Engineering.

**Honors & Affiliations**

- UT National Alumni Association Outstanding Teacher, 1997
- Chancellor’s Citation for Extraordinary Service to the University, 1999
- Allen & Hoshall Outstanding Faculty Award, 2000

The University of Tennessee Space Institute (UTSI) is a graduate education and research institution recognized for research in engineering and physics.
RESEARCH AREAS
Statistical mechanics applied to cell biology and immunology; multiscale modeling of cell signaling networks, the cytoskeleton, and membranes

RESEARCH AREAS
Molecular biotechnology and bioengineering, protein engineering and directed evolution

RESEARCH AREAS
Sustainable engineering, process design, separations and sustainable energy processes

RESEARCH AREAS
Engineering and optimization of photosynthetic routes to sustainable energy processes

RESEARCH AREAS
Chemical and physical biology; advanced materials for catalysis, separations, energy, and health

RESEARCH AREAS
Thermodynamics, fluid mechanics, molecular modeling and sustainable energy
Ramki Kalyanaraman  
Professor  
PhD, North Carolina State University  
419 Ferris Hall  
Knoxville, TN 37996-2100  
Phone: 865-974-5539  
E-mail: rkamki@utk.edu

Honors & Affiliations  
- Phi Kappa Phi Honor Society  
- Member, MRS, ACS, TMS, ASM, and AAAS  
- COE Research Fellow Award, 2011  
- NSF CAREER Award, 2005

RESEARCH AREAS
- Phase transformation and self-organization; energetic beam processing; thin film growth and characterization; functional nanostructures and nanocomposites for sustainable energy, sensing, and computing

Zhanhu Guo  
Associate Professor  
PhD, Louisiana State University  
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Knoxville, TN 37996-2200  
Phone: 865-974-2333  
E-mail: zguo@utk.edu

www.engr.utk.edu/cbe/faculty/Guo/default.html

Honors & Affiliations  
- Presidential Faculty Fellowship in Support of Undergraduate Research/Creative Activity, 2014  
- University Research Scholar, 2013  
- Invited Lecturer of 55th anniversary of Beijing University of Chemical Technology, 2013  
- Invited Plenary Speaker, “Nanotechnology in Corrosion” of National Association of Corrosion Engineers (NACE) – Corrosion Society, 2013

RESEARCH AREAS
- Multifunctional nanocomposites, nanomanufacturing, advanced nanocomposite membranes, fuel energy improvement and energy usage efficiency enhancement, electrochromic, strain sensing and magnetic field sensing devices, electromagnetic wave shielding materials, environmental sustainability and remediation, industrial/civilian safety materials

Ramki Kalyanaraman  
Professor  
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www.engr.utk.edu/cbe/faculty/Kalyanaraman/default.html

Honors & Affiliations  
- Phi Kappa Phi Honor Society  
- Member, MRS, ACS, TMS, ASM, and AAAS  
- COE Research Fellow Award, 2011  
- NSF CAREER Award, 2005

RESEARCH AREAS
- Phase transformation and self-organization; energetic beam processing; thin film growth and characterization; functional nanostructures and nanocomposites for sustainable energy, sensing, and computing

S. Michael Kilbey II  
Professor  
PhD, University of Minnesota  
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www.chem.utk.edu/Faculty/kilbey

Honors & Affiliations  
- Member, ACS, APS, AIChe, Sigma Xi  
- Alumni Master Teacher (Clemson University—highest honor given for excellence in teaching)  
- Dow Outstanding Young Faculty, 1996  
- 3M Young Investigator, 1997

RESEARCH AREAS
- Synthesis and characterization of polymeric materials used for surface and interface engineering, including advanced materials and composites for sustainable energy; intrinsic links between assembly, structure and properties of ultrathin polymer films at surfaces and of molecular assemblies in solution

Joshua R. Sangoro  
Assistant Professor  
PhD, University of Leipzig, Germany  
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Phone: 865-974-4395  
E-mail: jsangoro@utk.edu

www.engr.utk.edu/cbe/faculty/Sangoro/default.html

Honors & Affiliations  
- Science Alliance JDRD Collaborative Cohort Fellowship, 2014  
- Feodor-Lynen Research Fellowship of the Alexander von Humboldt Foundation, 2012  
- Member, American Physical Society; Electrochemical Society; German Physical Society; Materials Research Society; International Diecelectric Society; American Association for the Advancement of Science (AAAS)

RESEARCH AREAS
- Novel materials for electrochemical energy applications, nanoscale confinement and interfacial effects in soft materials, diffusion in soft condensed matter, broadband dielectric spectroscopy and its applications

Arthur Ragauskas  
Governor’s Chair Professor in Biorefining  
PhD, University of Western Ontario  
328 Dougherty Engineering Building  
Knoxville, TN 37996-2200  
Phone: 865-974-2024  
E-mail: aragausk@utk.edu

www.engr.utk.edu/cbe/faculty/Ragauskas/default.html

Honors & Affiliations  
- TAPPI Gunnar Nicholson Gold Medal Award, 2014  
- ACS Award for Affordable Green Chemistry, 2014  
- ORNL Visiting Fellow, 2013  
- Elected American Association for the Advancement of Science Fellow, 2012  
- Elected to Academy Board of International Academy of Wood Science, 2012  
- Fullbright Distinguished Chair in Alternative Energy, 2008-2009

RESEARCH AREAS
- Directed design of advanced catalytic materials and processes, renewable energy and fuels from biomass, catalytic reduction of CO₂ to C, fuel source and fine chemicals, fundamental surface science, chemical reaction kinetics, electro-catalysis, photo-catalysis, quantum chemical modeling

Sankar Raghavan  
Eastman Professor of Practice  
PhD, Kansas State University  
437 Dougherty Engineering Building  
Knoxville, TN 37996-2200  
Phone: 865-974-4820  
E-mail: sraghav2@utk.edu

www.engr.utk.edu/cbe/faculty/default.html

Honors & Affiliations  
- Member, American Institute of Chemical Engineering, Rotary Club of Danvil

RESEARCH AREAS
- Process design and optimization; risk evaluation and mitigation in chemical processes; engineering pedagogy

Sankar Raghavan  
Eastman Professor of Practice  
PhD, Kansas State University  
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E-mail: sraghav2@utk.edu

www.engr.utk.edu/cbe/faculty/default.html

Honors & Affiliations  
- Member, American Institute of Chemical Engineering, Rotary Club of Danvil

RESEARCH AREAS
- Process design and optimization; risk evaluation and mitigation in chemical processes; engineering pedagogy

Stephen J. Padddison  
Professor, Gibson Endowed Chair in Engineering  
PhD, The University of Calgary, Canada  
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Knoxville, TN 37996-2200  
Phone: 865-974-2026  
E-mail: spaddison@utk.edu

www.engr.utk.edu/cbe/faculty/Paddison/default.html

Honors & Affiliations  
- Visiting Fellow, University of Cambridge, 2015  
- Royal Academy of Engineering Distinguished Visiting Fellowship, 2015  
- Ferguson Faculty Fellow, 2013-2014  
- Chancellor’s Research & Creative Achievement Award, 2012  
- Tom & Ruth Clark Award for Excellence in Chemical & Biomedical Engineering Education, 2011  
- COE Research Fellow, 2010, 2011  
- Member, American Chemical Society; Materials Research Society, The Electrochemical Society; Royal Society of Chemistry (UK)

RESEARCH AREAS
- Computations and simulations of materials for electrochemical conversion and storage, proton and ion transport

Alexander Papandrew  
Research Associate Professor  
PhD, California Institute of Technology  
409C Science and Engineering Research Facility  
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www.engr.utk.edu/cbe/faculty/Papandrew/default.html

Honors & Affiliations  
- NSLS Science Highlight, 2007  
- National Defense Science and Engineering Graduate Fellowship, 2001  
- Columbia University Francis B.F. Rhodes Prize, 2000  
- Member, Electrochemical Society, Materials Research Society

RESEARCH AREAS
- Solid acid fuel cells, advanced synthesis routes for supported metal catalysts and nanocomposite electrodes, non-precisio-metal catalysts, flow batteries, advanced materials for energy storage and conversion

Joshua R. Sangoro  
Assistant Professor  
PhD, University of Leipzig, Germany  
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E-mail: jsangoro@utk.edu

www.engr.utk.edu/cbe/faculty/Sangoro/default.html

Honors & Affiliations  
- Science Alliance JDRD Collaborative Cohort Fellowship, 2014  
- Feodor-Lynen Research Fellowship of the Alexander von Humboldt Foundation, 2012  
- Member, American Physical Society; Electrochemical Society; German Physical Society; Materials Research Society; International Diecelectric Society; American Association for the Advancement of Science (AAAS)

RESEARCH AREAS
- Novel materials for electrochemical energy applications, nanoscale confinement and interfacial effects in soft materials, diffusion in soft condensed matter, broadband dielectric spectroscopy and its applications
<table>
<thead>
<tr>
<th><strong>RESEARCH AREAS</strong></th>
<th>Electrochemical energy storage and conversion components, devices and systems (redox flow batteries, lithium batteries, fuel cells), transport and thermodynamics of ion-conducting membranes, composite electrodes, application of NMR methods to chemical engineering problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESEARCH AREAS</strong></td>
<td>Biocatalysis, metabolic engineering, systems and synthetic biology, metabolic flux quantification, cell physiology and advanced fermentation, bioenergy, biofuels, biochemicals, and methane microbial conversion</td>
</tr>
</tbody>
</table>

**Honors & Affiliations**

- Member, American Institute of Chemical Engineers (AIChE), International Society of Metabolic Engineering (IMES), Society of Biological Engineering, Tau Beta Pi, American Chemical Society, and Society of Industrial Microbiology & Biotechnology
- Fellow, Electrochemical Society, 2011
- Member, MRS, ECS, and ACS (Polymer Division)
- Fellow, American Chemical Society Polymer Division, 2015
- F. Alex Nason Professor of Engineering, 2002-2009
- Ohio Eminent Scholar in Fuel Cells, 2002-2009
Chris D. Cox
Condra Professor and Head
PhD, Pennsylvania State Univ.
325 John D. Tickle Engineering Building
Knoxville, TN 37996-2313
Phone: 865-974-7700
E-mail: ccox9@utk.edu

Honors & Affiliations
- UT Leadership Development Program
- Member, American Society of Civil Engineers
- COE Outstanding Advising Award, 2011
- Department Outstanding Service Award, 2010, 2012, 2014
- Chancellors Teaching Award, 2009

RESEARCH AREAS
Mathematical modeling of genetic regulatory networks, environmental systems, and bio-energy production

Khalid A. Alshibli
Professor
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E-mail: alshibli@utk.edu

Honors & Affiliations
- UT-Civil and Environmental Engineering 2013-2014 Research Recognition Award
- 2007 Achievement Award, Department of Civil & Environmental Engineering, Louisiana State University
- Teacher of the Year Award 2005-2006, College of Engineering, Southern University and A&M College, Baton Rouge, Louisiana
- Engineering Faculty Professionalism Award, Louisiana Engineering Foundation, 2005
- NASA/Marshall Space Flight Center Group Achievement Award, 2003
- Member, ASCE, Geo Institute, US Universities Council on Geotechnical Engineering Research

RESEARCH AREAS
Multiscale behavior of granular materials, 3D computed tomography and X-ray diffraction to characterize geomaterials, foundation engineering, and extrarrenal soil materials

Edwin G. Burdette
Fred N. Peebles Professor
PE, PhD, University of Illinois
316 John D. Tickle Engineering Building
Knoxville, TN 37996-2313
Phone: 865-974-7704
E-mail: eburdett@utk.edu

Honors & Affiliations
- Edwin G. Burdette Endowed Professorship created, 2015
- Alumni Outstanding Teacher Awards, 2000, 2007
- COE Teaching Fellowship, 2006, 2014
- Co-Winner, ASCE Raymond C. Reese Research Prize, 2013
- Alexander Prize, 2003
- University Macebearer Award, 1990
- Fred N. Peebles Professorship, 1981–present

RESEARCH AREAS
Structural engineering; field testing of highway bridges; design of an optimum mix for high performance concrete; testing of anchors in concrete; research and development of methodology used for prediction of anchor capacity

Kimberly Carter
Assistant Professor
PhD, University of Arizona
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Honors & Affiliations
- Member, American Society of Civil Engineers (ASCE)
- Omega Chi Epsilon: Chemical Engineering Honor Society, 2002
- American Institute of Chemical Engineers, 1999-2002
- Society of Women Engineers, 1998-2000

RESEARCH AREAS
Degradation of organic constituents in hydraulic fracturing fluids; analysis of trace metal content of synthesis gas derived from coal; oxidation and adsorption of perfluorinated carbons and trichloroethene; remediation of brine spills with hay; correlation of plant growth with brine content in soil

Joseph Amoah
Lecturer
PE, PhD, Florida A&M University
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Honors & Affiliations
- Torchbearer Award for Excellence, 1999, National Society of Black Engineers
- Outstanding Leadership Award, 1999
- Founder, President, 1998-1999, National Society of Black Engineers (NSBE) chapters in Ghana
- Member, American Water Resources Association (AWRA); Association of Civil Engineers (ASCE)

RESEARCH AREAS
Sustainable water supply, infrastructure GIS, watershed and floodplain management, water quality modeling, low impact design, urban stormwater modeling, climate change on water systems, green water infrastructure planning and optimization

Christopher R. Cherry
Associate Professor
PE, PhD, University of California, Berkeley
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Knoxville, TN 37996-2313
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E-mail: cherry@utk.edu

Honors & Affiliations
- COE Ferris Faculty Award, 2015
- COE Professional Promise in Research Award, 2014
- NSF CAREER Award, 2011
- CEE Research Recognition Award, 2009, 2012
- Member, Transportation Research Board
- Member, Institute of Transportation Engineers

RESEARCH AREAS
Transportation planning, public transportation systems, non-motorized transportation, sustainable transportation, and transportation in developing countries

CONTACT
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CIVIL AND ENVIRONMENTAL ENGINEERING

David B. Clarke
Research Associate Professor and Director, Center for Transportation Research PE, The University of Tennessee
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c ee.utk.edu/people/people.php?id=delarke

Honors & Affiliations:
• Member Emeritus, TRB Committee on Local and Regional Rail Freight Transport; TRB Committee on Freight Transportation Economics and Regulation; TRB Committee on Railroad Operational Technologies
• Chair, ASCE-T&DI Rail Transportation Committee;
• Member, American Society of Civil Engineers, American Railway Engineering and Maintenance-of-Way Association, American Public Works Association and Editorial Board, Transportation Safety and Security

Research Areas:
Railway engineering; freight transportation systems; transportation demand modeling; network modeling; transportation safety; simulation

Taylor Eightmy
Vice Chancellor for Research & Engagement, Professor PhD, University of New Hampshire
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c ee.utk.edu/people/people.php?id=teighmy

Honors & Affiliations:
• Diplomate of the American Academy of Environmental Engineers and Scientists
• Member, Fully Chartered Committee of the US Environmental Protection Agency Science Advisory Board
• Board of Directors, Oak Ridge Associated Universities
• Board of Directors, UT Research Foundation
• Fellow, National Academy of Inventors

Research Areas:
Recycled materials characterization and beneficial use, element speciation, environmental; chemistry of leaching behavior, spectroscopy and surface analysis, applied geochemistry, reactive; barriers, environmental microbiology, biofouling, biofilms, sustainability, carbon sequestration

Robert H. Dodds
Research Professor
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c ee.utk.edu/people/people.php?id=rddodds

Honors & Affiliations:
• Member, National Academy of Engineering
• Editor, Engineering Fracture Mechanics (1996-2005)
• ASCE Walter Huber Prize, 1992
• ASTM Fellow

Research Areas:
Nonlinear fracture mechanics of structural metals and functionally graded materials, large-scale computational solid mechanics and high performance computing, micromechanical damage models for metals

Islam El-adaway
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PhD, Iowa State University
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c ee.utk.edu/people/people.php?id=eladaway

Honors & Affiliations:
• Academy of Distinguished Teachers, Mississippi State University, 2014
• New Faculty Research Award, American Society of Engineering Education, 2014
• Board Member, Journal of Management in Engineering, 2011-present

Research Areas:
Sustainable infrastructure systems, risk and financial engineering, holistic management for natural and man-made hazards, contractual and legal affairs in construction, agent based simulation and system dynamics modeling, engineering education, and engineering ethics

Lee D. Han
Professor
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Honors & Affiliations:
• Chancellor’s Citation for Research and Creative Achievement, 2011
• COE Research Achievement Award, 2014
• COE Teaching Fellow, 2013
• Leon and Nancy Cole Superior Teaching Award, 2012
• Chair of Faculty Senate Research Council, 2011-present
• TRB University Representative, 2007-present
• Charles E. Forell Faculty Award, 2007

Research Areas:
Emergency evacuation and incident management; high-performance microscopic traffic simulation; modeling algorithms; intelligent transportation systems (ITS); real-time large-scale data acquisition and analysis; heavy vehicle safety and tracking; license plate recognition; unsupervised learning algorithms; heuristic text and data mining

Jon Hathaway
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Honors & Affiliations:
• Professional Engineer, North Carolina
• Member, American Society of Civil Engineers
• Member, Committee on the Campus Environment

Research Areas:
Urban pollutant fate and transport; green infrastructure; low impact development; anthropogenic influences on the environment; innovative monitoring instrumentation; stormwater runoff effects on human and ecological health; coupled human and natural systems

John Drake
Research Professor
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http://cee.utk.edu/people/people.php?id=jdrake4

Honors & Affiliations:
• Contributing editor, Computational Geosciences
• Editorial board, International Journal of High Performance Computing and Applications
• Member, Society of Industrial and Applied Mathematicians

Research Areas:
Climate dynamics/engineering implications of climate change; numerical methods and parallel algorithms for climate modeling along with developing approaches to predictability and decadal, regional forecasting.

