Grants Awarded 2018

Doctoral New Investigator
Starter Grants Awarded to Faculty in Ph.D.-Granting Departments

Dr. Milad Abolhasani, North Carolina State University, Fundamental Studies of Switchable Hydrophilicity Solvents: An Energy-Efficient Strategy for Continuous Oil Extraction and Distillation-Free Solvent Recovery, $110,000.
Dr. Claribel Acevedo-Velez, University of Puerto Rico at Mayaguez, Effect of Surface Chemical Heterogeneity on Nanoparticle Adsorption at the Oil-Water Interface, $110,000.
Dr. Jacqueline Austermann, Columbia University, Combining Data and Models of the Centralian Superbasin to Investigate Cratonic Basin Formation, $110,000.
Dr. Hessam Babaee, University of Pittsburgh, Reduced Order Modeling of Filter Density Function of Reactive Turbulence, $110,000.
Dr. Carlos R. Baiz, The University of Texas at Austin, Interfacial Solvation in Reverse Micelles: Ultrafast 2D IR Spectroscopy of Surfactants, $110,000.
Dr. Christopher J. Barile, University of Nevada, Reno, Selective Electrocatalytic CO_2 Reduction to Synthetic Fuels Using Membrane-Controlled Proton Transport, $110,000.
Dr. Bhuvnesh Bharti, Louisiana State University, Understanding the Effect of Nanoconfinement on the Assembly and Temperature Induced Demixing of Surfactants, $110,000.
Dr. Eric D. Bloch, University of Delaware, Methane Storage with Metal-Organic Polyhedra-Based Materials, $110,000.
Dr. Laura Bradley, University of Massachusetts Amherst, Patterned Coatings for Responsive Surface Cleaning, $110,000.
Dr. Johnathan N. Brantley, The University of Tennessee, Metathesis Polymerizations of Cumulated Bonds, $110,000.
Dr. Carson J. Bruns, University of Colorado at Boulder, Colloidal Rotaxanes: Polymer Particles with Mechanical Bonds, $110,000.
Dr. Ya-Wen Chang, Texas Tech University, Phase Transfer Catalyst-Assisted Pickering Emulsification, $110,000.
Dr. Steven Chemtob, Temple University, Microtextural Controls on Silica Diagenesis in Organic-Rich Siliceous Shales: An Experimental Approach, $110,000.
Dr. Zheng Chen, University of California, San Diego, Design and Understanding of Novel Carbon-Based Electrocatalysts for Hydrogen Peroxide Synthesis to Enable Partial Methane Oxidation, $110,000.
Dr. Huanyu Cheng, The Pennsylvania State University, Controlled Mechanical Buckling: A Perfect Platform for Designing Multifunctional 3D Surface Structures, $110,000.
Dr. Sujit Datta, Princeton University, Connecting Pore-Scale Dynamics and Oil Mobilization by Polymers in 3D Porous Media, $110,000.
Dr. Luc Deike, Princeton University, Break-Up and Transport of Oil Droplets by Shear and Turbulence, $110,000.
Dr. Keary Mark Engle, The Scripps Research Institute, Copper-Catalyzed Oxidative Functionalization of Unactivated Alkenes, $110,000.
Dr. Jeremy Feldblyum, State University of New York at Albany, Pervaporative Separation of Refinery Streams by Membranes from Exfoliated Two-Dimensional Metal-Organic Frameworks, $110,000.
Dr. Melodie E. French, Rice University, Frequency-Dependent Attenuation of Elastic Waves in Fault Zones, $110,000.
Dr. Thomas L. Gianetti, University of Arizona, Design of Late-Late Transition Metal Bimetallic Complexes for CO_2 Reduction, $110,000.

Dr. Burcu Gurkan, Case Western Reserve University, The Role of Ionic Liquids on the CO_2 Electroreduction Reaction, $110,000.
