MIZZOU ENGINEERING

RESEARCH DIRECTORY

College of Engineering
University of Missouri

2023

Dear Colleagues,

At Mizzou Engineering, we are creating a better world through engineering.

We do this by pursuing transformative research that leads to new discoveries in science and technology, pushing the boundaries of what's possible. We combine visionary pursuits with practical investigation to devise bold, creative solutions to some of society's most pressing challenges. And we do it alongside our students, ensuring they receive a high-quality engineering education that empowers them to explore their ideas through hands-on experimentation.

Across six academic departments, we are studying new processes to improve precision health care, the latest trends in autonomous vehicles and smart transportation systems, ways in which artificial intelligence can help speed material innovations and creative ways to advance sustainability.

This guide will allow you to navigate specific research areas and activities happening across the College. Learn more about the interdisciplinary initiatives and centers that bring together researchers from across campus to share knowledge and resources. Meet the faculty members who make Mizzou Engineering a welcoming, inclusive and collaborative community.

As you learn more about us, I invite you to consider ways in which you could work across departments, across campus and across the world to advance life-changing research.

Noah D. Manring
Dean, Ketcham Professor
College of Engineering

CONTENTS

CONTENTS

NOAH D. MANRING

Dean, Ketcham Professor
W1006 Lafferre Hall
573-882-0195
manringn@missouri.edu

Education
PhD from Iowa State University
MS from University of Illinois at Urbana-Champaign
MA from Reformed Theological Seminary
BS and BA from Michigan State University

Research Focus
Cardiovascular mechanics
Fluid power
Machine design

Noah D. Manring is dean and Ketcham Professor of the College of Engineering at the University of Missouri.

Manring previously served as chair of the Department of Mechanical and Aerospace Engineering, served as chair of the former Department of Electrical and Computer Engineering, and on two separate occasions served as the College's associate dean of research. He also served as associate dean for administration at Princeton University, and as a program manager at Caterpillar's Technical Center in Mossville, Illinois. He holds 11 U.S. patents for innovations in the field of fluid power.

As a professor, he has received research funding from Caterpillar Inc., Festo Corp. and the National Fluid Power Association, as well as from the Department of Education, the National Science Foundation and various private donors. He has additionally done consulting work for several industrial firms, including Moog Inc., FMC Wyoming Corp., Dennison Hydraulics and Parker Hannifin. Manring has published two books, *Hydraulic Control Systems*, first and second editions, and *Fluid Power Pumps and Motors: Analysis, Design and Control*. He currently is working on his third book, *Opportunity, Genius, and Entrepreneurship: A History of Modern Engineering.*

Before joining the MU faculty, Manring worked for eight years in the off-highway mobile equipment industry.

ROGER FALES

**Associate Dean
of Student Services
and Academic Programs,
Professor of Mechanical and
Aerospace Engineering**
W1006E Lafferre Hall
573-884-1564
falesr@missouri.edu

Education
PhD from Iowa State University
MS from Kansas State University
BS from Kansas State University

Research Focus
Automatic control systems
Fluid power systems
Medical devices

Roger Fales serves as the associate dean of student services and academic programs at the University of Missouri College of Engineering. An engineer for Caterpillar Inc. before joining MU, Fales has four years of industrial experience developing fluid power and off-highway machine systems and controls. His research has focused on robust control design and stability of dynamic systems with applications in fluid power, respiratory support and the dynamics of blood oxygen saturation in premature infants. His research has been funded by the National Institutes of Health (NIH), MU Coulter Biomedical Accelerator, Caterpillar Inc., Honeywell and Boeing.

ROSEANNA N. ZIA

Associate Dean for Research, Dave Wollersheim Professor of Mechanical and Aerospace Engineering
W1006F Lafferre Hall
573-882-6555
rzia@missouri.edu

Education
PhD, California Institute of Technology
ME University of Michigan
BS University of Missouri

Research Focus
Microhydrodynamics
Rheology & Microrheology
Computational Modeling of
Multiphase Flows and Soft Matter

Roseanna N. Zia is Associate Dean for Research for the College of Enginering and Wollersheim Professor of Mechanical and Aerospace Engineering at the University of Missouri.

Zia received her PhD in Mechanical Engineering from the California Institute of Technology for development of theory in colloidal hydrodynamics working with Professor John F. Brady. Subsequently, she conducted post-doctoral study of colloidal gels at Princeton University in collaboration with Professor William R. Russel. Dr. Zia began her faculty career at Cornell University. She subsequently moved her research group to Stanford University.

Prior to coming to Missouri, Zia was a tenured professor in chemical engineering at Stanford with a courtesy appointment in mechanical engineering, where she developed micro-continuum theory for structure-property relationships of flowing suspensions, elucidating the mechanistic origins of the colloidal glass transition, and multi-scale computational modeling of reversibly bonded colloidal gels. Her group now combines these areas of research to shed light on the matter/life nexus, building the first physics-based model of the minimal biological cell

Zia received two Presidential Early Career Award for Scientists and Engineers (PECASE) awards, the highest honor bestowed by the U.S. government on outstanding scientists and engineers. She has also been honored with the Office of Naval Research (ONR) Director of Research Early Career Award, the ONR Young Investigator award, the National Science Foundation (NSF) CAREER Award, the NSF BRIGE Award, the Publication Award from the Society of Rheology, the Engineering Sonny Yau ('72) Teaching Award, and the Tau Beta Pi Teaching Honor Roll Award. Zia serves as an Associate Editor for the Journal of Rheology, and on the Advisory Boards of the AIChE Journal and the Journal of Colloid and Interface Science.

ADMINISTRATION

ACADEMIC DEPARTMENTS

Dean's Office Staff
Office: W1006 Lafferre Hall

Jenne Parker
Senior Business Services Consultant
Phone: 573-882-0948
Email: parkerjenn@missouri.edu

Ashley Armentrout
Executive Assistant
Phone: 573-884-7004
Email: amsgz4@missouri.edu

Melissa Collins
First Year Engineering Coordinator
Phone: 573-884-1182
Email: colllinsm@missouri.edu

Research Office Staff
Office: W1002D Lafferre Hall

Shelley Hilton
Director
Phone: 573-882-8732
Email: hiltonsa@missouri.edu

Nancy Baker
Senior Grants and Contracts Specialist
Phone: 573-882-4488
Email: bakern@missouri.edu

Rashmi Goswami
Senior Grants & Contracts Specialist
Phone: 573-882-7701
Email: goswamir@missouri.edu

Shima Naseh
Senior Grants & Contracts Specialist
Phone 573-882-9943
Email: shima.naseh@missouri.edu

Jennifer Townsend
Senior Post-Award Analyst
Phone: 573-882-8396
Email: townsendje@missouri.edu

Chemical and Biomedical Engineering
Office: W2030 Lafferre Hall
Phone: 573-884-8610

Civil and Environmental Engineering
Office: E2509 Lafferre Hall
Phone: 573-882-3715

Electrical Engineering and Computer Science
Office: 201 Naka Hall
Phone: 573-882-0692

Engineering and Information Technology
Office: E2437 Lafferre Hall
Phone: 573-882-1282

Industrial and Systems Engineering
Office: E3437 Lafferre Hall
Phone: 573-882-2691

Mechanical and Aerospace Engineering
Office: E2412 Lafferre Hall
Phone: 573-884-8918

Chemical and Biomedical Engineering

Kevin Gillis
Office: W2203A Lafferre Hall
Phone: 573-884-8610
Email: gillisk@missouri.edu

Yangchuan Xing (associate chair)
Office: W2028 Lafferre Hall
Phone: 573-884-1067
Email: xingy@missouri.edu

Civil and Environmental Engineering

Praveen Edara
Office: E2509D Lafferre Hall
Phone: 573-882-1900
Email: edarap@missouri.edu

Electrical Engineering and Computer Science

Syed Kamrul Islam
Office: 201 Naka Hall
Phone: 573-882-9139
Email: islams@missouri.edu

Engineering and Information Technology

Hani Salim
Office: E2437J Lafferre Hall
Phone: 573-884-6761
Email: salimh@missouri.edu

Industrial and Systems Engineering

James Noble
Office: E3437F Lafferre Hall
Phone: 573-882-9561
Email: noblej@missouri.edu

Mechanical and Aerospace Engineering

Hongbin "Bill" Ma
Office: E2412A Lafferre Hall
Phone: 573-884-5944
Email: mah@missouri.edu

If you would like expert comment from one of the faculty researchers on a specific topic listed in the topic index, you may contact the College of Engineering's Marketing and Communications director to make an arrangement to speak to someone.

Danene Brooks
573-882-7834
brooksdd@missouri.edu
engineering.missouri.edu

Follow us on social media:

MUEngineering

University of Missouri College of Engineering

mizzouengineer

mizzouengineer

mizzouengineering

ROY BLUNT NEXTGEN PRECISION HEALTH

Established: 2021
Website: https://precisionhealth.missouri.edu/

Mizzou Engineering faculty plays a role in NextGen Precision Health, an initiative to expand collaboration in personalized health care and the translation of interdisciplinary research for the benefit of society.

The Roy Blunt NextGen Precision Health building at Mizzou anchors this statewide initiative, which unites government and industry leaders with innovators from across the system's four research universities in pursuit of life-changing precision health advancements.

The NextGen building is a $220.8 million cutting-edge research facility dedicated to solving our most pressing health concerns. This space serves as a collaborative nexus for activity focused on speeding the path to new treatments and making them accessible to people in need. The 265,000-square-foot complex includes multidisciplinary laboratory space, clean rooms for tissue engineering and device fabrication, educational resources and state-of-the art equipment.

Mizzou Engineering faculty provide biomedical, biological, bioinformatics and computational expertise, as well as support informatics and data analytics to help translate crucial lab research into life-changing interventions, medicines, technologies and treatments specifically designed to improve individual health.

MU MATERIALS SCIENCE AND ENGINEERING INSTITUTE

CO-DIRECTORS: MATT MASCHMANN, ASSOCIATE PROFESSOR OF MECHANICAL & AEROSPACE ENGINEERING; TOMMY SEWELL, PROFESSOR OF CHEMISTRY

Established: 2022
Website: msei.missouri.edu

The MU Materials Science and Engineering Institute (MSEI) brings together interdisciplinary collaborators focused on materials science and engineering research and education with the goal of creating smarter, safer and more efficient ways to live through the investigation and design of advanced materials.

The MSEI serves as a hub for interdisciplinary materials research in the College of Engineering and the College of Arts & Science. Researchers across 10 MU departments work collaboratively to investigate design and application of high-performance materials through machine learning, quantum mechanics, multiscale simulation and theory, and other emerging technologies using cutting-edge facilities.

MSEI fosters collaboration in existing and new areas including biomaterials, nanomaterials, quantum materials, and materials-at-extremes.

By uniting the sciences and engineering at Mizzou, the Institute will create new opportunities for joint projects and funding proposals.

Additionally, Institute-affiliated faculty are expected to develop new interdisciplinary academic programs such as graduate degrees and certificates in materials science and engineering to prepare students to work and research in these rapidly evolving and cross-cutting areas.

FOCUS AREAS:
- Energy materials
- Nanoscale materials
- Materials-at-extremes
- Multiscale science and AI-informed material design
- Quantum materials
- Biomaterials

MISSOURI WATER CENTER

CO-DIRECTORS: BAOLIN DENG, WILLIAM ANDREW DAVISON PROFESSOR, CIVIL AND ENVIRONMENTAL ENGINEERING; DAMON HALL, ASSISTANT PROFESSOR, CHEMICAL AND BIOMEDICAL ENGINEERING AND SCHOOL OF NATURAL RESOURCES

Established: 2022
Website: water.missouri.edu

The Missouri Water Center brings together campus, government and industry collaborators with the goal of protecting and preserving Missouri's water resources. The Missouri Water Center serves the State of Missouri and the nation through innovative research on managing water resources and water quality, training students for water-related professions, and creating and transferring knowledge that enhances safety and the economic, environmental and social status of its people.

The Missouri Water Center was created by merging two existing centers at MU: The Missouri Water Resource Research Center in the College of Engineering and the Center for Watershed Management and Water Quality in the College of Agriculture, Food and Natural Resources (CAFNR).

FOCUS AREAS:
• Water resources and flood mitigation
• Water quality monitoring and management
• Economic impact assessments
• Stakeholder engagement
• Student training

CENTER FOR GEOSPATIAL INTELLIGENCE (CGI)

DIRECTOR: CURT DAVIS
F. ROBERT AND PATRICIA NAKA ENDOWED PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

Established: 2005
Website: https://engineering.missouri.edu/research/featured/center-for-geospatial-intelligence-cgi/

The primary mission of the Center for Geospatial Intelligence (CGI) is to engage research, development and training/education that support U.S. defense and intelligence agencies and related industry.

The center includes a variety of specialized research laboratories and secure high-performance computing infrastructure dedicated to working on geospatial intelligence problems in support of national security objectives. To date, CGI research has garnered more than $50 million in awarded federal grants/contracts from a diverse group of DoD/IC agencies including NGA, U.S. Army, OUSD(I), AFRL, DARPA and numerous defense companies that support these agencies. The depth and breadth of CGI's personnel, specialized research facilities and its funded research have made it the leading academic research center in this country focused on critical geospatial intelligence for national security and support of U.S. military forces throughout the world.

FOCUS AREAS:
• Satellite, airborne and ground-based remote sensing systems
• Artificial intelligence and machine learning
• Data science
• Automated target detection and recognition
• UAV systems and sensor processing
• Pattern recognition
• Data mining/information retrieval
• High-performance computing for geospatial data analytics

CENTER FOR CYBER EDUCATION, RESEARCH & INFRASTRUCTURE (MIZZOU CERI)

DIRECTOR: PRASAD CALYAM
GREG L. GILLIOM PROFESSOR OF CYBER SECURITY
Established: 2019
Website: engineering.missouri.edu/ceri-center

The Center for Cyber Education, Research & Infrastructure (Mizzou CERI) supports and enhances interdisciplinary efforts around cyber innovation.

CERI provides MU faculty, students and collaborators with access to advanced computing resources, leadership in initiatives to pursue major research funding, facilitation of expertise in cybersecurity and support for creation of cyber testbed sandboxes with relevant training. Additionally, the Center includes the Mizzou Cyber Range (sponsored by National Security Agency), which provides a virtual environment that allows students to practice cyber attack and defense strategies in realistic but safe settings. Also, the Center provides the Mizzou CAVE service (sponsored by National Science Foundation), which is an immersive virtual reality system with a synchronized motion tracking system to foster interdisciplinary research and education around a theme of dynamic decision making and learning. More than 30 faculty from different disciplines are involved in CERI activities.

FOCUS AREAS:
• Cyber infrastructure
• Cyber vision
• Cyber intelligence
• Cybersecurity
• Cyber training

INTERDISCIPLINARY AREAS:
• Big data analytics in precision medicine
• Geospatial video analytics
• Special education
• Public safety
• Agriculture
• Manufacturing

MISSOURI CENTER FOR TRANSPORTATION INNOVATION (MCTI)

DIRECTOR: WILLIAM BUTTLAR
GLEN BARTON CHAIR IN FLEXIBLE PAVEMENT TECHNOLOGY IN CIVIL AND ENVIRONMENTAL ENGINEERING
Founded: 2019
Website: mcti.missouri.edu

The Missouri Center for Transportation Innovation is a powerful network of partners including the four University of Missouri campuses, the Missouri Department of Transportation (MoDOT), the Federal Highway Administration and other agencies and industrial partners. These relationships provide access to cutting-edge resources such as state labs, field experiments, advanced computing, simulators and virtual reality.

MCTI began as a collaboration between the University of Missouri System and MoDOT to establish Missouri as a showcase and a clearinghouse for safe, accessible, sustainable and resilient transportation.

MCTI is supported with funding from MoDOT, industrial partners, affiliated centers and other state, federal and industrial funding sources. MCTI is also focused on broadening participation, developing the workforce and providing continuing education for the transportation profession.

FOCUS AREAS:
• Traffic, safety, systems and data analytics
• Pavements, environmental and hydraulics
• Structures and geotechnical
• Design, construction, maintenance and intermodal transportation

CENTERS AND SIGNATURE PROGRAMS

CENTER TO STREAM HEALTHCARE IN PLACE (C2SHIP)

DIRECTOR: MARJORIE SKUBIC
CURATORS' DISTINGUISHED PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
Websites: eldertech.missouri.edu; c2ship.org

Mizzou is part of the Center to Stream Healthcare In Place, a National Science Foundation I/UCRC. At Mizzou, the focus is to support older adults and to help them lead healthier and more independent lives. Through the center, researchers develop new Care in Place technologies for decentralized healthcare, driven by actual clinical needs, and evaluate them in realistic settings. With the C2SHIP industry partners, effective technologies are translated to commercialization to serve those in need.

The new C2SHIP center at MU leverages research at the former Center for Eldercare Rehabilitation and Technology. Previous projects include in-home activity assessment tools for tracking stroke rehabilitation; customized health alerts and interfaces using in-home and wearable sensors; fall detection with real-time alerts; physiological modeling combined with sensing for personalized cardiovascular monitoring; and linguistic summarization of sensor data for early illness recognition.

CENTER FOR EXCELLENCE IN LOGISTICS AND DISTRIBUTION (CELDi)

DIRECTOR: JAMES NOBLE
PROFESSOR AND CHAIR, INDUSTRIAL AND SYSTEMS ENGINEERING
Website: https://engineering.missouri.edu/research/featured/celdi/

The Center for Excellence in Logistics and Distribution (CELDi) is a graduated National Science Foundation I/UCRC that provides innovative solutions for partner organizations. CELDi is a research and education consortium consisting of six research universities and 20 member organizations. Over the past 15 years CELDi has partnered with more than 100 organizations on more than 300 projects. The center enables its industry partners to achieve logistics and distribution excellence by solving real problems to maximize profitability. The center produces cutting-edge research and graduates students with real-world project experience.

Research collaborations include projects addressing logistics systems analysis and design, supply chain modeling, and material flow design and improvement.

CYBERSECURITY CENTER AT MIZZOU

DIRECTOR: ROHIT CHADHA
ASSOCIATE PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE
CO-DIRECTOR: PRASAD CALYAM
PROFESSOR OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, GREG L. GILLIOM PROFESSOR IN CYBER SECURITY
Website: engineering.missouri.edu/ceri-center/cybersecurity

The Cybersecurity Center at Mizzou focuses on interdisciplinary research and educational approaches to national security problems. The center brings together affiliated faculty from engineering, information technology, business, law, medicine, social sciences and mathematics. Center activities are guided by an Advisory Board with experts from IBM, Equifax, MedeAnalytics, Veterans United Home Loans, Defense Information and Systems Agency and National Security Agency.

Through collaborative research, the center has brought in funding from the U.S. Naval Research Laboratory, the Army Research Laboratory and the National Security Agency (NSA), as well as the National Science Foundation and Department of Energy. Research topics include cloud and data security, cyber physical systems, privacy and secure multiparty computation.

The center's work contributed to the University of Missouri's recognition as a National Security Association Center for Academic Excellence.

MIDWEST INDUSTRIAL ASSESSMENT CENTER (IAC)

DIRECTOR: SANJEEV KHANNA
PROFESSOR OF MECHANICAL AND AEROSPACE ENGINEERING
Website: midwestiac.missouri.edu

The Midwest Industrial Assessment Center (IAC) helps small to midsized manufacturers in Missouri and Kansas states improve energy efficiency and waste reduction in their manufacturing operations. IAC Faculty and student interns from the center provide no-cost energy, productivity and waste assessments for clients from a variety of industries including municipal wastewater treatment plants. Additionally, the center trains the next generation of energy engineers and provides outreach to the industrial sector. More than 80 students have graduated from the program.

Midwest IAC is funded by the Advanced Manufacturing Office (AMO) under the Office of Energy Efficiency & Renewable Energy (EERE) of the US Department of Energy (DOE). Since its inception in 2006, Midwest IAC has conducted assessments at more than 300 industrial facilities and wastewater treatment facilities. The center has made more than 2,000 recommendations of measures for energy efficiency, waste reduction and productivity improvement. To date, those recommendations have shown an average potential savings of 6%-10% for clients' annual energy bills such as electric, natural gas, water and discharge streams if applicable.

In 2022, the Midwest IAC received the Center of the Year Award from the Department of Energy.

MULTIPHYSICS ENERGY RESEARCH CENTER

**DIRECTOR: HONGBIN "BILL" MA
CURATORS' DISTINGUISHED PROFESSOR,
GLEN A. BARTON PROFESSOR, CHAIR
OF MECHANICAL AND AEROSPACE
ENGINEERING**

*Website: engineering.missouri.edu/research/
centers-signature-programs/merc/*

The objective of the Multiphysics Energy
Research Center (MERC) is to advance
multi-physics energy research and become
a national center and leader in the field of
multiphysics energy.

MERC leverages the unique research strengths
at the University of Missouri to foster
collaboration around building energy, solar
energy and electric vehicles for applications
such as advanced hydrogen and fuel cell
technologies, technologies to increase
building energy efficiency, photovoltaics and
concentrating solar-thermal power and long-
duration energy storage technologies.

MERC faculty from Chemical and Biomedical
Engineering and from mechanical and
aerospace engineering bring together
expertise in surface science, plasma
technology, energy storage systems, energy
efficiency, advanced materials, power
composites for energy systems, nuclear energy
and thermal management of power systems.
The center will help develop and apply
multiphysics energy within various disciplines,
including machine learning and materials.

