Department of Chemical and Biological Engineering
UNIVERSITY OF WISCONSIN–MADISON

RESEARCH

RESEARCH FOCUS AREAS

- Bioengineering and Biotechnology
- Catalysis, Surface Science and Reaction Engineering
- Materials, Polymers and Transport Processes
- Theory, Data Science and Systems

FACULTY

- Styliani Avraamidou
  Circular economy systems; energy systems; multi-level optimization; robust optimization; supply-chain optimization

- Rose K. Cersosky
  Molecular modeling and simulation; applied mathematics and machine learning; self-assembly and interactions of complex building blocks; colloids, soft matter, and nanomaterials

- Quentin Dudley (joining Jan. 2024)
  Plant synthetic biology; metabolic engineering; cell-free systems; genome editing

- Matthew A. Gebbie
  Interfaces; electrochemistry; soft materials; nanoscience; electrocatalysis; energy storage; electrolytes; ionic liquids

- Michael D. Graham
  Fluid mechanics; flow and rheology of complex and multiphase fluids; blood flow; nonlinear dynamics

- George W. Huber
  Heterogeneous catalysis; renewable fuels and chemicals; biomass conversion; plastic recycling

- Daniel J. Kleiner
  Colloid science; complex fluids; suspension rheology

- Siddharth H. Krishna
  Heterogeneous catalysis; kinetics and mechanisms; microporous materials; sustainable fuels and chemicals; pollution control

- Whitney S. Loo
  Polymers; soft materials; nanomaterials; sustainability

- David M. Lynn
  Soft materials; surfaces and interfaces; polymers; nanotechnology; biotechnology; drug delivery

- Mai Ngo (joining Sept. 2024)
  Tissue engineering, cell engineering, mammalian synthetic biology, biomaterials, cell-cell communication

- Manos Mavrikakis
  Thermodynamics; kinetics and catalysis; surface science; computational chemistry; fuel cells; sensors; nanoscience

- Sean P. Palecek
  Stem cell engineering; therapeutic cell biomanufacturing; antimicrobial agents; cell signaling

- Brian F. Pfleger
  Synthetic biology; biotechnology; protein engineering; sustainable chemical production

- Thatcher W. Root
  Green chemistry; renewable resources; catalysis; spectroscopy

- Marcel Schreier
  Electrochemistry; renewable energy; electified interfaces; kinetics and catalysis; surface chemistry; electrochemical synthesis of chemicals

- Saverio E. Spagnolie
  Fluid mechanics; soft matter; biophysics; applied tools; air pollution origin and impacts; sensing

- John Yin
  Systems biology; virus-cell interactions; immunology; microfluidics

- Victor M. Zavala
  Optimization; control; data science; energy and environmental systems

AFFILIATE FACULTY

- AJ Boydston
  Additive manufacturing (3D printing); photoredox-catalyzed polymerizations; polymerizations in continuous flow; mechanocatalysis

- Padma Gopalan
  Polymer synthesis and characterization; electro-optic and photonic materials; self-assembly of block copolymers; photonic devices; liquid crystalline polymers

- Ivo Hermans
  Sustainable chemistry and catalysis engineering

- Vatsan Raman
  Systems and synthetic biology; protein design; biosensors; synthetic bacteriophages; high-throughput functional assays; sequence-function landscapes

- Philip A. Romero
  Protein engineering; machine learning; computational biology; high-throughput technology

- James J. Schauer
  Measurement and chemical characterization tools; air pollution origin and impacts; sensing

- Saverio E. Spagnolie
  Fluid mechanics; soft matter; biophysics; applied mathematics; numerical methods

- Ophelia S. Venturelli
  Synthetic & systems biology; computational modeling; microbial communities, microbiome engineering for bioprocessing, human health and agriculture applications; high-throughput experiments; microfluidics

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