Dr. Will R. Gutekunst, Georgia Institute of Technology, Controlling Polymer Microstructure and Degradation with Cyclic Thiocarbonyl Monomers, $110,000.
Dr. Martin F. Haase, Rowan University, Liquid Fibers for Continuously Operated Liquid-Liquid Extraction, $110,000.
Dr. Lilian C. Hsiao, North Carolina State University, Combining Experiments and Simulations to Understand the Glassy Rotations of Frictional Particles in Slurry Flow, $110,000.
Dr. Todd K. Hyster, Princeton University, Chemoenzymatic Dynamic Kinetic Resolution Using Radical Intermediates to Epimerize Challenging Stereocenters, $110,000.
Dr. Nan Jiang, University of Illinois at Chicago, Probing the Catalytic Properties of Bimetallic Surfaces at the Nanometer Length Scale, $110,000.
Dr. Amirmasoud Kalantari Dahaghi, University of Kansas, Statistical Deep Learning-Based Model (SDLM) for Direct, Fast, and Accurate Pore-Scale Modeling of Multiphase Flow in Porous Media, $110,000.
Dr. Piran R. Kidambi, Vanderbilt University, Tailoring Sub-Nanometer Pores in Atomically Thin Membranes for Petrochemical Separation, $110,000.
Dr. Coleman Kronawitter, University of California, Davis, Determining the Reaction Mechanism for Aqueous Electrochemical Partial Oxidation of Methane to Methanol to Establish Anode Catalyst Design Principles, $110,000.
Dr. Henry S. La Pierre, Georgia Institute of Technology, Molecular Analogs of Metal-oxide Supported Catalysts, $110,000.
Dr. Frank A. Leibfarth, University of North Carolina at Chapel Hill, Photocatalyzed Fluoroalkylation of Aromatic Polymers, $110,000.
Dr. Justin M. Lopchuk, H. Lee Moffitt Cancer Center and Research Institute, The Design of Novel Stable, Strained Diazirines for Functionalization in Organic Synthesis., $110,000.
Dr. Andrew J.D. Magenau, Drexel University, Elucidating Alkylborane Initiation for Rapid and Oxygen-Tolerant RAFT, $110,000.
Dr. Amin Mehrabian, The Pennsylvania State University, Poromechanics Solutions for Subsurface Stress Evolution around Hydrocarbon Reservoirs, $110,000.
Dr. Siddharth Misra, University of Oklahoma, Microscale Connectivities of Wetting and Non-Wetting Fluid Phases in Liquid-Rich Shales and Their Effects on the Propagation of Diffusion Front, $110,000.
Dr. Miguel A. Modestino, New York University, Ionic Liquid-Polymer Gel Electrolytes for Electrochemical Olefin Separations, $110,000.
Dr. Veronica Morales, University of California, Davis, Predicting the Probability and Degree of Preferential Flow in Porous Media from Pore-Network Geometric and Topologic Properties, $110,000.
Dr. Christopher Muhich, Arizona State University, Preventing the H_2S Poisoning of H_2 Separating Pd Membranes via an Applied Electric Field - A First Principles Investigation, $110,000.
Dr. Shankar Narayanan, Rensselaer Polytechnic Institute, Separation of Oil-Water Emulsions Using Nanoengineered Surfaces, $110,000.
Dr. Jaap Nienhuis, Florida State University, Filling of Incised Valleys: How Long Does a Sea-Level Highstand Need to Last?, $110,000.
Dr. Alex Nikulin, State University of New York at Binghamton, Unconventional Seismic Imaging in Unconventional Reservoir Characterization: A Passive-Source Seismic Investigation of the Marcellus and Utica Shale Plays, $110,000.
Dr. Melanie A.R. Reber, University of Georgia, Ultrafast Transient Absorption Spectroscopy of Hydrocarbon Radicals, $110,000.
Dr. Jerome R. Robinson, Brown University, Cation-Responsive Catalysis for Sequence-Controlled Oxygenated Copolymers, $110,000.