STUDENTS IN RESEARCH

Students play a critical role in research at Mizzou Engineering. Starting as undergraduates, students have opportunities to work alongside faculty who are making significant discoveries, exploring emerging technologies and finding ways to improve the lives of those around them. And because MU emphasizes interdisciplinary research, students may also collaborate with faculty and peers working in medicine, veterinary medicine, the sciences and business.

Graduate Research

Graduate students are vital to our research mission. They work with faculty advisors and mentors to publish in peer-reviewed journals, present at international conferences and compete for top accolades such as the National Science Foundation's Graduate Research Fellowship. Graduate students are involved in centers, signature programs and labs, as well as multidisciplinary research centers on campus.

Undergraduate Research

Undergraduate students are encouraged to pursue research opportunities working closely with faculty. Undergraduate research allows students to apply what they learn in class to real-world scenarios. Working as undergraduate research assistants gives students a preview of graduate school and provides hands-on experiences that hone the critical thinking and problem-solving skills employers are seeking.

Chemical
and
Biomedical
Engineering

The Department of Chemical and Biomedical Engineering has faculty heavily involved in the Missouri Water Center and NextGen Precision Health, as well as interdisciplinary centers across campus including the Dalton Cardiovascular Research Center. Departmental research spans beyond biomedical and chemical engineering to include bioprocess engineering and bioenvironmental engineering.

Our researchers are leaders in biomedical imaging, biomaterials, bioprocess and food process engineering, catalysis, electrochemistry and atomic layer deposition. We're investigating energy conversion and storage, materials for environmental sensing, soft materials and bioelectronics. And we have expertise in thin films and nanocoatings, neuroengineering and water sustainability.

We strive to conduct leading-edge research with real-world applications that will improve lives. If you have questions about our department, please feel free to contact me.

Kevin Gillis

Professor and Chair
Department of Chemical and
Biomedical Engineering

University of Missouri
W2203A Lafferre Hall

T: (573) 884-8610

E: gillisk@missouri.edu

NOEL ALOYSIUS

Assistant Professor
227 Agricultural Engineering Building
573-882-7328
aloysiusn@missouri.edu

Education
PhD from Yale University
MS from the University of North Dakota
BA from the University of Peradeniya

Technical Focus
Human-natural systems modeling
Hydrology
Water resources management

Noel Aloysius is an assistant professor in the Department of Chemical and Biomedical Engineering. His research interests include: Hydroclimatology with emphasis on modeling at watershed to regional scale; water and food security assessment; coupled human-natural systems; environmental change; land and water management in agriculture and remote-sensing for natural resource management.

SCOTT CHRISTENSEN

Assistant Teaching Professor
W2028 Lafferre Hall
573-882-3563
spchristensen@missouri.edu

Education
PhD from the University of Delaware
MS from Brigham Young University
BS from Brigham Young University

Technical Focus
Design of chemical manufacturing processes
Physical properties and phase behavior of chemical mixtures

Scott Christensen is an assistant teaching professor in the Department of Chemical and Biomedical Engineering. His background is in thermodynamics and physical properties of materials, and his career history includes experience in technical engineering roles for two photovoltaic module manufacturers and for two chemical manufacturing companies. He has created value by improving manufacturing processes and developing new products. He currently teaches the introductory and capstone courses in chemical manufacturing process design and a course on the fate of chemicals in the environment.

CHARLES "CHASE" DARR

**Director of Undergraduate Studies,
Assistant Teaching Professor,
ABET Coordinator**
250 Agricultural Engineering Building
573-882-7044
darrcm@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Arkansas
BS from the University of Arkansas

Charles Darr is an assistant teaching professor in the Department of Chemical and Biomedical Engineering at the University of Missouri. His background is in applications of nanomaterials, plasmonic materials and fluorescence for chem/bio sensors. He currently teaches courses such as Bioengineering Design I (capstone), Professional Development, Analysis of Bioprocesses, Intro to Materials and Materials Characterization, as well as manages internships and research for credit.

SHINGHUA DING

Cramer W. LaPierre Professor
324W Dalton Cardiovascular Research Center
573-884-2489
dings@missouri.edu

Education
PhD from the State University of New York at Buffalo
BS from the Zhejiang University of Technology, China

Technical Focus
Glia-neuron interactions
Glial function
In vivo two-photon imaging
Ischemic stroke
Neural degeneration and regeneration

Shinghua Ding is a professor in the Department of Chemical and Biomedical Engineering and an investigator at the Dalton Cardiovascular Research Center at the University of Missouri.

His current research is focusing on glial cell function and neuron-glia interactions in the central nervous system, stem cell differentiation and transplantation and ion channel function and modulation.

DIANA GIL PAGÉS

Associate Professor
Roy Blunt NextGen Precision Health Building
1030 Hitt Street
573-771-8683
gilpagesd@health.missouri.edu

Education
PhD from Universidad Autonoma de Madrid
Fellowship from University Hospital, Basel, Switzerland

Technical Focus
Adaptive immune response
Cancer Immunotherapies
Central and peripheral tolerance
Development of novel cancer immunotherapies
Immunology
Structure/function of antigen receptors
T cell development
TCR/CD3 signal transduction

Diana Gil Pagés' research investigates how antigen recognition by T cell receptors (TCRs) turns on cell adaptive immune function. Specifically, her research is founded on the TCR-associated CD3 multiprotein complex and is the principal discoverer of the CD3 conformational change (CD3Dc), which is at the foundation of her ongoing research. Gil Pagés is studying the various levels of control exercised over CD3Dc, including structural, biochemical, developmental and physiological aspects. Her work is grounded in technical innovation and data reproducibility with an emphasis in biochemistry and primary immune cell function. She is building on the current understanding of CD3Dc to translate knowledge into in vivo therapies for metastatic cancers with focus areas on fragment antigen-binding (Fab) fragments.

KEVIN GILLIS

Professor and Chair, Investigator at Dalton Cardiovascular Research Center
W2033A Lafferre Hall
573-884-8610
gillisk@missouri.edu

Education
DSc from Washington University
MS from Washington University
BS from Washington University
BA from St. Louis University

Technical Focus
Bio Micro- Electro- Mechanical Systems (BioMEMS)
Biomedical instrumentation
Electrophysiology
Fluorescence microscopy
Neuroengineering

Kevin D. Gillis is a professor and the chair of the Department of Chemical and Biomedical Engineering at the University of Missouri with a joint appointment in the Department of Medical Pharmacology and Physiology at MU's School of Medicine. He is also an investigator at MU's Dalton Cardiovascular Research Center and Director of the Interdisciplinary Neuroscience Program. The theme of his research is understanding how cells regulate the secretion of hormones and neurotransmitter using advanced biophysical approaches. These include developing microchip devices to assay cell secretion and using advanced fluorescent probes to understand exocytosis of transmitter. He also is an expert in electrophysiology. His research has been funded for many years by NIH as well as grant support from NSF and private funding agencies.

SHEILA GRANT

Associate Vice Chancellor of Research & Strategic Initiatives
310 Jesse Hall
573-884-4339
grantsa@missouri.edu

Education
PhD from Iowa State University
MS from Iowa State University
BS from Iowa State University

Technical Focus
Biomaterials
Diagnostic sensors/biosensors
Micro and nano-fabrication techniques

Sheila A. Grant is associate vice chancellor for research & strategic initiatives for the University of Missouri and a professor in the Department of Chemical and Biomedical Engineering at the University of Missouri. A former post-doctoral researcher and research engineer for Lawrence Livermore National Laboratory in California, Grant has received research funding from the National Science Foundation, the National Institutes of Health, USDA, Army and industrial contracts. She has founded several high tech ventures and is a Fellow of the National Academy of Inventors, a Fellow of the Biomedical Engineering Society and a Fellow of the American Institute for Medical and Biological Engineering.

LI-QUN "ANDREW" GU

Professor
221 Dalton Cardiovascular Research Center
573-882-2057
gul@missouri.edu

Education
PhD from Nankai University

Technical Focus
Gene material/DNA data storage/nucleic acid memory
Nanopore science/engineering/gene/protein sequencing
Next generation single-molecule biosensing technologies
RNA nanobiology

Li-Qun "Andrew" Gu is leading an interdisciplinary laboratory that has a long-term vision: integrating biomolecular engineering with nanobiotechnology to explore life science problems and develop sophisticated molecular diagnostic tools for personalized medicine. Gu is an awardee of an NSF CAREER grant. Supported by the NIH grants and Coulter Translational Program, his lab is developing ultrasensitive single-molecule technology for disease biomarker detection. He is working on nanopore-based single-molecule technology for rapid, label-free and low-cost gene sequencing and various genetic, epigenetic and proteomic detections. He utilizes his technology to explore COVID-19 genetic structures and screens their targeting drugs. The new generation of programmable nanopore biosensors is being combined with smart polymers and microfluidics to create robust chip devices for medical diagnosis, treatment and high-throughput screening at the molecular level. One example is the detection of cancer-associated circulating microRNAs for non-invasive and cost-effective cancer detection. His lab recently also developed gene material-based data storage, DNA hard drive and nucleic acid memory for broad biomedical applications (Nature Nanotech. Nano. 2011, ACS Nano 2013, 2014, 2015, JACS 2015, Nat Communication. 2017).

DAMON HALL

Assistant Professor
103 Anheuser-Busch Natural Resources Building
573-882-2280
halldam@missouri.edu

Education
PhD from Texas A&M University
MA from Purdue University

Technical Focus
Sustainability science
Water resources policy and planning
Conservation policy
Environmental communication
Human dimensions of natural resources

Damon Hall's research examines interactions between social and ecological systems where science, policy and culture meet. It is problem-oriented and audience-focused, addressing questions of how to make usable knowledge for transitions toward sustainability. He is currently working on long-term water resources planning, engaging citizens in stream data collection for hydrologic modeling and citizen-engaged policy approaches to address declines in native bee diversity and abundance.

KARL D. HAMMOND

Associate Professor
W2017 Lafferre Hall
573-882-1829
hammondkd@missouri.edu

Education
PhD from the University of Massachusetts-Amherst
BS from the California Institute of Technology

Technical Focus
Computational materials science
Plasma-facing materials/nuclear fusion materials
Porous materials/zeolites

Karl Hammond is an associate professor in the Department of Chemical and Biomedical Engineering and is involved in the Nuclear Engineering Program. His research focuses on topics in catalysis and materials science relevant to the production and utilization of energy. His research group uses tools from computational chemistry and physics combined with insights from experimental characterization to study adsorption and transport in porous materials, such as zeolites; damage in metals due to irridation; simulation of plasma-facing and fusion-relevant materials; and the role of impurities and defects in catalysis and materials science. His work potentially influences chemical separations, biomass-derived fuels, membrane separations processes, plasma devices and nuclear fusion reactors.

SOUMEN JANA

Assistant Professor
228 Agricultural Engineering Building
573-882-9112
sjgv7@missouri.edu

Education
PhD from the University of Washington
MS from North Dakota State University

Technical Focus
Designing of biomaterials
Heart valve and vascular graft tissue engineering
Native structured tissue engineering scaffold development

Soumen Jana is an assistant professor in the Department of Chemical and Biomedical Engineering at the University of Missouri. His research interest is in designing and developing porous and fibrous biomaterials for tissue engineering. His research emphasizes developing engineering technologies to mimic the native structure in biomaterials design. His research is currently focused on developing heart valves and vascular grafts through tissue engineering.

RAGHURAMAN KANNAN

Professor
NW 403, School of Medicine
573-882-5676
kannanr@missouri.edu

Education
PhD from Indian Institute of Science
MS from Indian Institute of Technology at Madras

Technical Focus
Personalized diagnostics
Targeted nanoparticles
Tumor imaging and therapy

Raghuraman Kannan is a professor of radiology with a joint-appointment in the Department of Chemical and Biomedical Engineering. He has been a faculty member at MU since 2005. He leads the program on clinical translation of nanomaterials at MU.

Kannan has been actively involved in the design and development of nanomedicine drugs and metal based radioactive pharmaceuticals for more than 15 years. As a principal investigator of National Institutes of Health-funded grants in the field of nanomedicine, Kannan has developed a library of biocompatible, non-toxic and readily injectable targeted nanoparticles for prostate, breast and pancreatic cancers. The results of these investigations have been published in several peer-reviewed high impact journals and formed the basis for several patent applications.

Kannan is a co-founder of four start-up companies at MU. Two of his companies, Nanoparticle Biochem Inc. and Shasun-NBI, LLC, have already raised million-dollar investments.

KIRUBA KRISHNASWAMY

Assistant Professor
244 Agricultural Engineering Building
573-882-1114
krishnaswamyk@missouri.edu

Education
PhD from McGill University
MTech from Tamil Nadu Agricultural University, India & McGill University
BTech from Tamil Nadu Agricultural University

Technical Focus
Sustainable food process engineering
Food fortification
Innovative technologies

Kiruba Krishnaswamy's primary interest is to address global challenges of food and nutrition security through sustainable food process engineering. She is an assistant professor in the Department of Chemical and Biomedical Engineering with a joint appointment in Food Science in the College of Agriculture, Food and Natural Resources.

She was involved in the "Consolidation of Food Security in South India" project in collaboration with McGill University, Tamil Nadu Agricultural University and Canadian International Development Agency (CIDA) during her undergraduate studies. Through this international collaborative project, she experienced the impact of food processing technologies to improve the livelihood of rural communities. Krishnaswamy received the Canadian Commonwealth Scholarship to conduct her master's research at McGill University and continued her PhD in Bioresource Engineering. She received the Best PhD Thesis Award from the Canadian Society for Bioengineers (CSBE). She has collaborated/consulted on International projects related to food and nutrition security in the U.S., Canada, India and Africa.

MARY MYERS

Associate Teaching Professor, Director of Undergraduate Studies, ABET Coordinator
W2010 Lafferre Hall
573-882-1332
myersmar@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Missouri
BS from the University of Missouri

Technical Focus
Process controls and optimization

Mary Myers is an associate teaching professor in the Department of Chemical and Biomedical Engineering at the University of Missouri and is involved in educational outreach. Her interests are primarily in engineering educational pedagogy, but she also stays current with process control optimization. Myers is tasked with supervising the ABET processes for the chemical engineering department.

ILKER OZDEN

Assistant Professor
240 Agricultural Engineering Building
573-884-3686
ozdeni@missouri.edu

Education
PhD from Brown University
BS in Electrical and Electronics Engineering
    from Bogazici University, Turkey
BS in Physics from Bogazici University, Turkey

Technical Focus
Neuroengineering
Neuroscience

Ilker Ozden is an assistant professor in the Department of Chemical and Biomedical Engineering. His research focuses on understanding the neurophysiological basis of movement disorders and reward-based learning using rodents as the animal model. His laboratory uses functional calcium imaging, multichannel electrophysiology, optogenetics and computational modeling to characterize normal and diseased brain activity and identify neural targets for neuromodulation-based therapies for nervous system deficits.

JOONTAEK PARK

Associate Teaching Professor
W2015 Lafferre Hall
573-882-3802
parkjoon@missouri.edu

Education
PhD from the University of Florida
MS from the Korea Advanced Institute of Science
    and Technology
BS from Seoul National University

Technical Focus
Acoustic microbubble streaming
Field-flow fractionation
Viscoelastic fluid modeling

Joontaek Park is an associate teaching professor in the Department of Chemical and Biomedical Engineering. He was an assistant professor in the Department of Chemical and Biochemical Engineering at Missouri University of Science and Technology. His research interest is theoretical and numerical modeling of complex fluids, which include modeling of shape-based particle separation using field flow fractionation, modeling of entangled polymers and computational fluid dynamics simulations of non-Newtonian fluids, such as cement flows, polymer melt extrusion in 3D printing, cleaning debris on complex parts from additive manufacturing using non-Newtonian fluids (funded by Honeywell), and microbubble streaming of a weakly viscoelastic polymer solution (funded by NSF).

PATRICK PINHERO

Professor
W2009 Lafferre Hall
573-882-7319
pinherop@missouri.edu

Education
PhD from the University of Notre Dame
BS from Creighton University

Technical Focus
Energy harvesting
Energy-Food-Water nexus
Environmental degradation and corrosion
Interfacial molecular assembly and nanofabrication
Nuclear fuel cycle process engineering

Patrick Pinhero is a professor in the Department of Chemical and Biomedical Engineering and the Nuclear Engineering Program at the University of Missouri. His research is focused on using material interfaces to understand, control and regulate chemical processes. Three teams within his research group are using interfacial molecular assembly to nanofabricate novel nanoantenna arrays for solar collection, special ballistic self-curing lubricants and molecularly-assembled nanoalloys. The group's nuclear fuel cycles R&D teams are examining the use of pyro-electrometallurgical techniques to selectively segregate individual elements from spent nuclear fuels, produce new recycled fuels and test these new fuels for use in light, water and breeder reactor systems. The group's degradation and corrosion teams characterize the stability of structural alloys using autoclaves, electrochemistry and surface science.

REGINALD E. ROGERS JR.

Associate Professor, Director of Graduate Studies
W2024 Lafferre Hall
573-882-4103
rerogers@missouri.edu

Education
PhD from the University of Michigan
MS from Northeastern University
BS from the Massachusetts Institute of Technology

Technical Focus
Water treatment using carbon nanomaterials
Carbon nanomaterial-based energy storage materials
Chemical and biological sensors

Reginald Rogers is an associate professor in the Department of Chemical and Biomedical Engineering. Prior to joining the faculty at the University of Missouri, Rogers served as an associate professor in the Department of Chemical Engineering at Rochester Institute of Technology (RIT). His research interests are focused on improved water resources using novel nanomaterials (e.g. carbon nanotubes). His group's focus is on developing 2D and 3D structures specifically tailored toward removal of targeted contaminants from water systems. In addition, his group also has an interest in developing carbon nanomaterial-based structures for energy storage applications, including advanced sodium-ion systems and supercapacitors. Rogers has been recognized for his teaching, research and service efforts through numerous seminars and awards. Notable awards include the 2021 Mentor on the Map Award from the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, the 2019 ACS Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences and the 2018 Janice A. Lumpkin Educator of the Year Award from the National Society of Black Engineers.

ADAM SCHRUM

Associate Professor
M627 Medical Sciences Building
573-771-7411
schruma@health.missouri.edu

Education
PhD from the University of Pennsylvania

Technical Focus
Biochemistry
Bioengineering
Network biology
Immunology
Autoimmunity and tolerance
Cancer biology
Immune response to pathogens

The laboratory of Adam G. Schrum is focused on physiologic signaling networks and how they function in molecular and cellular immunity. A main goal is to increase understanding of how T cells of the immune system decide whether to destroy or tolerate healthy, infected or cancerous tissue, with an eye toward applying lessons learned to design immunotherapies. Current projects focus on the T cell antigen receptor (TCR) and how its structure, multi-subunit composition and biochemical functions operate throughout the course of immune responses. Downstream of TCR triggering, many other proteins and pathways involved in T cell signaling cooperate to compose a network with emergent properties to determine immune fate. Using cellular, molecular, biochemical and proteomic techniques, the lab examines these processes in the context of T cell responses during development, infection, autoimmunity and cancer. The team recently published a multiplex microsphere-based approach to generate a new type of combinatorial network signature of signaling proteins, termed PiSCES. Using this system, signaling protein network profiles were generated from small skin biopsy samples donated by autoimmune or control patients. A unique signature of T cell biochemical activity was identified to be associated with autoimmune lesions.

SHRAMIK SENGUPTA

Associate Professor
252 Agricultural Engineering Building
573-884-4943
senguptas@missouri.edu

Education
Postdoctoral Training at the University of Notre Dame
PhD from the University of Minnesota
MS from the University of Colorado at Boulder
B.Tech from the Indian Institute of Technology, Kharagpur, India

Technical Focus
Nano and microfluidic systems for bio-diagnostics

Shramik Sengupta is an associate professor with the Department of Chemical and Biomedical Engineering. His current research focuses on the rapid detection, identification and characterization of pathogens in real-world clinical environmental and food samples using combinations of separation technologies and electrical detection methods.

PAVEL SOMAVAT

Assistant Professor
236 Agricultural Engineering Building
573-882-4533
psbvb@missouri.edu

Education
PhD from the University of Illinois at Urbana-Champaign
MS from the Technische Hochschule Mittelhessen, Germany
BE from the Maharshi Dayanand University, India

Technical Focus
Corn processing
Preparation and stability of natural food colors

Pavel Somavat is an assistant professor with the Department of Chemical and Biomedical Engineering and also Food Science in the College of Agriculture, Food & Natural Resources at the University of Missouri. His research interests include corn processing, preparation and stability of natural food colors, effects of processing on bioactive compounds in food, application of induction heating for food processing and process simulations.
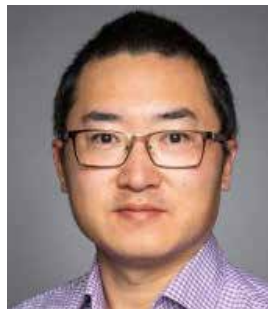
CHANGYU SUN

Assistant Professor
Roy Blunt NextGen Precision Health Building
573-884-8610
csyfc@missouri.edu

Education
PhD from INSA de Lyon, France
MS from INSA de Lyon and Northwestern Polytechnical
    University
BS from Northwestern Polytechnical University, Xi'an, China

Technical Focus
Cardiopulmonary MRI
Deep learning MRI
MRI reconstruction
Rapid MRI sequence development

Changyu Sun is an assistant professor with a joint appointment with the Department of Chemical and Biomedical Engineering and the School of Medicine's Radiology Department. After earning his master's and PhD in France, he did his postdoctoral training at MD Anderson and worked at University of Virginia as a senior scientist.

