Energy, Environmental & Chemical Engineering

Contact: Monique Spears
Email: moniquespears@wustl.edu
Website: https://eece.wustl.edu/graduate/programs

Faculty

Interim Chair and Professor
Katharine Flores (https://engineering.wustl.edu/faculty/Katharine-Flores.html)
Professor, Mechanical Engineering and Materials Science
PhD, Stanford University
Mechanical behavior of structural materials

Endowed Professors
Stifel and Quinette Jens Professor
PhD, University of California, Davis
Combustion, advanced energy systems, clean coal, aerosols, nanoparticle synthesis, rechargeable battery materials, thermal science

Walter E. Browne Professor of Environmental Engineering
PhD, California Institute of Technology
Aquatic chemistry, environmental engineering, water quality, water treatment

Randall Martin (https://engineering.wustl.edu/faculty/Randall-Martin.html)
Raymond R. Tucker Distinguished Professor
PhD, Harvard University
Characterizing atmospheric composition to inform effective policies surrounding major environmental and public health challenges ranging from air quality to climate change

Vijay Ramani (https://engineering.wustl.edu/faculty/Vijay-Ramani.html)
Director of Graduate Studies
Roma B. and Raymond H. Witcoff Distinguished University Professor
PhD, University of Connecticut
Electrochemical engineering, energy conversion

Vice Dean for Education
James McKelvey Professor of Engineering Education
DSc, Washington University
Air quality planning and management, aerosol science and engineering, green engineering

Professors
Zhen (Jason) He (https://engineering.wustl.edu/faculty/Zhen-Jason-He.html)
PhD, Washington University
Environmental biotechnology, bioenergy production, biological wastewater treatment, resource recovery, bioelectrochemical systems, sustainable desalination technology, anaerobic digestion, forward osmosis, membrane bioreactors

PhD, Harvard University
Aquatic processes, molecular issues in chemical kinetics, environmental chemistry, surface/physical chemistry, environmental engineering, biogeochemistry, nanotechnology

PhD, University of Washington
Metabolic engineering, bioremediation

Director of the Center for Aerosol Science and Technology (CASE)
PhD, California Institute of Technology
Aerosol properties and processes, nucleation and new particle formation, aerosols in the marine environment, effects of aerosols on cloud microphysical properties and macrophysical struct

Associate Professors
Rajan Chakrabarty (https://engineering.wustl.edu/faculty/Rajan-Chakrabarty.html)
PhD, University of Nevada, Reno
Characterizing the radiative properties of carbonaceous aerosols in the atmosphere, and researching gas phase aggregation of aerosols in cluster-dense conditions

Marcus Foston (https://engineering.wustl.edu/faculty/Marcus-Foston.html)
PhD, Georgia Institute of Technology
Utilization of biomass resources for fuel and chemical production, renewable synthetic polymersure, and development of advanced aerosol instruments
Tae Seok Moon (https://engineering.wustl.edu/faculty/TaeSeok-Moon.html)
PhD, Massachusetts Institute of Technology
Metabolic engineering and synthetic biology

Brent Williams (https://engineering.wustl.edu/faculty/Brent-Williams.html)
PhD, University of California, Berkeley
Aerosols, global climate issues, atmospheric sciences

Fuzhong Zhang (https://engineering.wustl.edu/faculty/Fuzhong-Zhang.html)
Francis Ahmann Career Development Associate Professor
PhD, University of Toronto
Metabolic engineering, protein engineering, synthetic and chemical biology

**Assistant Professors**

Peng Bai (https://engineering.wustl.edu/faculty/Peng-Bai.html)
PhD, Tsinghua University, China
Develop next-generation batteries, probe the in situ electrochemical dynamics of miniature electrodes down to nanoscales, capture the heterogeneous and stochastic nature of advanced electrodes, and identify the theoretical pathways and boundaries for the rational design of materials, electrodes and batteries through physics-based mathematical modeling and simulation

Fangqiong Ling (https://engineering.wustl.edu/faculty/Fangqiong-Ling.html)
PhD, University of Illinois at Urbana-Champaign
Microbial ecosystem analysis and modelling, process modelling, machine learning, NextGen sequencing bioinformatics, environmental microbiology, and bioreactor design

Kimberly M. Parker (https://engineering.wustl.edu/faculty/Kimberly-Parker.html)
PhD, Stanford University
Investigation of environmental organic chemistry in natural and engineered systems

Elijah Thimsen (https://engineering.wustl.edu/faculty/Elijah-Thimsen.html)
PhD, Washington University
Gas-phase synthesis of inorganic nanomaterials for energy applications, and novel plasma synthesis approaches

**Research Assistant Professor**

Benjamin Kumfer (https://engineering.wustl.edu/faculty/Benjamin-Kumfer.html)
DSc, Washington University
Advanced coal technologies, biomass combustion, aerosol processes and health effects of combustion-generated particles

**Senior Lecturers**

Janie Brennan (https://engineering.wustl.edu/faculty/Janie-Brennan.html)
Director of Undergraduate Studies
PhD, Purdue University
Biomaterials, chemical engineering, engineering education

Raymond Ehrhard (https://engineering.wustl.edu/faculty/Ray-Ehrhard.html)
BS, Missouri University of Science and Technology
Water and wastewater treatment technologies, process energy management

**Lecturers**

Trent Silbaugh (https://engineering.wustl.edu/faculty/Trent-Silbaugh.html)
PhD, University of Washington
Chemical engineering education, catalysis, carbon capture and conversion

Avni Solanki (https://engineering.wustl.edu/faculty/Avni-Solanki.html)
PhD, University of Florida
Wastewater, sustainable development, environmental engineering, and engineering education

**Affiliated Faculty**

Gary Moore
Senior Lecturer for the Joint Engineering Program
MS, Missouri University of Science and Technology
Environmental management

**Adjunct Faculty**

Keith Tomazi
PhD, University of Missouri-Rolla
Process development engineering

Grigoriy Yablonsky
PhD, Boreskov Institute of Catalysis
Chemical reaction engineering and heterogeneous catalysis

**Joint Faculty**

Doug Allen
PhD, Purdue University
USDA Research Scientist, Danforth Plant Sciences Center
Metabolic networks of oilseed plants

Nathan Ravi
PhD, Virginia Polytechnic Institute
Cataract, ocular biomaterials
Senior Professor

Milorad P. Dudukovic
Laura and William Jens Emeritus Professor
PhD, Illinois Institute of Technology
Chemical reaction engineering, multiphase reactors, visualization of multiphase flows, tracer methods, environmentally benign processing