Dr. Simon A. Rogers, University of Illinois at Urbana-Champaign, Towards Determination of Polymer Architecture by Nonlinear Rheology, $110,000.
Dr. Aaron S. Rury, Wayne State University, Unraveling the Structural Basis for Cavity-Controlled Molecular Photo-Physics, $110,000.

Dr. Joseph Samaniuk, Colorado School of Mines, Connecting the Dynamics of Interfacial Gas Hydrate Films with Bulk Hydrate Rheology, $110,000.
Dr. Alina M. Schimpf, University of California, San Diego, Tuning Reactivity and Lewis Acidity in Molecule-Based Porous Metal Oxides for Alkane Dehydrogenation, $110,000.
Dr. Thomas P. Senftle, Rice University, Modeling the Effects of Sulfate and Phosphate on the Performance of Iron-based Catalysts for Propane Dehydrogenation, $110,000.
Dr. Francesca Serra, The Johns Hopkins University, Liquid Crystal Topological Defects as Self-Assembled Optical Components, $110,000.
Dr. Christo S. Sevov, The Ohio State University, Electrically-Driven, Catalytic C-C Bond-Forming Reactions: Strategies, Methods, and Mechanisms, $110,000.
Dr. Sufei Shi, Rensselaer Polytechnic Institute, Vertical Grown Two-Dimensional Semiconductors for Oxidative Dehydrogenation of Propane, $110,000.
Dr. Zachary P. Smith, Massachusetts Institute of Technology, Elucidating the Anomalous Solubility Behavior of Small Molecules in Fluoropolymers, $110,000.
Dr. Elizabeth Swanner Smith, Iowa State University, Determining the Mechanism(s) of Sedimentary Pyrite Formation from Anoxic (Pore) Waters, $110,000.
Dr. R. Mitchell Spearrin, University of California, Los Angeles, High-Temperature Carbon Isotope Spectroscopy for Chemical Kinetic Studies of Fuel Blends, $110,000.
Dr. Nicholas Stadie, Montana State University, Tuning the Thermodynamics of Adsorbed Natural Gas via Heteroatom Doping, $110,000.
Dr. Jianwei Sun, Tulane University, Understanding the Asymptotic Dependence of Van Der Waals Density Functionals for Heterogeneous Catalysis, $110,000.
Dr. J. Ryan Thigpen, University of Kentucky, Integrating Restorations, Forward Finite Element Modeling, and Microstructural Analyses to Understand Strain Accommodation in Contractional Salt Systems, $110,000.
Dr. Lee M. Thompson, University of Louisville, Elucidation and Design of Metallophotocatalytic Pathways for Partial Oxidation of Methane, $110,000.
Dr. Douglas R. Tree, Brigham Young University, The Role of Nucleation in Melt-Memory Effects in Semi-Crystalline Polymers, $110,000.
Dr. Emily Y. Tsui, University of Notre Dame, Alumosiloxide Complexes: Protonation and Dioxygen Reactivity for C–H Bond Activation, $110,000.
Dr. Renske M. van der Veen, University of Illinois at Urbana-Champaign, Ultrafast Carrier and Structural Dynamics in Plasmon-Enhanced Heterogeneous Photocatalysis, $110,000.
Dr. Matthias M. Waegele, Boston College, Leveraging the Structure-Specificity of Transient IR Spectroscopy to Elucidate Reaction Mechanisms in Visible Light-Driven Photocatalysis, $110,000.
Dr. Wei Wei, Wichita State University, Template-free Synthesis of 3D Hydrogen Incorporated Carbon Materials for Catalysts and Catalyst Supports, $110,000.
Dr. Cathy Y. Wong, University of Oregon, Simulating Asphaltene Aggregation Using a Coarse-Grained Model and *in Situ* Measurements, $110,000.
Dr. Lauren D. Zarzar, The Pennsylvania State University, Hydrate Formation and Agglomeration in Pickering Emulsions, $110,000.
