Energy, Environmental & Chemical Engineering

Phone: 314-935-5545
Website: https://eece.wustl.edu/academics/undergraduate-programs/index.html

Faculty

Department Chair and Professor

Joshua Yuan
Lucy & Stanley Lopata Professor
PhD, University of Tennessee
Design-based engineering to address challenges in energy, the environment and health

Endowed Professors

Richard L. Axelbaum
The Stifel & Quinette Jens Professor of Environmental Engineering Science
PhD, University of California, Davis
Combustion, advanced energy systems, clean coal, aerosols, nanoparticle synthesis, rechargeable battery materials, thermal science

Daniel E. Giammar
Walter E. Browne Professor of Environmental Engineering
Director, Center for the Environment
PhD, California Institute of Technology
Aquatic chemistry, environmental engineering, water quality, water treatment

Zhen (Jason) He
Laura and William Jens Professor of Energy, Environmental & Chemical Engineering
Director of Graduate Studies
PhD, Washington University
Environmental biotechnology, bioenergy production, biological wastewater treatment, resource recovery, bioelectrochemical systems, sustainable desalination technology, anaerobic digestion, forward osmosis, membrane bioreactors

Feng Jiao
Elvera and William R. Stuckenberg Professor
Director, Center for Carbon Management
PhD, University of St. Andrews
Electrocatalysis, carbon dioxide utilization, electrochemical devices, energy storage

Randall Martin
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
Vice Provost for Graduate Education and International Affairs
Roma B. and Raymond H. Wittcoff Distinguished University Professor
PhD, University of Connecticut
Electrochemical engineering, energy conversion

Jay R. Turner
Head of the Division of Engineering Education
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

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

Xinhua Liang
PhD, University of Colorado Boulder
Gas-phase synthesis, surface science and catalysis, nanostructured films and devices, energy and environmental applications

Yinjie Tang
PhD, University of Washington
Metabolic modeling, fermentation engineering, algal bioprocesses

Jian Wang
Director of the Center for Aerosol Science and Engineering (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 structure

Fuzhong Zhang
PhD, University of Toronto
Metabolic engineering, protein engineering, synthetic and chemical biology

Associate Professors

Peng Bai
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; identify the theoretical pathways and boundaries for the rational design of materials, electrodes, and batteries through physics-based mathematical modeling and simulation
Rajan Chakrabarty  
Harold D. Jolley Career Development Associate Professor  
PhD, University of Nevada, Reno  
Characterizing the radiative properties of carbonaceous aerosols in the atmosphere, researching gas-phase aggregation of aerosols in cluster-dense conditions

Marcus Foston  
Director of Diversity Initiatives  
PhD, Georgia Institute of Technology  
Utilization of biomass resources for fuel and chemical production, renewable synthetic polymers, development of advanced aerosol instruments

Elijah Thimsen  
PhD, Washington University in St. Louis  
Gas-phase synthesis of inorganic nanomaterials for energy applications, novel plasma synthesis approaches

Assistant Professors

Christopher Cooper  
PhD, Stanford University  
Responsive, soft materials for applications in energy storage, environmental sustainability and human health

Jenna Ditto  
PhD, Yale University  
Chemical composition of indoor and outdoor air, indoor air chemistry, health impacts of air pollution exposure

Fangqiong Ling  
PhD, University of Illinois at Urbana-Champaign  
Microbial ecosystem analysis and modelling, process modelling, machine learning, NextGen sequencing bioinformatics, environmental microbiology, bioreactor design

Kimberly M. Parker  
PhD, Stanford University  
Investigation of environmental organic chemistry in natural and engineered systems

Lu Xu  
PhD, Georgia Institute of Technology  
Air quality, climate change, atmospheric chemistry

Research Assistant Professor

Benjamin Kumfer  
DSc, Washington University  
Advanced coal technologies, biomass combustion, aerosol processes and health effects of combustion-generated particles

Senior Lecturers

Janie Brennan  
Director of Undergraduate Studies  
PhD, Purdue University  
Chemical engineering education, biomaterials

Raymond Ehrhard  
BS, Missouri University of Science and Technology  
Water and wastewater treatment technologies, process energy management

Trent Silbaugh  
PhD, University of Washington  
Chemical engineering education, catalysis, carbon capture and conversion

Kristen Wyckoff  
PhD, University of Tennessee  
Environmental engineering education, stormwater runoff, environmental microbiology

Lecturer

Kurt Russell  
PhD, Purdue University  
Chemical engineering education, catalysis

Affiliated Faculty

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

Adjunct Faculty

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

Emeritus 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