Changyu is an MRI researcher interested in developing novel strategies for rapid MRI acquisition and accurate reconstruction. His simultaneous multislice acquisition and reconstruction methods have been applied to cardiac cine, perfusion and strain MRI. The current research focuses on developing novel physics- and data-driven methods using deep learning, parallel imaging, non-Cartesian sampling and compressed sensing for cardiopulmonary applications. The goals of his research are to develop fast, accurate and automatic MRI workflows for diagnosis and treatment of patients.

JINGLU TAN

Professor and Director of Division of Food, Nutrition & Exercise Sciences
215 Agricultural Engineering Building
573-882-2369
tanj@missouri.edu

Education
PhD from the University of Minnesota

Technical Focus
Image processing
Biosensing
Bioimaging
Bioprocess modeling

Jinglu Tan is a professor in the Department of Chemical and Biomedical Engineering. He serves as director for the Division of Food, Nutrition & Exercise Sciences, a joint division between the College of Agriculture, Food & Natural Resources and the School of Medicine. His current research includes modeling and sensing of photoelectron transduction in plants and energy metabolism in muscles.

MELISSA TERPSTRA

Professor and Director of NextGen Imaging
1101 Hospital Drive, NextGen Precision Health Institute
573-882-1026
melissa.terpstra@missouri.edu

Education
PhD from the University of Minnesota

Technical Focus
Alzheimer's Disease
Human connectome magnetic resonance imaging
Magnetic Resonance Spectroscopy

Melissa Terpstra is a professor in the Department of Chemical and Biomedical Engineering and a professor of radiology within the School of Medicine. She has a PhD in medical physics and is an expert on uncovering tiny signals in magnetic resonance spectra (MRS) using ultra-high field magnetic resonance imaging (MRI). Notably, she discovered and optimized techniques to measure signals from vitamin C and other antioxidants and neurotransmitters noninvasively from the human brain using MRI. She launched her independent career by applying this technology to study aging and Alzheimer's disease via sustained funding from the National Institutes of Health. Furthermore, she continues to study the reliability of in vivo human brain MRS technique. Prof. Terpstra is a principal investigator on the nationwide Human Connectome Project on Aging (HCPA), which collected structural, functional, and diffusion images from over 1000 individuals. With an accompanying R01, she acquired MRS data from her local HCPA cohort, and MRS will be part of the upcoming nationwide project, the Adult Aging Brain Connectome. These consortia also collect extensive health, behavioral, cognitive and COVID data. Prof. Terpstra reviews for several journals and study sections at the National Institutes of Health. She has experience using in vivo MRS to study cancer.

ROBERT THOMEN

Assistant Professor
1 Hospital Drive
573-882-1026
thomenr@health.missouri.edu

Education
PhD from Washington University in St Louis
MS from Creighton University
BS from Creighton University

Technical Focus
Hyperpolarized gases
Pulmonary imaging
MRI physics

Robert Thomen is an assistant professor with a joint appointment with the Department of Chemical and Biomedical Engineering and the School of Medicine's Radiology Department.

Thomen's research gives the lungs another look. His team has hypothesized that a new way to see what is happening inside the lungs using hyperpolarized gas will make both treatments and diagnoses more precise. Thomen, who runs the Mizzou Pulmonary Imaging Research Lab, hopes these detailed scans can help researchers investigate, diagnose and treat diseases like COPD, asthma, cystic fibrosis, idiopathic pulmonary fibrosis and emphysema.

BRET ULERY

Associate Professor
W2027 Lafferre Hall
573-882-8169
uleryb@missouri.edu

Education
PhD from Iowa State University
BS from the University of Iowa
BSE from the University of Iowa

Bret Ulery is an associate professor in the Department of Chemical and Biomedical Engineering. He received a Bachelor of Science in Engineering in chemical engineering and a bachelor's degree in biochemistry from the University of Iowa in 2006. In 2010, he earned his doctorate in chemical engineering from Iowa State University. Subsequently, he spent two years conducting postdoctoral research at the University of Connecticut Health Center and another two years at the University of Chicago before joining the MU faculty. As director of the Biomodulatory Materials Engineering Laboratory, he leads a team of researchers focused on the design, development and production of novel biomaterials for a variety of biomedical applications primarily in the fields of immunology and regenerative medicine. His research has led to over 50 peer-reviewed publications, manuscript submissions, book chapters and technology disclosures in various journals including ACS Biomaterials Science & Engineering, Biomaterials Science, Molecular Systems Design & Engineering, The AAPS Journal and more.

CAIXIA "ELLEN" WAN

Associate Professor
239 Agricultural Engineering Building
573-884-7882
wanca@missouri.edu

Education
PhD from Ohio State University

Technical Focus
Biocatalyst development and biocatalysis
Biofuels and bioproducts
Bioprocess optimization

Caixia "Ellen" Wan is an assistant professor in the Department of Chemical and Biomedical Engineering at the University of Missouri. Her research is focused on the development of advanced technologies for the conversion of biomass to value-added products. She is exploring novel biochemical conversion processes for the sustainable production of bioenergy, biofuels and other bioproducts. Her research involves biocatalyst development and biocatalysis, metabolic engineering, bioreactor design and bioprocess optimization. She is also interested in the development of integrated biorefinery systems for efficiently converting biomass to advanced biofuels and co-products.

YANGCHUAN XING

Associate Chair, Cramer W. LaPierre Professor
W2033 Lafferre Hall
573-884-1067
xingy@missouri.edu

Education
PhD from Yale University
ME from the Chinese Academy of Sciences
BE from Northeastern University, Shenyang, China

Technical Focus
Electrocatalysis and electrochemical engineering
Particle technology
Sustainable chemical manufacturing

Yangchuan Xing is currently the Cramer W. LaPierre Professor and associate chair of the Department of Chemical and Biomedical Engineering at the University of Missouri. He earned his PhD degree in chemical engineering from Yale University and completed his postdoctoral fellowship at Johns Hopkins University. His research interest lies in advanced functional materials and chemically reacting systems. Current research includes electrocatalysis for proton electrolyte fuel cells, sustainable manufacturing of powder materials and nanocoating on nanoparticles. His research has been supported by the National Science Foundation, the U.S. Department of Energy, the Army Research Office, the Air Force Research Laboratory and many industrial partners. He has taught both undergraduate and graduate courses covering transport phenomena, chemical reaction engineering, chemical engineering laboratories, chemical engineering design and chemical process materials.

ZHENG YAN

Assistant Professor
Joint appointment with the Department of Mechanical and Aerospace Engineering
W2016 Lafferre Hall
573-884-0562
yanzheng@missouri.edu

Education
PhD from Rice University
MS from Tsinghua University
BS from Xi'an Jiao Tong University

Technical Focus
Advanced manufacturing
Bioelectronics
Soft materials

Zheng Yan is an assistant professor in the Department of Chemical and Biomedical Engineering and Department of Mechanical and Aerospace Engineering at the University of Missouri. He received his PhD from Rice University (2009-2013) and did postdoc training at the University of Illinois at Urbana-Champaign (2013-2017) before joining the faculty of the University of Missouri. His current research focuses on fundamental materials, devices and manufacturing innovations of soft electronics for health and robotics. Yan is a recipient of the NSF CAREER Award and the UM System President's Award for Early Career Excellence.

GANG YAO

Professor
249 Agricultural Engineering Building
573-884-7529
yaog@missouri.edu

Education
PhD from Texas A&M University
BS from Nanjing University

Technical Focus
Biomedical image/signal processing
Biomedical optics and photon migration in turbid media
Pupillary light reflex
Tissue optics and non-invasive tissue characterization

Gang Yao earned a BS degree in physics from Nanjing University in 1989 and a PhD degree in biomedical engineering from Texas A&M University in 2000. He was a software engineer at GE Medical Systems from 2001-2002 prior to joining the engineering faculty at University of Missouri. He is currently a professor in the Department of Chemical and Biomedical Engineering. His current research focuses on studying light-tissue interactions and developing new optical imaging methods for biomedical applications.

MATTHIAS J. YOUNG

Assistant Professor
W2025 Lafferre Hall
573-882-9908
matthias.young@missouri.edu

Education
PhD from the University of Colorado, Boulder
MS from the University of Colorado, Boulder
BS from the University of Missouri

Technical Focus
Atomic layer deposition
Atomic structure
Energy storage
Materials electrochemistry
Molecular layer deposition
Thin film coatings
Water desalination

Matthias J. Young is an assistant professor at the University of Missouri with a joint appointment in the Department of Chemical and Biomedical Engineering and the Department of Chemistry. He is a National Science Foundation Graduate Research Fellowship Program recipient and a former National Research Council Postdoctoral Fellow at the National Institute of Standards and Technology in Boulder, Colorado. Young also worked as a postdoctoral researcher at Argonne National Laboratory prior to joining the faculty at the University of Missouri in 2018. Young runs the Mizzou Thin Film Coatings and Materials Electrochemistry Lab. His group focuses on the intersection of thin film coating chemistry and electrochemical material properties. Current research projects focus on electrode materials for energy storage and water treatment applications. Young is the recipient of the 2020 Paul H. Holloway Young Investigator Award from the American Vacuum Society Thin Film Division and has published more than 25 journal articles and five patents.

Civil
and
Environmental
Engineering

College of Engineering
University of Missouri

The Department of Civil and Environmental Engineering is home to the Missouri Center for Transportation Innovation and jointly houses the Missouri Water Center with CAFNR. Department faculty conduct research in the environmental, geotechnical, structures and transportation labs.

Our faculty are leaders in transportation studies, working closely with state and federal agencies, including the Missouri Department of Transportation. We are internationally known for work around water resources and geotechnical engineering. And we have researchers who are experts in structural health monitoring, nondestructive testing and explosion resistant design.

Our department is committed to building a better world. If you have questions or want more information about our department, please let me know.

Praveen Edara

Professor and Chair
Department of Civil and
Environmental Engineering

University of Missouri
E2509D Lafferre Hall

T: (573) 882-1900

E: edarap@missouri.edu

YAW ADU-GYAMFI

Assistant Professor
E3504 Lafferre Hall
573-882-7546
adugyamfiy@missouri.edu

Education
PhD from the University of Delaware
MCE from the University of Delaware
BSC from the Kwame Nkrumah University of Science and
Technology

Technical Focus
Artificial intelligence
Big Data analytics
Infrastructure health monitoring
Intelligent transportation systems

Yaw Adu-Gyamfi's research focus areas are traffic operations, intelligent transportation systems, civil infrastructure systems, Big Data analytics and artificial intelligence. His research has been supported by various agencies, including the NSF, U.S. DOT, state DOTs and municipalities. Prior to joining Mizzou, he worked as an associate scientist for the Center for Transportation and Education (CTRE) at Iowa State University where he co-lead the development of Real-time Analytics of Transportation Data group (REACTOR). He also worked as a research scientist for the smart laboratory at the University of Virginia where he focused on developing cloud-based analytic solutions for real-time traffic operations performance monitoring. Adu-Gyamfi is a recipient of the NSF CAREER award in 2021. He has received civil engineering degrees from the University of Delaware (PhD, MS) and a Geomatic Engineering degree from the Kwame Nkrumah University of Science and Technology (BS).

BILL BUTTLAR

Glen Barton Chair in Flexible Pavement Technology, P.E.
E2509C Lafferre Hall
573-884-9328
buttlarw@missouri.edu

Education
PhD from Pennsylvania State University
MS from Pennsylvania State University
BS from Pennsylvania State University, with honors

Technical Focus
Hyperloop infrastructure design and health monitoring
Smart pavement infrastructure
Sustainable pavements
Transportation innovation

Bill Buttlar is the Glen Barton Chair in Flexible Pavements, where he oversees the Mizzou Asphalt Pavement and Innovation Lab (MAPIL). He is the Founding Director of the Missouri Center for Transportation Innovation (MCTI), a powerful network of partners including the four UM System campuses, the Missouri Department of Transportation and the Federal Highway Administration. He has more than 300 publications in the area of asphalt materials and pavements and more than 100 invited presentations and keynote lectures. He is leading several regional and national studies on sustainable and resilient transportation infrastructure and is one of the founding organizers of the Data Science in Pavement Symposium series in collaboration with the FHWA Turner-Fairbank Research Lab. Buttlar is the editor-in-chief of the International Journal of Road Materials and Pavement Design and has served twice on the Board of Directors of the Association of Asphalt Paving Technologists (AAPT). His recent work in the incorporation of ground tire rubber and recycled, post-consumer recycled plastic in asphalt pavement surfaces was featured in a demonstration project on Stadium Blvd in Columbia, Missouri, in 2021.
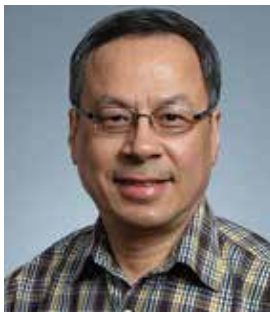
ZHEN CHEN

Professor
E2504 Lafferre Hall
573-882-0311
chenzh@missouri.edu

Education
PhD from the University of New Mexico
MS from the University of New Mexico
BE from Shanghai University

Technical Focus
Blast/impact-resistant design
Nanotechnology
Simulation-based engineering science

Zhen Chen is a professor in the Department of Civil and Environmental Engineering and the Nuclear Engineering Program, as well as an adjunct professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He is a recipient of the prestigious National Science Foundation CAREER grant and a Fellow with the American Society of Mechanical Engineers. Chen spent several years working for the New Mexico Engineering Research Institute and Sandia National Laboratories before joining the MU faculty in 1995. He has received research grants from the National Science Foundation, the National Research Council, Sandia National Laboratories, the Air Force Office of Scientific Research, the Army Research Office, General Motors and other funding sources.

BAOLIN DENG

William Andrew Davidson Professor
C2644 Lafferre Hall
573-882-0075
dengb@missouri.edu

Education
PhD from Johns Hopkins University
MS from China University of Geosciences
BE from China University of Geosciences

Technical Focus
Chemical and biological transformation of contaminants
Environmental applications and impact of nanotechnology
Hazardous waste management
Membrane process for water treatment and water reuse

Baolin Deng is a William Andrew Davidson Professor in the Department of Civil and Environmental Engineering and Co-director of the Missouri Water Center. He has been PI/co-PI for over three dozen research projects including the CAREER grant from the National Science Foundation and published over 130 peer-reviewed journal articles and book chapters. Deng is Associate Editor/Asian regional editor for the AEESP journal – Environmental Engineering Science. Previously he served on the EPA Science Advisory Board Drinking Water Committee and chaired the MU Department of Chemical Engineering from 2009-2015. Deng also conducted research in the US Air Force Research Laboratory as a National Research Council (NRC) Research Associate and at the New Mexico Tech as a faculty member. During the 2006/2007 academic year he was a visiting scholar at Stanford University's Environmental Engineering program and Research Scientist at Army Engineer Research & Development Center, on a Development Leave to develop expertise on Environmental Sustainability. During his sabbatical/research leave from 2017-2018, he taught and conducted research as Chair Professor at the Southern University of Science & Technology, China.

CIVIL AND ENVIRONMENTAL ENGINEERING

PRAVEEN EDARA

Professor and Chair, P.E.
E2509D Lafferre Hall
573-882-1900
edarap@missouri.edu

Education
PhD from Virginia Polytechnic Institute and State University
MS from Virginia Polytechnic Institute and State University
BTech from the Indian Institute of Technology-Madras

Technical Focus
Alternative geometric designs
Intelligent transportation systems
Traffic safety and countermeasures

Praveen Edara is the chair and professor in the Department of Civil and Environmental Engineering at the University of Missouri. He teaches and conducts research in the areas of traffic operations, intelligent transportation systems, geometric design and traffic safety. His research has been supported by various US agencies, including NSF, U.S. DOT, NAS, state DOTs and local governments. His current research focuses on generating artificial realistic crash datasets, examining safety through naturalistic driving study data, assessing disaster resilience, investigating alternative intersection designs, and developing virtual and augmented reality modules to train the transportation workforce. He and his co-authors received 2015, 2016 and 2019 best paper awards from two standing committees of TRB of the National Academies. Prior to joining MU, he worked as a research scientist for the Virginia Transportation Research Council (VTRC) conducting research in ITS and Traffic Engineering. Before VTRC, he worked as a research contractor at the Turner Fairbanks Highway Research Center of the Federal Highway Administration, performing research in alternative interchange/intersection designs and traffic safety. He is a registered professional engineer in Missouri and a certified professional traffic operations engineer.

MARIA FIDALGO

Associate Professor, Director of Graduate Studies
E2509F Lafferre Hall
573-884-6777
fidalgom@missouri.edu

Education
PhD from Rice University
MS from Rice University
BS from Instituto Tecnologico de Buenos Aires

Technical Focus
Materials for water treatment
Membrane processes
Nanotechnology and the environment
Sensors for water quality monitoring

Maria Fidalgo is an associate professor in the Department of Civil and Environmental Engineering. Her research area is water quality and treatment, with emphasis on developing new materials and processes for advanced treatment. Current research projects include the use nanoparticles and/or nanostructured materials for the chemical degradation of pharmaceuticals, membrane filtration, adsorption and the fabrication of molecularly imprinted optical sensors for detection of emerging water contaminants. Her interests also include fate, transport and toxicity of nanomaterials in the environment and sustainability. Fidalgo has received funding from the Environmental Protection Agency, the US Geological Survey, the Bureau of Reclamation and the National Science Foundation.

OLIVER GIRALDO-LONDOÑO

Assistant Professor, James W. and Joan M. O'Neill Faculty Scholar in Engineering
C2641 Lafferre Hall
573-882-3430
ogiraldo@missouri.edu

Education
PhD from the Georgia Institute of Technology
MS from Ohio University
BS from the National University of Colombia

Technical Focus
Fracture mechanics
Topology optimization and generative design

Oliver Giraldo-Londoño is an assistant professor and James W. and Joan M. O'Neill Faculty Scholar in Engineering in the Department of Civil and Environmental Engineering at the University of Missouri. He is currently serving as the director of research for the 3D Printing Research & Experiences Lab to promote 3D printing research and development. His research focuses on computational mechanics, particularly on the fields of topology optimization and computational fracture mechanics. His work has been published in the Proceedings of the Royal Society A, Computer Methods in Applied Mechanics and Engineering, Structural and Multidisciplinary Optimization, among others. Giraldo-Londoño has worked in collaboration with Sandia National Laboratories and Siemens Corporate technology to develop frameworks for topology optimization of structures subjected to general dynamic loading and thermomechanical loading, respectively. He has received several awards including the Young Researcher Award from COLCIENCIAS (the Colombian equivalent to the National Science Foundation) and the Emilio Robledo Award, awarded by the Colombian Society of Engineers.

VELLORE GOPALARATNAM

Professor, P.E.
E2501 Lafferre Hall
573-882-2683
gopalaratnamv@missouri.edu

Education
PhD from Northwestern University
ME from the Asian Institute of Technology
BE from Birla Institute of Technology and Science

Technical Focus
Bridges and pavements
Composite materials
Engineering sustainability
Experimental mechanics
Prestressed and high performance concrete materials

Vellore S. Gopalaratnam is a Fellow of the American Concrete Institute (ACI) and is a registered Professional Engineer in Missouri. He has also been active in other professional organizations, including the American Society of Civil Engineers, American Academy of Mechanics, Society of Experimental Mechanics and the Materials Research Society. He has previously served as the chair of the ACI Fracture Mechanics Committee and secretary of the ACI Fiber Reinforced Concrete Committee.

As a Fulbright Specialist (at Amrita University) and a Fulbright-Nehru Scholar (at IIT-Madras), he has been actively engaged in research on widespread implementation of precast prestressed concrete technologies for housing and infrastructure applications in India. He is the director of the Mizzou Engineering STEM Scholars' Program, a project funded by the National Science Foundation.

His research interests include sustainable materials and infrastructure, prestressed concrete, high performance and fiber reinforced cement composites, polymer concretes, experimental mechanics and performance evaluation of bridges.

ZHIQIANG HU

William Andrew Davidson Professor, P.E.
E2509 Lafferre Hall
573-884-0497
huzh@missouri.edu

Education
PhD from the University of Connecticut
MS from the University of Connecticut
BS from Zhejiang University

Technical Focus
Environmental engineering

Zhiqiang Hu is a William Andrew Davidson Professor in the Department of Civil and Environmental Engineering at the University of Missouri. Hu's research interests include water and wastewater treatment, environmental nanotechnology and biotechnology, and emerging renewable energy issues. His research has been funded by the Environmental Protection Agency, National Science Foundation, the U.S. Department of Agriculture, the U.S. Geological Survey, Water Environment Research Foundation and other members of industry. He is a registered professional engineer in Connecticut.

TIM MATISZIW

Associate Professor
E2509 Lafferre Hall
573-882-8370
matisziwt@missouri.edu

Education
PhD from Ohio State University
MS from the University of Missouri
BS from the University of Missouri

Technical Focus
Geographic information science
Network and location modeling
Operations research

Tim Matisziw is an associate professor at the University of Missouri with a joint appointment in the Department of Geography, the Department of Civil and Environmental Engineering and the MU Institute for Data Science & Informatics. He is also the director of the U.S. Geospatial Intelligence Foundation accredited Geospatial Intelligence certificate program (graduate and undergraduate) at MU. Matisziw has led research teams in a wide range of areas such as infrastructure interdiction and vulnerability assessment, network design and performance modeling, target identification and tracking, modeling complex systems and facility siting. The primary focus underlying much of his research activities is the study of networked systems. His work is funded by the National Science Foundation, the Environmental Protection Agency, the Robert Wood Johnson Foundation and the Missouri Research Board. Internationally, he maintains professional membership and is active in Sigma Xi, Association of American Geographers, Regional Science Association International and the Institute for Operations Research and the Management Sciences.

