

**ANDREA ACHILLI**

Associate Professor Andrea Achilli conducts research on membrane processes for potable water reuse and desalination and integration, modeling, and automation of decentralized and distributed water systems.

[Achilli Research & Teaching \(ART\) Lab](#)

PAUL BLOWERS

Distinguished Professor Paul Blowers uses quantum chemistry to predict properties of compounds related to processing and sustainability, performs life cycle assessment to compare alternatives, and investigates pedagogical choices for student learning and success.

[Blowers Research Website](#)

JIM FARRELL

Professor Jim Farrell's research focuses on electrochemical water treatment using an electrochemical cell to produce reagents needed in water treatment, and for oxidation and reduction of contaminants in water. He is also conducting research studying reaction and adsorption phenomena using quantum chemistry modeling.

JIM FIELD

Professor Jim Field conducts research on water and wastewater treatment processes with emphasis on the (bio)remediation of hazardous pollutants.

[Field-Sierra Research Group](#)

DON GERVASIO

Professor Don Gervasio's research focus is electrochemical engineering including solid state anhydrous proton conductors, energy conversion reactors, corrosion of metals in metallic CSP reactors, extraction and electrodeposition of metals and semiconductors from molten salts, electrochemical sensors and high temperature (up to 1000C) reference electrodes.

ROBERTO GUZMAN

Professor Roberto Guzman has two primary research focuses: the synthesis of multifunctional polymers for protein and surface interactions in the effective affinity ligand incorporation as derivatives for peptide and protein separations and analysis, and nanoparticle technology in the synthesis of theranostic systems with nanoparticles and encapsulated drugs and biomolecules as molecular tools for diagnostics, imaging, and therapy.

KERRI HICKENBOTTOM

Assistant Professor Kerri Hickenbottom's research takes a system-level approach to advance fundamental knowledge and applications of integrated engineered systems for advanced treatment and recovery of nontraditional water and energy resources in decentralized settings, and gain insight to the technical, economic, and environmental life-cycle impacts of these technologies for process scale-up. This research is impactful in reducing energy consumption and increasing efficiency while generating new water sources, thus, transforming how water, energy, and other natural resources are managed.

[Hickenbottom Environmental Research \(HER\) Lab](#)

VICKY KARANIKOLA

Assistant Professor Vicky Karanikola's research focuses on advanced water and wastewater treatment processes with particular interest in material and process optimization at the water-energy nexus interface. She and her research team utilize engineering fundamentals to improve process performance while bridging the gap between the lab scale and real-life application through vigorous cost and energy optimization techniques and optimize materials for selective decontamination of inorganic and organics contaminants

[Karanikola Optimization Research for Environmental Sustainability \(KORES\) Lab](#)

GREG OGDEN

Research Professor Greg Ogden conducts research related to technology development via the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. He also works on renewable fuels and green propellants.

[Greg Ogden Research Website](#)

**KIM OGDEN**

Professor and department chair Kim Ogden's research characterizes separate and scale-up processes and bioproducts from algae and guayule. The process includes technoeconomic analyses and testing integrated energy, food and water systems.

[Kim Ogden Research Website](#)

ADAM PRINTZ

Assistant Professor Adam Printz conducts research on the stability of printed electronic materials for applications including photovoltaics, light-emitting diodes, and sensors. Current projects include: developing a novel printing process for printable semiconductors, studying intermolecular interactions between organic additives precursors for hybrid inorganic-organic semiconductors, and designing nanocomposites to improve the mechanical and chemical stability of thin-film devices.

[Printz Research Group](#)

ERIN RATCLIFF

Associate Professor Erin Ratcliff's research focuses on low cost, printable semiconducting materials and interfaces for energy harvesting and storage and biosensing, all with reduced manufacturing cost and lessened environmental impact. Key materials systems include metal halide perovskites and conductive polymers, with major applications to solar (photovoltaics) and solar fuels.

[Laboratory for Interface Science of Printable Electronic Materials](#)

EDUARDO SAEZ

Distinguished Professor Eduardo Saez utilizes advanced oxidation processes for water treatment and reuse and attenuation of trace organics in natural waters due to sunlight photolysis.

SUCHOL SAVAGATRUP

Assistant Professor Suchol Savagatrup utilizes the principles of soft materials science, device engineering, and applied chemistry (molecular engineering) to probe chemical and physical interactions at complex interfaces. He and his research team focus on engineering responsive soft materials—polymers and emulsions—with bio-inspired functions for a wide range of applications in biomimicry, chemical and biosensors, and environmental monitoring.

[Savagatrup Research Laboratory](#)

FARHANG SHADMAN

Regents Professor Farhang Shadman utilizes novel technologies for manufacturing nano-scale semiconductor devices with focus on reducing the usage of energy and other resources and lowering the environmental footprint.

REYES SIERRA

Professor Reyes Sierra conducts research on water and wastewater treatment processes with emphasis on the (bio)remediation of hazardous pollutants.

[Field-Sierra Research Group](#)

ARMIN SOROOSHIAN

Professor Armin Sorooshian's research focuses on the effect of aerosol particles on the environment, clouds and rainfall, climate, and public health/welfare. A suite of synergistic methods are used, including laboratory experiments, ground and airborne field measurements, modeling, and remote sensing observations.

[Sorooshian Research Group](#)

SYLVIA SULLIVAN

Assistant Professor Sylvia Sullivan's research examines scale interactions within atmospheric phenomena, particularly the role of small-scale ice physics on radiative balance and precipitation generation within clouds and storms. She and her research team utilize both computational techniques - high-performance computing with storm-resolving and climate models, and benchtop experimentation - ice nucleation, growth, and attrition chambers.

[Lab for Multiscale Cloud Modeling and Experimentation](#)