Dr. Shiyu Zhang, The Ohio State University, Methane Oxidation with Unsymmetrical Bimetallic Catalysts, $110,000.
Dr. Yige Zhang, Texas A&M University, Neogene Evolution of Organic Carbon Burial in the Global Ocean, $110,000.
Dr. Weiwei Zheng, Syracuse University, Growth of 2-Dimensional Nanoplatelets from the Surface Ligand-Mediated Assembly of 1-Dimensional Nanorods, $110,000.

New Directions
Awards for Fundamental Research

Dr. Shahriar Afkhami, New Jersey Institute of Technology, The Study of Hele-Shaw Viscoelastic Two-Phase Flows, $110,000.
Dr. Matthew J. Allen, Wayne State University, Electrochemical Control of U(III) Using Coordination Chemistry, $110,000.
Dr. Mikhail A. Anisimov, University of Maryland, Thermodynamics of Fluids with Interconversion of Molecular States, $110,000.
Dr. Masoud Babaei, University of Manchester, A Better Understanding of Noble Gas Fractionation during Natural Gas Migration in Tight Rock and Water-Saturated Crust through Two Phase Flow Modelling, $110,000.
Dr. Reza Barati, University of Kansas, Understanding the Underlying Mechanisms of the Effect of Water Composition Modification on COBR Properties in Carbonate Limestone Rocks, $110,000.
Dr. Darrin Bellert, Baylor University, Earth Abundant Transition Metal Oxides and Carbides as Super-Atom Molecular Analogs to Platinum, $110,000.
Dr. Simon B. Blakey, Emory University, Oxidative Functionalization of Feedstock Chemicals: Generating Complexity Following Green Chemical Principles, $110,000.
Dr. Roman Boulatov, University of Liverpool, Photoactuating Polymers of Stiff Stilbene, $110,000.
Dr. Arthur E. Bragg, The Johns Hopkins University, Photothermal and Charge-Transfer Dynamics of Aluminum Nanomaterials for Plasmon-Sensitized Photocatalysis, $110,000.
Dr. Jeffery A. Byers, Boston College, Iron-based Catalysts for Suzuki-Miyaura Cross-coupling and C-H Functionalization Reactions, $110,000.
Dr. Cathleen M. Crudden, Queen's University, Preparation of Novel Soluble Metal Nanoclusters Stabilized by N-Heterocyclic Carbene Ligands for the Oxidation of Methane to Methanol, $110,000.
Dr. Michael A. Duncan, University of Georgia, Photochemical Synthesis and Spectroscopy of Large Polycyclic Aromatic Hydrocarbons, $110,000.
Dr. Michael R. Fisch, Kent State University, Development and Understanding of Mixed Lyotropic Liquid Crystals, $110,000.
Dr. Ellen R. Fisher, Colorado State University, Exploring Fundamental Chemistry in Plasma Aided Ignition and Combustion Systems, $110,000.
Dr. Danna E. Freedman, Northwestern University, Harnessing Spin-Orbit Coupling to Tune Chemical Reactivity, $110,000.
Dr. Haifeng Gao, University of Notre Dame, Regioselective Polymerization of A_2 and B_4 Monomers for Synthesis of Linear and Ladder Polymers Using Friedel-Crafts Hydroxyalkylation Reaction, $110,000.
Dr. Geoffrey M. Geise, University of Virginia, Fundamental Permittivity Properties of Hydrated Polymers, $110,000.
Dr. Hadi Ghasemi, University of Houston, Fundamental Studies on Growth Kinetics of Gas Hydrates and Solid-Hydrate Interactions, $110,000.
Dr. William P. Gilhooly, Indiana University-Purdue University Indianapolis, Roots, Weathering, and the Terrestrial Phosphorus Cycle of the Late Devonian, $110,000.