SARAH ORTON

Associate Professor, P.E., Director of Undergraduate Studies
E2503 Lafferre Hall
573-884-5089
ortons@missouri.edu

Education
PhD from the University of Texas at Austin
MS from the University of Illinois at Urbana-Champaign
BS from the University of Texas at Austin

Technical Focus
Fiber reinforced composite in structural applications
Reinforced concrete structures
Repair, retrofit and strengthening of structures for extreme events
Engineering education

Sarah L. Orton is an associate professor in civil and environmental engineering at the University of Missouri. She is a member of the American Concrete Institute and the American Society of Civil Engineers. She has worked on projects involving use of carbon fiber reinforced polymers to strengthen structures for extreme events (blast, earthquake, collapse), analysis and testing for reinforced concrete frames under disproportionate collapse, seismic response of unreinforced masonry buildings and concrete frames, and risk and reliability analysis of bridges and offshore structures. She is a registered professional engineer in Missouri.

BRENT L. ROSENBLAD

Associate Professor, P.E.
E2509 Lafferre Hall
573-884-3736
rosenbladb@missouri.edu

Education
PhD from the University of Texas at Austin
MS from the University of Texas at Austin
BS from the University of Illinois

Technical Focus
Geophysics and remote sensing
Geotechnical earthquake engineering
Geotechnical engineering
Infrastructure assessment and monitoring

Brent L. Rosenblad is an associate professor in the Department of Civil and Environmental Engineering at the University of Missouri. He is chair of the American Society of Civil Engineers Geophysical Engineering Committee, a member and past chair of the Missouri Seismic Safety Commission, and a member of the Transportation Research Board subcommittee on geophysics. His research focus is primarily on the application of geophysical and remote sensing methods for geotechnical and earthquake engineering problems. His research expertise and experience include: the use of seismic surface wave methods for geotechnical applications, earthquake site characterization of critical facilities, foundation design and condition assessment, remote sensing for landslide and rockfall hazards, and geotechnical aspects of pavement performance. He is a registered professional engineer in Missouri.

MARYAM SALEHI

Assistant Professor
mshfp@missouri.edu

Education
PhD from Purdue University
MSc from the University of South Alabama
PhD from Amirkabir University of Technology, Iran
MSc from Amirkabir University of Technology, Iran
BSc from Yazd University, Iran

Technical Focus
Drinking water quality
Plastic pollution
Contaminant fate and transport

Maryam Salehi is an assistant professor in the Department of Civil and Environmental Engineering at the University of Missouri. She applies her expertise in water chemistry, polymers, and surface sciences to investigate plastic pollutants' fate within the environment and examine the contaminant transport within potable water plumbing systems. She completed her postdoc at Purdue University (2017-2018) and served as an assistant professor in the Department of Civil Engineering at the University of Memphis (2018-2022) before joining the University of Missouri. Salehi is an NSF Early CAREER awardee investigating the plastic pollutant fate and heavy metals transport within the urban storm runoff.

HANI SALIM

Professor, James C. Dowell Fellow, P.E.
Interim Chair, Engineering and Information Technology
E2506 Lafferre Hall
573-884-6761
salimh@missouri.edu

Education
PhD from West Virginia University
MS from West Virginia University
BS from the Jordan University of Science and Technology

Technical Focus
Blast mitigation and design
Composite materials
Structures and solid mechanics

Hani A. Salim is a professor in the Department of Civil and Environmental Engineering, James C. Dowell Fellow in the College of Engineering and interim chair of the Department of Engineering and Information Technology. Salim is a member of the ASCE Technical Committee on Blast, Shock and Impact, as well as the ASCE Blast Protection of Building Standards Committee. He is director of MU's National Center for Explosion Resistant Design, which conducts research on designs and strategies to protect against explosions. Salim serves as a member of The International Scientific Committee for the International Conference on Protective Structures. He has received funding from the U.S. Army Corps of Engineers, Applied Research Associates, the Missouri Department of Transportation, the Air Force Research Laboratory and the U.S. Army Research Laboratory. He received the 2005 William T. Kemper Fellowship for Teaching Excellence and the 2005 Outstanding Teaching Award in the college. He is a registered professional engineer.

CARLOS SUN

Professor, P.E., J.D.
E2505 Lafferre Hall
573-884-6330
csun@missouri.edu

Education
PhD from the University of California-Irvine
JD from the University of Missouri
MS from the University of California-Irvine
BS from the University of California-Irvine

Technical Focus
Construction management
Transportation

Carlos Sun has specialized in transportation engineering for over 30 years. He is a professor at the University of Missouri where he teaches graduate and undergraduate courses and conducts research. He is the director of the construction management programs. His research areas include smart work zones, highway safety, intelligent transportation systems, simulators and virtual reality, autonomous and connected vehicles, smart cities, sustainable transportation modes, accessibility, legal issues and construction management. He has obtained research funding from programs such as NCHRP, ACRP, SHRP2, NSF, U.S. DOT, FHWA, AGC, U.S. DoED and several state DOTs. His short-term experiences include University of California-Berkeley postdoctoral researcher, Missouri Department of Transportation Chief Counsel's Office extern and Associated General Contractors of America Faculty Fellow. He served on the Transportation Research Board's Legal Resources Executive Committee of the National Academies where he oversaw the seven legal standing committees. He is a licensed attorney and professional engineer.

KATHLEEN TRAUTH

Associate Professor, P.E.
C2645 Lafferre Hall
573-882-5843
trauthk@missouri.edu

Education
PhD from Texas Tech University
MS from Texas Tech University
BS from Ohio State University

Technical Focus
Hydraulics on the landscape and as impacting biological systems
Landscape-based wetland analysis
Regulatory compliance and public policy
Stormwater management

Kathleen Trauth is an associate professor in the Department of Civil and Environmental Engineering and is an associate with the School of Natural Resources' Center for Watershed Management and Water Quality. Trauth received the Watershed Management Achievement Award from the Missouri Water Environment Association in 2021.

Trauth came to the University of Missouri with more than a decade of experience at Sandia National Laboratories in Albuquerque, New Mexico, and the New Mexico Environment Department. She has received funding from NASA, the National Science Foundation, Raytheon, the Environmental Protection Agency, the Missouri Department of Transportation and the Missouri Department of Conservation, through which she collaborates with colleagues across the campus. She is the Founder and President of Infiltronics Environmental LLC, a company she started to commercialize a stormwater management device. She is a licensed professional engineer in Missouri and New Mexico.

BINBIN WANG

Assistant Professor
C2648 Lafferre Hall
573-882-1275
wangbinb@missouri.edu

Education
PhD from the University of Wisconsin-Milwaukee
MS from the University of Science and Technology of China
BS from Anhui Normal University

Technical Focus
Environmental fluid dynamics
Hydraulics and hydrology
Mixing and transport
Turbulence

Binbin Wang's research concerns fundamental fluid flows and how they impact the natural and engineered environments. His research interests span a broad range of applications in environmental hydraulic, aquatic systems, geophysics, environmental health, etc. These applications include understanding aerosol transport and fate related to infectious diseases, measuring and modeling hydrodynamics in rivers and lakes, predicting pollution dispersion, understanding survival of eggs and larvae of invasive carps and endangered sturgeons, understanding long-distance seed dispersal, assisting vascular disease prediction and treatment. Wang has led or co-led research projects funded by National Science Foundation, U.S. Geological Survey, U.S. Department of Energy, Gulf of Mexico Research Initiative, Microsoft and Shell Exploration & Production Company. He has authored or co-authored 33 journal articles, one book chapter and more than 40 conference abstracts and full papers as of May 2021. He is an associate editor of Coastal Engineering Journal, and a member of Fluid Dynamics Technical Committee in the Engineering Mechanics Institute (EMI) of American Society of Civil Engineers (ASCE).

GLENN WASHER

Professor, James C. Dowell Fellow
E2502 Lafferre Hall
573-884-0320
washerg@missouri.edu

Education
PhD from Johns Hopkins University
MS from the University of Maryland
BS from Worcester Polytechnic Institute in Massachusetts

Technical Focus
Condition assessment of civil infrastructure
Nondestructive evaluation
Bridge engineering
Maintenance and preservation of bridges

Glenn Washer is a professor of civil and environmental engineering at the University of Missouri. Before joining the university, Washer was with the Federal Highway Administration (FHWA) at the Turner Fairbank Research Center (TFHRC) where he served as the director of the FHWA Nondestructive Evaluation (NDE) program. Washer received his PhD in Materials Science and Engineering from the Center for Nondestructive Evaluation (CNDE) at the Johns Hopkins University in 2001. His research interests are focused on condition assessment technology for civil infrastructure. This includes developing nondestructive evaluation (NDE) technologies for damage detection, reliability of inspection technologies and risk-based inspection. Research in NDE technologies currently includes ultrasonic stress measurement, ultrasonic testing for steel bridge fabrication, thermal imaging technologies and reliability of NDE technologies. He has published over 120 journal and conference papers related to the condition assessment of bridges, and is a Fellow of the American Society for Nondestructive Testing (ASNT).

Electrical Engineering

and

Computer Science

College of Engineering
University of Missouri

EECS is home to the Center for Geospatial Intelligence, the Center for Cyber Education, Research & Infrastructure (Mizzou CERI), the Center to Stream Healthcare in Place (C2SHIP), the Cybersecurity Center at Mizzou and numerous faculty labs working in a broad range of areas.

Our researchers are leaders in artificial intelligence, machine learning, image and video processing and computer vision. We're studying cloud computing, networking and high performance computing, as well as computer architectures, cyber-physical systems and cybersecurity. We're investigating nano and micro technology, semiconductor devices and circuits, neural engineering, power engineering and physical electronics. And we're applying our knowledge to bioinformatics, information retrieval, robotics and power systems.

In short, we're harnessing the power of advanced technology to change the world. If you have questions about our research, please let me know.

Syed "Kamrul" Islam

Professor and Chair
Department of Electrical
Engineering and Computer
Science

University of Missouri
201 Naka Hall

T: 573-882-9139

E: islams@missouri.edu

HADI ALI AKBARPOUR

Assistant Research Professor
126 Naka Hall
573-882-0547
akbarpour@missouri.edu

Education
PhD from the University of Coimbra

Technical Focus
Autonomous systems and robotics
Artificial intelligence
Computer vision
Machine learning

Hadi Ali Akbarpour is an assistant research professor with the Department of Electrical Engineering and Computer Science Department. He has a PhD in Electrical and Computer Engineering from the University of Coimbra in Portugal (2012). He is a multi-disciplinary researcher with primary research interests spanning the areas of artificial intelligence, computer vision, machine learning and autonomous systems and robotics. He has been a co-PI and PI in multiple research projects performed at the University of Missouri ($8M) and more than six SBIR projects ($6M). He has 70+ publications in high impact conferences, journals and books, U.S. patents, 6 awards (best papers, presentations and challenges). Akbarpour is the General Chair of 51st IEEE AIPR (Washington D.C.) and is a co-organizer of the Special Session "Analysis of Aerial Motion Imagery" in the International Conference on Image Processing (IEEE-ICIP), France, 2022. He has been on the Editorial Board of Remote Sensing Journal since 2021. He was a Guest Editor for Sensors Journal for Object Tracking and Recognition (2019-2021).

MAHMOUD ALMASRI

Associate Professor
323 Naka Hall
573-882-0813
almasrim@missouri.edu

Education
PhD from Southern Methodist University
MS from Bogazici University
BS from Bogazici University

Technical Focus
Biomedical microsensors
Biosensing
Infrared material and uncooled detectors
Micro/nanoelectromechanical systems
Microfabrication
Optical fiber-based sensors

Mahmoud Almasri is an associate professor in electrical engineering and computer science at the University of Missouri. Almasri's research and published materials include metasurface-based uncooled silicon germanium oxide (Si-Ge-O) infrared material and detectors, impedance based microfluidic biosensors for rapid simultaneous and accurate detection of foodborne pathogens, waterborne pathogens, viruses and proteins, optical fiber based plasmonic sensors and Surface-Enhanced Raman Scattering (SERS) sensors for chemical and biological sensing, lab-on-chip for single cell malaria detection, MEMS capacitors and microstructures for power harvesting at low-frequency oscillations, and micropost arrays for mapping traction forces of vascular smooth muscle cells.

DEREK T. ANDERSON

Associate Professor
305 Naka Hall
573-884-6628
andersondt@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Missouri
BS from Wichita State University

Technical Focus
Artificial intelligence
Computational intelligence
Computer vision
Data/information fusion
Machine learning
Remote sensing
Signal/image processing

Derek Anderson is an associate professor in electrical engineering and computer science at the University of Missouri, a core faculty member of the MU Institute for Data Science & Informatics, and director of the Mizzou INformation and Data FUsion Laboratory (MINDFUL). His focus is information fusion and computational intelligence/machine learning/ artificial intelligence in the context of signal/ image processing and computer vision for remote sensing. Anderson has published more than 190 articles (book chapters, journals, and conference proceedings), and he has helped organize and run multiple domestic and international conferences, special sessions, workshops and tutorials. Anderson has received approximately $29 million to date in funding across 25 research projects. More information can be found at www.derektanderson.com.

GERGEI BANA

Assistant Professor
123 Naka Hall
573-882-2326
banag@missouri.edu

Education
PhD from the University of Pennsylvania
MA from the University of Pennsylvania
MS from Eötvös University, Budapest

Gergei Bana is an assistant professor in the Department of Electrical Engineering and Computer Science and the Department of Mathematics at the University of Missouri.

ANDREW BUCK

Assistant Research Professor
141B Naka Hall
buckar@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Missouri
BS CE from the University of Missouri
BS EE from the University of Missouri

Technical Focus
Data visualization
Intelligent agents
Machine learning

Andrew Buck is an assistant research professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. His research interests include machine learning, intelligent agents, autonomous drones, computer vision and 3D visualization.

PRASAD CALYAM

Greg L. Gilliom Professor of Cyber Security
221 Naka Hall
573-882-9747
calyamp@missouri.edu

Education
PhD from Ohio State University
MS from Ohio State University
BE from Bangalore University

Technical Focus
Cloud computing
Computer networking
Cybersecurity

Prasad Calyam is an associate professor in the Department of Electrical Engineering and Computer Science, Greg G. Gilliom Professor of Cyber Security, director of the Cyber Education, Research and Infrastructure Center (Mizzou CERI), and a core faculty member in the MU Institute for Data Science & Informatics. Previously, he was a research director at the Ohio Supercomputer Center/Ohio Academic Resources Network at Ohio State University. He currently directs a research group in the Virtualization, Multimedia and Networking (VIMAN) Lab. He has published more than 185 papers in various conference and journal venues. As the principal investigator, he has successfully led teams of graduate, undergraduate and postdoctoral fellows in numerous federal-, state- and industry-sponsored research and development projects. His research sponsors include: National Science Foundation (NSF), Department of Energy (DOE), National Security Agency (NSA), Department of State, the Army Research Lab (ARL) and others. He currently serves as an associate editor for IEEE Transactions on Network and Service Management, and previously served as an editor for IEEE Communications Magazine and chair of NSF visioning workshops. He is a Senior IEEE Member.

ROHIT CHADHA

Associate Professor
201 Naka Hall
573-882-3843
chadhar@missouri.edu

Education
PhD from the University of Pennsylvania
BTech from the Indian Institute of Technology

Technical Focus
Computer security
Formal methods
Program analysis

Rohit Chadha is an associate professor in the Department of Electrical Engineering and Computer Science at the University of Missouri and director of the Mizzou Cybersecurity Center. His research interests are in the area of formal engineering methods for computer security. Chadha has held research positions at INRIA in Saclay, France; the University of Illinois at Urbana-Champaign; the Instituto Superior Tecnico in Portugal; and the University of Sussex in the UK.

JIANLIN CHENG

William and Nancy Thompson Distinguished Professor
109 Naka Hall
573-882-7306
chengji@missouri.edu

Education
PhD from the University of California, Irvine
MS from Utah State University
BS from Huazhong University of Science and Technology

Technical Focus
Artificial intelligence
Bioinformatics
Machine learning

Jianlin "Jack" Cheng is the William and Nancy Thompson Distinguished Professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. He received his PhD in information and computer science from the University of California, Irvine in 2006. His research is focused on developing machine learning and artificial intelligence (AI) methods and tools for big biomedical data analysis. His research group has developed numerous bioinformatics tools for analyzing protein structure and function, biological networks and 3D genome structure, which are used by scientists around the world. His research has been supported by the National Institutes of Health (NIH), the National Science Foundation (NSF), and the U.S. Department of Energy (DOE). Cheng was a recipient of the NSF CAREER award and the MU College of Engineering's junior and senior faculty research awards.

CURT DAVIS

F. Robert and Patricia N. Naka Professor
323 Naka Hall
573-884-3789
davisch@missouri.edu

Education
PhD from the University of Kansas
BS from the University of Kansas

Technical Focus
Geospatial intelligence
Image processing
Satellite remote sensing

Curt Davis is the Naka Endowed Professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. Davis also is the founding and current director of MU's Center for Geospatial Intelligence, an interdisciplinary center that focuses on geospatial intelligence needs critical for national security, homeland defense and military combat support. His research has been funded by both civilian and defense government agencies including NASA, the National Science Foundation, the National Geospatial Intelligence Agency, the Defense Intelligence Agency and the U.S. Army, as well as industry leaders such as the Boeing Co., Raytheon Co., Booz-Allen-Hamilton, Northrop Grumman Corp. and others.

GUILHERME "GUI" N. DeSOUZA

Associate Professor
325 Naka Hall
573-882-5579
desouzag@missouri.edu

Education
PhD from Purdue University
MS from the Federal University of Rio de Janeiro - COPPE
BS from the Federal University of Rio de Janeiro

Technical Focus
Human-computer interaction
Machine learning and pattern recognition
Robotic assistive technology
Robotics and robotic vision
Robotics in agriculture and animal systems

Gui N. DeSouza is an associate professor in electrical engineering and computer science at the University of Missouri. Winner of Purdue University's Honeywell Teaching Award, the Maria Canto Neuberger Research Award and the MU Excellence in Teaching Award, DeSouza came to MU after working as a principal research scientist at Purdue and as a faculty member at the University of Western Australia. He also worked for more than 10 years at the Brazilian Power Systems Research Center on distributed and real-time systems for supervisory control and data acquisition and on diagnostic of the same power systems using machine learning, pattern recognition and computational intelligence in general. At MU, DeSouza established the Vision-Guided and Intelligent Robotics Lab. His research has been funded by various grants that amount to close to $30Million in the past 15+ years, from institutions such as NSF, NIH (R15 and R01), USDA, Leonard Wood Institute, VistaCon/Naval Research Lab, National Geospatial-Intelligence Agency and more.

THOMAS G. ENGEL

Associate Professor
349 Naka Hall
573-882-2972
engelt@missouri.edu

Education
PhD from Texas Tech University
MS from Texas Tech University
BS from Texas Tech University

Technical Focus
Electromechanics
Energy conversion
Systems

Thomas G. Engel (Senior Member, IEEE) received a PhD degree in electrical engineering from Texas Tech University in 1990. He joined Enfitek, Inc., Lubbock, a research and development firm, and later became the vice president of research and development. In 1993, he became a research assistant professor with the Pulsed Power Laboratory, Texas Tech University. He became an assistant professor with the University of Missouri in 1995, where he became an associate professor in 2001. He teaches both graduate and undergraduate courses in circuits, electronics, systems, electrical machines, energy conversion, pulsed power and direct energy conversion. He has consulted for academia, industry and federal agencies. His publication record includes 114 journal and conference publications and four book publications in his fields of specialization. He holds three patents and one registered copyright. His current research interests include energy conversion, electromechanical systems, energy conversion and computer-generated imaging. Engel is a member of Tau Beta Pi, Eta Kappa Nu and Sigma Xi.

FILIZ BUNYAK ERSOY

Assistant Professor
219 Naka Hall
573-882-6483
bunyak@missouri.edu

Education
PhD from the University of Missouri-Rolla (Missouri S&T)
MS from Istanbul Technical University
BS from Istanbul Technical University

Technical Focus
Artificial intelligence and machine learning
Biomedical image analysis
Computer vision
Image processing

Filiz Bunyak Ersoy is an assistant professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. Her research interests include image processing, computer vision, artificial intelligence and machine learning for biomedical image analysis and visual surveillance with special emphasis on motion analysis, level set and deep learning methods. She has 100+ publications in high-impact conferences, journals and books, as well as two U.S. patents. Her research sponsors include Coulter Foundation, University of Missouri, National Science Foundation, National Institutes of Health, Naval Research Laboratory, Army Research Laboratory, Air Force Research Laboratory and others. She served as chair for BIBM Workshop on Machine Learning Approaches in High Resolution Microscopy Imaging, co-chair for ICPR/ICCV Workshop on Analysis of Aerial Motion Imagery, and program co-chair for IEEE Applied Imagery Pattern Recognition Workshop. She currently serves on editorial boards of MDPI Sensors Journal and ACM Computing Surveys.

JOHN GAHL

Professor, P.E.
231 Naka Hall
573-882-5238
gahlj@missouri.edu

Education
PhD from Texas Tech University
MS from Texas Tech University
BS from Ohio State University

Technical Focus
Material science in extreme environments
Nuclear, plasma and beam science

John Michel Gahl is a professor in the Department of Electrical Engineering and Computer Science. He is also a senior research scientist at the University of Missouri Research Reactor Center. He is a licensed professional engineer in Missouri.