Joshua Fu
Professor, PhD, North Carolina State University
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E-mail: jfu@utk.edu
c ee.utk.edu/people/people.php?id=jfu

Honors & Affiliations:
• Contributing author, National Climate Assessment
• Chancellor’s Professional Promise Award in Research & Creative Achievement, 2012
• Most-Cited Article Award, Atmospheric Environment, Elsevier Limited
• Significant Event Award, ORNL
• Modeling Lead, Model Intercomparison Study (MICS-Asia)

Research Areas:
Air pollution, climate change in regional and local impacts such as heat waves, flood/drought, and energy infrastructure, computational science

Terry C. Hazen
Governor’s Chair Professor, Director, Institute for a Secure and Sustainable Environment PhD, Wake Forest University
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Knoxville, TN 37996
Phone: 865-974-7709
E-mail: tchazen@utk.edu
c ee.utk.edu/people/people.php?id=tchazen

Honors & Affiliations:
• Fellow, American Association for the Advancement of Science, 2013-present
• Fellow, American Academy of Microbiology, 1991-present
• DOE BER Distinguished Scientist Award, 2005-2010
• CEE Scholar Recognition Award, 2014
• Faculty Fellow, Oak Ridge National Laboratory, Biosciences Division, 2011-present
• Adjunct Professor, nine universities internationally

Research Areas:
Applied and environmental microbiology; bioremediation to clean up contaminated sites; bioenergy; climate change; water quality
Qiang He
Associate Professor
PhD, University of Illinois, Urbana-Champaign
448 John D. Tickle Engineering Building
Knoxville, TN 37996-2313
Phone: 865-974-6067
E-mail: qianghe@utk.edu

Honors & Affiliations
• Member, American Society for Microbiology (ASM)
• Member, International Water Association
• Member, American Society for Microbiology (ASM)
• CEE Scholar Recognition Award, 2011
• CEE Teaching Recognition Award, 2013

Research Areas
- Environmental biotechnology, water quality, environmental microbiology and renewable energy

Baoshan Huang
Edwin G. Burdette Professor
PE, PhD, Louisiana State University
419 John D. Tickle Engineering Building
Knoxville, TN 37996-2313
Phone: 865-974-7713
E-mail: bhuang@utk.edu

Honors & Affiliations
• Chair, ASCE Bituminous Materials Committee 2010-2012
• Associate Editor, ASCE Journal of Materials in Civil Engineering

Research Areas
- Construction materials, pavement engineering, constitutive modeling and numerical analysis and geotechnical engineering

Asad Khattak
Alvin and Sally Beaman Professor
PhD, Northwestern University
322 John D. Tickle Engineering Building
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Honors & Affiliations
• Plenary session speaker at Chinese Overseas Transportation Association (COTA) International Conference of Transportation Professionals, 2015
• Editor-in-Chief, Journal of Intelligent Transportation Systems, 2014 Impact Factor: 1.377
• Associate Editor, International Journal of Sustainable Transportation, 2014 Impact Factor: 2.548
• Member, Transportation Research Board User Information Systems Committee

Research Areas
- Intelligent transportation systems, transportation safety, sustainable transportation

Frank Loeffler
Governor’s Chair Professor
PhD, University of Hohenheim/Technical University Harburg
706 Science & Engineering Research Facility
Knoxville, TN 37996-2000
Phone: 865-974-4044
E-mail: frank.loeffler@utk.edu

Honors & Affiliations
• Editor, Applied and Environmental Microbiology, 2013-2018
• Shimizu Visiting Professor, Environmental Science and Engineering Program, Stanford University, 2009
• SERDP, Cleanup Project of the Year Award, 2004, 2006
• National Science Foundation CAREER Award, 2001
• Alexander von Humboldt Foundation Feodor-Lynen Fellow

Research Areas
- Environmental microbiology and the use of bacteria to clean and protect environmental resources

Shashi Nambisan
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PE, PhD, University of California, Berkeley
320 John D. Tickle Engineering Building
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Honors & Affiliations
• President, Council of University Transportation Centers, 2014-2015
• Co-chair, Committee on National Transportation Data Requirements, Transportation Research Board of the National Academies
• Quest Scholar of the Week, July 28, 2014, University of Tennessee
• Professor Shashi Nambisan Day, Proclamation by the Governor, State of Nevada, January 31, 2007

Research Areas
- Transportation safety, risk analysis; data-enabled decision support systems; vulnerable road users; education and workforce development

Anjelica M. Palomin
Assistant Professor
PhD, Georgia Institute of Technology
423 John D. Tickle Engineering Building
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Phone: 865-974-7757
E-mail: angel@utk.edu

Honors & Affiliations
• Member, American Society of Civil Engineers, Geo-Institute, Sigma Xi Scientific Research Society, Clay Mineral Society

Research Areas
- Engineered Soils - particle modification, engineered soil fabrics, clay particle surface modification, micro-scale soil mechanics, geogrids in pavement engineering applications, large-volume applications of coal combustion products

Z. John Ma
Professor
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E-mail: zma2@utk.edu

Honors & Affiliations
• ASCE Raymond C. Reese Research Prize, 2013
• Fellow, American Society of Civil Engineers
• Departmental Scholar Recognition Award, 2012
• NSP CAREER Award, 2004
• Co-winner, ASCE T.Y. Lin Award, 2002
• Outstanding Engineering Educator, ASCE Tennessee Section

Research Areas
- Behavior and design of FRP decks and concrete bridges; mechanics and application of FRP composites; sustainable structures

Thanos Papanicolaou
Goodrich Chair of Excellence Professor
PhD, Virginia Tech University
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Honors & Affiliations
• Director, Hydraulics and Sedimentation Laboratory
• American Society of Civil Engineers (ASCE) Hydraulics Hunter Rouse Award, 2014
• Editor-in-Chief of Hydraulic Engineering, 2014
• Co-Director, Critical Zone Observatory for Intensively Managed Landscapes, 2014
• Distinguished Member, Iowa Academy of Science, 2011
• ASCE Walter Huber Award Fellow, 2008
• Member, American Geophysical Union, ASCE, Soil and Water Conservation Society, American Society for Engineering Education

Research Areas
- Hydrodynamics, modeling, sediment transport, sensors
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</table>

### Research Areas

**Development/testing of models for multiphase flow and reactive chemical transport; inverse modeling; analysis of prediction uncertainty; decision/design/cost optimization.**

**Granular materials; 3D mechanical properties; microstructure; flow through porous media; neutron and x-ray tomography; neutron residual stress mapping and polymeric composites.**

**Asphalt paving materials, portland cement concrete and geotechnical engineering.**

**Structural mechanics, interface mechanics, composite materials modeling, stabilized methods, high performance computing.**

**Structures and materials; reliability analysis methods; optimization methods; uncertainty quantification methods (variability, data uncertainty, and model uncertainty); flexible pavement performance evaluation and design.**

**Water resources engineering, hydraulics and sediment transport in rivers, ecological engineering and stream restoration.**

**Computational mechanics, interface mechanics, composite materials modeling, stabilized methods, high performance computing.**

**Bank erosion; conservation practices; isotopic tracers; runoff and infiltration; sediment source partitioning; soil organic carbon biogeochemistry.**

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**Honors & Affiliations**

- Member, American Geophysical Union
- COE Research Fellow Award, Charles E. Ferris Faculty Award, Moses E. and Mayme Brooks Distinguished Professor Award
- Departmental Research Recognition Award and Outstanding Teacher Award
- Member, American Water Resources Association
- Member, American Ecological Engineering Society
- Member, American Geophysical Union

**Honors & Affiliations**

- COE Research Fellow Award, Charles E. Ferris Faculty Award, Moses E. and Mayme Brooks Distinguished Professor Award
- Departmental Research Recognition Award and Outstanding Teacher Award
- Member, American Water Resources Association
- Member, American Ecological Engineering Society
- Member, American Geophysical Union

**Honors & Affiliations**

- Editorial Board Member, ASTM Advances in Civil Engineering Materials
- Runner-up Best Paper Award, 2015, Sixth European Asphalt Technology Association (EATA)
- Member, Association of Asphalt Paving Technologists (AAPT); Transportation Research Board
- Associate Member, American Society of Civil Engineers

**Honors & Affiliations**

- Member, American Geophysical Union
- Tau Beta Pi

---

**Honors & Affiliations**

- Included in List of Teachers Ranked as Excellent By Their Students: Fall 2014, Spring 2015
- University of Illinois Structural Engineering Instructional Fellowship, Spring 2015
- Young Researcher Travel Fellowship, Sixth Kwang-Hua Forum, Shanghai, China, 2014
- Liu Huixian Earthquake Engineering Scholarship, 2010

**Honors & Affiliations**

- Editorial Assistant, Journal of Hydraulic Engineering, American Society of Civil Engineers (ASCE)
- 2013 Outstanding Reviewer, Journal of Environmental Quality
- Member, American Geophysical Union; ASCE; Soil and Water Conservation Society

---

**Honors & Affiliations**

- Editor, Journal of Environmental Quality, American Society of Civil Engineers (ASCE)
- 2013 Outstanding Reviewer, Journal of Environmental Quality
- Member, American Geophysical Union; ASCE; Soil and Water Conservation Society
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**Honors & Affiliations**
- IEEE Industry Applications Society Outstanding Young Member, 2001
- Chancellor’s Award for Professional Promise in Research and Creative Achievement, 2003
- NSF CAREER Award, 2001
- Fellow, IEEE
- Member, ASEE

**Research Areas**
- Power systems and power electronics, hybrid electric vehicles, renewable energy and silicon carbide power electronics

---

**Mongi A. Abidi**
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**Honors & Affiliations**
- Engineering Research Fellow Award, 2003
- Gonzalez Family Award for Excellence in Research, 2003
- Philips Professorship Award, 2001–2003

**Research Areas**
- Bioinformatics
- Communication
- Computer Engineering
- Computer Vision & Robotics
- Electromagnetics
- Electro-Optics
- High Performance Computing
- Image & Information Processing
- Intelligent Control
- Microelectronics
- Mixed-Signal VLSI
- Monolithic Sensors
- Networking
- Parallel Computing
- Plasma Engineering
- Power Electronics & Systems
- Sensor Fusion
- Signal Processing
- Visualization

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**Micah Beck**
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**Research Areas**
- Distributed systems, networking, content distribution, storage systems, scalable services and data grids

---

**Itamar Arel**
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**Honors & Affiliations**
- DOE CAREER Award, 2004
- Senior Member, IEEE
- Member, AAAI
- Intel Scholarship Award for Excellence in PhD Studies, 1999

**Research Areas**
- High-performance machine learning, reinforcement learning, biologically-inspired cognitive architectures, scientific computing

---

**Ortal Arel**
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**Research Areas**
- Cryptography, cyber security, signal processing

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Honors & Affiliations
• Allen and Hoshall Engineering Faculty Award, 2010
• Charles Edward Ferris Faculty Award, 2011
• L.R. Hesler Award for Excellence in Teaching and Service, Chancellor's Honors, 2011
• Moses E. and Mayme Brooks Distinguished Professor Award, 2009
• Member, ASEE, ACM, SIAM, MAA, IEEE Computer Society
• Editorial Board of Computing in Science and Engineering (IEEE Computer Society and AIP) and Statistical Analysis and Data Mining

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Honors & Affiliations
• Gonzalez Family Award for Excellence in Teaching, 2009
• Chancellor's Award for Professional Promise, 2006
• COE Research Fellow Award, 2005 & 2006
• Eta Kappa Nu Outstanding Teacher Award, 2002
• Member, IEEE Solid-State Circuits Society, IEEE Society of Circuits and Systems and IEEE Electron Devices Society

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Honors & Affiliations
• Member, ACM, IEEE, IEEE Computer Society
• National Science Foundation CAREER Award, 2010
• ECE Early Career Award, 2010

Daniel Costinett
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Honors & Affiliations
• Best Paper Award, COMPEL 2012
• Best Presentation Award, APEC 2012
• Associate Editor, IEEE Trans on Industrial Applications
• ECE Faculty of the Year, 2015
• Member, ACM, IEEE, Systems

Judy Day
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Mark E. Dean
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Honors & Affiliations
• Distinguished Alumni Award, University of Tennessee, 2012
• Distinguished Alumni Award, Florida Atlantic University, 2009
• Percy Julian Award & Outstanding Scientist of the Year, Harvard Society of Black Scientists and Engineers, 2007
• National Institute of Science (NIS) 2006 Outstanding Scientist Award
• Dougherty Award, 2005, UT College of Engineering
• IEEE Fellow, 2002
• Forty patents issued

Seddik M. Djouadi
Professor
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Honors & Affiliations
• Best Paper Award in the 1st Mediterranean Conference on Intelligent Systems and Automation
• Ralph E. Powe Junior Faculty Award, 2005
• Outstanding Reviewer for Automatica, 2004 and 2007
• National Research Council/U.S. Air Force Research Laboratory Associationhip Award, 2000

Jack Dongarra
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Honors & Affiliations
• Distinguished Research Staff in the Computer Science and Mathematics Division, ORNL.
• Turning Fellow, Manchester University, 2007
• ACM/IEEE Ken Kennedy Award, 2003; IEEE Medal of Excellence in Scalable Computing, 2008; IEEE Fernbach Award, 2004; IEEE IPDPS Charles Babbage Award, 2011
• SIAM Supercomputing’s award for Career Achievement, 2010
• Member, National Academy of Engineering, 2001
• Fellow, SIAM, 2003; ACM, 2001; IEEE, 1999; AAAS, 1994

