

2008 ACS PRF Grantees

Type AC

Awards for Fundamental Research

Dr. Edgar Acosta, University of Toronto, Flow Dynamics Around Oil-Coated Particles: Defining Strategies for Oil-Water-Particle Separation, \$100,000.

Dr. Jay Ague, Yale University, Effect of Pore-size Controlled Solubility on Mineralization, Porosity, and Permeability in Porous Media: a Combined Experimental and Theoretical Study, \$69,568.

Dr. Igor Alabugin, Florida State University, Design of New Radical Reactions: From Elusive 5-Endo-Dig Cyclization to Cascade Transformations, \$100,000.

Dr. Anastasios Angelopoulos, University of Cincinnati, Nanoparticle Layer-by-Layer Assembly for Fuel Cell Electrodes, \$100,000.

Dr. Mikhail Anisimov, University of Maryland, Novel Aspects in Thermodynamics of Curved Fluid Interfaces, \$100,000.

Dr. Phillip Armstrong, California State University, Fullerton, Exhumation and Deformation due to Shallow Subduction above the Yakutat Microplate in Southern Alaska, \$149,420.

Dr. Micha Asscher, The Hebrew University of Jerusalem, Thermally Stable, Sintering Resistant Catalysts, \$100,000.

Dr. Michael Baird, Queen's University, Rational Syntheses of Metallocarbohedrynes (Met-cars), \$100,000.

Dr. Huiming Bao, Louisiana State University, Experimental Sulfate Triple-Oxygen Isotope Geochemistry, \$100,000.

Dr. Paul Blakemore, Oregon State University, Asymmetric Halogen-Metal Exchange of Geminal Dihalides with Planar Chiral Organometallic Reagents, \$99,990.

Dr. Roman Boulatov, University of Illinois at Urbana-Champaign, Simple Metalloporphyrin Dimers for Multielectron Reduction Catalysis, \$100,000.

Dr. C. Bowers, University of Florida, Adsorption, Diffusion and Exchange Studies in Single-File Nanotube Materials for Gas Separations Using Hyperpolarized NMR Methods, \$100,000.

Dr. John Brady, California Institute of Technology, The Bulk Viscosity of Suspensions, \$100,000.

Dr. Seth Brown, University of Notre Dame, Probing the Articulation Between Electron Transfer and Bond Cleavage Using Early Metal Complexes of Redox-Active Phenoxides, \$100,000.

Dr. Laurie Butler, University of Chicago, Unimolecular Dissociation Dynamics of the Methylsulfonyl Radical and its CH₃OSO Isomer, \$100,000.

Dr. Tai Chiang, University of Illinois at Urbana-Champaign, Atomic Bonding and Instabilities in Nuclear Materials, \$100,000.

Dr. Stephen Colbran, University of New South Wales, Discovery of Molecular Oxidation Catalysts using Metallo-Enzyme Mimicry and Combinatorial Chemistry, \$100,000.

Dr. Coray Colina, The Pennsylvania State University, Carbon Dioxide Adsorption in Novel Amorphous Polymers: A Computational Study, \$100,000.

Dr. Scott Collins, The University of Akron, Dinuclear Initiators in Ring-Opening Polymerization, \$100,000.

Dr. Prodromos Daoutidis, University of Minnesota, Dynamics and Control of Integrated Processes for Hydrogen and Power Generation, \$100,000.

Dr. Daniel De Kee, Tulane University, Yield Stress of Complex Fluids: A Numerical Study for a Concentric Cylinder Geometry with Slotted Rotor, \$100,000.

Dr. Peter deMenocal, Columbia University, Lamont-Doherty Earth Observatory, Origin of the Mid-Pliocene Pole-to-Equator Ocean Productivity Shift, \$100,000.

Dr. Renee Diehl, The Pennsylvania State University, Adsorption of Hydrocarbons on Complex Metallic Alloy Surfaces - Lubricants and Superlubricity, \$100,000.