SHUBHRA GANGOPADHYAY

Cramer W. LaPierre Endowed Chair
141A Naka Hall
573-882-4070
gangopadhyays@missouri.edu

Education
PhD from the Indian Institute of Technology
MS from Jabalpur University
BS from Jabalpur University

Technical Focus
Bio-micro and nano electro-mechanical systems (Bio MEMS/NEMS)
Nanoengineering energetic materials and their integration with MEMs for various applications
Nanomaterial processing using top down and bottom up (self-assembly) approaches
Nano scale electronic devices, logic and memory, single electron transistors, organic electronics
Plasmonic systems for light coupling and super resolution microscopy and sensing

Shubhra Gangopadhyay's research has been extensively funded by the National Science Foundation, the Department of Defense, the National Institutes of Health and several companies including Boeing, Texas Instruments, IBM, Sematech, Biorad and Global Goods, In 2003, Gangopadhyay became a Fellow of the American Physical Society for her seminal work on amorphous carbon-based materials, In 2008, she was a Nano 50 award recipient for the invention of nano-engineered thermites and applications. Gangopadhyay became a Fellow of the American Institute of Medical and Bilogical Engineering and a Fellow of National Academic of Inventors for her discovery of plasmonic gratings dignositics device and gene/drug delivery micro-device system. Gangopadhyay was a Program Director at the Electrical, Communication and Cyber Security division of the National Science Foundation during 2016 to 2020. Gangopadhyay serves as a faculty mentor for various federal research proposals.

SEAN PATRICK GOGGINS

Professor
113 Naka Hall
484-683-5037
gogginss@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Minnesota
MS from the University of Wisconsin - Milwaukee
BS from the University of Wisconsin - Madison

Technical Focus
Open source software
Security
Serious games
Social computing

Sean Goggins is a professor of electrical engineering and computer science at the University of Missouri. Sean's research focuses generally on social computing, with specific active projects in open source software health and sustainability, serious games, and cybersecurity. Goggins is a founding member of the Linux Foundation's working group on community health analytics for open source software CHAOSS, a co-creator of Mission Hydro Sci, and the author of over 100 papers and three books focusing on understanding how social technologies influence organizational, small group and community dynamics, typically including analysis of electronic trace data from systems combined with the perspectives of people whose behavior is traced. His work is funded by the National Science Foundation, the Sloan Foundation, the Ford Foundation, Mozilla, Red Hat Software, the U.S. Department of Education and the U.S. Navy's Office of Naval Research. Goggins is also the creator of the Data Science and Analytics master's program at Missouri.

DOMINIC K.C. HO

Professor
202 Naka Hall
573-882-8023
hod@missouri.edu

Education
PhD from the Chinese University of Hong Kong
BS from the Chinese University of Hong Kong

Technical Focus
Signal processing
Wireless communications

Dominic K. C. Ho was born in Hong Kong. He was a research associate in the Royal Military College of Canada, a member of scientific staff at Bell-Northern Research, Montreal, Canada, and a faculty member in the Electrical Engineering Department at the University of Saskatchewan, Saskatoon, Canada. He joined the University of Missouri in 1997 and is a professor in the Department of Electrical Engineering and Computer Science. His research interests are in sensor array processing, source localization, subsurface object detection, wireless communications and adaptive processing. Ho has published over 130 journal papers and 170 conference articles. He was active in the ITU-T standard developments, and served as an associate editor of the IEEE Transactions on Signal Processing and IEEE Signal Processing Letters. He was the chair of Sensor Array and Multichannel Processing Technical Committee of the IEEE Signal Processing Society, and a technical chair of the 2016 IEEE International Conference on Acoustics, Speech and Signal Processing. He has received the junior faculty research award, the senior faculty research award and the teaching award. He is a Fellow of the IEEE.

KHAZA ANUARUL HOQUE

Assistant Professor
321 Naka Hall
573-882-4480
hoquek@missouri.edu

Education
Postdoctoral Research Fellow, University of Oxford, UK
PhD from Concordia University, Canada
MASc from Concordia University, Canada

Technical Focus
Cyber-physical systems
Cybersecurity
Formal methods
Safe and secure machine learning/artificial intelligence

Khaza Anuarul Hoque is an assistant professor in the Department of Electrical Engineering and Computer Science at the University of Missouri where he directs the Dependable Cyber-Physical Systems (DCPS) Laboratory. He is also a core faculty member of the Mizzou Cybersecurity Center. He received his MS and PhD degrees from the Department of Electrical and Computer Engineering at Concordia University, Montreal, Canada, in 2011 and 2016, respectively. Prior to joining MU, he was a postdoctoral research fellow at the University of Oxford, UK. His research interests include formal methods, cyber-physical systems, cybersecurity and safe AI/ML. He is a senior member of IEEE, and member of ACM and AAAS. His research has been funded by the National Science Foundation (NSF) and Navy Research Laboratory (NRL).
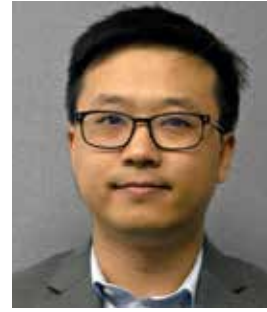
QINGYUN HUANG

Assistant Professor

Technical Focus
Power electronics

Qingyun Huang is an assistant professor in the Department of Electrical Engineering and Computer Science at the University of Missouri.

NAZ ISLAM

Professor
319 Naka Hall
573-882-7570
islamn@missouri.edu

Education
PhD from Rensselaer Polytechnic Institute
MS from Islamabad University
BS from Punjab University

Technical Focus
Semiconductors and device analysis

Naz Islam is a professor in the Department of Electrical Engineering and Computer Science and the Nuclear Engineering Program at the University of Missouri. Islam has been a principal investigator of a project researching radio frequency effects on electronic systems and has served as lead investigator for a project involving semiconductor device simulation, fabrication and radiation effects studies. His work has been funded by the Air Force Office of Scientific Research.

SYED KAMRUL ISLAM

Chair, Professor
201 Naka Hall
573-882-9139
islams@missouri.edu

Education
PhD from the University of Connecticut
MS from the University of Connecticut
BSc from Bangladesh University of Engineering
    and Technology

Technical Focus
Analog/Mixed-signal integrated circuits
Monolithic sensors
Semiconductor devices

Syed Kamrul Islam received his BSc in electrical and electronic engineering from Bangladesh University of Engineering and Technology and MS and PhD in electrical engineering from the University of Connecticut. He is currently a professor and the chair of the Department of Electrical Engineering and Computer Science at the University of Missouri. Islam's current research interests are: semiconductor devices, high temperature electronics, analog and mixed-signal circuit design, bio-microelectronics and nanotechnology.
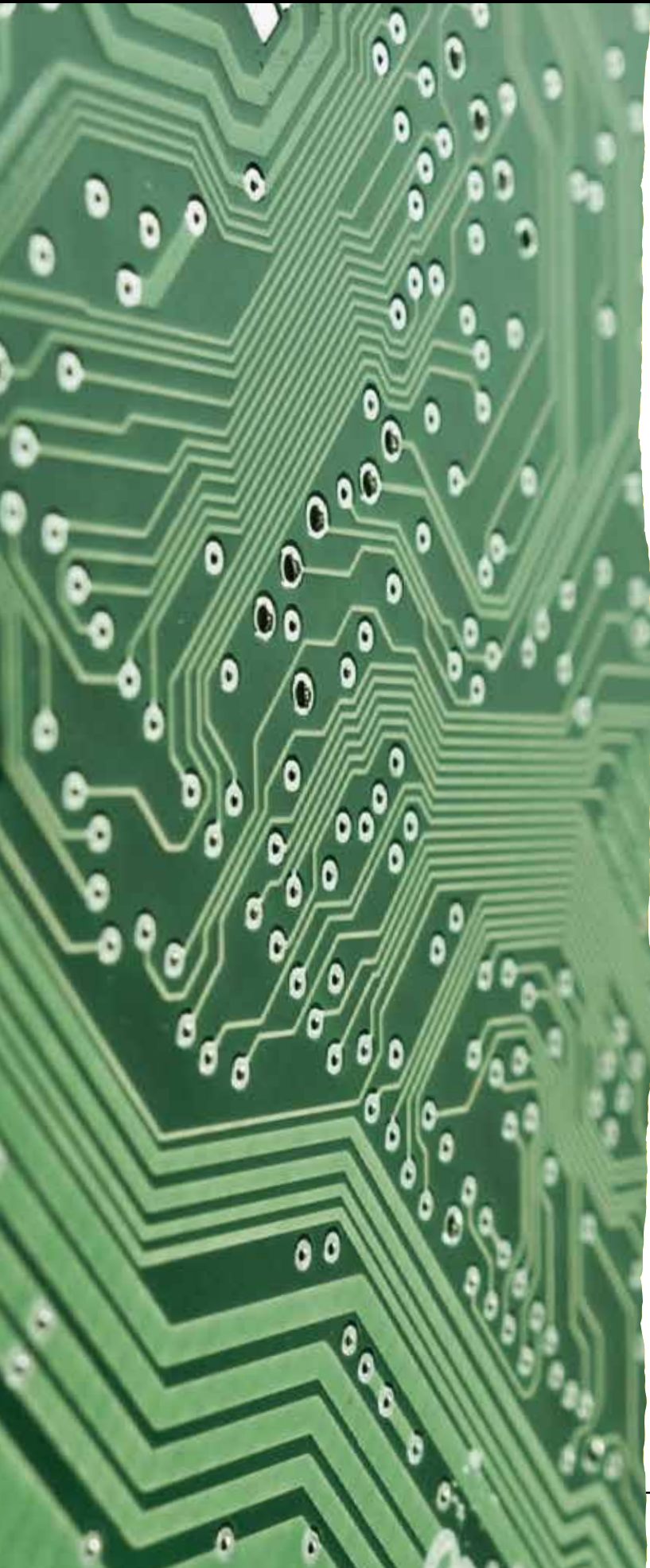
MICHAEL JURCZYK

Associate Professor
121 Naka Hall
573-884-8869
jurczykm@missouri.edu

Education
PhD from the University of Stuttgart
MS from the University of Bochum

Technical Focus
Computer networking
Cybersecurity
IoT systems and security

Michael Jurczyk is an associate professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. He worked as a research scientist with the Institute for Microelectronics Stuttgart in Germany, and was a visiting professor at Purdue University before coming to Missouri. His research interests are in cyber security, IoT system security and computer networking, and he has been supported, among others, by The National Science Foundation and the Defense Advanced Research Projects Agency.

TONI KAZIC

Associate Professor
143A Naka Hall
573-882-1946
kazict@missouri.edu

Education
PhD from the University of Pennsylvania
BS from the University of Illinois

Technical Focus
Computational biology
Maize genetics
Network inference

Toni Kazic is an associate professor in electrical engineering and computer science at the University of Missouri. She is currently working on methods to infer the structure of complex networks using the disease lesion mimic mutants of maize as a model system. Her work has included the development of an architecture for community query, deposit, review and curation of information on biochemical reactions, and the analysis of extant reaction networks. Kazic is a Fellow of the American College of Medical Informatics and was an Invited Researcher to the Institute for New Generation Computer Technology. She served as a program director for the National Science Foundation in computational biology, and now consults for the National Institutes of Health and the National Science Foundation and is a member of several national and international scientific advisory bodies.

JIM KELLER

Curators' Distinguished Professor Emeritus
307 Naka Hall
573-882-7339
kellerj@missouri.edu

Education
PhD from the University of Missouri
MA from Southern Illinois University
BA from the University of Missouri-St. Louis

Technical Focus
Artificial/computational intelligence
Image processing

James M. Keller is a Curators' Distinguished Professor Emeritus at the University of Missouri and is an honorary professor at the University of Nottingham. His research interests center on computational intelligence: fuzzy set theory and fuzzy logic, neural networks, and evolutionary computation with a focus on problems in computer vision, pattern recognition, and information fusion including bioinformatics, spatial reasoning in robotics, geospatial intelligence, sensor and information analysis in technology for eldercare, and landmine detection. His funding sources include numerous industrial and government entities like Union Electric, the National Science Foundation, NASA/JSC, the Air Force Office of Scientific Research, the Army Research Office and the Office of Naval Research. He has coauthored over 500 technical publications.

Keller is a Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a Fellow of the International Fuzzy Systems Association (IFSA) and a past President of the North American Fuzzy Information Processing Society (NAFIPS). He received the 2007 Fuzzy Systems Pioneer Award and the the 2021 IEEE Frank Rosenblatt Technical Field Award.

JUNGHWAN KIM

Assistant Professor
One Hospital Drive
573-884-9834
junghwan.kim@health.missouri.edu

MERT KORKALI

Assistant Professor
korkalim@missouri.edu

Technical Focus
Cascading failures in interdependent critical infrastructure
    networks
Data-driven methods for decision making under uncertainty
Fault identification and localization in power grids
Multi-timescale simulation of power grid dynamics
Network science and its applications to infrastructure networks
Power grid state estimation
Probabilistic risk/reliability assessment under rare events
Uncertainty quantification methods for power grid operation,
    planning, and control applications

Before joining MU, Mert Korkali worked as a Research Staff Member at Lawrence Livermore National Laboratory (LLNL), where he served as a principal investigator (PI) and co-PI on several projects on power grid operations and planning, solar-grid integration and extreme event modeling, funded by the U.S. Department of Energy. Before that, he was a Postdoctoral Research Associate at the University of Vermont. His current research interests lie in the broad interface of power system state estimation, electromagnetic transient analysis, cascading failures, uncertainty quantification and data-driven methods for power system operation, control and planning. He received the Best Paper Award at the 2019 IEEE Power and Energy Society General Meeting (PESGM). He is the Chair of the IEEE PES Task Force (TF) on Standard Test Cases for Power System State Estimation and the Secretary of the IEEE PES TF on Power System Uncertainty Quantification and Uncertainty-Aware Decision-Making. He currently serves as an Editor of the IEEE Open Access Journal of Power and Energy and IEEE Power Engineering Letters and an Associate Editor of the Journal of Modern Power Systems and Clean Energy. Korkali is a Senior Member of IEEE.

SCOTT KOVALESKI

Professor
573-882-8377
kovaleskis@missouri.edu

Education
PhD from the University of Michigan
MSE from the University of Michigan
BS from Purdue University

Technical Focus
Electromagnetics
Nuclear engineering
Plasma science
Charged particle accelerators
Pulsed power

Scott Kovaleski is a professor in electrical engineering and computer science at the University of Missouri. Kovaleski currently has numerous federally funded projects that include research in charged particle generation and acceleration, electromagnetics simulation and materials, and pulsed power.

JUSTIN LEGARSKY

Associate Professor, Director of Undergraduate Studies
313 Naka Hall
573-882-7558
legarskyj@missouri.edu

Education
PhD from the University of Kansas
MS from the University of Kansas
BS from the University of Washington

Technical Focus
Advanced radar
Antennas
Electro-optical sensors
Ground-based radar
Interferometry
Microwave sensor design
Optical image processing
Polarimetry
Radar image processing
Satellite imagery
Sensor data processing

Justin Legarsky has been awarded a Certificate in Effective Instruction from the Association of College and University Educators (ACUE). Legarsky has completed Mizzou's Online Teaching Foundations Program. Legarsky worked for NASA Jet Propulsion Laboratory on the Mars Advanced Radar for Subsurface and Ionospheric Sounding instrument, which currently orbits Mars. At Mizzou, Legarsky's research has included projects with antennas, microwave sensor design, radar image processing, optical image processing, sensor data processing, ground-based radar, satellite imagery, polarimetry, interferometry, advanced radar and electro-optical sensors. Legarsky's research has been funded by the NSF, various DoD funding agencies and private industry.

SATISH S. NAIR

Professor, Robert H. Buescher Faculty Fellow, P.C.E.
229 Naka Hall
573-882-2964
nairs@missouri.edu

Education
PhD from Ohio State University
MS from Ohio State University
BS from the Indian Institute of Technology

Technical Focus
Computational and AI models in neuroscience
Neural engineering
Uncertainty modeling using robust and adaptive techniques

Satish S. Nair is a Robert H. Buescher Faculty Fellow and professor in the Department of Electrical Engineering and Computer Science and Department of Chemical and Biomedical Engineering. His background is in the area of mathematical modeling of systems and their control, with focus on uncertainties and robust designs. His focus for the past 15 years has been collaborating with neuroscientists at MU and outside on reverse engineering brain circuits at molecular, cellular, systems and behavioral levels. Importantly, his lab strives to generate fundamental understanding of structure-function relationships, including via reduced order and machine learning formulations.

His research has been funded by the National Institutes of Health, the National Science Foundation, NASA and the U.S. Air Force. He is a Fellow of the American Society of Mechanical Engineers (ASME) and is a past chair of the ASME Dynamic Systems and Control Division (~8000 members). He has been Associate Editor of the IEEE Transactions on Control Systems Technology and of the ASME Journal of Dynamic Systems, Measurement Control.

KANNAPPAN PALANIAPPAN

Curators' Distinguished Professor
205 Naka Hall
573-884-9266
pal@missouri.edu

Education
PhD from the University of Illinois
MS from the University of Waterloo
BS from the University of Waterloo

Technical Focus
Biomedical image and video analysis
Computer vision and remote sensing
Deep learning and data visualization

Kannappan Palaniappan has received several notable awards, including the National Academies Jefferson Science Fellowship (first in Missouri), the NASA Public Service Medal for pioneering contributions to (Big Data) scientific visualization of petabyte-sized archives, the Air Force Summer Faculty Fellowship, the Boeing Welliver Summer Faculty Fellowship, and MU's William T. Kemper Fellowship for Teaching Excellence. At NASA's Goddard Space Flight Center, he co-founded the Visualization and Analysis Lab that has produced a number of spectacular Digital Earth visualizations used by search engines (BlueMarble), museums, magazines and broadcast television. He is co-inventor of the Interactive Image SpreadSheet for handling large multispectral imagery, and he developed the first massively parallel semi-fluid cloud motion analysis algorithm using geostationary satellite imagery. In 2014, his team won first place at the IEEE Computer Vision and Pattern Recognition (CVPR) Change Detection Workshop video analytics challenge. In 2015, the team was a finalist in the CVPR Video Object Tracking Challenge, and in 2016, the team won the best paper award at the CVPR Automatic Traffic Surveillance Workshop.

PRAVEEN RAO

Associate Professor
CE-736 CS&E Building
573-884-4195
praveen.rao@missouri.edu

Education
PhD from the University of Arizona
MS from the University of Arizona
BE from the University of Pune

Technical Focus
Big Data systems
Cybersecurity
Data science
Health informatics

Praveen Rao's research interests are in the areas of Big Data systems, data science, health informatics and cybersecurity. Specifically, he focuses on developing scalable algorithms and software systems to extract meaningful insights from massive, diverse datasets. His research, teaching and outreach activities have been supported by the National Science Foundation (NSF), National Institutes of Health (NIH), National Endowment for the Humanities (NEH), Air Force Research Lab (AFRL), the University of Missouri System, University of Missouri Research Board, and companies. He is a co-PI for the NSF IUCRC Center for Big Learning. He is a Senior Member of the ACM and IEEE.

GRANT SCOTT

Assistant Professor
311 Naka Hall
573-884-3604
grantscott@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Missouri
BS from the University of Missouri

Technical Focus
Data science
Geospatial AI
High-performance computing
Machine learning

Grant Scott is an assistant professor in the Department of Electrical Engineering and Computer Science and the Institute for Data Science and Informatics at the University of Missouri. He has participated in projects for the National Science Foundation (NSF), Department of Defense (DoD), NGA, DIA, Army, Air Force, Army ERDC, NRL, NRO and DARPA. He is currently mentoring or leading research projects in several areas including data science, machine learning, computer vision, multi-modal analytics, high-performance computing, Internet of Things (IoT) and geospatial analytics. His research interests also include knowledge-driven multidimensional indexing, multimodal analytics, computer vision, pattern recognition, computational intelligence, databases (geospatial, media-content, and traditional), parallel/distributed systems and information theory in support of media database systems.

YI SHANG

Professor, Robert H. Buescher Faculty Fellow, Director of Graduate Studies
207 Naka Hall
573-884-7794
shangy@missouri.edu

Education
PhD from the University of Illinois at Urbana-Champaign
MS from the Chinese Academy of Sciences
BS from the University of Science and Technology of China

Technical Focus
Artificial intelligence
Mobile and distributed computing
Bioinformatics

Yi Shang received his PhD in computer science from the University of Illinois at Urbana-Champaign in 1997, MS from the Institute of Computing Technology, Chinese Academy of Sciences, Beijing, in 1991, and BS from the University of Science and Technology of China, Hefei, in 1988. Previously, he worked as a senior researcher at the Xerox Palo Alto Research Center (PARC) in Palo Alto, California. He has published over 200 peer-reviewed papers in the fields of artificial intelligence, wireless sensor networks, mobile and distributed computing, and bioinformatics, and received six U.S. patents. His papers have been widely cited, with one first-author paper cited 1,800 times. He has been featured among the World's Top 2% Scientists List, according to a Stanford University study in 2020. At MU, he has supervised more than 80 graduate students and over 70 undergraduate researchers. His research has been supported by grants from many funding sources, including the NSF, NIH, U.S. Army, DARPA, Missouri Department of Conservation, Microsoft, Raytheon, etc. He has co-founded a start-up company, TigerAware LLC. He is a lifetime member of ACM and Senior Member of IEEE.