Dr. W. Ashley Griffith, The Ohio State University, The Relationship between Strain Rate and Fracture Density under 2D Isotropic Tension, $110,000.
Dr. Stanislav Groysman, Wayne State University, Heterobimetallic Homogeneous Catalysts for CO Oxidation, $110,000.
Dr. Anju Gupta, Rochester Institute of Technology, Fundamental Research on Controlled Porous Surfaces To Enhance Nucleate Boiling of Pure and Binary Mixtures, $110,000.
Dr. Jie He, University of Connecticut, Polymeric Foldamers Containing Multicopper Sites for Phenol Hydroxylation under Aerobic Conditions, $110,000.
Dr. Matthias Ihme, Stanford University, Fundamental Understanding of Stochastic Pre-Ignition and Super-Knock of Hydrocarbon Fuels, $110,000.

Dr. Sadhan C. Jana, The University of Akron, Emulsion-Templated Organo-Gel Constructs for Oil-Water Separation, $110,000.
Dr. Friederike C. Jentoft, University of Massachusetts Amherst, Identification and Design of Sites for Methane Conversion to Higher Alkanes under Mild Conditions, $110,000.
Dr. Clark M. Johnson, University of Wisconsin-Madison, The Origin of Illite in Sedimentary Basins as Determined by K, Si, Fe, and Mg Isotope Analysis: New Tools for Basin Analysis, $110,000.
Dr. David Johnston, Harvard University, Linking Oxygen Isotopes and Pyrite Weathering to Long-Term Organic Matter Burial, $110,000.
Dr. Tadanori Koga, State University of New York at Stony Brook, Structure and Dynamics of a Nanoparticle Network for Mechanical Reinforcement of Polymer Nanocomposites, $110,000.
Dr. Michelle A. Kominz, Western Michigan University, Thermal Modeling of the Michigan Basin: Why are Hydrocarbons Mature?, $110,000.
Dr. Tonya Kuhl, University of California, Davis, Rational Design of Cement Dispersants for Improved Flow and Rheological Properties, $110,000.
Dr. Oleg Larionov, The University of Texas at San Antonio, Development of Selective C-C Bond Forming Reactions of Petroleum-Relevant Organosulfur Compounds, $110,000.
Dr. Yiannis A. Levendis, Northeastern University, Reduction of Laminar Burning Velocities of Liquefied Petroleum Gas Components by Blending with CO_2, $110,000.
Dr. Yusong Li, University of Nebraska-Lincoln, Nanoparticles Diffusion and Dispersion in Confined Pore Spaces with Oil Residuals, $110,000.
Dr. Christopher Y. Li, Drexel University, Crystallization-Driven Porous Polymers, $110,000.
Dr. Mian Liu, University of Missouri-Columbia, Formation of Rocksalt Diapirs: A Numerical Study, $110,000.
Dr. Stephen Maldonado, University of Michigan, Electrochemical Liquid-Liquid-Solid Syntheses of Pd-Based Intermetallic Single-Crystalline Films for Catalytic Hydrogenations, $110,000.
Dr. David W. McCamant, University of Rochester, Probing Exciton Dynamics in Molecular Dimers with Femtosecond Stimulated Raman Spectroscopy, $110,000.
Dr. Ognjen S. Miljanic, University of Houston, Cyclobenzoins: Hosts for Small Gases and Precursors to Curved Aromatics, $110,000.
Dr. Marcello Minzoni, University of Alabama, Water Chemistry Controls on Carbonate Factories and Reservoir Quality Distribution in the Jurassic Smackover Formation: Implications for Exploration in Carbonate Ramp Plays, $110,000.
Dr. Yifei Mo, University of Maryland, Exploring Novel Mixed-Anion Materials for Petroleum-Related Applications, $110,000.
Dr. Valeria Molinero, University of Utah, Nucleation of Model Zeolites through Molecular Simulations, $110,000.