Aly E. Fathy
James McConnell Professor
PhD, Polytechnic Institute of New York
609 Min H. Kao Building
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Honors & Affiliations
• University of Tennessee Research and Creative Achievement Award, 2013
• Lamar Alexander Teacher/Scholar Excellence Award, University of Tennessee, 2011
• COE Research Fellow Award, 2008, 2011
• IEEE Fellow and 2008 IEEE RWS General Chair

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

RESEARCH AREAS
Information retrieval, data and text mining, bioinformatics, computational science and scientific and parallel computing

RESEARCH AREAS
High efficiency power conversion, energy harvesting, implantable devices, and electric vehicles

RESEARCH AREAS
Development and analysis of mathematical models relating to the immune response to various stimuli and the application of control methodologies to modulate the immune response with therapeutic inputs

RESEARCH AREAS
Advanced computer systems architectures and structures

RESEARCH AREAS
Electromagnetics, antennas, microwaves, wireless and ultra wide band radars

RESEARCH AREAS
Analog/mixed-signal integrated circuit design for extreme environments (both wide temperature and radiation); high-temperature/high-voltage gate drive circuits for widebandgap power electronics; multi-channel monolithic instrumentation systems; and mixed-signal/mixed voltage circuit design for systems-on-a-chip

RESEARCH AREAS
Networked embedded systems, wireless sensor networks, operating systems, wireless networking, embedded software

RESEARCH AREAS
Numerical algorithms in linear algebra, parallel computing, use of advanced computer architectures, programming methodology and tools for parallel computers

RESEARCH AREAS
Systems and control, wireless communication, estimation and identification and computer vision

RESEARCH AREAS
Information retrieval, data and text mining, bioinformatics, computational science and scientific and parallel computing

RESEARCH AREAS
High efficiency power conversion, energy harvesting, implantable devices, and electric vehicles

RESEARCH AREAS
Development and analysis of mathematical models relating to the immune response to various stimuli and the application of control methodologies to modulate the immune response with therapeutic inputs

RESEARCH AREAS
Advanced computer systems architectures and structures

RESEARCH AREAS
Electromagnetics, antennas, microwaves, wireless and ultra wide band radars
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<td>Professor of Practice</td>
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**RESEARCH AREAS**

- **Wei Gao**
  - Wireless networking, mobile systems, cyber-physical systems, social networks, pervasive mobile computing

- **Jens Gregor**
  - Analog/mixed signal integrated circuit design; low-power circuits for wireless sensors; biomedical devices

- **Gong Gu**
  - Devices based on novel materials; semiconductor and device physics, processing and materials

- **Jeremy Holleman**
  - Forensic engineering analysis of electrical cable fires in power plants; high performance computational modeling of fires and explosions; cyberterrorism; computer security

- **Jian Huang**
  - Big data, high-performance computing, data visualization, analytics and data analysis

- **David Icove**
  - Pattern recognition, image processing and computer tomography

- **Syed Kamrul Islam**
  - Forensic engineering analysis of electrical cable fires in power plants; high performance computational modeling of fires and explosions; cyberterrorism; computer security

- **Michael Jantz**
  - Compilers, operating systems, and runtime systems (virtual machines); innovative system tools and techniques to enable more efficient execution on modern architectures

- **Andreas Koschan**
  - Image processing; computer vision; biometrics and robotics; multispectral and color vision; industrial inspection; and homeland security
Yilu Liu  
**Governor’s Chair Professor, Deputy Director of NSF/DOE Engineering Research Center**  
**PhD, Ohio State University**  
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**Honors & Affiliations**  
- Fellow, IEEE  
- Editorial Board of IEEE Proceedings  
- Editorial Board of European Transactions on Electric Power

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Fangxing (Fran) Li  
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**PE, PhD, Virginia Polytechnic Institute and State University**  
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**Honors & Affiliations**  
- Fellow of IET (formerly IEE)  
- UT Chancellor’s Award for Professional Promise in Research and Creative Achievement, 2011  
- College of Engineering Research Fellow, 2009  
- Eta Kappa Nu Outstanding Teacher Award, 2006  
- Director, CURENT Education Program  
- Editor, IEEE Transactions on Sustainable Energy  
- Secretary, IEEE Power and Energy Society PSPI Committee

---

Michael A. Langston  
**Professor**  
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**Honors & Affiliations**  
- COE Faculty Research, University of Tennessee, 2012  
- Distinguished Researcher Award, Canadian Mathematical Society, 2011  
- Gonzalez Family Research Excellence Award, University of Tennessee, 2011  
- COE Faculty Research Fellow, 2008  
- Department of Energy EPSCoR Award, 2007  
- UT Research and Creative Achievement Award, 2004  
- Association for Computing Machinery Distinguished Service Prize, 2001

---

Nicole McFarlane  
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**Honors & Affiliations**  
- Future Faculty Fellowship by University of Maryland Engineering Department, 2007  
- Outstanding TA Award, 2007

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**Honors & Affiliations**  
- University Studies Interdisciplinary Scholar of the Year, 2005-06  
- Fellow, Institute for Advanced Studies, Collegium Budapest, 1997  
- Member, AAAS; IEEE; IEEE Computer Society and Computer Intelligence Society  
- Editor-in-Chief, International Journal Nanotechnology and Molecular Computation

---

Donatello Materassi  
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**PhD, Università degli Studi di Firenze, Florence, Italy**  
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**www.eecs.utk.edu/people/faculty/dmateras**

**Honors & Affiliations**  
- Best Paper Award, SIDRA conference, 2011  
- Fellowship, University of Florence, 2004-2007  
- Università degli Studi di Firenze, 2003, Laurea in Computer Science Engineering, with Encomio Accademico (valedictorian)

---

R E S E A R C H  A R E A S

Yilu Liu  
**Honors & Affiliations**  
- Fellow, IEEE  
- Editorial Board of IEEE Proceedings  
- Editorial Board of European Transactions on Electric Power

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Husheng Li  
**Associate Professor**  
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**Honors & Affiliations**  
- Best Paper Award of EURASIP Journal on Wireless Communications and Networking, 2005  
- Member, IEEE

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Lynne E. Parker  
**Professor and Associate Head**  
**PhD, Massachusetts Institute of Technology**  
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Phone: 865-974-4394  
E-mail: leparker@utk.edu

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**Honors & Affiliations**  
- COE Moses and Mayme Brooks Distinguished Professor Award, 2013  
- Chancellor’s Award for Research & Creative Achievement, 2011  
- Fellow, IEEE, 2010; Member, ACM, AAAI  
- COE Allen & Hoshall Engineering Faculty Award, 2009  
- Gonzalez Family Award for Excellence in Research, 2009  
- UTK Angie Warren Perkins Award, 2006  
- PECASE Award, 2000

---

Fangxing (Fran) Li  
**Honors & Affiliations**  
- Fellow of IET (formerly IEE)  
- UT Chancellor’s Award for Professional Promise in Research and Creative Achievement, 2011  
- College of Engineering Research Fellow, 2009  
- Eta Kappa Nu Outstanding Teacher Award, 2006  
- Director, CURENT Education Program  
- Editor, IEEE Transactions on Sustainable Energy  
- Secretary, IEEE Power and Energy Society PSPI Committee

---

Nicole McFarlane  
**Honors & Affiliations**  
- Future Faculty Fellowship by University of Maryland Engineering Department, 2007  
- Outstanding TA Award, 2007

---

Husheng Li  
**Honors & Affiliations**  
- Best Paper Award of EURASIP Journal on Wireless Communications and Networking, 2005  
- Member, IEEE

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Lynne E. Parker  
**Honors & Affiliations**  
- COE Moses and Mayme Brooks Distinguished Professor Award, 2013  
- Chancellor’s Award for Research & Creative Achievement, 2011  
- Fellow, IEEE, 2010; Member, ACM, AAAI  
- COE Allen & Hoshall Engineering Faculty Award, 2009  
- Gonzalez Family Award for Excellence in Research, 2009  
- UTK Angie Warren Perkins Award, 2006  
- PECASE Award, 2000

---

Fangxing (Fran) Li  
**Honors & Affiliations**  
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- UT Chancellor’s Award for Professional Promise in Research and Creative Achievement, 2011  
- College of Engineering Research Fellow, 2009  
- Eta Kappa Nu Outstanding Teacher Award, 2006  
- Director, CURENT Education Program  
- Editor, IEEE Transactions on Sustainable Energy  
- Secretary, IEEE Power and Energy Society PSPI Committee

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Nicole McFarlane  
**Honors & Affiliations**  
- Future Faculty Fellowship by University of Maryland Engineering Department, 2007  
- Outstanding TA Award, 2007

---

Abstracts of the researchers' professional affiliations and research interests.
## Electrical Engineering and Computer Science

### Honors & Affiliations

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Department</th>
<th>Website</th>
<th>Contact Information</th>
<th>Honors &amp; Affiliations</th>
<th>Research Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gregory D. Peterson</strong>&lt;br&gt;Professor, Director of NICS&lt;br&gt;DSc, Washington University</td>
<td>Electrical Engineering and Computer Science</td>
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<td>- John W. Fisher Professor, 2001-2003&lt;br&gt;- Senior Member, IEEE</td>
<td>- Advanced computer systems, computational science, reconfigurable computing and design automation</td>
</tr>
<tr>
<td><strong>Hairong Qi</strong>&lt;br&gt;Gonzalez Family Professor&lt;br&gt;PhD, North Carolina State Univ.</td>
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<td>- GRSS Highest Impact Paper Award, IEEE Geoscience and Remote Sensing Society, 2012&lt;br&gt;- Best Paper Award, 3rd ACM/IEEE Int. Conf. on Distributed Smart Cameras, 2009&lt;br&gt;- Best Paper Award, Int. Conf. on Pattern Recognition, 2006&lt;br&gt;- NSF CAREER Award, 2005&lt;br&gt;- Chancellor’s Award for Professional Promise, 2004&lt;br&gt;- Leon and Nancy Cole Superior Teaching Award, 2006&lt;br&gt;- COE Allen &amp; Hoshall Engineering Faculty Award, 2006</td>
<td>- Image processing and computer vision and collaborative processing in resource-constraint networks</td>
</tr>
<tr>
<td><strong>Michael J. Roberts</strong>&lt;br&gt;Professor (retired)&lt;br&gt;PhD, University of Tennessee</td>
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<td>- Leon and Nancy Cole Superior Teaching Award, 2005&lt;br&gt;-Eta Kappa Nu Outstanding Teacher Award, 2004&lt;br&gt;- Gonzalez Family Award for Excellence in Teaching, 2003&lt;br&gt;- Life Member, IEEE</td>
<td>- Signal processing, instrumentation, and optics</td>
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<tr>
<td><strong>Kai Sun</strong>&lt;br&gt;Assistant Professor&lt;br&gt;PhD, Tsinghua University, Beijing, China</td>
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<td>- Project manager at Electric Power Research Institute, grid operations, planning, and renewable integration before joining UT</td>
<td>- Power system stability, control, and optimization</td>
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<tr>
<td><strong>Michael G. Thomason</strong>&lt;br&gt;Professor (Retired)&lt;br&gt;PhD, Duke University</td>
<td>Electrical Engineering and Computer Science</td>
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<td>Phone: 865-974-4405&lt;br&gt;Email: <a href="mailto:thomason@eecs.utk.edu">thomason@eecs.utk.edu</a></td>
<td>- Editorial board, International Journal of Imaging Systems &amp; Technology&lt;br&gt;- Senior Member, IEEE&lt;br&gt;- Senior Member, ACM</td>
<td>- Image processing, probability models and parallel computation</td>
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</tbody>
</table>
## Research Areas

### Chao Tian

**Associate Professor**  
PhD, Cornell University  
605 Min H. Kao Building  
Knoxville, TN 37996-2250  
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E-mail: chao.tian@utk.edu  

**Honors & Affiliations**  
- Senior Member, Institute of Electrical and Electronics Engineers  
- Liu Memorial Award, Cornell University, 2014  
- AT&T Key Contributor Awards, 2009-2013

**Research Areas**  
- Data storage systems; information theory, data communication and networks; joint source-channel coding; image/video coding and processing

### Michael D. Vose

**Associate Professor**  
PhD, University of Texas, Austin  
352 Min H. Kao Building  
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**Honors & Affiliations**  
- Member, American Mathematical Society

**Research Areas**  
- Evolutionary computation, algorithms simulation and theory

### Fei (Fred) Wang

**Professor and R.M. Condra Chair of Excellence**  
PhD, University of Southern California  
519 Min H. Kao Building  
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**Honors & Affiliations**  
- Fellow, IEEE  
- Associate Editor, *IEEE Transactions on Power Electronics*  
- IEEE Member of Power Electronics, Industry Applications, Power & Energy and Industrial Electronics Societies  
- Member, IEEE IAS Industrial Drives and Industrial Power Converter Committees and IEEE PELS Rectifiers and Inverters Task Force  
- Vice Chairman, Task Force, Control Architecture for IEEE PES WG 18 Power Electronics Building Blocks

**Research Areas**  
- Power electronics, power systems, motor drives, aerospace applications, WBG power electronics

### Yan Xu

**Eastman Professor of Practice**  
PhD, The University of Tennessee  
307 Min H. Kao Building  
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**Honors & Affiliations**  
- Research staff, Oak Ridge National Laboratory  
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)  
- Member, IEEE Power and Energy Society, IEEE Power Electronics Society

**Research Areas**  
- Power systems and power electronics; including utility applications of power electronics; renewable energy integration; smart grid; microgrid; communication; control; protection; energy management of power systems

---

## Research Areas

### Kevin Tomsovic

**CTI Professor and Director, Center for Ultra-wide-area Resilient Electric Energy Transmission Networks**  
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**Honors & Affiliations**  
- College of Engineering Research Achievement Award, 2015  
- IEEE Fellow, 2007  
- Outstanding EE Teaching Faculty, WSU 1996, 2002

**Research Areas**  
- Intelligent systems and optimization methodologies applied to various power system problems

### Jie (Jayne) Wu

**Associate Professor**  
PhD, University of Notre Dame  
312 Min H. Kao Building  
Knoxville, TN 37996-2250  
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**Honors & Affiliations**  
- Member, Association for Computing Machinery  
- Member, IEEE Computer Society

**Research Areas**  
- Microfluidics, solid-state sensors and actuators and microelectromechanical systems (MEMS)
### Research Focus
- Lean Systems & Management
- Production & Service Systems Modeling & Analysis
- Healthcare Systems
- Reliability & Maintenance Engineering
- Engineering Management
- Facilities Design & Materials Handling
- Applied Optimization
- Operations Research
- Logistics, Transportation & Supply Chain
- Energy & Sustainability

### Industrial & Systems Engineering

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<th>Email</th>
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<tbody>
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<td>John Kobza</td>
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</tr>
</tbody>
</table>

### Research Areas
- **Stochastic processes, quality, systems involving risks and uncertainty**

### Honors & Affiliations
- Fellow of the Institute of Industrial Engineers
- Registered Professional Engineer, Texas
- Member, Institute for Operations Research and Management Sciences

### Research Areas
- **Economic complexity, human factors, complex systems**

### Honors & Affiliations
- Engineering Excellence Award, General Motors Institute Alumni
- Special Achievement Award for Innovation, GM North American Mfg. Center
- Past Chairman, Society of Maintenance & Reliability Professionals
- Most Valuable Colleague Award, General Motors Research & Development
- J.D. Power Gold Award (Highest Quality, North America) – CTS Cadillac Plant
- Member, Society of Maintenance & Reliability Professionals, Human Factors Society