CHI-REN SHYU

Director of MU Institute for Data Science and Informatics, Paul K. and Dianne Shumaker Professor
241 Naka Hall
573-882-3884
shyuc@missouri.edu

Education
PhD from Purdue University
MS from Purdue University
BS from Feng Chia University

Technical Focus
Artificial intelligence
Biomedical informatics
Geospatial informatics
Quantum computing

Chi-Ren Shyu serves as the director of the MU Institute for Data Science and Informatics, where 60 interdisciplinary core faculty from 22 departments/schools support more than 160 graduate students in the MS degree program in Data Science & Analytics and PhD degree program in Informatics with emphasis areas in bioinformatics, health informatics and geospatial informatics. Shyu has organized and chaired technical program committees for several IEEE conferences, and will be organizing IEEE BIBE 2023 in North America. He represents MU serving on the Southeastern Conference (SEC) Artificial Intelligence Curriculum Consortium. Since joining MU in 2000, Shyu has received several awards including the National Science Foundation CAREER award, Engineering Faculty Research Award, Engineering Teaching Excellence Award, the University of Missouri Faculty Interdisciplinary Entrepreneurial Award, UM System President's Leadership Award and seven computer science teaching awards. His current research focuses on digital health, explainable AI, quantum computing and spatial Big Data analytics. He is a Fellow of the American Medical Informatics Association.

MARJORIE SKUBIC

**Curators' Distinguished Professor,
Robert H. Buescher Faculty Fellow**
329 Naka Hall
573-882-7766
skubicm@missouri.edu

Education
PhD from Texas A&M University
MS from Texas A&M University-Kingsville
BS from South Dakota State University

Technical Focus
Eldercare technology
Human-robot interaction
Spatial reasoning interfaces

Marjorie Skubic received her PhD in computer science from Texas A&M University in 1997, where she specialized in human-robot interaction. She is a Curators' Distinguished Professor in electrical engineering and computer science at the University of Missouri. In addition to her academic experience, she has spent 14 years working in industry as a software developer. Her current research interests include sensor networks for ambient intelligence, preventative health screening and rehabilitation tools, and user interfaces to foster proactive health care. In 2006, Skubic established the Center for Eldercare and Rehabilitation Technology at the University of Missouri and serves as the Center Director for this transdisciplinary team. The center's work supports proactive models of health care such as monitoring systems that noninvasively track the physical and cognitive health of elderly residents in their homes and generate alerts for health changes, increasing fall risk and actual fall events. Recent work has also investigated automated screening of athletes and pianists to flag injury risks, with support for preventative exercises to reduce the risk, as well as rehabilitation support for stroke patients and patients recovering from hand surgery.

JEFFREY UHLMANN

Associate Professor
217 Naka Hall
573-884-2129
uhlmannj@missouri.edu

Education
PhD from the University of Oxford
MS from the University of Missouri
BA from the University of Missouri

Technical Focus
Information fusion
Entertainment engineering
Digital combinatorics

Jeffrey Uhlmann is an associate professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. He has published seminal work in the areas of information and sensor fusion, metric data structures and nonlinear estimation. He also has a long background in experimental music and filmmaking. He has been featured among the World's Top 2% Scientists List, according to a Stanford University study in 2020.

PETROS VALETTAS

Assistant Professor
303 Math Sciences Building
573-882-6221
valettasp@missouri.edu

Education
PhD from the National and Kapodistrian University of Athens
MSc from the National and Kapodistrian University of Athens
BS from the National and Kapodistrian University of Athens

Technical Focus
Applications in data science
Convex geometry
High-dimensional probability

Petros Valettas is an assistant professor in mathematics, with a joint appointment in electrical engineering and computer science at the University of Missouri. He was previously a visiting assistant professor in the Department of Mathematics at Texas A&M University, College Station. His research interests lie in the study of high-dimensional structures, which arise in mathematics and applied fields, using analytic, geometric and probabilistic methods. The main focus is on the concentration of measure phenomenon, super-concentration and their applications in high-dimensional geometry and data analysis. His research has been funded by the National Science Foundation.

XIU-FENG "HENRY" WAN

Professor
471D Bond Life Sciences Building
573-882-8943
wanx@missouri.edu

Education
PhD from Mississippi State University

Technical Focus
Computational biology
Machine learning
Systems biology

Henry Wan is a professor of electrical engineering and computer science, professor of molecular microbiology and immunology, and professor of veterinary pathobiology at the University of Missouri. Before joining Mizzou, Wan was an assistant, associate and full professor at Mississippi State University (2009-2019), a Senior Service Fellow in the Influenza Division of the Centers for Disease Control and Prevention in Atlanta (2007-2009) and an assistant professor in the Department of Microbiology at Miami University (2005 to 2007). Wan's long-term career goals are to understand how zoonotic pathogens (especially influenza A viruses) emerge and re-emerge at the animal-human interface and to improve the effectiveness of the influenza vaccines in disease prevention and control by developing and applying integrated, multi-scale, and evidence-based approaches that combining laboratory, clinical and computational methods. He has published more than 130 peer reviewed papers and his research has been supported by NIH, NSF, DOJ, and USDA. Wan identified A/goose/Guangdong/1/1996 (H5N1), the precursor virus causing current H5N1 bird flu threat, during his earlier graduate study in China.

DONG XU

**Curators' Distinguished Professor,
Paul K. and Dianne Shumaker Professor**
227 Naka Hall
573-882-2299
xudong@missouri.edu

Education
PhD from the University of Illinois at Urbana-Champaign
MS from Peking University
BS from Peking University

Technical Focus
Bioinformatics/computational biology
Deep learning
Single-cell data analysis

Dong Xu is a Curators' Distinguished Professor with appointments in the Christopher S. Bond Life Sciences Center and the Informatics Institute at Mizzou. He did two years of postdoctoral work at the US National Cancer Institute and was a staff scientist at Oak Ridge National Laboratory until 2003 before joining MU. He served as department chair of Computer Science during 2007-2016 and director of the Information Technology Program from 2017-2020. Over the past 30 years, he has conducted research in many areas of computational biology and bioinformatics, including single-cell data analysis, protein structure prediction and modeling, protein post-translational modifications, protein localization prediction, computational systems biology, biological information systems, and bioinformatics applications in human, microbes and plants. His research since 2012 has focused on the interface between bioinformatics and deep learning. He has published more than 400 papers with more than 21,000 citations and an H-index of 73 according to Google Scholar. He was elected to the rank of American Association for the Advancement of Science (AAAS) Fellow in 2015 and American Institute for Medical and Biological Engineering (AIMBE) Fellow in 2020.

YUNXIN ZHAO

Professor
247A Naka Hall
573-882-3374
zhaoy@missouri.edu

Education
PhD from the University of Washington
MS from the University of Washington
BS from the Beijing Institute of Posts
    and Telecommunications

Technical Focus
Biomedical applications
Machine learning and signal processing
Speech and language processing

Yunxin Zhao is a professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. She is a recipient of the National Science Foundation's CAREER Award. Zhao has published more than 150 journal and conference papers and has been granted seven U.S. patents. Zhao's research has been funded by the National Science Foundation, the National Institutes of Health, the Whitaker Foundation, the U.S. Army, Microsoft Research, Office of Naval Research through SBIR, Coulter Translational Partnership Program, Missouri Spinal Cord Injury/Disease Research Program (SCIDRP), industry and the Advanced Telecommunication Research Institute of Japan.
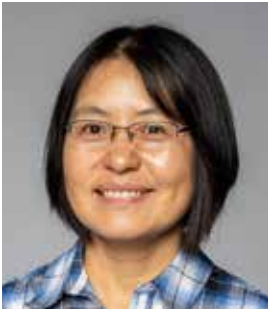
PEIFEN ZHU

Assistant Professor
107B Naka Hall
573-882-5190
pzhu@missouri.edu

Education
PhD from Lehigh University

Technical Focus
Clean energy
Electronic/photonic materials
Optoelectonic materials and devices
Solid state lighting

Peifen Zhu is an assistant professor in the Department of Electrical Engineering and Computer Science at the University of Missouri. Prior to joining the University of Missouri in Fall 2022, she was an assistant professor in the Department of Physics and Engineering Physics at the University of Tulsa. She received a PhD in Electrical Engineering from Lehigh University in 2015. Her research work covers the theoretical and experimental aspects of photonics, optoelectronic devices, optical physics and electronic/photonic materials for energy efficiency and renewable energy. She received the NSF CAREER award and Zelimir Schmidt Award for Outstanding Researcher.
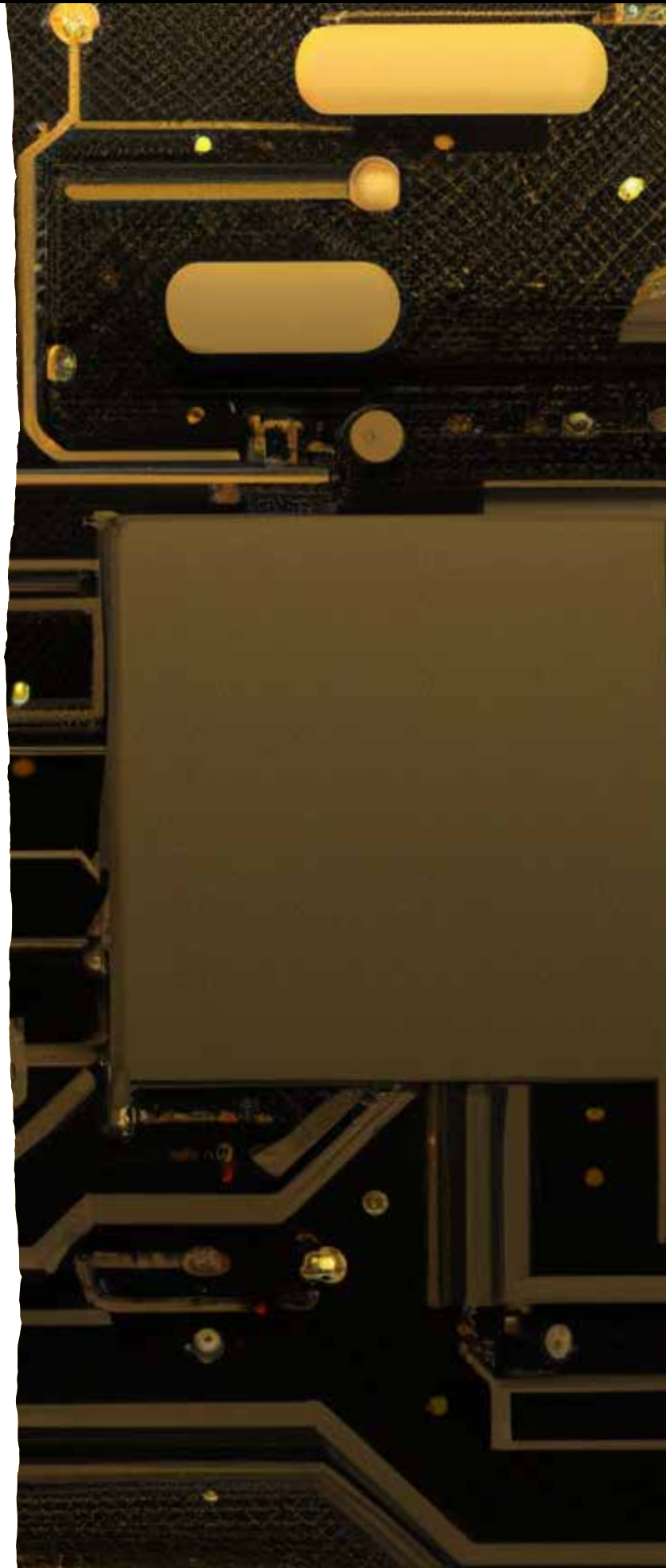
Engineering and Information Technology

College of Engineering
University of Missouri

In 2022, Mizzou Engineering established the Department of Engineering and Information Technology with plans to build on our legacy of success and innovation around emerging technologies. That includes photogrammetry and motion capture technologies to convert two-dimensional images into realistic 3D models, integrating virtual and augmented realities into educational settings and working with autonomous systems such as Spot, the robot from Boston Dynamics.

While the EIT department is new, we've offered a bachelor's degree in information technology since 2005. Students gain a foundational understanding alongside hands-on experiences applying technology to real-world problems. And faculty are experts in autonomous systems, extended, virtual and mixed-use reality, media production and more.

We're excited to expand upon our expertise to grow our programs and department. Don't hesitate to reach out if you have any questions or would like more information.

Hani Salim

Professor and Interim Chair
Department of Engineering
and Information Technology

University of Missouri
E2506 Lafferre Hall

T: (573) 884-6761

E: salimh@missouri.edu

KRISTOFFERSON CULMER

**Assistant Professional Practice Professor,
Director of Autonomous Systems Laboratory**
E2437K Lafferre Hall
culmerk@missouri.edu

Education
MS from the University of Missouri
BS from Central Methodist University

Technical Focus
Autonomous systems
Nature language processing

Kristofferson Culmer is an assistant professor of professional practice in the Department of Engineering and Information Technology and director of the Autonomous Systems Lab. Culmer teaches courses in software engineering such as programming languages and paradigms, database management systems and software engineering and machine learning & data analytics. He also assists teaching IT 1040 (Problem Solving and Programming).

Culmer was born and raised in the Commonwealth of the Bahamas and completed his undergraduate studies at Central Methodist University in Fayette, Missouri, before coming to Mizzou for his graduate studies in computer science.

Culmer is an advocate for higher education with a passion for service and has also served the College of Engineering and the university in a number of ways. He has previously served as a research mentor for the National Science Foundation (NSF) Research Experience for Undergraduates (REU) and also as a teaching lead for the STEM Cubs program, a STEM education outreach program for K-6 students in the local community. Culmer has also been involved in the Graduate Scholars of Excellence (GSE) program where he has served as a mentor for undergraduate students from underrepresented and underserved communities.

CHIP GUBERA

Associate Professional Practice Professor
E2437F Lafferre Hall
573-882-6566
guberac@missouri.edu

Education
M Ed from the University of Missouri
BA from the University of Missouri

Technical Focus
2D and 3D animation
Film and video
Media technology
Motion graphics
Visual effects

Christopher "Chip" Gubera has over 15 years of experience teaching media technology and design for the Department of Engineering and Information Technology at the University of Missouri. He spends most of his teaching time in the classroom, he has been teaching online since 2015. From time to time, he also does freelance in motion graphics, visual effects and music for feature films and network television. He is also an independent filmmaker. In the last 25 years, he has written, directed and/or produced eight feature films and over 30 short films, 19 of which have been accepted at film festivals around the world. Twelve of these films have won awards at festivals worldwide and seven have had distribution. The many awards and nominations include a Mid-American Emmy nomination for his documentary feature "Joplin, Missouri – A Tornado Story" (2012). His other feature films include "Song of the Dead" (2005), "Academy of Doom" (2007), "Mil Mascaras Vs. The Aztec Mummy" (2007), "In the Wake of Ire" (2018 and "The Lost Treasure of Jesse James" (2020). In 2016, his multi-award-winning feature film "Slasher.com" was released worldwide on DVD, VOD, and is currently available for viewing on Amazon Prime Video.

JIAMING JIANG

Assistant Teaching Professor
E2437J Lafferre Hall
jjiang@missouri.edu

Education
PhD from North Carolina State University
Master of Science from North Carolina State University
Bachelor in Computer Science from Calvin University

Technical Focus
Formal methods
Programming languages

Jiaming Jiang is an assistant teaching professor in the Department of Engineering and Information Technology. Before that, she was a lecturer at UC Davis. She has taught a variety of courses, including Python, C, Haskell, Prolog, data structures, and semantics of programming languages. Her research focus during her PhD was on formal methods. She has developed a model of a security access control systems using mathematical logics. Her technical focus areas include formal methods and various programming languages, including Python, C++, C, Rust, Haskell and Prolo.

GILLIAN MAURER

Associate Professional Practice Professor
E2437B Lafferre Hall
573-882-1282
maurerb@missouri.edu

Education
M Ed from the University of Missouri
BA from the University of Missouri

Technical Focus
Color (Big Data) in media (research)
CUDA GPU accelerated processing (cluster) (research)
Digital production systems
Digital production systems and efficiency design
Film production and management
Image processing
Media technology and post production
Project management
UHD / RAW video processing

Gillian Maurer is an associate professor of practice in the Department of Engineering and Information Technology at the University of Missouri. Maurer's academic efforts focus on digital production systems, media post-production software and media technology. Her formal background in learning systems, design and development provides the College of Engineering support in online course development and deployment. Maurer is also a film producer, director and cinematographer. Prior to her appointment in the College of Engineering, Maurer served as the Director of Film Production for the Film Studies program in the College of Arts and Sciences.

SCOTTIE MURRELL

Assistant Teaching Professor
E2437L Lafferre Hall
sdm6f8@umsystem.edu

Education
MS from University of Missouri
BS from University of Missouri

Technical Focus
Extended Reality (XR)
UNIX Operating System
Web development

Scottie Murrell is an assistant teaching professor in the Department of Engineering and Information Technology. Murrell's focus is on computer programming and computer systems design. His research is in the field of extended reality and how it applies to the field of education. His previous work as an adjunct instructor for virtual reality and networking was also at the University of Missouri where he obtained his master's and bachelor's degrees. Murrell was also the recipient of the Outstanding Senior Award in Information Technology and a co-founder of the University of Missouri Virtual Reality Organization. He worked as a program logic controller programmer and built analog circuit I/O systems to integrate with robotic controllers.

DALE MUSSER

Associate Teaching Professor
602 3rd Street, Suite 1
San Francisco, California
573-884-1328
musserda@missouri.edu

Education
PhD from Ohio State University
MA from Ohio State University
BS from Shippensburg University of Pennsylvania

Technical Focus
Augmented Reality
Autonomous systems
Drones
Game design and development
Human cognition and learning
Intelligent systems
iOS app development
Knowledge management
Machine learning
Performance support systems
Software engineering
Unmanned aerial and ground vehicles

Dale Musser is an associate teaching professor in the Department of Engineering and Information Technology at the University of Missouri. Musser was previously a faculty member in Network Learning Systems in the School of Information Science & Learning Technologies at the University of Missouri and a manager of entertainment and educational software development at IBM in Atlanta. His research and development work has been supported by grants from the National Science Foundation and the Department of Education. He was a co-founder of MU's Center for Technology Innovations in Education.

HANI SALIM

Professor, James C. Dowell Fellow, P.E.
Interim Chair
E2506 Lafferre Hall
573-884-6761
salimh@missouri.edu

Education
PhD from West Virginia University
MS from West Virginia University
BS from the Jordan University of Science and Technology

Technical Focus
Blast mitigation and design
Composite materials
Structures and solid mechanics

Hani A. Salim is a professor in the Department of Civil and Environmental Engineering, James C. Dowell Fellow in the College of Engineering and interim chair of the Department of Engineering and Information Technology. Salim is a member of the ASCE Technical Committee on Blast, Shock and Impact, as well as the ASCE Blast Protection of Building Standards Committee. He is director of MU's National Center for Explosion Resistant Design, which conducts research on designs and strategies to protect against explosions. Salim serves as a member of The International Scientific Committee for the International Conference on Protective Structures. He has received funding from the U.S. Army Corps of Engineers, Applied Research Associates, the Missouri Department of Transportation, the Air Force Research Laboratory and the U.S. Army Research Laboratory. He received the 2005 William T. Kemper Fellowship for Teaching Excellence and the 2005 Outstanding Teaching Award in the college. He is a registered professional engineer.

MICHAEL TOMPKINS

Assistant Professional Practice Professor
E2437D Lafferre Hall
tompkinsmr@missouri.edu

Education
ME from the University of Missouri
BS from the University of Missouri

Technical Focus
3D modeling and animation
Digital audio design and creation
Digital media technology
Digital production systems
Interactive digital audio design and creation
Interactive digital environment design and creation

Michael Tompkins is an assistant professional practice professor in the Department of Engineering and Information Technology, where he has been since 2013. After earning his bachelor's degree in 2017, he worked as a graduate teaching assistant for the program and earned a master of education in learning technologies and design in 2019. Tompkins teaches computer modeling animation, game theory and design and audio engineering. He is also researching methods to use live visual effects and animations with educational materials to better engage students with educational content. Outside of work, he runs a small media consulting business and helps bring media solutions up to date. He also enjoys gaming with virtual reality, watching television, anime and movies, walking his puppy and cooking.
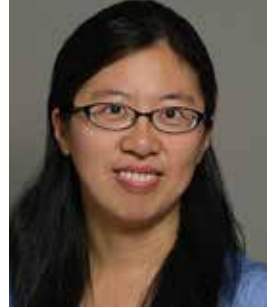
FANG WANG

Associate Teaching Professor, Director of CREXR Lab
E2437H Lafferre Hall
573-884-8747
wangfan@missouri.edu

Education
PhD from the University of Missouri
MS from Southern Methodist University
BS from Nankai University

Technical Focus
Computational intelligence
Engineering simulation software and device modeling
Mobile application development
Virtual and augmented reality

Fang Wang is an associate teaching professor in the Department of Engineering and Information Technology at the University of Missouri as well as director of the Collaborative Research Environments for Extended Reality (CREXR) Lab. Before joining MU, she worked as a senior software engineer in research and development at Ansys Inc. Prior to that, she worked as a senior device modeling and characterization engineer at Motorola Inc. and Freescale Semiconductor Inc. Her current research interests include virtual and augmented reality, game and mobile application in healthcare and education and engineering simulation software development.

Industrial

and

Systems

Engineering

College of Engineering
University of Missouri

The Department of Industrial and Systems Engineering spans healthcare, logistics, manufacturing and service. The department is home to the Center for Excellence in Logistics and Distribution (CELDi), a graduated National Science Foundation I/UCRC, that allows researchers from six universities to collaborate with member organizations and provides opportunities for students to network with professionals.