Dr. Vahid J. Niasar, University of Manchester, Pore-Scale Investigation of Wettability Impacts on Mixing in Two-Phase Porous Media: Implications for Modified Salinity Waterflooding, $110,000.
Dr. Fernando Pacheco de Resende, University of Washington, The Role of Supercritical Ethylene on Oligomerization Reactions with Nickel-based Heterogeneous Catalysts, $110,000.
Dr. Emily Pentzer, Case Western Reserve University, Exploiting Small Molecule Building Blocks To Architect Polymers with Enhanced Performance as Dielectric Materials, $110,000.
Dr. Dong Qin, Georgia Institute of Technology, Revitalizing Silver Nanocrystals as a Catalyst toward Hydrogenation by Tuning the Electronic Structure with an Isocyanide-Based Compound, $110,000.
Dr. Jeffrey D. Rimer, University of Houston, Probing the Intrinsic Kinetics of Elementary Steps in Zeolite Catalysts by Temporal Analysis of Products, $110,000.
Dr. Victor Ryzhov, Northern Illinois University, Fundamental Properties of Mono- and Binuclear Metal Ion Complexes as Homogeneous Catalysts Investigated via Mass Spectrometry and Theoretical Chemistry, $110,000.
Dr. Richard J. Saykally, University of California, Berkeley, Characterization of the Liquid Phase of Carbon by X-Ray Scattering with Free Electron Lasers, $110,000.

Dr. Michael Shatruk, Florida State University, Discovery of New Petroleum Reforming Catalysts via Investigation of Complex Metallic Alloys Aided by Deep Learning Methods, $110,000.
Dr. Kevin H. Shaughnessy, University of Alabama, Cooperative Bond Activation Promoted by Metal Complexes of Ligands Containing Proximal Basic Sites, $110,000.
Dr. Michael R. Shirts, University of Colorado at Boulder, Engineering Molecular Selectivity in Self-Assembled Nanostructured Membranes, $110,000.
Dr. Vinod Srinivasan, University of Minnesota, Efficient Atomization of Non-Newtonian Fluids Using a Novel Counterflow Nozzle, $110,000.
Dr. Gila E. Stein, The University of Tennessee, Melt Processable Vinyl-Added Polynorbornenes for Advanced Thermoplastics, $110,000.
Dr. Holly J. Stein, Colorado State University, Elemental and Isotopic Partitioning of Mercury in Source Rocks and Oils, $110,000.
Dr. Daniel R. Talham, University of Florida, A New Mechanism Influencing Phase Behavior in Hybrid Layered Materials, $110,000.
Dr. Uttam K. Tambar, The University of Texas Southwestern Medical Center, New Directions in Photoredox Catalysis, $110,000.
Dr. Benjamin M. Tutolo, University of Calgary, Is there an Organo-Silica Complexing Mechanism for Carbonate Reservoir Silicification?, $110,000.
Dr. Randall L. Vander Wal, The Pennsylvania State University, Microwave Driven Pyrolysis: Comparative Heating Rates and Reactive Plasma Assessments, $110,000.
Dr. Mark W. Vaughn, Texas Tech University, Capillary Condensation in Nanoporous Media, $110,000.
Dr. Patrick J. Walsh, University of Pennsylvania, New Reactions of Petroleum Derived Feedstocks, $110,000.
Dr. Dunwei Wang, Boston College, Rh Single Atom Catalysts Dispersed on TiO_2 for Selective Photocatalytic CH_4 Transformation to CH_3OH, $110,000.
Dr. Chao Wang, The Johns Hopkins University, Coke-Resistent Dehydrogenation of Light Hydrocarbons Using Single-Atom Platinum Catalysts, $110,000.
Dr. Mary F. Wheeler, The University of Texas at Austin, Computational Investigation of Acid-Rock Interactions in Matrix Acidizing and Acid Fracturing, $110,000.
Dr. Jeffery L. White, Oklahoma State University, Self-Diffusion and Interactions of Multicomponent Fluids in Model Reservoir Solids, $110,000.