### Research Areas
- Supply chain management, transportation, logistics, optimization, stochastic processes

### Honors & Affiliations
- Outstanding Research Award, MS State, 2008
- Member, Institute of Industrial Engineers
- Member, Institute of Operations Research and Management Sciences

### Research Areas
- Sequential decision making under uncertainty; medical decision making; reliability; maintenance optimization; stochastic processes; Markov decision processes

### Honors & Affiliations
- Member, Institute for Operations Research and the Management Sciences; Society for Medical Decision Making; Institute of Industrial Engineers; American Society for Engineering Education

### Research Areas
- Reliability and maintainability, lean process implementation, benchmarking competitive practices, instilling problem-solving cultures and strategies that lead to business results

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>University</th>
<th>Phone</th>
<th>Email</th>
<th>Address</th>
<th>Honors &amp; Affiliations</th>
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<tbody>
<tr>
<td>Xueping Li</td>
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<td>411 B.H. Goethert Parkway</td>
<td>• Member, Institute of Electrical and Electronics Engineers</td>
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<td>Harold A. Richards</td>
<td>Research Assistant Professor, Faculty Development Coordinator</td>
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<tr>
<td>Rupy Sawhney</td>
<td>Health Fellow and Professor, Director, Center for Advanced Systems Research &amp; Education (CASRE)</td>
<td>PhD, The University of Tennessee</td>
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<td><a href="mailto:sawhney@utk.edu">sawhney@utk.edu</a></td>
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<td>• Welliver Boeing Fellow</td>
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<td>512 John D. Tickle Engineering Building</td>
<td>• Lean Production Fellowship</td>
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<tr>
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<td>• Member, Institute of Electrical and Electronics Engineers</td>
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</tbody>
</table>

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**RESEARCH AREAS**

- Complex systems modeling, simulation and optimization; healthcare logistics; supply chain management; scheduling; information assurance
- Effective undergraduate and graduate student education; faculty development in health sciences and healthcare analytics
- System dynamic model for high reliability organizations; quantifying the purchasing power of public transportation; CELDI; human interaction in logistics systems-supplement; NSF I/UCRC program; economic feasibility of cottonseed oil based bio-diesel; utilizing agricultural biomass in energy production and economic development; public transportation maintenance knowledge and resource sharing project
- Supply chain systems and optimization; systems engineering—requirements, logistics support, and systems of systems; scheduling
- Integer programming, stochastic programming, non-linear programming, combinatorial optimization, power generation, scheduling problems, energy markets
- Healthcare systems engineering, optimization and simulation models in healthcare, stochastic optimization, parallel computing, communication networks
- Design of international assembly systems, supply chain management, reliability optimization and system design

---
VEERLE KEPPENS
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Honors & Affiliations
• College of Engineering Research Fellow Award, 2009
• Chancellor’s Award for Professional Promise, 2007
• Departmental Outstanding Young Faculty Researcher, 2005
• Alexander Von Humboldt Fellow, 1998–1999
• Fulbright/NATO Fellow, 1995–1998
• Fellow, Acoustical Society of America

WOMENS & ENGINEERING
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VEERLE KEPPENS
Elastic constants and magnetic properties of novel materials.

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Honors & Affiliations
• COE Teaching Fellow Award, 2014
• Leon and Nancy Cole Superior Teaching Award, 2013
• Faculty Award for Excellence in Teaching, 2010, 2014
• COE Research Fellow Award, 2005, 2006, 2008, 2011
• Professional Promise in Research and Creative Achievement, University of Tennessee, 2006

JOSE (LINO) VASCONCELOS DA COSTA
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Honors & Affiliations
• Member, Laser Institute of America
• Reviewer, Optics and Lasers in Engineering and Rapid Prototyping Journal

VEERLE KEPPENS
Elastic constants and magnetic properties of novel materials.

HANH CHO
Mechanical behavior of materials; neutron and synchrotron x-ray diffraction, amorphous, nanocrystalline, and ultrasound-grained alloys.

JOSE (LINO) VASCONCELOS DA COSTA
Femtosecond laser machining of transparent dielectric materials; laser powder deposition for solid freeform fabrication purposes; LSI coating and marking of structural components; functionalization of nanoimprinted structures.

WOJCIECH DMOWSKI
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329 Ferris Hall
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865-576-8684
E-mail: wdmowski@utk.edu

Honors & Affiliations
• Joint Institute for Neutron Sciences
• Secretary, SIG Amorphous Materials of the ACA, 200-2003
• Two research awards from the Ministry of Education and Science, Poland
• Member, TMS, ACA, ACS, APS and MRS

RESEARCH AREAS
Chemical and morphological characterization of fibers and polymers for biomedical applications

VEERLE KEPPENS
Elastic constants and magnetic properties of novel materials.

HANH CHO
Mechanical behavior of materials; neutron and synchrotron x-ray diffraction, amorphous, nanocrystalline, and ultrasound-grained alloys.

JOSE (LINO) VASCONCELOS DA COSTA
Femtosecond laser machining of transparent dielectric materials; laser powder deposition for solid freeform fabrication purposes; LSI coating and marking of structural components; functionalization of nanoimprinted structures.

WOJCIECH DMOWSKI
Atomic structure and dynamics in liquids and glasses; nanoscale structures and local atomic ordering in materials; advanced structural characterization techniques.
MATERIALS SCIENCE AND ENGINEERING

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Honors & Affiliations
- Nanotechnology Impact Award, 2004
- George H. Besis Outstanding Undergraduate Advisor Award, 2008
- College of Engineering Research Fellow Award, 2011
- Member, MRS, MSA, DPG, APS, TMS

Interface science and analytical transmission electron microscopy

RESEARCH AREAS

Yanfei Gao
Associate Professor
PhD, Princeton University
319 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-2350
E-mail: yga07@utk.edu

Honors & Affiliations
- Chancellor’s Professional Promise Award, 2010
- COE Research Fellow Award, 2010, 2013
- MSE Faculty Research Award, 2010
- MSE Faculty Teaching Award, 2013
- Sir Gordon Wu Fellowship, Princeton University
- Joint Faculty, ORNL Materials Theory Group

Mechanics of solids and structures, computational materials science, surface science and mechanical behaviors of advanced structural materials

RESEARCH AREAS

Bin Hu
Professor
PhD, Chinese Academy of Sciences
403 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-3946
E-mail: bu@utk.edu

Honors & Affiliations
- COE Research Achievement Award, 2014
- COE Research Achievement Award, 2010
- Chancellor’s Professional Promise Award, 2008
- COE Research Fellow Award, 2008
- NSF CAREER Award, 2007

Sensing, modeling and control of direct metal deposition, laser materials processing, biological device fabrication, diamond microelectronics

RESEARCH AREAS

Takeshi Egami
UT-ORNL Distinguished Scientist & Professor
PhD, University of Pennsylvania
208 South College
Knoxville, TN 37996-2200
Phone: 865-974-7204
E-mail: egami@utk.edu

Honors & Affiliations
- Director Emeritus, UT-ORNL Joint Institute for Neutron Sciences
- J.D. Hanawalt Award, International Union of Crystallography, 2010
- B.E. Warren Diffraction Physics Award, American Crystallography Association, 2003
- Fellow, American Physical Society

Physics of liquids and glasses, superconducting oxides and chalcogenides, neutron and x-ray scattering

RESEARCH AREAS

William H. Hofmeister
Research Professor
PhD, Vanderbilt University
UT Space Institute CLA
Tullahoma, TN 37388
Phone: 931-393-7446
E-mail: whof@utk.edu

Honors & Affiliations
- Director, Center for Laser Applications
- Fellow, ASM International
- Visiting Erskine Fellow Canterbury University, 2011
- Adjoint Professor of Electrical Engineering, Vanderbilt University
- External Associate, Vanderbilt Institute for Integrative Biosystems Research and Education

Sensing, modeling and control of direct metal deposition, laser materials processing, biological device fabrication, diamond microelectronics

RESEARCH AREAS

Jason Fowlkes
UT-ORNL Joint Associate Professor
PhD, The University of Tennessee
304 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-243-2902
E-mail: jfowlkes@utk.edu; fowlkesjd@ornl.gov

Honors & Affiliations
- Nanofabrication Research Laboratory, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory
- Bredesen Center for Interdisciplinary Research and Graduate Education
- Member, American Chemical Society
- Member, SPIE

Nanofabrication, lithography and metrology; electron microscopy and microanalysis and modeling electron and ion interactions with solids

RESEARCH AREAS

Wei He
Associate Professor
PhD, University of Connecticut
303 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-5375
E-mail: whe5@utk.edu

Honors & Affiliations
- Departmental Faculty Award for Excellence in Research, 2012
- NSF CAREER Award, 2011
- Departmental Faculty Award for Excellence in Teaching, 2011

Biomaterials, neural tissue engineering and controlled release

RESEARCH AREAS

David C. Joy
Distinguished Scientist & Professor
PhD, University of Oxford
104 Hoskins
Knoxville, TN 37996
Phone: 865-974-3422
E-mail: dcjoy@utk.edu

Honors & Affiliations
- Peter Duncumb Award for Excellence in Microanalysis, 2010
- UT Research Foundation Recognition Award, 2002
- Fellow, Microscopy Society of America, 2009
- Fellow, Royal Microscopical Society (UK)
- Editor Emeritus, SCANNING
- National Winner, Battelle Nanoscience Challenge, 2002
- SRC Distinguished Research Award, 1998

Nanofabrication, lithography and metrology; electron microscopy and microanalysis and modeling electron and ion interactions with solids

RESEARCH AREAS

Easo P. George
Research Professor
PhD, University of Pennsylvania
304 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-9331
E-mail: egeorge@utk.edu

Honors & Affiliations
- Humboldt Prize, AvH Foundation, Germany
- Sustained Outstanding Research Award, U.S. Department of Energy
- TSM Fellow, ASM Fellow
- Buchler Best Paper Award
- MRS Outstanding Symposium Paper Award

Physical metallurgy and mechanical behavior

RESEARCH AREAS

David C. Joy
Distinguished Scientist & Professor
PhD, University of Oxford
104 Hoskins
Knoxville, TN 37996
Phone: 865-974-3422
E-mail: dcjoy@utk.edu

Honors & Affiliations
- Peter Duncumb Award for Excellence in Microanalysis, 2010
- UT Research Foundation Recognition Award, 2002
- Fellow, Microscopy Society of America, 2009
- Fellow, Royal Microscopical Society (UK)
- Editor Emeritus, SCANNING
- National Winner, Battelle Nanoscience Challenge, 2002
- SRC Distinguished Research Award, 1998

Nanofabrication, lithography and metrology; electron microscopy and microanalysis and modeling electron and ion interactions with solids

RESEARCH AREAS
Honors & Affiliations
- NSF CAREER Award, 2005
- Member, MRS, SPIE, TMS, ASM, ACS and AAAS
- Phi Kappa Phi Honor Society
- Joint Faculty, Materials Science and Technology
- Member, NRC Condensed Matter and Materials
- ISI Highly Cited Researcher
- Moore Foundation Materials Synthesis Investigator
- Fellow, American Physical Society
- Director of NSF Integrated Graduate Education and
- Westinghouse Outstanding Performance
- Haynes International Gift Funds
- Fellow, American Society for Metals
- Faculty Appointments in Energy Science & Engineering
- Young Researcher Fellowship from the Ministry of
- Science and Education of Russian Federation
- Member, APS and ACS
- Departmental Faculty Award for Exemplary Service, 2014
- Fellow, American Chemical Society, Society of
- Plastics Engineers and The Fiber Society

RESEARCH AREAS
- Advanced functional materials; solar energy; plasmonics,
opics and magnetism; nanomanufacturing
- Mechanical behaviors and processing of high-temperature
materials and neutron studies
- Discovery, growth, and materials physics of new functional
electronic and magnetic materials (e.g. superconductors,
thermoelectrics, proton conductors, itinerant ferromagnets);
2D spintronic materials
- Multiscale materials modeling, sustainable energy, structure/
property relationships in nanostructured materials, coarse-
grained modeling of polymers
- High-pressure chemistry and physics; neutron and X-ray
scattering; superconducting materials; clathrate hydrates
- Ultrasonic processing of materials and actinide oxide
electronic properties and microwave processing of materials
- Materials joining, non-equilibrium phase transformations,
physical metallurgy, materials properties, corrosion of welds
and failure analysis
- Inorganic scintillators and their applications.
James R. Morris  
**UT-ORNL Joint Associate Professor**  
PhD, Cornell University  
302 Ferris Hall  
Knoxville, TN 37996-2100  
Phone: 865-974-2484  
E-mail: morrisj@ornl.gov  
www.engr.utk.edu/mse/faculty/morris/default.html  

**Honors & Affiliations**  
- Chair, Chemistry and Physics of Materials Committee, TMS Society, 2005-2008  
- Departmental Excellence in Teaching Award, 2012  
- Visiting associate professor, CNRS, École des Mines, Nancy Cedex, France, June 2005  
- Deputy Director, Department of Energy “Energy Frontier Research Center for Defect Physics,” 2010-present  

**RESEARCH AREAS**  
Theoretical modeling of mechanical and thermodynamic properties of materials, particularly: liquid and glass behavior; defects, mechanical properties and phase transformations in crystalline materials; crystal nucleation and growth; gas adsorption in nanoporous materials

---

T. G. Nieh  
**Professor**  
PhD, Stanford University  
322 Ferris Hall  
Knoxville, TN 37996 -2100  
Phone: 865-974-5328  
E-mail: tnieh@utk.edu  
www.engr.utk.edu/mse/faculty/nieh/default.html  

**Honors & Affiliations**  
- Fellow, TMS  
- Fellow, ASM International  
- Editor-in-Chief, Intermetallics  
- Adjunct professor, WPI-Tohoku University  
- Consulting professor, Hong Kong City University, University of Science and Technology-Beijing  

**RESEARCH AREAS**  
High temperature mechanical behavior; nanomaterials; multilayers; metallic glasses; high entropy alloys

---

Maulik Patel  
**Research Assistant Professor**  
PhD, Bhabha Atomic Research Center, University of Mumbai  
330 Ferris Hall  
Knoxville, TN 37996 -2100  
Phone: 865-974-5706  
E-mail: maulik@utk.edu  
www.engr.utk.edu/mse/faculty/patel/default.html  

**Honors & Affiliations**  
- Post-doctoral Research Associate, Los Alamos National Laboratory  
- Senior Research Fellow of the Department of Atomic Energy, India

**RESEARCH AREAS**  
Radiation induced modifications in ceramics, crystallography of complex oxides using X-ray and neutron diffraction

---

George M. Pharr  
**Chancellor's Professor, John McKamey Professor and Director, Joint Institute for Advanced Materials, PE, PhD, Stanford University**  
401 Ferris Hall  
Knoxville, TN 37996-2100  
Phone: 865-974-8202  
E-mail: pharr@utk.edu  
www.engr.utk.edu/mse/faculty/pharr/default.html  

**Honors & Affiliations**  
- National Academy of Engineering, 2014  
- Fellow, Materials Research Society  
- Fellow, ASM International  
- Innovation in Materials Characterization Award, MRS, 2010  
- Bradley Stoughton Award for Young Teachers of Metallurgy, ASM, 1985

**RESEARCH AREAS**  
Mechanical behavior of materials, nanoindentation and thin film mechanical properties

---

Claudia J. Rawn  
**Associate Professor and Director, Center for Materials Processing**  
PhD, University of Arizona  
331 Ferris Hall  
Knoxville, TN 37996-2100  
Phone: 865-974-5340  
E-mail: crawn@utk.edu  
www.engr.utk.edu/mse/faculty/rawn/default.html  