Dr. William Dietrich, University of California, Berkeley, The Role of Sediment Supply in Morphodynamics: Bars, Bends, and Planform, \$100,000.

Dr. Panagiotis Dimitrakopoulos, University of Maryland, Dynamics of Three-Dimensional Droplets Sliding on Solid Substrates, \$100,000.

Dr. Linda Doerrer, Boston University, Late Transition Metal Complexes with Fluorinated Alkoxide Ligands for C-H Activation, \$100,000.

Dr. Diane Doser, The University of Texas at El Paso, Constraints on the Structure of the Border Ranges Fault System, South-Central Alaska from Integrated 3-D Inversion of Gravity/Magnetic Data, \$100,000.

Dr. Allan Ekdale, University of Utah, Glauconite Character and Ichnofabric Signature of Parasequences within Condensed Sections in Passive Margin Settings, \$59,000.

Dr. Paul Evans, University of Wisconsin-Madison, Structures and Defects at Interfaces in Organic Molecular Heterostructures, \$100,000.

Dr. James Feng, University of British Columbia, Encapsulation in Bicomponent Transport and Extrusion, \$100,000.

Dr. Torsten Fiebig, Boston College, Optical and Electronic Properties of Functionalized Carbon Nanotubes Studied with Ultrafast Spectroscopy, \$90,000.

Dr. Alison Frontier, University of Rochester, Development of Catalytic Asymmetric Methods for the Synthesis of Pyrrolidine Derivatives via Hydrogenation of Substituted Pyrroles, \$100,000.

Dr. Charles Garner, Baylor University, Synthesis and Application of C₂-Chiral Phosphinines to Asymmetric Catalysis, \$81,609.

Dr. Harry Gibson, Virginia Polytechnic Institute and State University, Supramacromolecular Pseudorotaxane and Rotaxane Polymers, \$100,000.

Dr. Gregory Girolami, University of Illinois at Urbana-Champaign, New Chiral Solid Catalysts for Oxidation Reactions, \$100,000.

Dr. Dmitri Goussev, Wilfrid Laurier University, Abnormal Pincer-Type Carbenes for Functionalization of Hydrocarbons, \$90,000.

Dr. Sandra Greer, University of Maryland, Micelles in Partially Miscible Solvents, \$100,000.

Dr. Keith Gubbins, North Carolina State University, Multi-Scale Modeling of Reaction with Diffusion, \$100,000.

Dr. Anna Gudmundsdottir, University of Cincinnati, New Photoremovable Protecting Groups with the Capacity to Release Alcohols in High Quantum Yields, \$100,000.

Dr. Ting Guo, University of California, Davis, Chemical Imaging of the Catalytic Processes of CO₂ Reforming of Methane using Laser Vaporization Generated Ni Nanoparticles and Time-Resolved X-ray Spectroscopy, \$100,000.

Dr. Nivedita Gupta, University of New Hampshire, Effect of Surfactant Solubility on Drop Dynamics in Oil-Water Two-Phase Systems, \$100,000.

Dr. Juergen Hahn, Texas A&M University, Determining Sets of Parameters to Be Estimated for Nonlinear Model Predictive Control, \$100,000.

Dr. P. Halasyamani, University of Houston, Energy Conversion and Power Generation in New Non-Pb Based Piezoelectric Oxide Materials: Synthesis, Characterization, and Structure-Property Relationships, \$100,000.

Dr. Dennis Hall, University of Alberta, A Greener Phase-Switch Concept for Multistep Synthesis Using Boronic Acids as Productive Tags, \$100,000.

Dr. W. Dean Harman, University of Virginia, Diels-Alder Cycloaddition Reactions with Dihapto-Coordinated Pyridines, \$100,000.

Dr. Eric Heller, Harvard University, Semiclassical Correlation Energies of Atoms and Molecules, \$100,000.

Dr. Paul Helquist, University of Notre Dame, Computational Design, Virtual Screening, and Experimental Validation of Chiral Catalysts, \$100,000.