Dr. Benjamin Wiley, Duke University, Exploring the Limits of Electroorganic Synthesis Productivity with Flow-Through Nanowire Electrodes, $110,000.
Dr. Florence J. Williams, University of Alberta, Intramolecular Nitrene-Mediated Modification of Simple Alcohols, $110,000.
Dr. Angela K. Wilson, Michigan State University, Mechanistic Insights and Radical Reaction Rates in the Oxidative Coupling of Methane, $110,000.
Dr. John C. Wright, University of Wisconsin-Madison, Applications of Fully Coherent Multidimensional Spectroscopy to Organic and Inorganic Synthesis, $110,000.
Dr. Lei Zhang, University of Alaska, Fairbanks, Defect-Engineered Metal-Organic Frameworks for the Storage of Acetylene, $110,000.

Undergraduate New Investigator
Starter Grants Awarded to Faculty in Non-Ph.D.-Granting Departments

Dr. Ted A. Brzinski, Haverford College, Investigation of Velocity Fluctuations and Correlations during the Sedimentation of Dense Granular Dispersions, $55,000.
Dr. Michael G. Campbell, Barnard College, The Importance of Nuclearity in the Redox Chemistry of Silver: New Mechanistic Pathways for Hydrocarbon Oxidation, $55,000.
Dr. Maria Carroll, Providence College, Influence of Redox Active Ligands on Substrate Selectivity of Iron Carbonyl Complexes in Electrocatalytic Reactions, $55,000.
Dr. Allyson M. Fry-Petit, California State University, Fullerton, Optimization of Oxygen Exchange Membranes through Unraveling the Contribution of Structural Rigidity via Neutron Diffraction Studies, $55,000.
Dr. Daniel R. Griffith, Lafayette College, Tropone Iron Tricarbonyl as a Platform for the Synthesis of aza-Polycyclic Molecules, $55,000.
Dr. James P. Grinias, Rowan University, Broadening Mechanisms in Size-Based Separations for Polymer Characterization Using Superficially Porous Particles, $55,000.
Dr. Lawrence J. Hill, Western Kentucky University, Degradable Antioxidant Polymers from Petroleum-Derived Monomers, $55,000.
Dr. Ivan Dempsey Hyatt, Adelphi University, Hypervalent Iodine-Guided Electrophilic Substitution, $55,000.
Dr. Steven E. Kalman, Stockton University, Air-Stable, Bifunctional Ruthenium Catalysts for Base-free Transfer Hydrogenation, $55,000.
Dr. Catherine E. McCusker, East Tennessee State University, Development of Zinc(II) Dipyrrin Sensitizers for Photocatalytic Carbon Dioxide Reduction, $55,000.
Dr. Maosheng Miao, California State University, Northridge, Structure and Stability of Oxyfluorides and Oxychlorides and Their Relations to Catalytic Activities in Oil Refining Reactions, $55,000.
Dr. Raul Navarro, Occidental College, Development of a Catalytic Asymmetric Addition Reaction to ortho-Quinone Methides, $55,000.
Dr. Rachel E. O'Brien, The College of William and Mary, Fragmentation and Functionalization: Characterizing Condensed Phase Autoxidation of Hydrocarbons, $55,000.
Dr. Andrew Petit, California State University, Fullerton, Using Computational Chemistry to Achieve a Mechanistic Understanding of the Intramolecular Cyclization of Oxime and Oxime Ether Radical Cations, $55,000.
Dr. Scott M. Simpson, St. Bonaventure University, Using Density Functional Theory to Predict Heterogeneous Catalysts for the Selective Formation of cis-2-Butene from 1,3-Butadiene, $55,000.
Dr. Srinivasa Rao Singamaneni, The University of Texas at El Paso, *In Situ* Electron Spin Resonance Studies of Defects in 2-Dimensional VS_2 Nano Layers for Advanced Catalysis, $55,000.