**Honors & Affiliations**  
- Fellow, ASM International  
- Member, U.S. National Committee for Crystallography  
- UTK Faculty Award for Environmental Leadership, 2012  
- MSE Faculty Award for Excellence in Service, 2012, 2013  
- MSE Faculty Award for Excellence in Teaching, 2008  
- COE Outstanding Faculty Advisor, 2007  
- Member, American Crystallographic Association, ASM International, Neutron Scattering Society of America

**RESEARCH AREAS**  
Crystallography, crystal chemistry and property relationships, in-situ X-ray and neutron powder diffraction, ceramic synthesis and gas hydrates

---

Kurt E. Sickafus  
**Alvin and Sally Beaman Professor**  
PhD, Cornell University  
414 Ferris Hall  
Knoxville, TN 37996-2100  
Phone: 865-974-4858  
E-mail: kurt@utk.edu  
www.engr.utk.edu/mse/faculty/sickafus/default.html  

**Honors & Affiliations**  
- Fellow, Los Alamos National Laboratory, 2008  
- Los Alamos National Laboratory Distinguished Mentor Performance Award, 2003  
- Fellow, American Ceramic Society, 1998

**RESEARCH AREAS**  
Behavior of complex oxides in extreme radiation environments

---

Michael L. Simpson  
**UT-ORNL Joint Professor**  
PhD, University of Tennessee  
328 Ferris Hall  
Knoxville, TN 37966-2100  
Phone: 865-974-3316  
E-mail: simpsonml1@ornl.gov  
www.engr.utk.edu/mse/faculty/simpson/default.html  

**Honors & Affiliations**  
- Fellow, IEEE, AIMBE  
- Battelle Memorial Institute Distinguished Inventor, 2007  
- Kermit Fischer Environmental Award, 1998  

**RESEARCH AREAS**  
Molecular-scale engineering and nanoscale technologies; and nanophase materials science
Chris Wetteland
Lecturer
MS, Rutgers University
316 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-5446
E-mail: cjw@utk.edu

Honors & Affiliations
• Los Alamos National Laboratory
• Distinguished Performance Award, 2001, 2003
• Faculty Award for Excellence in Teaching, 2015
• Bohmische Physical Society
• Mineralogical Society of America
• Meteoritical Society of America

RESEARCH AREAS
Radiation damage in nuclear materials; ceramic synthesis; early solar system processes; novel development of solar thermal and photovoltaic energy systems; 3D printing; STEM outreach

Zhirong Yue
Research Associate Professor - UT Space Institute
PhD, Sun Yat-sen University
E-202 Main Building, UTI
411 B.H. Goethert Parkway
Tullahoma, TN 37388
Phone: 931-393-7362
E-mail: zyue@utsi.edu

Honors & Affiliations
• DOE Office of Science Early Career Scientist and Innovator, 2011
• Fellow, Materials Research Society, American Physical Society, American Society of Cristallography, American Society for Testing and Materials (ASTM)
• Senior Member, Institute for Electrical and Electronics Engineers (IEEE)

RESEARCH AREAS
Scintillation materials and devices; high-speed electronics; novel integration technologies; non-volatile memory; and plasma science and engineering

William Weber
Governor’s Chair Professor
PhD, University of Wisconsin
201 TANDEC Building
Knoxville, TN 37996-1950
Phone: 865-974-0415
E-mail: wjweber@utk.edu

Honors & Affiliations
• Pacific Northwest National Laboratory Director’s Award for Individual Lifetime Achievement in Science and Technology, 2009
• University of Wisconsin, Oshkosh, Distinguished Alumni Award, 2009
• Fellow, Materials Research Society, American Association for the Advancement of Science, American Ceramic Society, American Physical Society

RESEARCH AREAS
Radiation-solid interactions; radiation damage in nuclear materials; ion beam modification of materials; materials under extreme environments

Jiaqiang Yan
Research Assistant Professor
PhD, University of Texas at Austin
B228 Joint Institute for Neutron Sciences
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6453
Phone: 865-576-8673
E-mail: jyan@utk.edu

Honors & Affiliations
• Member, American Physical Society
• Member, American Society of Metallurgy and Materials Society

RESEARCH AREAS
Design and synthesis of novel materials, mainly in single crystal form; physical properties of new materials including superconductors, thermoelectric materials, magnetoresistive materials, and multifunctional materials; neutron and x-ray scattering

Zhongren Yue
Research Associate Professor - UT Space Institute
PhD, Tohoku University, Japan
B228 Joint Institute for Neutron Sciences
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6453
Phone: 865-576-8673
E-mail: jyan@utk.edu

Honors & Affiliations
• Fellow, Materials Research Society, American Physical Society
• University of Wisconsin, Oshkosh, Distinguished Alumni Award, 2009
• Fellow, Materials Research Society, American Association for the Advancement of Science, American Ceramic Society, American Physical Society

RESEARCH AREAS
Scintillation materials and devices; high-speed electronics; novel integration technologies; non-volatile memory; and plasma science and engineering

Shanfeng Wang
Associate Professor
PhD, University of Akron
424 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-7809
E-mail: swang16@utk.edu

www.engr.utk.edu/mse/faculty/wang/default.html

Honors & Affiliations
• DOE Office of Science Early Career Scientist and Innovator, 2011
• Fellow, Materials Research Society, American Physical Society, American Society for Testing and Materials (ASTM)
• Senior Member, Institute for Electrical and Electronics Engineers (IEEE)

RESEARCH AREAS
Discovery and development of novel scintillation materials for the next generation of gamma-ray, x-ray, and neutron detectors; solid state synthesis and melt crystal growth via the Czochralski, the Vertical Gradient Freeze and the Bridgman methods; solid state chemistry and phase equilibria; scintillation mechanisms and characterization techniques

Andrew A. Wereszczak
UT-ORNL Joint Faculty Professor
PhD, University of Delaware
310 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-0545
E-mail: andyw@utk.edu

Honors & Affiliations
• Fellow, American Ceramic Society, 2011
• Fellow, Materials Research Society, American Physical Society, American Society for Testing and Materials (ASTM)
• Fellow, American Ceramic Society (ACerS), American Society for Testing and Materials (ASTM)

RESEARCH AREAS
Science and engineering of brittle materials; micro-, meso-, and macro-mechanical response as a function of material microstructure; mechanical reliability and thermal management of structures; novel mechanical test methods; high-temperature mechanical test methods; probabilistic life prediction and design of brittle components; fracture mechanics and failure analysis

Yanwen Zhang
Research Assistant Professor
UT-ORNL Joint Associate Professor
PhD, Lund University, Sweden
434 Dougherty Engineering Building
Knoxville, TN 37996-2200
Phone: 865-974-0482
E-mail: yanwen@utk.edu

Honors & Affiliations
• Director, Department of Energy (DOE) Energy Frontier Research Center (EFRC) on Dissipation to Defect Evolution (EDDE)
• Deputy Director of the UT-ORNL Ion Beam Materials Laboratory (IBML)
• Presidential Early Career Awards for Scientists and Engineers, 2005
• DOE Office of Science Early Career Scientist and Engineer Award, 2005

RESEARCH AREAS
Research focusing on a broad range of topics in both theoretical and experimental aspects of interaction of ions and electrons with materials and how these interactions can be applied to the analysis and modification of materials, as well as the detection and characterization of charged particles

William Weber
Governor’s Chair Professor
PhD, University of Wisconsin
201 TANDEC Building
Knoxville, TN 37996-1950
Phone: 865-974-0415
E-mail: wjweber@utk.edu

Honors & Affiliations
• Pacific Northwest National Laboratory Director’s Award for Individual Lifetime Achievement in Science and Technology, 2009
• University of Wisconsin, Oshkosh, Distinguished Alumni Award, 2009
• Fellow, Materials Research Society, American Association for the Advancement of Science, American Ceramic Society, American Physical Society

RESEARCH AREAS
Radiation-solid interactions; radiation damage in nuclear materials; ion beam modification of materials; materials under extreme environments

Jiaqiang Yan
Research Assistant Professor
PhD, University of Texas at Austin
B228 Joint Institute for Neutron Sciences
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6453
Phone: 865-576-8673
E-mail: jyan@utk.edu

Honors & Affiliations
• Member, American Physical Society
• Member, American Society of Metal
• Member, The Minerals, Metals and Materials Society

RESEARCH AREAS
Design and synthesis of novel materials, mainly in single crystal form; physical properties of new materials including superconductors, thermoelectric materials, magnetoresistive materials, and multifunctional materials; neutron and x-ray scattering

Mariya Zhuravleva
Assistant Professor, SMRC
PhD, Tohoku University, Japan
307 Ferris Hall
Knoxville, TN 37996-2100
Phone: 865-974-3179
E-mail: mariya@utk.edu

Honors & Affiliations
• Secretary, Executive Board, American Association of Crystal Growth, 2015-2017
• Project leader, five-year NSF-ONDO grant to perform state-of-the-art research with the aim of achieving large volume bulk growth of new scintillators with excellent energy resolution
• Member, Materials Research Society, IEEE Nuclear and Plasma Sciences Society, IEEE Women in Engineering
**Mechanical, Aerospace & Biomedical Engineering**

**Contact**
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---

**Matthew Mench**
Professor and Head, R.M. Condra Chair of Excellence
PhD, Pennsylvania State University
410 Dougherty Engineering Building
Knoxville, TN 37996-2210
Phone: 865-974-6751
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honors.com/utk/matthew-mench

**Honors & Affiliations**
- Thomas Reuters Highly Cited Researcher
- ASME Fellow
- 2013 UTK Research Fellow Award
- 2007 NSF Early Career Development Award
- Associate Editor (Emeritus), International Journal of Hydrogen Energy
- Executive Vice President, International Association for Hydrogen Energy (IAHE)
- Outstanding and Premier Teaching Awards Penn State Engineering Society, 2006 and 2009, respectively

**Research Focus**
- Experimental and computational studies of multiphase transport in electrochemical power storage and conversion

---

**Sudarsanam Suresh Babu**
UT-ORNL Governor’s Chair Professor for Advanced Manufacturing
PhD, University of Cambridge, UK
407 Dougherty Engineering Building
Knoxville, TN 37996-2210
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E-mail: sbabu@utk.edu

mabe.utk.edu/people/two/sudarsanam-suresh-babu-

**Honors & Affiliations**
- Member, Institute of Electrical and Electronics Engineers; Research on Care Community; International Congress for Joint Reconstruction
- OSU College of Engineering–Lumley Award, April 2013
- AWS Adams Memorial Award, November 2012
- ASM Fellow Award, October 2012
- College of Engineering–Lumley Interdisciplinary Award, May 2012
- Co-recipient, AWS Warren Savage Memorial Award, 2011
- Co-Recipient, AWS William Spragen Award, 2011
- AWS William Irgang Memorial Award, 2011

**Research Areas**
- Advanced manufacturing including additive manufacturing, phase transformations, in-situ and ex-situ characterization

---

**Emam ElHak Abdel-Fatah**
Research Assistant Professor
PhD, The University of Tennessee
307 E. Stadium Hall
Knoxville, TN 37996
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mabe.utk.edu/people/two/emam-e-abdel-fatah/

**Honors & Affiliations**
- Member, Institute of Electrical and Electronics Engineers; Research on Care Community; International Congress for Joint Reconstruction

**Research Areas**
- Process modeling; healthcare engineering; pervasive computing; medical imaging; computer vision; machine learning; biomechanics; computational anatomy; anthropology

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**Phuriwat Anusontithra**
Associate Professor
PhD, Pennsylvania State University
UT Space Institute
411 B.H. Goethert Parkway
Tullahoma, TN 37388
Phone: 931-393-7417
E-mail: pamusont@utsi.edu

www.utsi.edu/faculty/pamusont/pamusont.htm

**Honors & Affiliations**
- Member, AIAA, AHS

**Research Areas**
- Multi-physics (fluid/structure/thermal) simulations, computational mechanics, high-performance computing, novel sensor development and testing, health monitoring and condition-based maintenance systems, wind energy converter

---

**J. Mark Barker**
Assistant Professor
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Knoxville, TN 37996

**Honors & Affiliations**
- Member, American Society for Engineering Education Sigma Xi
- Outstanding and Premier Teaching Awards Penn State Engineering Society, 2006 and 2009, respectively

**Research Areas**
- Synthesis and characterization of novel biomaterials; development of hydrogel drug delivery systems; local drug delivery to solid tumors; drug penetration through tumor tissue

---

**Elizabeth Barker**
Lecturer
PhD, The University of Tennessee
Health Science Center
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E-mail: ebarkori@utk.edu

mabe.utk.edu/people/two/elizabeth-barker/

**Honors & Affiliations**
- Member, Society for Biomaterials; American Association of Pharmaceutical Scientists
- American Society for Engineering Education

**Research Areas**
- Computational mechanics; fracture and contact mechanics; solid, fluid, and thermal mechanics; finite element methods; applied mathematics; multiscale modeling; mechanics of energy storage materials; structural health monitoring

---

**Mark Barker**
Senior Lecturer
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312 Dougherty Engineering Building
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**Honors & Affiliations**
- Member, Tau Beta Pi, Pi Tau Sigma
- Member, American Society of Mechanical Engineers
- American Society for Engineering Education Sigma Xi

**Research Areas**
- Thermal fatigue, undergraduate education, fluid mechanics

---

**Reza Abedi**
Assistant Professor
PhD, University of Illinois at Urbana-Champaign
UT Space Institute
411 B.H. Goethert Parkway
Tullahoma, TN 37388
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www.utsi.edu/faculty/rabedi/abedi.htm

**Honors & Affiliations**
- Member, United States Association for Computational Mechanics (USACM); American Society of Mechanical Engineering (ASME); Materials Research Society (MRS); Society of Industrial and Applied Mathematics (SIAM); American Mathematical Society (AMS); American Society for Engineering Education (ASEE)

**Research Areas**
- Microscopy; biodata visualization; computer vision; machine learning; biomechanics; computational anatomy; anthropology

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<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
<th>Honors &amp; Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert E. Bond</td>
<td>Senior Lecturer</td>
<td>PhD, West Virginia University</td>
<td>Member, ASME, AIAA and AHS</td>
</tr>
<tr>
<td>J.A.M. Boulet</td>
<td>Associate Professor and Associate Head of Undergraduate Programs</td>
<td>PhD, Stanford University</td>
<td>NSF CAREER Award, 2008</td>
</tr>
<tr>
<td>Subhadeep Chakraborty</td>
<td>Assistant Professor</td>
<td>PhD, Pennsylvania State University</td>
<td>Member, IEEE, Member, ASME, Regular reviewer for American Control Conference, Conference on Decision and Control, Systems Man and Cybernetics, Data Mining and Knowledge Discovery, ASME Turbo-Expo etc.</td>
</tr>
<tr>
<td>Christopher Combs</td>
<td>Research Assistant Professor</td>
<td>PhD, The University of Texas at Austin</td>
<td>NASA Space Technology Research Fellow, 2011 – 2015</td>
</tr>
<tr>
<td>Brett Compton</td>
<td>Assistant Professor</td>
<td>PhD, University of California, Santa Barbara</td>
<td>Senior Member of AIAA</td>
</tr>
<tr>
<td>Hans DeSmit</td>
<td>Associate Professor, AE P'rogram Coordinator</td>
<td>PhD, Pennsylvania State University</td>
<td>UTQ Quest Scholar of the Week, Jan. 2010</td>
</tr>
<tr>
<td>Chad Duty</td>
<td>Associate Professor</td>
<td>PhD, Georgia Tech</td>
<td>ASEE, Air Force Summer Faculty Fellowship, 2011, 2012</td>
</tr>
<tr>
<td>Steve Brooks</td>
<td>Associate Professor</td>
<td>PhD, Catholic University of America, Washington DC</td>
<td>US Antarctic Service Medal, US Navy Arctic Service Ribbon</td>
</tr>
</tbody>
</table>

**Research Areas**

- Robert E. Bond: Aerodynamics, fluid dynamics, heat transfer, airplane performance
- J.A.M. Boulet: Dynamics, vibrations and structures
- Subhadeep Chakraborty: Characterization and mitigation of failures in complex systems using data-driven system identification and supervisory control; electrochemical sensor development for simultaneous detection of multiple environmental contaminants through stochastic signal processing; modeling and analysis of behavioral dynamics in networked societies
- Christopher Combs: Compressible flows; turbulence; laser-based measurement techniques; flowfield imaging
- Hans DeSmit: Structural dynamics, active vibration control, rotor dynamics, structural health monitoring, rotorcraft propulsion and elastic wave propagation

---

**Subhadeep Chakraborty**

- **Honors & Affiliations**
  1. Member, IEEE
  2. Member, ASME
  3. Regular reviewer for American Control Conference, Conference on Decision and Control, Systems Man and Cybernetics, Data Mining and Knowledge Discovery, ASME Turbo-Expo etc.

