

Year	Mentor	Project Title
2016	Benton	Evaluation of growing conditions of biopolymer accumulating cyanobacteria <i>Synechocystis PCC 6803</i>
	Dorman	Engineering conductivity in metal oxide nanowires
	Boldor (BE)	Ultrasonic pretreatment of microalgae for enhanced lipid extraction
	Melvin	Development of a microfluidic gradient generator to study lipid production in <i>Chlamydomonas reinhardtii</i>
	Arges	Anion exchange membranes with a fluorescent molecular probe for water sensing in alkaline fuel cells
	McPeak	Chiral microstructures - Wet etching of Z-cut quartz
	Gutierrez-Wing (CE)	Effect of NaOH on CO ₂ sequestration to decrease mass release of stabilized fluorogypsum
	Dooley	Sulfur-tolerant reforming catalysts for CO ₂ reforming
2017	Dooley	Transition Metal-doped Rare-earth Oxysulfide Catalysts for High Temperature Dry Reforming of Methane
	Arges	Ammonia-Based Flow Battery
	Benton	Investigating exposure time, freezing rate, and cell concentration parameters of cryopreservation for <i>Nannochloropsis</i> sp. using dimethyl sulfoxide
	Xu	Computational modeling of doped discharge products in Lithium-Air batteries
	McPeak	SUNstrips: Water Purification for Developing Countries
	Melvin	The effects of fluid shear stress on cancer cell deformation and migration
	Dorman	Novel Synthesis of SrNbO ₃ for Photocatalytic Water Purification

	Benton	Photosynthetic Organisms as Micro-Bioreactors of Polyaspartic Acid
	McPeak	Spray Deposition of Gold Colloids for Photodisinfection
	Bharti	Magnetic Field Directed Assembly of Colloids in Drying Droplets: From Surface Patterns to Actuating Materials
	Nandakumar	A DEM Study of Particle Clustering in a Cylindrical Vessel Undergoing Orbital Motion
2018	Arges	High temperature proton conductors with acid incorporated polycations for electrochemical upgrading of methane and fuel cells
	Benton	Metabolic engineering to produce cyanobacteria biofactories
	Bharti	Adsorption and assembly of surfactants at silica nanomaterial interfaces
	Ding	Atomic layer deposition for advanced catalysis
	Dooley	Exploring the uniformity of transition-metal doped rare earth oxide catalysts
	Gartia (ME)	Design of a micro cooling system for cerebro spinal fluid for traumatic brain injury
	Jung (BE)	Synthetic extracellular matrix with lignosulfonate
	McPeak	Visible-light-driven water purification using a plasmonic photocatalyst
	Melvin	Microfluidic devices to study cellular crosstalk and migration
	Melvin	Development of a thiol-acrylate-based hydrogel for tumor spheroid generation in a microfluidic device
	Wang (ME)	Novel nanomaterials for electrochemical energy storage
Xu	Enabling efficient prediction of interfacial surface reactions through neural networks	

2019	Benton	Growth kinetics of <i>Alcanivorax borkumensis</i>
	Benton	Culturing cyanobacteria with nanoparticles for enhanced production of biochemicals
	Bharti	Disordering colloidal monolayers
	Dooley	Direct activation of methane by high-pressure partial oxidation to methanol in inert wall microreactors
	Lawrence	Engineering precision nanoparticles: Tailoring the structural parameters of polymeric ligands
	Martin (BE)	<i>In vitro</i> analysis of plant derived phenolic compounds in human adipose-derived stem cells
	McPeak	Etching titanium dioxide before adding gold-nanoparticles: improving solar disinfection
	Melvin	Development of a novel microfluidic device to study cellular signaling
	Melvin	Using a flow-free microfluidic orthogonal gradient generator to test antibiotic combinations on <i>Pseudomonas aeruginosa</i> biofilms
	Plaisance	Simulating electrochemical carbon dioxide reduction on an MoS ₂ surface
2021	Arges	Reinforced High Temperature Polymer Electrolyte Membranes for Fuel Cell Applications
	Benton	Degradation of Plastics by Bacteria
	Bharti	Designing Foam Emulsions for Topical Drug Delivery

Dooley	Platinum/Zeolite Catalysts for Depolymerization of Polyethyleneby RF Induction Heating
Lawrence	Degradation of Bottlebrush Polymers via Sonication
McPeak	Dual Porous Photocatalyst for Multi-Contaminant Removal from Well Water
Melvin	High-Throughput Microfluidic Generation and Interrogation of 3D Co-Culture Cancer Spheroids
Melvin	Optimization of Hydrogel in an Open-Air 3D Printed Microfluidic Device to Study 3D Cell Migration
Nandakumar	Understanding Fluid-Solid Interaction in Chemical Process Equipment
Wang (ME)	High-Performance NH ₄ ⁺ Ion Battery Based on Hydrogel Electrolyte