Dr. Justin R. Sparks, Muhlenberg College, Accessing New Catalyst Chemistries via Light-Matter Strong Coupling, $55,000.
Dr. Kathryn Tamulonis, Allegheny College, Relationship between Rome Trough Reactivation and the Distal Stratigraphy and Reservoir Quality of the Devonian Marcellus and Burket Formations of the Appalachian Basin, $55,000.
Dr. Sarah Z. Tasker, Franklin and Marshall College, Synthesis of Oxetanes via a Formal Formylation, $55,000.
Dr. Fangyuan Tian, California State University, Long Beach, Designing Surface Supportive Zeolitic Imidazolate Frameworks for Purifying Natural Gas, $55,000.
Dr. Cheng Zhang, Long Island University Post, Direct Methane Oxidation to Methanol at Low Temperature Using Bismuth-Polyoxometalates on Silicon Carbide, $55,000.

Undergraduate Research
Awarded to Faculty in Non-Ph.D.-Granting Departments

Dr. Kuppuswamy Arumugam, Wright State University, Controlling Sequential Arrangement of Monomers in Triblock Copolymers with Ruthenium Catalysts Containing Tetrathiafulvalene N-Heterocyclic Carbenes, $70,000.
Dr. Karin Goldberg, Kansas State University, High-Resolution Sequence Stratigraphy in Mudrock-Dominated Successions: The Chattanooga/Woodford Shale (Late Devonian, Midcontinent Basin), $70,000.
Dr. Elmer B. Ledesma, University of St. Thomas, Effect of Ethane, Propane, and *n*-Butane on the Non-Catalytic Partial Oxidation of Methane at High Equivalence Ratios, $70,000.
Dr. Harmon D. Maher, University of Nebraska-Omaha, Characterizing and Understanding within-Unit Fracture Pattern Variability, $70,000.
Dr. Emily C. McLaughlin, Bard College, New Methods for Nitrene Generation and Transfer in the Selective Aziridination of Alkenes, $70,000.
Dr. Arsalan Mirjafari, Florida Gulf Coast University, Click Synthesis and Physicochemical Characterization of Amphiphile Ionic Liquids with Enhanced Fluidity and Diverse Functionalities, $70,000.
Dr. Peter N. Njoki, Hampton University, Microwave Assisted Synthesis of Non-Precious Bimetallic Heterogeneous Nanoparticle Catalysts, $70,000.
Dr. Abby R. O'Connor, The College of New Jersey, Development of Fe Pincer Complexes for CO_2 Reduction, $70,000.
Dr. Sara B. Pruss, Smith College, Testing Links between Marine Anoxia and Mercury Enrichments during the Late Cambrian SPICE Event, $70,000.
Dr. Dipendu Saha, Widener University, Adsorptive Separation of Light Paraffin and Olefins in Ag(I) and Cu(I) Grafted Microporous Carbons, $70,000.
Dr. Sophia Suarez, City University of New York, Brooklyn College, Studies of the Dynamics in and the Effect of Surfactants on Gas Hydrates Formation and Agglomeration, $70,000.
Dr. Aleksey N. Vasiliev, East Tennessee State University, Superacidic Catalysts for Alkylation of Benzene by Olefins, $70,000.
Dr. Trent P. Vorlicek, Minnesota State University Mankato, Advancing the Vanadium Paleoredox Proxy: Defining the Chemistry Controlling Vanadium Speciation in Sulfidic and Polysulfidic Natural Waters, $70,000.
Dr. Katsuyuki Wakabayashi, Bucknell University, Chain Length and Architecture Modification and Characterization of Polyolefins via Mechanochemistry with Solid-State Shear Pulverization, $70,000.
Dr. Yanjie Zhang, James Madison University, Thermodynamic and Spectroscopic Studies of Ion Interactions with Model Heteroatomic Compounds in Crude Oil, $70,000.