---

**Christopher Combs**

- **Honors & Affiliations**
  1. NASA Space Technology Research Fellow, 2011 – 2015
  2. Graduate Researcher, The University of Texas at Austin, 2010-2015
  4. Member, AIAA

---

**Hans DeSmit**

- **Honors & Affiliations**
  1. UTQ Quest Scholar of the Week, Jan. 2010
  2. ASME Dynamic Systems and Control Division, Rudolf Kalman Best Paper Award, 2009
  3. NSF CAREER Award, 2008
  4. Member, ASME, AIAA and AHS

---

**Chad Duty**

- **Honors & Affiliations**
  1. ORNL Excellence in Technology Transfer Award for Big Area Additive Manufacturing (2014)
  3. R&D 100 Award: CermaCladTM: Rapid Metal Coating Process (MesoCoat) (2011)
  4. R&D100 Award for PulseForge 3100 with Pulse Thermal Processing (2009)

---

**Steve Brooks**

- **Honors & Affiliations**
  1. Senior Member of AIAA
  2. Member ASME, Sigma Gamma Tau, Sigma Xi
  3. NSF Career Award, 2012
  4. MABE Department Outstanding Teaching Award, 2012
  5. ASEE-IGTI John P. Davis Award for Best Paper of the Year, 2012
  6. ASEE, Air Force Summer Faculty Fellowship, 2011, 2012

---

**Kivanc Ekici**

- **Honors & Affiliations**
  1. Senior Member of AIAA
  2. Member ASME, Sigma Gamma Tau, Sigma Xi
  3. NSF Career Award, 2012
  4. MABE Department Outstanding Teaching Award, 2012
  5. ASEE-IGTI John P. Davis Award for Best Paper of the Year, 2012
  6. ASEE, Air Force Summer Faculty Fellowship, 2011, 2012

---

**Steve Brooks**

- **Honors & Affiliations**
  1. US Antarctic Service Medal
  2. US Navy Arctic Service Ribbon

---

**Hans DeSmit**

- **Honors & Affiliations**
  1. UTQ Quest Scholar of the Week, Jan. 2010
  2. ASME Dynamic Systems and Control Division, Rudolf Kalman Best Paper Award, 2009
  3. NSF CAREER Award, 2008
  4. Member, ASME, AIAA and AHS
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zannatul Ferdous</td>
<td>Assistant Professor</td>
<td>PhD, Rice University</td>
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<td></td>
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<td></td>
<td>Phone: 865-974-6678, E-mail: <a href="mailto:zferdous@utk.edu">zferdous@utk.edu</a></td>
</tr>
<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>American Heart Association, Biomedical Engineering Society, Center for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biological and Environmental Nanotechnology</td>
</tr>
</tbody>
</table>

**RESEARCH AREAS**

- Disease development & remodeling in heart valves, cellular mechanochemistry & electrophysiology, heart-valve biomechanics & tissue engineering, biomarkers for early detection & treatment in valves, bioreactor systems for native & engineered systems.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Larry Steven Foster</td>
<td>Lecturer</td>
<td>BS, The University of Tennessee</td>
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<td>Phone: 865-974-5129, E-mail: <a href="mailto:lfr3@utk.edu">lfr3@utk.edu</a></td>
</tr>
<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>Mechanical Systems Architect/Chief Engineer/Senior Technical Staff Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lexmark International, 1991–2010, Senior Product Design Engineer IBM,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1977–1991</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>William (Bill) R. Hamel</td>
<td>Professor</td>
<td>PhD, The University of Tennessee</td>
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<td>Phone: 865-974-6588, E-mail: <a href="mailto:whamel@utk.edu">whamel@utk.edu</a></td>
</tr>
<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>ANS Ray Goertz Award, 2014, ASME Fellow, IEEE Fellow, IEEE Robotic &amp;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automation Society 2007 Distinguished Service Award, Allen &amp; Hoshall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engineering Faculty Award, 2004, Moses E. and Mayme Brooks Distinguished</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Professor Award, 2000</td>
</tr>
</tbody>
</table>

**RESEARCH AREAS**

- Teleoperations and telerobotics, biomechatronics and biomimetics, automotive systems and controls and nano biosystems.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wei He</td>
<td>Associate Professor</td>
<td>PhD, University of Connecticut</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>Member, Materials Research Society, Member, Society of Biomaterials,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Member, Biomedical Engineering Society, Departmental Faculty Award for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excellence in Research, 2012, NSF CAREER Award, 2011, Departmental Faculty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Award for Excellence in Teaching, 2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
</tr>
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<tbody>
<tr>
<td>David (Butch) K. Irick</td>
<td>Research Assistant Professor,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Director</td>
<td>PhD, The University of Tennessee</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>Phone: 865-974-0663, E-mail: <a href="mailto:dki@utk.edu">dki@utk.edu</a></td>
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<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>COE Charles Edward Ferris Faculty Award, 2014, Member, SAE Student Chapter</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faculty Advisor, Senior Member, SME, Licensed Professional Engineer,</td>
</tr>
<tr>
<td></td>
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<td>Member, ASME</td>
</tr>
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</table>

**RESEARCH AREAS**

- Automotive testing for emissions and performance; hybrid electric vehicle design and system integration; use of alternative fuels (methanol, ethanol, natural gas, bio-diesel) in vehicles; computer integrated engineering and manufacturing.

<table>
<thead>
<tr>
<th>Name</th>
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<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacqueline (Jackie) A.</td>
<td>Associate Professor</td>
<td>PhD, University of Liverpool</td>
</tr>
<tr>
<td>Johnson</td>
<td></td>
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<td></td>
<td>Phone: 931-393-7474, E-mail: <a href="mailto:jjohnson@utsi.edu">jjohnson@utsi.edu</a></td>
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<tr>
<td></td>
<td>Honors &amp; Affiliations</td>
<td>COE Research Fellow Award, 2014, Fellow, American Ceramic Society, R&amp;D</td>
</tr>
<tr>
<td></td>
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<td>100 Award Winner, 2007, Fellow of the Institute of Physics</td>
</tr>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Majid Keyhani</td>
<td>Professor</td>
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<td></td>
<td>Honors &amp; Affiliations</td>
<td>Fellow, ASME, Pi Tau Sigma Outstanding Teacher Award, 2006, B. Ray Thompson</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sr. Professorship Award, 2002, Robert M. Condra Professorship Award,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1997–1999, Moses E. and Mayme Brooks Distinguished Professor Award, 1995</td>
</tr>
</tbody>
</table>

**RESEARCH AREAS**

- Additive manufacturing, nanophotonics, nanomaterials for energy storage and environment applications, femtosecond induced nonthermal nanosintering and additive manufacturing for flexible electronics, Li rechargeable battery, water treatment, ultrasensitive substrates for surface-enhanced optical spectroscopy, femtosecond laser-nanosurgery and cell transfection.

**RESEARCH AREAS**

- Nanoscale laser-trapping, manipulation, and tissue engineering with applications in nanomedicine.

**RESEARCH AREAS**

- Nanoscience in medicine.
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• Exxon Mobil Professor Award, 2006
• Fellow, ASME
• Editorial Board, Natural Science Reports
• Editor, Journal of Flow Visualization and Image Processing
• Associate Editor, Experiments in Fluids
• TEES Fellow Award, Texas A&M, 2001
• Association of Former Students Teaching Excellence Award, Texas A&M 1999

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• Faculty Advisor for the East Tennessee Chapter of the Society for the Advancement of Material and Process Engineering (SAMPE)

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Honors & Affiliations
• Senior Member, IEEE
• Member, IEEE Engineering and Biology Society
• Member, IEEE Computer Society
• Member, Orthopaedic Research Society

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Honors & Affiliations
• American Physical Society (APS)
• American Chemical Society (ACS)
• Materials Research Society (MRS)
• American Association for Advancement of Science (AAAS)

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Honors & Affiliations
• MABE Distinguished Professor, 2008
• Shell Professor, 2002
• Exxon Professor, 1996

Richard D. Komistek
Fred M. Roddy Professor
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Honors & Affiliations
• Research Fellow Award, 2005, 2006, 2012
• President, International Society of Technology in Arthroplasty, 2009–2010
• Guest Editor, Journal of Biomechanics, 2005
• Coventry Award, Knee Society, 2003
• ESIS Clinical Biomechanics Award, 1996 and 1998
• Member, American Academy of Orthopedic Surgeons (AAOS), Orthopaedic Research Society (ORS), Knee Society

J. Evans Lyne
Clinical Associate Professor
PhD, North Carolina State Univ.
MD, Vanderbilt University
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Honors & Affiliations
• American Institute of Aeronautics; Advisor to the UT AIAA Student Chapter
• Atmospheric Flight Mechanics Technical Committee and HyTASP Committee
• Technical reviewer for the Journal of Spacecraft and Rockets and Planetary and Space Science

Masood Parang
Professor and Associate Dean for Academic & Student Affairs
PhD, University of Oklahoma
101 Perkins Hall
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E-mail: mparang@utk.edu
Honors & Affiliations
• AIAA Associate Fellow
• NASA-ASEE Faculty Fellowship, 1995, 1996
• Shell Professor of Mechanical Engineering, 2000-2001
• College of Engineering Advisor Award, 2000
• College of Engineering and departmental teaching awards, 1990, 1995, 1999

RESEARCH AREAS
Near-field characterization of micro/nano-scale transport; opto-thermal characterization of nanostructured materials (graphene); neutron radiographic characterization of liquid metal phase transition

RESEARCH AREAS
Space mission planning, hypersonics and atmospheric entry

RESEARCH AREAS
Composite materials properties and processing, cure cycle optimization and fusion energy

RESEARCH AREAS
Musculoskeletal mechanics analysis, computer assisted orthopaedic surgery and medical imaging registration

RESEARCH AREAS
Fluidized beds, lean NOx traps (LNTs), diesel oxidation catalysts (DOC), SCR catalysts and diesel particulate filters (DPFs)

RESEARCH AREAS
Plasmodynamics, high-temperature gases, rarefied gases, cryodeposits, high-speed flow

RESEARCH AREAS
Fluid flow and heat transfer, microgravity flows, applied math

RESEARCH AREAS
Biomechanics, Kane’s dynamics, implant design and vibrations

RESEARCH AREAS
Mechanical, Aerospace and Biomedical Engineering
**RESEARCH AREAS**

Promotion of innovation in design education with alternate problem solving strategies; assessment of teaching techniques to promote creative problem solving; applications of chaos theory in design education; thermal control of consumer electronics; thermal and fluid based instrumentation systems; energy system analysis; experimental heat transfer and fluid flow.

**RESEARCH AREAS**

Structural mechanics with an emphasis on linear and non-linear finite element methods, energy and variational methods, dynamics and vibrations, plate and shell analysis, computational solid mechanics; engineering education, particularly engineering design, as well as the history of science and engineering.

**RESEARCH AREAS**

Bio-inspired transduction and materials; smart materials.

**RESEARCH AREAS**

Finite element analysis, computational mechanics, fracture mechanics, mechatronics, engineering education.

**RESEARCH AREAS**

Fundamentals and innovative applications of energy transport and conversion (heat transfer physics); multiscale, multiphysics simulations (ab initio, molecular dynamics, and meso or Boltzmann); thermal energy transport and conversion in non-equilibrium, heterogeneous structures (interfaces, molecular junctions), graphene, and energy conversion devices (solar cell, fuel cell, etc.)

**RESEARCH AREAS**

Computational fluid dynamics focusing on high-speed viscous flows, turbulent and transitional shock interactions; integration of empirical and numerical simulations within a comprehensive framework.

**RESEARCH AREAS**

Computational tools, forward dynamics, patient-specific modeling, inverse dynamics, surgical robotics.

**Daniel Caleb Rucker**

**Assistant Professor**

**PhD, Vanderbilt University**

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**Honors & Affiliations**

- IEEE Member
- VUSE Best Student Paper Award, Vanderbilt School of Engineering, 2010

**Adrija Sharma**

**Research Assistant Professor**

**PhD, The University of Tennessee**

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**Honors & Affiliations**

- Member, Internal Society of Biomechanics, International Society for Technology in Arthroplasty
- Reviewer, *Journal of Biomechanics; Journal of Biomechanical Engineering; Journal for Orthopedic Research*
- John Insall Award, Knee Society Proceedings, 2010

**Larry Sharpe**

**Senior Lecturer**

**PhD, University of South Carolina**

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**Honors & Affiliations**

- Outstanding Teacher Award: Pi Tau Sigma, 2014
- Member, American Society of Mechanical Engineers
- Member, American Society of Engineering Education
- Licensed Professional Engineer

**Seungha Shin**

**Assistant Professor**

**PhD, University of Michigan, Ann Arbor**

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**Honors & Affiliations**

- Member, American Society of Mechanical Engineers, MRS
- Member, The Honor Society of Phi Kappa Phi, University of Michigan, 2010-2013
- Journal and conference proceeding reviewer for *Physical Review B (APS), AIP Advances (AIP), Nanoscale and Microscale Thermophysical Engineering (Taylor & Francis), Heat Transfer 2013, IMECE 2014 (ASME)*

**Christopher D. Pionke**

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**Honors & Affiliations**

- National Alumni Association Outstanding Teacher, 1999
- American Society for Mechanical Engineers, Civil Engineers and Engineering Education
- Society of Sigma Xi
- Faculty Advisor and Treasurer, Tau Beta Pi

**John Schmisseur**

**Professor of Aerospace Engineering and H.H. Arnold Chair**

**PhD, Purdue University**

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**Honors & Affiliations**

- Fellow, American Institute of Aeronautics and Astronautics, 2012
- Fellow, Air Force Research Laboratory, 2013
- Air Force Science and Engineering Award in Research Management, 2008
**MECHANICAL, AEROSPACE AND BIOMEDICAL ENGINEERING**

**Gary V. Smith**  
Professor and Associate Head of Graduate Programs  
PhD, Pennsylvania State University  
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Honors & Affiliations  
- College of Engineering Outstanding Faculty Advisor, 2005  
- Outstanding MABE Teacher, 2010  

**Stephanie TerMaath**  
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PE, PhD, Cornell University  
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Honors & Affiliations  
- Moses E. and Mayme Brooks Distinguished Professor Award, 2015  
- Penn State Schreyer Honors College Outstanding Alumnus Mentor, 2014  
- Office of Naval Research Young Investigator Award, 2014  
- Associate Fellow, American Institute of Aeronautics and Astronautics  
- Faculty Advisor, Tau Beta Pi, Society of Women Engineers  