Our research areas include advanced manufacturing, applied operations research, data analytics for decision making, emerging transportation logistics and quality and reliability engineering. We're working on problems in healthcare systems, supply chain/logistics/distribution, and human-computer interaction. Our work aims to reduce costs, improve quality and increase productivity across a variety of industries.

Feel free to reach out if you would like to learn more about how industrial engineering is improving the world.

James Noble

Professor and Chair
Department of Industrial and
Systems Engineering

University of Missouri
E3437 Lafferre Hall

T: (573) 882-9561

E: noblej@missouri.edu

JUNG HYUP KIM

Associate Professor
E3437F Lafferre Hall
573-884-0354
kijung@missouri.edu

Education
PhD from Pennsylvania State University
BS from Mississippi State University

Technical Focus
Ergonomics
Human factors
Human-computer interaction
Workload

Jung Hyup Kim is an associate professor in the Department of Industrial and Systems Engineering at the University of Missouri. His current research interests include eye-tracking, real-time workflow analysis and human performance modeling in the fields of ergonomics and health care. His research has been funded by corporate sponsors (e.g., Honeywell, Missouri Employers Mutual, etc.) and the National Institutes of Health. His research objectives are to examine human performance, workload and situation awareness in real-world environments.

JAMES NOBLE

Professor, Chair, Director of Graduate Studies and Director of Undergraduate Studies, P.E.
E3437 Lafferre Hall
573-882-9561
noblej@missouri.edu

Education
PhD from Purdue University
MS from Purdue University
BS from the University of Oklahoma

Technical Focus
Integrated production system design
Logistics and distribution
Material flow systems

James S. Noble is a professor and chair of the Department of Industrial and Systems Engineering at the University of Missouri and MU Site Director for the graduated NSF I/UCRC Center for Excellence in Logistics and Distribution (CELDi). Noble is currently working on research related to integrated production systems, humanitarian logistics and supply chain system design. His research has been funded by the National Science Foundation, Bayer, Boeing, Hallmark Cards., Honeywell FMT, Medline, Ameren, UMB Financial, the U.S. Economic Development Administration, the Midwest Transportation Consortium and the Missouri Department of Transportation. He received the Society of Manufacturing Engineers Outstanding Young Manufacturing Engineering award in 1997. He was honored with the William T. Kemper Fellowship for Teaching Excellence in 2022 and received the 2014 Win Horner Award for Innovative Writing Intensive Teaching. He was elected a Fellow of the Institute for Industrial and Systems Engineering (IISE) in 2019. He is a registered professional engineer in Missouri.

SUCHI RAJENDRAN

Assistant Professor
E3437D Lafferre Hall
573-882-7421
rajendrans@missouri.edu

Education
PhD from Pennsylvania State University

Technical Focus
Applied operations research
Data analytics
Emerging transportation and logistics

Suchi Rajendran is an assistant professor with a joint appointment in the Department of Industrial and Systems Engineering and in the Department of Marketing in the Trulaske College of Business at the University of Missouri. She has worked on projects with companies such as Case New Holland and Schneider Electric. She is a recipient of the Richard Wallace Faculty Incentive Grant, Bob Bloss Faculty Enhancement Grant and Winemiller Excellence Award in Data Analytics. She is a Penn State National Science Foundation Center for Health Organization Transformation (NSF CHOT) scholar, Service Enterprise Engineering Fellow and also a recipient of the DAAD-WISE Fellowship of Germany. She is a Lean Six Sigma Black Belt. Her research interests include health care delivery systems, supply chain optimization, marketing data analytics, multiple criteria decision making and quality assurance.

KANGWON SEO

Assistant Professor
E3437M Lafferre Hall
573-884-9465
seoka@missouri.edu

Education
PhD from Arizona State University
MS from Arizona State University
BS from Hongik University

Technical Focus
Optimal experimental designs of reliability tests
Quality and reliability engineering
System health monitoring and failure prediction

Kangwon Seo is an assistant professor in industrial and systems engineering and statistics (joint) at the University of Missouri. He obtained his PhD degree at Arizona State University and joined MU in 2017. His research areas include system health monitoring and failure prediction, data imbalance problems in machine learning and optimal experimental designs of reliability tests. His research articles have been published in a variety of relevant journals, including Big Data Research, Journal of Quality Technology and IISE Transactions. He received RAMS 2016 Tom Fagan Best Student Paper Award, and his research team was selected as a finalist in the 2019 IISE QCRE Data Challenge competition. He is teaching design and analysis of engineering experiments, applied statistical models, probability and statistics, and multivariate data analysis.

SHARAN SRINIVAS

Assistant Professor
E3437G Lafferre Hall
573-882-7409
srinivassh@missouri.edu

Education
PhD from Pennsylvania State University
ME from Pennsylvania State University
MS from Binghamton University
BE from College of Engineering, Guindy, Anna University

Technical Focus
Applied operations research
Emerging transportation/logistics technologies
Predictive analytics
Prescriptive analytics
Supply chain management

Sharan Srinivas is an assistant professor with a joint appointment in the Department of Industrial and Systems Engineering and the Department of Marketing at MU. He is also a core faculty at the MU Institute for Data Science and Informatics, and a visiting faculty at the University of Passau, Germany. Srinivas received his PhD in industrial engineering and operations research. Srinivas' area of specialization is data analytics and operations research with research interests in healthcare operations management, transportation/logistics, smart service systems and supply chain. He has been an investigator on a range of industry-based research projects. He has published over 40 peer-reviewed articles in journals, conferences, books and trade publications. In particular, his research work has appeared in leading journals such as Computers and Industrial Engineering, Expert Systems with Applications, Transportation Research Part C: Emerging Technologies, Transportation Research Part E: Logistics and Transportation Review, International Journal of Medical Informatics. He is also an active member of INFORMS and IISE professional societies.
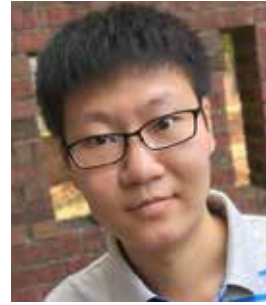
YI WANG

Assistant Professor
E3437C Lafferre Hall
573-882-2340
yiwang@missouri.edu

Education
PhD from North Carolina State University
MS from Tianjin University, Tianjin, China
BS from Tianjin University, Tianjin, China

Technical Focus
Advanced micro/nano manufacturing
Biomedical sensors and devices
Brain-machine interface
Micro electrico-mechanical systems (MEMS)
Ultrasonic assisted machining

Yi Wang is an assistant professor in the Department of Industrial and Systems Engineering at the University of Missouri. His primary research interests include advanced micro/nano manufacturing technology, brain-machine interface development, biomedical sensors (flexible) and devices development, ultrasonic-assisted machining and computer-aided design and manufacturing.
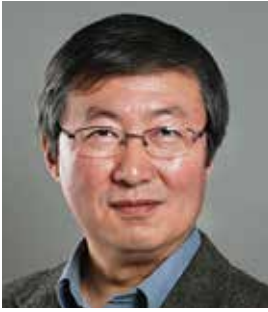
BIN WU

Teaching Professor
E3437L Lafferre Hall
573-882-5540
wubi@missouri.edu

Education
PhD from Brunel University
BS from Brunel University

Technical Focus
Health care systems engineering
Industrial energy efficiency
Manufacturing and supply systems design

Bin Wu is a teaching professor in the Department of Industrial and Systems Engineering at the University of Missouri, and director of the Missouri Industrial Assessment Center. Wu is an internationally recognized expert in the design and management of manufacturing and supply systems. He has written a number of books on the subject that have been adopted as standard undergraduate and postgraduate texts worldwide. He is the recipient of numerous awards and established the International Journal of Manufacturing System Design, acting as its editor in chief since 1996. His research has been funded by the Missouri Department of Natural Resources, the Kauffman Foundation, the National Science Foundation and the U.S. Department of Energy. Wu is a Royal Chartered Engineer (CEng, U.K.).
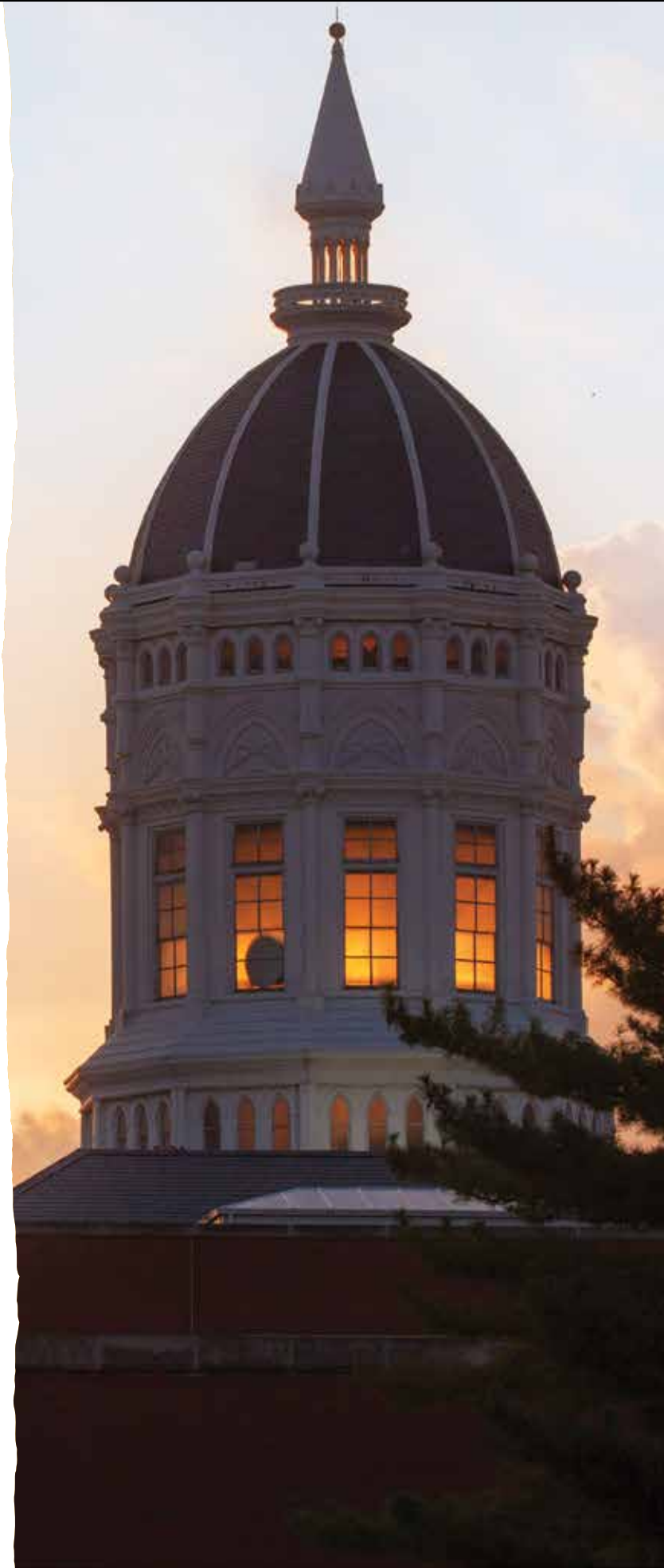
Mechanical

and

Aerospace

Engineering

MU

College of Engineering
University of Missouri

The Department of Mechanical and Aerospace Engineering is home to the MU Materials Science and Engineering Institute in collaboration with the MU College of Arts & Science, the Midwest Assessment Center and the Multiphysics Energy Research Center. Over the past several years, we have added and updated four labs around manufacturing processes, instruments, material and manufacturing and thermal/fluid dynamics.

Our research areas include fluid flow and heat transfer, aerospace vehicle flight mechanics and control, fluid power systems, manufacturing process, multiphysics energy, metamaterials, elasticity, nanomaterials, nanotechnology, topical insulators, thermal management and machine learning.

In mechanical and aerospace engineering, we're discovering new possibilities every day. Feel free to contact me if you have questions about our work or facilities.

Hongbin "Bill" Ma

Curators' Distinguished
Professor and Chair
Department of Mechanical and
Aerospace Engineering

University of Missouri
E2412A Lafferre Hall

T: (573) 884-5944

E: mah@missouri.edu

CHUNG-LUNG "C.L." CHEN

William and Nancy Thompson Distinguished Professor
E2403B Lafferre Hall
573-882-9037
chencl@missouri.edu

Education
PhD from the University Colorado-Boulder
MS from the University of Colorado-Boulder
BS from the National Cheng Kung University

Technical Focus
Multidisciplinary modeling and integration
Renewable energy
Thermal management, flow control and microfluidics

Chung-Lung "C.L." Chen is an endowed chair professor in the Department of Mechanical and Aerospace Engineering. In his career, he has led a wide range of paradigm-shift programs in thermal management, flow control, micro/nano technology, multidisciplinary computational technology and fluid/structure/acoustics. Chen's research has been funded by multiple offices within the Defense Advanced Research Projects Agency (DARPA), the Advanced Research Projects Agency-Energy, NASA, NSF, the Army Research Office, the Office of Naval Research, the National Reconnaissance Office, Oak Ridge National Laboratory, Rockwell Automation, Rockwell Collins, the Boeing Co., Kimberly Clark, RTI International, MOST, CSIST and Industrial Technology Research Institute. He worked at the NASA Ames Research Center on computational aerodynamics and helicopter rotor flows from 1985 to 1988. He is an Associate Fellow of the American Institute of Aeronautics and Astronautics and has authored or co-authored more than 150 technical papers, 11 U.S. patents and one book chapter. He received National Chung Kung University's DAA Distinguished Alumnus Award in 2011 and the Best Paper Award of ASME 2013 Micro/Nanoscale Heat & Mass Transfer International Conference.

MUN Y. CHOI

President of the University of Missouri
321 University Hall
573-882-2011
president@missouri.edu

Education
PhD from Princeton University
MA from Princeton University
BS from University of Illinois

Mun Y. Choi serves as the 24th president of the University of Missouri — a dual role as chancellor of the University of Missouri and president of the four campus University of Missouri System. In this role, he oversees the academic, business and financial aspects of the four universities, as well as a health care system and statewide extension program.

Additionally, he holds a joint appointment as a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri College of Engineering.

Choi came to Missouri in 2017 after nine years at the University of Connecticut where he served as provost and executive vice president (2012-2017) and earlier as dean of engineering (2008-2012). His career in higher education also includes serving eight years as a department head of engineering at Drexel University and six years as an assistant and associate professor at the University of Illinois at Chicago.

A product of and passionate champion for public higher education, he earned his bachelor's degree from the University of Illinois. He secured his master's and PhD degrees in mechanical and aerospace engineering from Princeton University.

Biography courtesy of the UM System.

ROGER FALES

Associate Dean of Student Services and Academic Programs, Associate Professor
W1006E Lafferre Hall
573-884-1564
falesr@missouri.edu

Education
PhD from Iowa State University
MS from Kansas State University
BS from Kansas State University

Technical Focus
Automatic control systems
Fluid power systems
Medical devices

Roger Fales serves as the associate dean of student services and academic programs at the University of Missouri College of Engineering. An engineer for Caterpillar Inc. before joining MU, Fales has four years of industrial experience developing fluid power and off-highway machine systems and controls. His research has focused on robust control design and stability of dynamic systems with applications in fluid power, respiratory support and the dynamics of blood oxygen saturation in premature infants. His research has been funded by the National Institutes of Health (NIH), MU Coulter Biomedical Accelerator, Caterpillar Inc., Honeywell and Boeing.

FRANK FENG

Professor
E2413A Lafferre Hall
573-884-4624
fengf@missouri.edu

Education
PhD from the University of Minnesota
BS from the Nanjing University of Aeronautics and Astronautics

Technical Focus
Dynamics and vibration
Micro electrico-mechanical systems (MEMS)

Frank Feng is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri in the College of Engineering. He received his PhD degree from the University of Minnesota and is a Fellow of the American Society of Mechanical Engineers.

GUOLIANG HUANG

Professor, Huber and Helen Croft Chair in Engineering
E2410 Lafferre Hall
573-884-5915
huangg@missouri.edu

Education
PhD from the University of Alberta
MS from the Beijing Institute of Technology
BS from Zhongshan University

Technical Focus
Active metamaterials and active elasticity
Multifunctional materials and bio-inspired materials
Self-energy and self-aware composites
Smart materials and bio-sensor systems
Structural health monitoring
Wave propagation and vibration in acoustic/elastic metamaterials

Guoliang Huang works in the broad area of solid mechanics and architected materials—in particular the new frontiers of structural dynamics, topological mechanics, wave propagation and dynamical behaviors of composite materials, both man-made and formed naturally. His recent research has been focusing on addressing challenges in development of passive and active metamaterials for wave propagation and noise control, mechanical topological insulator, vibration and sound mitigation, flow/structure interaction, aerodynamics, structural health monitoring, energy harvesting and bio-sensing, among others. He is a renowned scholar in the emerging field of elastic and acoustic metamaterials and metacomposites. His work has pioneered a new class of active metamaterials with sensing, actuation and information processing and response and space-time modulated metamaterials for mechanical nonreciprocity.

Huang has published more than 140 first class international journal papers in those fields, along with one book and four chapters in other books. He serves as associate editor of Wave Motion and specialty chief editor in the Physical Acoustics and Ultrasonics section of Frontiers in Physics.

YUE JIN

Assistant Professor
yj5cy@missouri.edu

Education
PhD from Pennsylvania State University
MS from Shanghai Jiao Tong University
BS from Xi'an Jiaotong University

Technical Focus
Fluid flow mass and heat transfer
Reactor thermal hydraulics

Yue Jin is an assistant professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He was a postdoctoral research associate in the Department of Nuclear Science and Engineering at MIT. His research interests span multiple areas of thermal-fluid sciences and nuclear engineering, including fluid flow mass and heat transfer, reactor thermal hydraulics, design, modeling and optimization of complex energy systems (advanced nuclear reactors, compact heat exchangers and steam generators). He is also interested in the development and validation of the multi-scale multi-physics numerical analysis tools used for energy system analysis. He received his PhD degree from the Pennsylvania State University in 2019.

SANJEEV KHANNA

Professor, Director of the Midwest Industrial Assessment Center

E3412 Lafferre Hall
573-884-9109
khannas@missouri.edu

Education

PhD from the University of Rhode Island
MS from the Indian Institute of Technology
BS from the Indian Institute of Technology

Technical Focus

Energy efficiency in manufacturing
Experimental mechanics and dynamic mechanical behavior
    of materials
Introducing problem-based learning (PBL) and innovation
    in engineering curriculum

Sanjeeve Khanna is a winner of the National Science Foundation's CAREER award and has received technical and pedagogical research funding from the National Science Foundation (NSF), Auto Steel Partnership, Ford Motor Co., International Research Exchanges Board (IREX), U.S. Department of Homeland Security and U.S. Department of Energy, totaling over $9 million. Khanna has received a U.S. patent for developing transparent glass fiber reinforced polymer composites that can protect windows against catastrophic damage under extreme loading. He has done pioneering research on residual stresses in spot welds that has greatly benefitted the automobile industry and is developing higher strength and lightweight reinforced aluminum foam for energy absorption under impact. His work has resulted in over 95 journal and conference publications and he has co-authored two textbooks on mechanics of materials. Khanna's leadership of the DOE-IAC program, which provides industrial energy assessments to Midwest manufacturers while training students, will save Midwest industries served in the last five years over $29 million in energy costs. It will also reduce energy use by 3.5 Terra BTU, carbon dioxide emissions by 0.22 million metric tons (or 440 million pounds) and electric demand by 15 MW every year.

CRAIG KLUEVER

Professor, Director of Undergraduate Studies

E3414 Lafferre Hall
573-882-6764
klueverc@missouri.edu

Education

PhD from Iowa State University
MS from Iowa State University
BS from Iowa State University

Technical Focus

Guidance and control of aerospace vehicles
Orbital mechanics
Reentry flight mechanics
Trajectory optimization

Craig Kluever is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He received his BS in aerospace engineering from Iowa State University in 1986, and worked at Rockwell International from 1986 to 1989 in the Space Shuttle Guidance, Navigation and Control Group. He returned to Iowa State and completed his MS and PhD degrees in aerospace engineering in 1990 and 1993, respectively. He has published numerous articles, primarily in the journals of the American Institute of Aeronautics and Astronautics (AIAA). Kluever is the author of two textbooks: *Dynamic Systems: Modeling, Simulation, and Control*; and *Space Flight Dynamics*, both published by Wiley. He was a 2020 Kemper Fellow. Kluever is an Associate Fellow of the AIAA and a Fellow of the American Astronautical Society (AAS). He is currently a deputy editor of the AIAA Journal of Guidance, Control, and Dynamics.
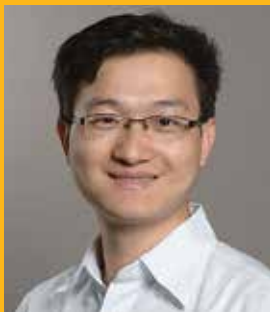
JIAN LIN

Associate Professor, William R. Kimel Faculty Fellow
E2404B Lafferre Hall
573-882-8427
linjian@missouri.edu

Education
PhD from the University of California, Riverside
MS from the University of California, Riverside
BS from Zhejiang University

Technical Focus
3D/4D printing
Smart manufacturing
Soft materials

Jian "Javen" Lin is an associate professor in mechanical and aerospace engineering at MU. He was previously a postdoctoral research associate in the Department of Materials Science and Nanoengineering at Rice University. He received a bachelor's degree in mechanical and automation engineering in 2007, followed by a master's degree in electrical engineering and doctorate in mechanical engineering in 2010 and 2011. Lin's research group is conducting highly interdisciplinary research which dedicates computational and experimental research in advanced manufacturing and materials for biomedical and energy applications. The research lies in three main fields: smart manufacturing powered by artificial intelligence; soft materials and 3D/4D printing; and biomanufacturing. The research projects are funded by National Science Foundation, National Institute of Health, U.S. Department of Energy, U.S. Department of Agriculture and industry. The results have been published in top-tier journal papers and acknowledged by many media outlets. He is a recipient of the 2015 ORAU Ralph E. Powe Junior Faculty Enhancement Award and 2016 Emerging Investigator of the Journal of Materials Chemistry.