**Uday Vaidya**  
UT-ORNL Governor’s Chair Professor  
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Honors & Affiliations  
- Text Book: *Composites for Automotive, Mass Transit and Truck*  
- Presidential Teaching Award  
- Composites Manufacturing BEST Award  

**Eric R. Wade**  
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Honors & Affiliations  
- Member, ASME, IEEE, SIN, ASNR, ACRM  

**Kwai L. Wong**  
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Honors & Affiliations  
- Member, SIAM  
- Research Scientist, Joint Institute for Computational Sciences, 1997–present  

**Matthew Young**  
Eastman Assistant Professor of Practice  
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Honors & Affiliations  
- Member, American Society of Mechanical Engineers; Institute of Electrical and Electronics Engineers; American Society for Engineering Education  

**U. Peter Solies**  
Clinical Associate Professor, Academic Program Coordinator, Aviation Systems  
PhD, The University of Tennessee  
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*www.utsi.edu/faculty/usolies/usolies.htm*  
Honors & Affiliations  
- Senior Member, American Institute for Aeronautics and Astronautics  
- NASA — American Society for Engineering Education Summer Faculty Fellowship  

**Jindong Tan**  
Professor and Associate Head, Integrated Programs and Activities  
PhD, Michigan State University  
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Honors & Affiliations  
- Institute of Electrical and Electronics Engineers  
- Robotics & Automation Society  
- Engineering in Medicine and Biology Society  
- Association for Computing Machinery  

---

**RESEARCH AREAS**  
**Fluid control systems**

**RESEARCH AREAS**  
**Structural mechanics, fracture mechanics, material science, high-performance computing, structural dynamics**

**RESEARCH AREAS**  
**Advanced composites, composite materials and manufacturing, applications development, nondestructive evaluation, sustainable and green materials, composites design, process modeling and mechanics, composites recycling and sustainability, sound and vibration damping, hybrid materials, multiscale, multifunctional and nano-bio materials**

**RESEARCH AREAS**  
**Flow control, unsteady flows, high frequency swirling flows, flow actuators, combustion control, pitch-based carbon fibers and carbon fiber composites**

**Biological signal processing, wearable sensor design, assistive robotics, neuro-rehabilitation, health-care technology**

**Multiphysics simulations on large scale parallel computers; finite element formulations for computational fluid dynamics; parallel direct and sparse solvers for systems of linear equations; numerical linear algebra implementation on GPUs; scalable software framework for multi-disciplinary biomedical simulations**

**Engineering pedagogical methods; robotics and controls; machine design; additive manufacturing**
### Feng-Yuan Zhang
Associate Professor
PhD, Nagoya University, Japan

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**Honors & Affiliations**
- Graduate with the Highest Honor from NUAA
- Meitetsu Foundation Fellowship
- Maruban Research Promotion Foundation Scholar
- Mitsutoyo Scholar for Science and Technology
- First Place Prize, American Chemical Society (ACS)-Delaware Section

**Research Areas**
- Sustainable energy and alternative fuel, low-emission combustion engines, thermal/fluid sciences, MEMS/NEMS, micro-/nano-scale transport, micro fluids and heat transfer, advanced electron/optical/laser/X-ray spectrocopies

### Zhili Zhang
Associate Professor
PhD, Princeton University

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**Honors & Affiliations**
- ASEE Air Force Summer Faculty Fellowship 2012, 2013
- Crocco Teaching Award, Princeton University
- Member, American Institute of Aeronautics and Astronautics
- Member, Optical Society of America

**Research Areas**
- Radar REMPI, laser diagnostics and plasma dynamics

### Xiaopeng Zhao
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PhD, Virginia Tech

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**Honors & Affiliations**
- Member, Biomedical Engineering Society
- Member, American Society for Mechanical Engineers
- NSF CAREER Award
- Quest Scholar of the Week, UTK, Jan. 2010
- Award, Computing in Cardiology Challenge, 2010, 2011

**Research Areas**
- Dynamics and control, computational biology, medical informatics
### Research Focus

- Nuclear Reactor Fuels and Materials
- Nuclear Security
- Radiological Science and Health Physics
- Nuclear I&C, Reliability and Safety
- Nuclear Fuel Cycles
- Advanced Modeling and Simulation

### Research Areas

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<thead>
<tr>
<th>RESEARCH AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied artificial intelligence, surveillance and diagnostics, instrumention and control, modeling and simulation, maintenance and reliability engineering</td>
</tr>
<tr>
<td>Advanced Radionuclide Separations, nuclear forensics for post-detonation analysis, advanced imaging techniques and methodologies for pre-detonation forensic samples</td>
</tr>
<tr>
<td>Fault detection, diagnostics, and prognostics; equipment condition assessment; process monitoring for safeguards and control; risk-informed maintenance and control</td>
</tr>
<tr>
<td>Nuclear fusion science and technology; plasma physics; plasma-material interactions; diagnostics</td>
</tr>
<tr>
<td>High performance computing applications to nuclear engineering, reactor core physics, molten salt based nuclear systems</td>
</tr>
</tbody>
</table>

### Contact

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Phone: 865-974-2525
Fax: 865-974-0668
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Web: www.engr.utk.edu/nuclear
Honors & Affiliations

- Member, INMM, ASEE
- American Chemical Society
- Fellow, American Association for the Advancement of Science
- Fellow, American Institute of Chemists
- American Nuclear Society
- American Physical Society

RESEARCH AREAS

Global nuclear security, nuclear counter-terrorism, nuclear and radiochemistry, nuclear forensics, nonproliferation, safeguards and consequence management

Honors & Affiliations

- Member, IEEE
- Member, Institute of Nuclear Materials Management
- Member, American Nuclear Society
- Member, American Society for Engineering Education

RESEARCH AREAS

Radiation instrumentation, especially for nonproliferation technologies and imaging

Maik Lang

Assistant Professor

PhD, University of Heidelberg, Germany

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Phone: 865-974-8247

E-mail: mlang2@utk.edu

Honors & Affiliations

- Member, American Society of Mechanical Engineers
- Member, American Nuclear Society
- Fellow, American Society for Engineering Education
- Member, American Physical Society
- Member, Institute of Nuclear Materials Management
- Member, American Nuclear Society
- Member, American Society for Engineering Education

RESEARCH AREAS

Radiation damage and high-pressure studies, materials science

Eric D. Lukosi

Assistant Professor

PhD, University of Missouri-Columbia

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Phone: 865-974-6568

E-mail: elukosi@utk.edu

Honors & Affiliations

- Ralf E. Powe Young Faculty Enhancement Award, 2013
- ANS Meeting, Proceedings, and Transactions Committee, 2013-present
- Member, IEEE, 2012-present
- Member, American Nuclear Society, 2007-present

G. Ivan Maldonado

Assistant Professor

PhD, North Carolina State University

31 Pasqua Engineering Building

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Honors & Affiliations

- Member, American Nuclear Society
- Member, American Society of Mechanical Engineers
- Member, IEEE

RESEARCH AREAS

Reactor physics, computational nuclear engineering and nuclear fuel management

Ronald E. Pevey

Associate Professor

PE, PhD, The University of Tennessee

213 Pasqua Engineering Building

Phone: 865-974-7577

E-mail: rpevey@utk.edu

Honors & Affiliations

- COE Teaching Fellow, 2012
- Leon and Nancy Cole Superior Teaching Award, 2001
- Secretary, American Nuclear Society Mathematics and Computations Division, 2004–2006

RESEARCH AREAS

Monte Carlo methods, nuclear criticality safety, radiation shielding and nuclear reactor physics

Arthur E. Ruggles

Professor

PhD, Rensselaer Polytechnic Institute

312 Pasqua Engineering Building

Phone: 865-974-2525

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Honors & Affiliations

- Fellow, American Society of Mechanical Engineers (ASME)
- Member, American Nuclear Society (ANS)
- Member, Sigma Xi
- COE Research Fellow, 2009

RESEARCH AREAS

Nuclear nonproliferation and safeguards, nuclear fuel cycle modeling, nuclear waste management, and policy issues pertaining to the nuclear fuel cycle

Lawrence Heilbronn

Associate Professor

PhD, Michigan State University

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Honors & Affiliations

- Member, American Society for Engineering Education
- Member, American Physical Society
- Member, American Nuclear Society
- Member, IEEE

RESEARCH AREAS

Rafael E. Powe Young Faculty Enhancement Award, 2013

Yongji R. Hayward

Assistant Professor

PhD, University of Michigan

211 Pasqua Engineering Building

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Honors & Affiliations

- Ralf E. Powe Young Faculty Enhancement Award, 2013
- ANS Meeting, Proceedings, and Transactions Committee, 2013-present
- Member, IEEE, 2012-present
- Member, American Nuclear Society, 2007-present

RESEARCH AREAS

Ionizing radiation detection system design and engineering for a variety of applications, from material to data processing

Steven E. Skutnik

Assistant Professor

PhD, North Carolina State University

505A Ferris Hall

Phone: 865-974-2212

E-mail: sskutnik@utk.edu

Honors & Affiliations

- Member, American Nuclear Society
- Member, Institute of Nuclear Materials Management

RESEARCH AREAS

Thermal-fluid transport, liquid metals, fluid transients and water hammer

Arthur E. Ruggles

Professor

PhD, Rensselaer Polytechnic Institute

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Honors & Affiliations

- Fellow, American Society of Mechanical Engineers (ASME)
- Member, American Nuclear Society (ANS)
- Member, Sigma Xi
- COE Research Fellow, 2009

RESEARCH AREAS

Nuclear nonproliferation and safeguards, nuclear fuel cycle modeling, nuclear waste management, and policy issues pertaining to the nuclear fuel cycle
**Joseph R. Stainback IV**  
Research Associate Professor  
PhD, The University of Tennessee  
207 Pasqua Engineering Building  
Knoxville, TN 37996-2300  
Phone: 865-744-8923  
E-mail: jstainback@utk.edu

**Honors & Affiliations**  
- Five DOE Defense Programs Awards of Excellence  
- Member, Institute of Industrial Engineers (IIE)  
- Member, Institute of Nuclear Materials Management (INMM)  
- Member, American Nuclear Society (ANS)

**Brian Wirth**  
UT-ORNL Governor's Chair Professor  
PhD, University of California-Santa Barbara  
303 Pasqua Engineering Building  
Knoxville, TN 37996-2300  
Phone: 865-974-2554  
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**Honors & Affiliations**  
- National Science Foundation CAREER Award  
- Fusion Power Associates David J. Rose Excellence in Fusion Engineering Award, 2007  
- Presidential Early Career Award for Scientists & Engineers (PECASE), 2003  
- Early Career Scientist and Engineer Award, Department of Energy, 2003  
- Editorial Advisory Board, Journal of Nuclear Materials

**Donghua Xu**  
Research Assistant Professor  
PhD, California Institute of Technology  
215 Pasqua Engineering Building  
Knoxville, TN 37996-2300  
Phone: 865-974-5057  
E-mail: xudh@utk.edu

**Honors & Affiliations**  
- Two first- and corresponding-author papers listed as Highly Cited by ISI Web of Science, 2014  
- Member, MRS, TMS, ISRN Mat. Sci. editorial board  
- Proposal Reviewer, Romanian National Research Council, US DOE Fusion Energy Sciences  
- Two US patents on metallic glasses

**Steven Zinkle**  
UT-ORNL Governor's Chair Professor  
PhD, University of Wisconsin, Madison  
306 Pasqua Engineering Building  
Knoxville, TN 37996-2300  
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E-mail: szinkle@utk.edu

**Honors & Affiliations**  
- Member, US National Academy of Engineering  
- Member, National Materials & Manufacturing Board  
- Editor, Metallurgical & Materials Transactions E: Materials for Energy Systems  
- DOE E.O. Lawrence Memorial Award, Nuclear Technology, 2006  
- Fellow, Materials Research Society; The Minerals, Metals and Materials Society; American Nuclear Society; AAAS; American Physical Society  
- Robert W. Cahn Award, 2010

**RESEARCH AREAS**  
- Physical metallurgy of structural materials; ion and neutron irradiation effects on the microstructure, physical properties, and mechanical properties of metals and ceramics; transmission electron microscopy; fusion and space fission reactor materials studies

---

**Lawrence W. Townsend**  
Condra Chair Professor, Chancellor's Professor  
PhD, University of Idaho  
303A Pasqua Engineering Building  
Knoxville, TN 37996-2300  
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**www.engr.utk.edu/nuclear/townsend.html**

**Honors & Affiliations**  
- Member, American Nuclear Society (ANS)  
- Member, Institute of Nuclear Materials  
- Member, Institute of Industrial Engineers (IIE)  
- Member, US National Academy of Engineering  
- DOE E.O. Lawrence Memorial Award, Nuclear Technology, 2006  
- Fellow, Materials Research Society; The Minerals, Metals and Materials Society; American Nuclear Society; AAAS; American Physical Society  
- Robert W. Cahn Award, 2010

**RESEARCH AREAS**  
- Nuclear and radiological engineering, radiation physics, transport theory, Theoretical nuclear physics and space radiation protection

---

**Belle R. Upadhyaya**  
Professor  
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**Honors & Affiliations**  
- Alexander Prize, 2015  
- Chancellor’s Award for Research & Creative Achievement  
- Fellow, International Society of Automation  
- Fellow, International Society of Automation

**RESEARCH AREAS**  
- Nuclear structural materials; radiation damage in materials; amorphous and nano-crystalline metals/ alloys; rate theory based cluster dynamics modeling; kinetic Monte Carlo modeling; positron annihilation spectroscopy experiments  
- Radiation instrumentation, especially for nonproliferation technologies and imaging  
- Reactor dynamics and control, instrumentation, advanced signal processing, reactor monitoring and diagnosis, small modular reactors, reliability and maintainability engineering
RESEARCH AREAS
Biofuels & Bioprocessing
Underwater Video – GPS Habitat Mapping
GPS Tracking of Military Vehicle Movement & Environmental Impacts
Precision Farming & Yield Mapping
Soil Bioremediation for Contaminant Removal
Ground Penetrating Radar for Subsurface Measurements
Erosion Mapping & Control & Sediment Modeling
Irrigation System Design
Waste Management – Human and Animal

Honors & Affiliations
- Member, American Society of Agricultural and Biological Engineers, Soil Science Society of America, American Society of Civil Engineers, ASPE Professional Firms Practicing in the Geosciences

END
### Robert S. Freeland
**Professor**
PE, PhD, The University of Tennessee

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Bio: [bioengr.ag.utk.edu/dynamic/show_person.asp?which=224](bioengr.ag.utk.edu/dynamic/show_person.asp?which=224)

**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers, Tennessee Association of Professional Surveyors, Gamma Sigma Delta Honor Society, Alpha Zeta Honor Society

### William E. Hart
**Associate Professor**
PhD, Purdue University

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**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers
- Treasurer, Gamma Sigma Delta Honor Society of Agriculture
- UT National Alumni Association Outstanding Teaching Award, 2012
- UTIA Webster Pendergrass Award for Outstanding Service, 2011
- CASNR W.F. and Golda Moss Outstanding Teaching Award—Over 10 Years, 2011
- BESS Outstanding Service Faculty Award, 2011

### Shawn A. Hawkins
**Assistant Professor**
PE, PhD, The University of Tennessee

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**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers, American Water Resources Association-Tennessee Section, Tennessee Air Pollution Control Board, Tennessee Association of Agricultural Agents & Specialists

### Douglas G. Hayes
**UT-DOE, Joint Faculty, Professor**
PhD, University of Michigan

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**Honors & Affiliations**
- Guest Professor, Wuhan Polytechnic University (China)
- BESS Outstanding Teacher Award, 2012
- Senior Associate Editor, *Journal of the American Oil Chemists’ Society*
- Associate Editor, *Journal of Surfactants and Detergents*
- Associate Editor, *Biological Engineering Transaction (ASABE)*
- Secretary/Treasurer, *Biotechnology Division, American Oil Chemists’ Society (AOCS)*

### Brian G. Leib
**Associate Professor**
PhD, Pennsylvania State University

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Bio: [bioengr.ag.utk.edu/dynamic/show_person.asp?which=1040](bioengr.ag.utk.edu/dynamic/show_person.asp?which=1040)

**Research Areas**
- Extension specialty: the environmental impact of animal waste land application

### Andrea L. Ludwig
**Assistant Professor**
EIT, PhD, Virginia Tech

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- Knoxville, TN 37996-4531
- Phone: 865-723-882
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**Honors & Affiliations**
- Secretary, American Ecological Engineering Society
- Member, American Water Resources Association, Gamma Sigma Delta, Consortium of Universities for the Advancement of Hydrologic Sciences

### Timothy G. Prather
**Extension Specialist I**
MS, University of Georgia

- 106 BESS Offices
- Knoxville, TN 37996-4531
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- E-mail: tprather@utk.edu

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**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers, Tennessee Geographic Information Council

### Fred D. Tompkins
**Distinguished Professor and Associate Vice President for Research and Economic Development**
PE, PhD, University of Tennessee

- 110 BESS Offices
- Knoxville, TN 37996-4531
- Phone: 865-974-7666
- E-mail: tompkins@tennessee.edu

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**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers
- UT Alumni Association Outstanding Teacher Award
- Webster Pendergrass Award for Outstanding Service
- Allen & Hoshall Outstanding Teaching Award
- Gamma Sigma Delta Outstanding Teaching Award
- ASAE Outstanding Paper Awards

### John S. Tyner
**Associate Professor**
PhD, Oklahoma State University, PE (Texas), P.G.

- 312 BESS Offices
- Knoxville, TN 37996-4531
- Phone: 865-974-7130
- E-mail: jtyner@utk.edu

Bio: [bioengr.ag.utk.edu/dynamic/show_person.asp?which=888](bioengr.ag.utk.edu/dynamic/show_person.asp?which=888)

**Honors & Affiliations**
- Member, American Society of Agricultural and Biological Engineers, American Geophysical Union

---

**Research Areas**
- Near-surface geophysical surveying, land surveying, precision agriculture
- Power and machinery systems
- Extension specialty: irrigation system design and management
- Watershed restoration, urban and agricultural stormwater management
- Unsatuated flow and transport, LID management
- Machine design, off-highway vehicle performance, field-going implements and systems
**John B. Wilkerson**  
Professor  
PhD, The University of Tennessee  
309 BESS Offices  
Knoxville, TN 37996-4531  
Phone: 865-974-7132  
E-mail: wilkej@utk.edu  

**Honors & Affiliations**  
- Member, American Society of Agricultural & Biological Engineers

**Alvin R. Womac**  
Professor  
PE, PhD, The University of Tennessee  
308 BESS Offices  
Knoxville, TN 37996-4531  
Phone: 865-974-7104  
E-mail: awomac@utk.edu

**Honors & Affiliations**  
- TAES Research Impact Award, UTIA  
- T.J. Whatley Distinguished Young Scientist Award, UTIA  
- Member, American Society of Agricultural & Biological Engineers, the American Society of Mechanical Engineers, UTIA Biofuels Committee

**Daniel C. Yoder**  
Professor  
PE, PhD, Purdue University  
317 BESS Offices  
Knoxville, TN 37996-4531  
Phone: 865-974-7116  
E-mail: dyoder@utk.edu

**Bioengr.ag.utk.edu/dynamic/show_person.asp?which=896**

**Honors & Affiliations**  
- Fellow, Soil and Water Conservation Society  
- Recipient of 1 Superior Paper and 2 Honorable Mention Paper Awards from ASABE  
- Member, AAAS, AGU, ASABE, ASTM, SWCS

**X. Philip Ye**  
Associate Professor  
PhD, University of Minnesota  
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Knoxville, TN 37996-4531  
Phone: 865-974-7129  
E-mail: xye2@utk.edu  

**Bioengr.ag.utk.edu/dynamic/show_person.asp?which=1146**

**RESEARCH AREAS**

<table>
<thead>
<tr>
<th>RESEARCH AREAS</th>
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</thead>
<tbody>
<tr>
<td>Sensor development</td>
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</table>

<table>
<thead>
<tr>
<th>RESEARCH AREAS</th>
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</thead>
<tbody>
<tr>
<td>Biomass harvest, processing and supply logistics; spray application analyses and environmental effects</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>RESEARCH AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass conversion to bioenergy and biomaterials, characterization and evaluation of biological materials using NMR/MRI, FTIR/FTNIR, modeling of reaction and transport phenomena in food and bioprocess engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESEARCH AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stormwater management, erosion and sediment control, hydrologic monitoring</td>
</tr>
</tbody>
</table>
Center for Intelligent Systems and Machine Learning
Michael W. Berry, Director
PhD, University of Illinois at Urbana-Champaign
616 Min H. Kao Building
Knoxville, TN 37996-4350
Phone: 865-974-3838
E-mail: mberry@utk.edu
Web: cisml.utk.edu

About the center:
The Center for Intelligent Systems and Machine Learning (CISML) is a collaboration of faculty from three colleges and eight academic departments at the University of Tennessee (UT) and is part of the College of Engineering on the Knoxville campus. Beginning as a simple faculty initiative to create a unified curricula, CISML evolved into an official UT research center that studies the theory and application of intelligent systems and machine learning. In addition to UT faculty, the center’s affiliated research staff is comprised of experts from Oak Ridge National Laboratory (ORNL).

CISML’s focus is on designing computer-based systems that exhibit intelligent behavior, operate autonomously, and adapt to environmental changes. Examples of the diverse research activities in this area include pattern recognition, robotics, artificial intelligence, biologically-inspired cognitive architectures, bioinformatics, and data mining, to name a few.

Center for Transportation Research
Dr. David B. Clarke, Director
PE, PhD, The University of Tennessee
309 Conference Center Building
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Fax: 865-974-3889
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About the center:
CTR is home to a broad set of research, educational, and outreach activities that promote the safe and efficient movement of people and goods throughout the region and across the world. These activities help practitioners meet daily transportation challenges, contribute to the development and implementation of new transportation technologies, inform transportation policy-making, and help prepare coming generations of transportation professionals. CTR provides valuable opportunities in support of students and faculty across the university and throughout the Southeast.

During our forty-two-year history, CTR has relied on collaborations with affiliates, partners, and project sponsors. Our partnerships include state and federal agencies, individual communities, other universities, private-sector firms, and transportation leaders worldwide. CTR has long-standing relationships with all sectors of the US Department of Transportation, the US Army Corps of Engineers, Tennessee Department of Transportation, Governor’s Highway Safety Office, the Southeastern Transportation Center research consortium, the National University Rail Center, the Council of University Transportation Centers, and Knox County Schools. CTR has ongoing international collaborations with Beijing Jiaotong Transportation University and Tongji University.

Center for Materials Processing
Claudia Rawn, Director
PhD, University of Arizona
513 East Stadium Hall
Knoxville, TN 37996-0750
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E-mail: crawn@utk.edu
Web: www.engr.utk.edu/cmp

About the center:
The Center for Materials Processing (CMP) was initiated as a Center of Excellence in 1985 through the Tennessee Higher Education Commission. The CMP’s mission is to foster and promote research on a wide variety of materials with the objective of providing technology that can be the starting point for new product development or provide solutions to problems related to the performance of materials that will improve industrial competitiveness. The mission is achieved by support of interdisciplinary research in departments across the campus. CMP funds are matched by support from industry and governmental agencies and are primarily used to support graduate fellowships and undergraduate research or for the purchase or upgrade of state-of-the art instrumentation. Industrial support is provided through CMP memberships, research contracts, and gifts.

Materials of interest include materials used in advance energy systems, including materials found as components in the solar and nuclear industries, and materials used in high performance applications including materials found as components in computers and in the aerospace industries. Biomaterials and materials for nuclear detection are also a focal point of many of the researchers associated with the CMP.

Center for Ultra-wide-area Resilient Electric Energy Transmission Networks
Kevin Tomsovic, Director
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512 Min H. Kao Building
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Phone: 865-974-9720
E-mail: tomsovic@tennessee.edu
Web: curent.utk.edu

About the center:
The Center for Ultra-wide-area Resilient Electric Energy Transmission Networks (CURENT) is an engineering research center headquartered at the University of Tennessee, Knoxville, but with research partnerships at Northeastern University, Rensselaer Polytechnic Institute, and Tuskegee University. The center collaborates with academia, industry, and national laboratories to develop innovative technologies and studies that may aid in the creation of a smarter, more robust, and unified electric grid system. CURENT is jointly supported by the National Science Foundation (NSF) and the Department of Energy (DOE).

CURENT’s vision is a nation-wide or continent-wide transmission grid that is fully monitored and dynamically controlled in real-time for high efficiency, high reliability, low cost, better accommodation of renewable energy sources, full utilization of energy storage, and accommodation of responsive load. CURENT also strives for a new generation of electric power and energy systems engineering leaders with global perspectives and diverse backgrounds.
Innovative Computing Laboratory

Jack Dongarra, Director
PhD, University of New Mexico
203 Claxton Complex
Knoxville, TN 37996-1450
Phone: 865-974-8205
E-mail: dongarra@eecs.utk.edu
Web: icl.cs.utk.edu

Honors & Affiliations:
• Distinguished Research Staff in the Computer Science and Mathematics Division, ORNL
• Turing Fellow, Manchester University, 2007
• ACM/IEEE Ken Kennedy Award, 2013; IEEE IPDPS Charles Babbage Award, 2011; IEEE Medal of Excellence in Scalable Computing, 2008; IEEE Fernbach Award, 2004
• SIAM Supercomputing’s award for Career Achievement, 2010
• Member, National Academy of Engineering, 2001
• Fellow, SIAM, 2009; ACM, 2001; IEEE, 1999; AAAS, 1994

About the center:
The Innovative Computing Laboratory (ICL) aspires to be a world leader in enabling technologies and software for scientific computing. The center’s vision is to provide high performance tools to tackle science’s most challenging problems and to play a major role in the development of standards for scientific computing in general. ICL is part of the Department of Electrical Engineering and Computer Science in the College of Engineering and serves as the cornerstone laboratory of the Center for Information Technology Research (CITR), one of the University of Tennessee’s nine Centers of Excellence.

Institute of Biomedical Engineering

William Hamel, Interim Director
PhD, The University of Tennessee
403 Dougherty Engineering Building
Knoxville, TN 37996-2110
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E-mail: whamel@utk.edu
Web: ibme.utk.edu

Honors & Affiliations:
• ANS Ray Goertz Award, 2014
• ASME Fellow
• IEEE Fellow
• IEEE Robotic & Automation Society 2007 Distinguished Service Award
• Allen & Hoshall Engineering Faculty Award, 2004
• Moses E. and Mayme Brooks Distinguished Professor Award, 2000

About the center:
The Institute of Biomedical Engineering (iBME) at the University of Tennessee is a unique initiative, established to increase the level of human knowledge; provide new technologies; advance human health; and contribute to the economic development of Tennessee and the nation. The institute’s incorporation of engineering and medicine unites three diverse campuses in a multi-disciplinary collaboration.

Researchers from the University’s College of Engineering; Graduate School of Medicine; College of Veterinary Medicine; College of Educational, Health, and Human Sciences; College of Arts and Sciences; College of Business Administration; and College of Agricultural Sciences and Natural Resources work collaboratively with scientists, physicians, faculty and students from many UT disciplines to research today’s medical problems, resulting in better healthcare for the state and beyond. Through the institute, students and faculty conduct world-class biomedical research.

Institute for a Secure and Sustainable Environment

Terry Hazen, Director
PhD, Wake Forest University
507 Science & Engineering Research Facility
Knoxville, TN 37996
Phone: 865-974-4251
E-mail: tchazen@utk.edu
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Honors & Affiliations:
• Fellow, American Association for the Advancement of Science, 2013-present
• Fellow, American Academy of Microbiology, 1991-present
• DOE BER Distinguished Scientist Award, 2005-2010
• CEE Scholar Recognition Award, 2014
• Faculty Fellow, Oak Ridge National Laboratory, Biosciences Division, 2011-present
• Adjunct Professor, nine universities internationally

About the center:
The University of Tennessee’s Institute for a Secure and Sustainable Environment (ISSE) seeks to promote the development of policies, technologies, and educational programs that cut across multiple disciplines, engage the university’s research faculty and staff, and grow in response to pressing environmental and security issues facing the state, the nation, and the globe.

ISSE’s specialized centers, programs, and initiatives address a range of issues that fall under the broad rubric of sustainability.

Reliability & Maintainability Center

Klaus M. Blache, Director
PhD, Wayne State University
507 East Stadium Hall
Knoxville, TN 37996-0700
Phone: 865-974-9628
E-mail: kbleche@utk.edu
Web: www.RMC.utk.edu

Honors & Affiliations:
• Research Professor in Industrial & Systems Engineering
• Engineering Excellence Award, General Motors Institute Alumni
• Special Achievement Award for Innovation, GM North American Mg. Center
• Past Chairman, Society of Maintenance & Reliability Professionals
• Most Valuable Colleague Award, General Motors Research & Development
• J.D. Power Gold Award (Highest Quality, North America) – CTS Cadillac Plant
• Member, Society of Maintenance & Reliability Professionals, Human Factors Society

About the center:
The Reliability and Maintainability Center (RMC) is a university–industry association dedicated to improving industrial productivity, efficiency, safety and profitability through advanced reliability and maintainability concepts, technologies, and management principles.

The RMC’s vision is to be an international leader in education, research, technologies, assessments, professional development, information sharing, and business support in the areas of reliability and maintainability.

Originated in 1996, the RMC has grown to more than fifty-five sponsoring organizations and has educational and research interactions with faculty and staff in all departments of the College of Engineering (COE) and with various faculty and staff in the College of Business. About twelve percent of the COE undergraduate class receives a minor in Reliability and Maintainability.
Scintillation Materials Research Center
Charles L. Melcher, Director
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Honors & Affiliations:
• Fellow, IEEE
• Nuclear and Plasma Sciences Society, 2006 Merit Award
• Senior Editor: Conference Proceedings of Inorganic Scintillators and their Applications, 2007
• Associate Editor: Conference Proceedings of Inorganic Scintillators and their Applications, 2009
• Associate Editor, IEEE Transactions on Nuclear Science, 2004-2010
• Chair, Radiation Instrumentation Technical Committee, IEEE Nuclear and Plasma Sciences Society, 2009-2011

About the center:
The Scintillation Materials Research Center is widely recognized as a leading research facility for the discovery and development of innovative materials that are used as gamma ray, X-ray, and neutron sensors. The center’s faculty, students, and other researchers are supported by a combination of public and private funding to perform both basic and applied research related to the needs of the health-care industry, homeland security, and the exploration for new energy resources.

Applications of the technology include medical imaging systems that depend on high-performance radiation sensors for early and accurate diagnosis of disease, portal monitors that identify the illegal transport of radioactive materials, and instruments used in the petroleum industry for the discovery and production of oil and gas.
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<td>J. Roger Parsons</td>
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### Biosystems Engineering and Soil Science

#### Emeritus Faculty

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#### Adjunct Faculty

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<tr>
<td>Seth Dabney</td>
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