YUYI LIN

Professor, P.E.
E3409 Lafferre Hall
573-882-7505
liny@missouri.edu

Education
PhD from the University of California, Berkeley
MS from the University of California, Los Angeles
Undergraduate diploma from Fuzhou University

Technical Focus
Adsorbent natural gas process and equipment
High-pressure/high-temperature manufacturing
Machine design; mechanical spring and valve train dynamics

Yuyi Lin is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. His research has been funded by the National Science Foundation, the U.S. Department of Energy, the Missouri Department of Natural Resources and private companies such as Monsanto Co., Chung Rong Spring Group and Pacific Metallurgical LLC. He is a Fellow of the American Society of Mechanical Engineers and a registered professional engineer in Missouri.
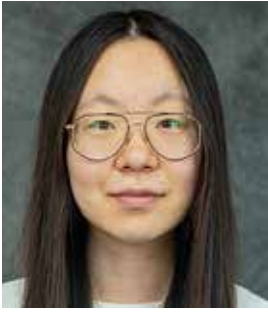
MUSHUANG LIU

Assistant Professor
E2404C Lafferre Hall
573-882-7053
ml529@missouri.edu

Education
PhD from the University of Texas at Arlington
BS from the University of Electronic Science and Technology of China

Technical Focus
Control systems
Game theory
Machine learning

Mushuang Liu is an assistant professor of mechanical and aerospace engineering at the University of Missouri. Before joining Missouri, she worked as a postdoc at University of Michigan from 2021-2022. She received her PhD degree from University of Texas at Arlington in 2020 and a Bachelor degree from University of Electronic Science and Technology of China in 2016.

J. ERIK LOEHR

Glen A. Barton Professor, P.E.
E3502 Lafferre Hall
573-882-6380
eloehr@missouri.edu

Education
PhD from the University of Texas at Austin
MS from the University of Texas at Austin
BS from the University of Texas at Austin

Technical Focus
Geotechnical engineering
Reliability-based design

J. Erik Loehr is the Glen A. Barton Professor in the College of Engineering at the University of Missouri. He has over 25 years of experience conducting geotechnical engineering research, most recently including work to evaluate the benefits of post-grouting for drilled shafts with funding from the Federal Highway Administration and the California Department of Transportation. He has authored or co-authored numerous publications, including the most recent updates to FHWA's Geotechnical Engineering Circulars 5 and 10, and has contributed to development of practical reliability-based design provisions for several state departments of transportation and AASHTO. He is active in professional organizations including the Deep Foundations Institute, the ASCE Geo-Institute, the International Association of Foundation Drilling (ADSC) and the Transportation Research Board. He has received numerous awards, including the Osterberg Lecture and Award from the Deep Foundations Institute, the Harry Schnabel Jr. Award from the ASCE Geo-Institute, the ADSC Outstanding Service Award, the K.B. Woods Award from TRB and an NSF Career Award among other honors. He is a registered professional engineer in the State of Missouri.

STEPHEN LOMBARDO

Professor
C3212 Lafferre Hall
573-884-1644
lombardos@missouri.edu

Education
PhD from the University of California, Berkeley
BS from Worcester Polytechnic Institute

Technical Focus
Ceramic materials and ceramic processing
Electronic ceramics
Transport phenomena and kinetics

Stephen J. Lombardo is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He is also an adjunct professor in the Department of Chemical and Biomedical Engineering. Lombardo has several years of industrial experience, having worked for Saint-Gobain Corp. and CeraMem Corp. His research has been financed by the National Science Foundation, the University of Missouri Research Board, the MU Research Reactor and the Petroleum Research Fund, as well as by private businesses such as Alcoa Corp., AlliedSignal, Concurrent Technologies Corp., Honeywell and Procter & Gamble.

HONGBIN "BILL" MA

Chair, Curators' Distinguished Professor, Glen A. Barton Professor
E2412A Lafferre Hall
573-884-5944
mah@missouri.edu

Education
PhD from Texas A&M University
MS from Lamar University
MS and BS from Dalian Maritime University

Technical Focus
Ejector refrigeration
Heat pipes
Phase-change heat transfer
Thermal management

Hongbin "Bill" Ma is the Glen A. Barton Professor, Robert H. Buescher Faculty Fellow, chair of mechanical and aerospace engineering and the director of the Multi-Physics Thermal Energy Center (MPTEC) at the University of Missouri. He has conducted active research in the fields of phase-change heat transfer, heat pipes, ejector refrigeration and thermal management. His research has been supported by the National Science Foundation (NSF), the National Institutes of Health (NIH), the Department of Energy, Oak Ridge National Laboratory, Intel Corp., Dell, the Defense Advanced Research Projects Agency (DARPA), Exxonmobil, the U.S. Army, Northrop Grumman, the Office of Naval Research (ONR) and the Department of Education, among others. His research work has resulted in more than 310 publications, including one book, seven book chapters and 162 refereed journal papers, as well as 15 patentable technologies. He is the founder of MU ISoTherM (Innovative Solution of Thermal Management) Consortium with members of Intel, Foxconn and others, which made significant contributions to heat pipe applications in computer cooling. Ma is a Fellow of the American Society of Mechanical Engineering (ASME) and the National Academy of Inventors (NAI).

NOAH D. MANRING

Dean, Ketcham Professor
W1006 Lafferre Hall
573-882-0195
manringn@missouri.edu

Education
PhD from Iowa State University
MS from the University of Illinois at Urbana-Champaign
MA from Reformed Theological Seminary
BS from Michigan State University
BA from Michigan State University

Technical Focus
Cardiovascular mechanics
Fluid power
Machine design

Noah D. Manring is the dean and Ketcham Professor of the College of Engineering. He previously served as chair of the Department of Mechanical and Aerospace Engineering and the college's former Department of Electrical and Computer Engineering. He also has served twice as associate dean of research. He holds 11 U.S. patents for innovations in the field of fluid power.

As a professor, he has received research funding from Caterpillar Inc., Festo Corp. and the National Fluid Power Association, as well as from the Department of Education, the National Science Foundation and various private donors. He has additionally done consulting work for several industrial firms, including Moog Inc., FMC Wyoming Corp., Dennison Hydraulics and Parker Hannifin. Manring published two textbooks, *Hydraulic Control Systems* and *Fluid Power Pumps and Motors.*

Before joining the MU faculty, Manring worked for eight years in the off-highway mobile equipment industry.

MATT MASCHMANN

Associate Professor
E3401 Lafferre Hall
573-882-2310
maschmannm@missouri.edu

Education
PhD from Purdue University
MS from the University of Missouri
BS from the University of Missouri

Technical Focus
Nanoscale materials
Thermal transport

Matt Maschmann is an associate professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. His research examines the design, synthesis, characterization and implementation of nanoscale material systems. Current emphasis areas include the micro-mechanics of CNT forest growth and compression, 3-D carbon nanotube microstructures, energy and energetic materials and biological inspiration. He is also interested in in situ SEM testing techniques for material synthesis and characterization. Engineering devices of interest include novel physical sensors, composite materials and enhanced surfaces for thermal management.

HUSSEIN NASSAR

Assistant Professor
E2404A Lafferre Hall
573-884-8408
nassarh@missouri.edu

Education
PhD from the Université Paris-Est
MSE from the École des Mines - ParisTech
BS from Sorbonne Université

Technical Focus
Elasticity
Geometry
Solid mechanics
Waves

Hussein Nassar is an assistant professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He studied maths and mechanics in Paris, France, before joining MU. His research focuses on the connections between elasticity and geometry, structures and mechanisms in solid mechanics and on related applications in the design and modeling of lattices and architected materials. He is a recipient of the NSF CAREER award.

HUY NGUYEN

Assistant Teaching Professor
E3409 Lafferre Hall
573-882-6020
hqn6d8@mail.missouri.edu

Education
PhD from the University of Missouri
MS from Hanoi University of Science and Technology
BS from Hanoi University of Science and Technology

Technical Focus
Acoustic metamaterials
Energy harvesting
Sound control

Huy Nguyen is an assistant teaching professor in the Department of Mechanical & Aerospace Engineering at the University of Missouri. His research focuses on designing functional acoustic metamaterials which demonstrate high performance in noise control applications such as soundproofing panels, sound diffusers and absorbers and acoustic energy harvesters.

CHRISTOPHER O'BRYAN

Assistant Professor
E2403C Lafferre Hall
573-882-7933
xin@missouri.edu

Education
PhD from University of Florida
MS from University of Florida
BS from University of Florida

Technical Focus
Contact mechanics
Interfacial instabilities
Polymer physics
Soft matter manufacturing

Christopher O'Bryan is an assistant professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He received his PhD from the University of Florida for his work in developing new methods in soft matter 3D-printing to enable the structuring of hydrogels, polymers, biopolymers, and living cells. His research focuses on exploring the instabilities that arise at the interface between soft materials, leveraging these instabilities to design new biomaterials, and developing new design principles for soft matter manufacturing.

CHANWOO PARK

Associate Professor
E2402 Lafferre Hall
573-882-6087
parkchanw@missouri.edu

Education
PhD from the University of Michigan, Ann Arbor
MS from the Korea Advanced Institute of Science
    and Technology
BS from Hanyang University

Technical Focus
Boiling and condensation
Desalination
Energy conversion
Heat transfer
Thermal management

Chanwoo Park is director of the Heat Transfer/ Sustainable Energy Laboratory at the University of Missouri. He was elected a fellow of the American Society of Mechanical Engineers (ASME) in 2020. His research interests include heat and mass transfer in multi-scale and multi-physics systems, boiling, condensation, battery thermal management and desalination.

Park is the recipient of the National Science Foundation's prestigious CAREER award in 2014, which funded his research on thin-film evaporation enhancement using hierarchical multi-scale porous media. His research grants as principal or co-principal investigator total about $6.5 million, and his past appointments include the University of Nevada-Reno, Advanced Cooling Technologies, Inc., and in the Ford Research and Advanced Engineering Laboratory, Korea Institute of Science and Technology. His research has been funded by the National Science Foundation, U.S. Department of Defense, U.S. Department of Energy, NASA, the Environmental Protection Agency, Hyundai Motor Company and other industries.

TOMMY SEWELL

Professor
Professor of Chemistry; Adjunct Professor, Department of Mechanical and Aerospace Engineering
202A Schlundt Hall
573-882-7725
sewellt@missouri.edu

Education
PhD from Oklahoma State University
B Sc from Hardin-Simmons University

Technical Focus
High explosives
Materials at extreme conditions
Materials theory and simulation
Multiscale methods at atomistic and mesoscopic scales

Tommy Sewell has been a chemistry professor at Mizzou since 2008; full professor of chemistry since 2012 and adjunct professor of mechanical and aerospace engineering since 2016. Prior to that, he was a technical staff member for 15 years in the Explosives and Organic Materials Group of the Theoretical Division at Los Alamos National Laboratory. Sewell was named Fellow of the American Physical Society in 2017 for his sustained contributions to the field of Shock Compression of Condensed Matter. While at Mizzou, Sewell has received federal research grants from AFOSR, ARO, DTRA and ONR. Currently, he is the Principal Investigator of a DoD/AFOSR "MURI" project entitled, "Integrating Multiscale Modeling and Experiments to Develop a Meso-Informed Predictive Capability for Explosives Safety and Performance." Research in Sewell's group is focused on atomistic and mesocale simulations of materials – it is strongly interdisciplinary, involving collaborations with chemists, materials scientists, engineers and experts in machine learning. Sewell is always on the lookout for well-prepared and highly motivated graduate students with backgrounds in physical chemistry, materials science and engineering.

DAVID SINGH

Curators' Distinguished Professor
Curators Distinguished Professor in the Department of Physics and Astronomy; Adjunct Professor, Department of Mechanical and Aerospace Engineering
414 Physics Building
singhdj@missouri.edu

Education
PhD from the University of Ottawa

Technical Focus
Condensed matter and materials theory

David Singh is an adjunct professor in the Department of Mechanical and Aerospace Engineering and a Curator's Distinguished Professor in the Department of Physics and Astronomy. He research focuses on understanding the relationships between the structure of materials and their functional properties and addresses questions such as why is a certain material a good thermoelectric, a high energy product ferromagnet or a high temperature superconductor, while a related compound is not. The goal of this work is to understand properties at the level of atoms and electrons, and to use this understanding to find new higher performance materials for application. The primary tools are computational modeling based on density functional theory, Boltzmann transport theory and molecular dynamics. Singh also develops new approaches and software for this purpose, particularly methods for calculating transport properties and methods for density functional calculations.

GARY SOLBREKKEN

Teaching Professor
E2411A Lafferre Hall
573-882-5577
solbrekkeng@missouri.edu

Education
PhD from the University of Minnesota
MS from the University of Minnesota
BS from the Rose-Hulman Institute of Technology

Technical Focus
Thermal management of energy and biological systems

Gary L. Solbrekken is a teaching professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. He is also part of the Nuclear Engineering Program. He studies fluid-structure interaction, influence of material property changes caused by nuclear radiation in structural materials, thermal/mechanical effects in packaging of nuclear and electronic structures, system level implementation of thermoelectric devices, cryopreservation of biological tissues and use of resonant acoustics to evaluate structural aging. He collaborates with industry, national labs, biologists, accelerator facilities and the University of Missouri Research Reactor (MURR). His projects have been funded by Intel, W.L. Gore and Associates, Argonne National Lab, the National Science Foundation, the National Institutes of Health, Y-12 National Security Complex and MU. He currently serves as chair of the MURR reactor safety-subcommittee and on the reactor advisory committee. He previously managed a thermal laboratory for Intel Corp. and holds four U.S. patents in the area of thermal management.

ROBERT WINHOLTZ

Associate Professor, Director of Graduate Studies
E3410 Lafferre Hall
573-882-6322
winholtz@missouri.edu

Education
PhD from Northwestern University
MS from the University of Nebraska
BS from the University of Nebraska

Technical Focus
Materials science
Neutron imaging
Residual stress

Robert A. Winholtz is an associate professor in the Department of Mechanical and Aerospace Engineering and the Nuclear Engineering Program at the University of Missouri. A longtime research scientist at the University of Missouri Research Reactor, Winholtz is also familiar with synchrotron X-ray experimental facilities. His work has been funded by the Office of Naval Research, the National Science Foundation and NASA.

MING XIN

Professor
E2403C Lafferre Hall
573-882-7933
xin@missouri.edu

Education
PhD from Missouri University of Science and Technology
MS from Nanjing University of Aeronautics and Astronautics
BS from Nanjing University of Aeronautics and Astronautics

Technical Focus
Guidance; navigation and control of aerospace vehicles

Ming Xin is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. His research focuses on guidance, navigation, and control of aerospace systems such as spacecraft, aircraft, launch vehicles, and unmanned aerial vehicles, as well as robotic systems. His research has been funded by the NSF, DOE, USDA, and NASA. Xin was the recipient of the prestigious NSF CAREER Award. He is an Associate Fellow of AIAA, a Senior Member of IEEE and AAS, and a member of ASME. He is a Technical Editor for IEEE/ASME Transactions on Mechatronics, and an Associate Editor for AIAA Journal of Spacecraft and Rockets.

QINGSONG YU

Professor
E3411 Lafferre Hall
573-882-8076
yuq@missouri.edu

Education
PhD from the University of Missouri
MS from the University of Missouri
MS from the Changchun Institute of Applied Chemistry
BS from Tianjin University

Technical Focus
Biomedical materials and devices
Plasma medicine and plasma dentistry
Plasma technology and its applications

Qingsong Yu is a professor in the Department of Mechanical and Aerospace Engineering at the University of Missouri. His research has been focusing on non-thermal plasma technology and its application in materials science and engineering, including mechanistic investigation of plasma chemistry, surface modification of engineering materials and plasma deposition of thin films. His recent research focuses on an emerging research area, i.e., plasma medicine/dentistry that investigates atmospheric non-thermal plasmas for biomedical applications. Yu has published over 120 peer-reviewed journal papers, nine invited review articles/book chapters and five patents. Yu's research has been funded by the University of Missouri Research Board, the National Science Foundation, the Boeing Company and the National Institutes of Health.

YAO ZHAI

Assistant Professor
yzc33@missouri.edu

Education
PhD from University of Colorado-Boulder
MS from University of Massachusetts-Lowell
MS from Chinese Academy of Science
BS from Tianjin University

Technical Focus
Advanced manufacturing
Radiative cooling materials

Yao Zhai is an assistant professor with the Department of Mechanical and Aerospace Engineering at the University of Missouri.

YUWEN ZHANG

Curators' Distinguished Professor, Huber and Helen Croft Chair in Engineering
E3408 Lafferre Hall
573-884-6936
zhangyu@missouri.edu

Education
PhD from the University of Connecticut
DEng from Xi'an Jiaotong University
MS from Xi'an Jiaotong University
BS from Xi'an Jiaotong University

Technical Focus
Energy storage and conversion
Heat and mass transfer
Thermal management

Yuwen Zhang has taught undergraduate and graduate courses in thermodynamics, fluid mechanics, heat transfer, gas dynamics, intermediate fluid mechanics, intermediate heat transfer, convection heat transfer and multiphase heat transfer. His research interest lies in heat and mass transfer and its applications in manufacturing, thermal management and energy systems. He has published more than 300 journal papers, over 180 conference papers, and seven books. He received the MU Chancellor's Award for Outstanding Research and Creative Activity and the COE Senior Faculty Research Award. He was elected a fellow of the American Society of Mechanical Engineers (ASME) in 2007, and a fellow of the American Association for the Advancement of Science (AAAS) in 2015. He is serving as editor-in-chief, associate editor and editorial board member of several journals in the thermal and fluids sciences. He has served as congress co-chair, track chair and session chairs for numerous national and international conferences. He served as department chair from 2013 to 2017.

MECHANICAL AND AEROSPACE ENGINEERING

ROSEANNA N. ZIA

**Associate Dean for Research,
Wollersheim Professor
of Mechanical and Aerospace**
W1006F Lafferre Hall
573-882-6555
rzia@missouri.edu

Education
PhD, California Institute of Technology
ME University of Michigan
BS University of Missouri

Technical Focus
Microhydrodynamics
Rheology & Microrheology
Computational Modeling of
Multiphase Flows and Soft Matter

Roseanna N. Zia is Associate Dean for Research
and Dave Wollersheim Professor of Mechanical and
Aerospace Engineering. Previously, Zia was a professor
in chemical engineering at Stanford. She focuses on
developing micro-continuum theory for structure-
property relationships of flowing suspensions,
elucidating the mechanistic origins of the colloidal glass
transition, and multi-scale computational modeling of
reversibly bonded colloidal gels.
Zia received two Presidential Early Career Awards for
Scientists and Engineers awards. She has also been
honored with a number of awards from the Office
of Naval Research the National Science Foundation,
including the CAREER Award, the Society of Rheology,
the Engineering Sonny Yau ('72) Teaching Award, and
the Tau Beta Pi Teaching Honor Roll Award. Zia serves
as an Associate Editor for the Journal of Rheology, and
on the Advisory Boards of the AIChE Journal and the
Journal of Colloid and Interface Science.

Faculty Index

and

Topic Index

College of Engineering
University of Missouri

ALPHABETICAL LISTING OF RESEARCH FACULTY

Sewell, Tommy	100	Yu, Qingsong	102
Shang, Yi	69	Zhai, Yao	103
Shyu, Chi-Ren	69	Zhanq, Yuwen	103
Singh, David	100	Zhao, Yunxin	72
Skubic, Marjorie	70	Zhu, Peifen	73
Solbrekken, Gary	101	Zia, Roseanna N.	104
Somavat, Pavel	33		
Srinivas, Sharan	86		
Sun, Carlos	48		
Sun, Changyu	33		
Tan, Jinglu	34		
Terpstra, Melissa	34		
Thomen, Robert	35		
Tompkins, Michael	79		
Trauth, Kathleen	48		
Uhlmann, Jeffrey	70		
Ulery, Bret	35		
Valettas, Petros	71		
Wan, Caixia "Ellen"	36		
Wan, Xiu-Feng "Henry"	71		
Wang, Binbin	49		
Wang, Fang	80		
Wang, Yi	86		
Washer, Glenn	49		
Winholtz, Robert	101		
Wu, Bin	87		
Xin, Ming	102		
Xing, Yangchuan	36		
Xu, Dong	72		
Yan, Zheng	37		
Yao, Gang	37		
Young, Matthias	38		

TOPIC INDEX

TOPIC INDEX

TOPIC INDEX

Human-Computer Interactions
See Ergonomics

Hydraulics
See Fluid Mechanics

Imaging / Processing

Industrial Engineering

Informatics / Bio / Health

Information Technology

Integrated Circuits

Instrumentation
See Sensing

Location Science / Geospatial Intelligence / Graphic Information Science (GIS)

Logistics and Distribution

Machine Design

Machine Learning

Manufacturing

Materials Science and Engineering

Medicine
See Biomedical Engineering

Microelectromechanical Systems (MEMS)

TOPIC INDEX