Dr. Patrick Henry, Loyola University of Chicago, Palladium(II)-Catalyzed Asymmetric Synthesis of alpha-Substituted Ketones, \$100,000.

Dr. Timothy Herbert, Brown University, Preservation of Biomarker Environmental Proxies in Uplifted Marine Sections: a Test from the Mediterranean Region, \$149,791.

Dr. So Hirata, University of Florida, Predictive Property Simulations for Plastic Photovoltaics, \$100,000.

Dr. Roland Horne, Stanford University, Enhanced CO₂ Sequestration Taking Account of Aqueous Solubility, \$100,000.

Dr. Shaoyi Jiang, University of Washington, Chemical and Physical Properties of Zwitterionic Polymers, \$100,000.

Dr. Cari Johnson, University of Utah, Controls on Marginal Marine and Nonmarine Stratigraphic Architecture: New Constraints from the Cretaceous Straight Cliffs Formation, Utah, \$99,900.

Dr. Scott Johnson, The University of Maine, Primary Migration of Oil Through Self-Propagating Fractures, \$100,000.

Dr. Marc Johnson, University of Michigan, Terminal Carbide Formation from Fischer Carbenes: A Challenge for Olefin Metathesis and an Opportunity for Carbide Synthesis, \$100,000.

Dr. Thomas Johnson, University of Minnesota, Duluth, Characterizing Organic Matter in Sediments of a Tropical Rift Lake, \$100,000.

Dr. Cameron Jones, Monash University, Zeolite Encapsulated Poly(phosphaalkynes): A New Approach to an Elusive Target, \$99,991.

Dr. Christopher Jones, Georgia Institute of Technology, Catalytic Coupling Moving Beyond Palladium - Exploring Heterogeneous Cu and Au Catalysts in Aromatic C-N and C-O Bond Forming Reactions, \$100,000.

Dr. Linda Kah, The University of Tennessee, Ocean Circulation, Nutrient Cycling, and the S-Isotope Composition of Early Paleozoic Marine Systems, \$99,188.

Dr. Bart Kahr, University of Washington, Beyond Specific Rotations, \$100,000.

Dr. Howard Katz, The Johns Hopkins University, Organic Semiconductor Blends Designed for High Seebeck Coefficient through Fermi Level and Density of States Engineering, \$100,000.

Dr. Alan Kaufman, University of Maryland, Biomarker Studies of Organic-rich Neoproterozoic Shales from Glaciogenic Successions in Brazil, \$100,000.

Dr. Cameron Kepert, University of Sydney, Energy Storage in Nanoporous Metal-Organic Framework Materials, \$100,000.

Dr. Michael Kessler, Iowa State University, ROMP Healing Agent Development for Self-Healing Materials, \$100,000.

Dr. S. King, Wake Forest University, Synthesis of Hydroxamic Acids through -NOH Insertion of Ketones, \$100,000.

Dr. Simon Klemperer, Stanford University, Seismic Reflection Characterization of a Core-Complex and Low-angle Normal Fault, and Associated Basin Development, Ruby Mountains, Nevada, \$100,000.

Dr. David Kofke, University at Buffalo, State University of New York, Examination of the Role of Entropy and Defects on the Relative Stability of Molecular Crystals, \$100,000.

Dr. Marisa Kozlowski, University of Pennsylvania, Formation of Functional Amino Acids via Three-Component Coupling: An Unusual Addition Mode to the Nitrogen of alpha-Iminoesters, \$100,000.

Dr. Klaus Lackner, Columbia University, Electrolysis of Carbon Dioxide in the Production of Sustainable Hydrocarbon Fuels, \$112,111.

Dr. Susan Lattuner, Florida State University, Ion Exchange of Zeolites in Polyethylene Oxide Oligomer Solutions, \$100,000.

Dr. R. Leckie, University of Massachusetts Amherst, Oligocene-Miocene Eustatic Record of the Northeastern Margin: Linking the Timing and Magnitude of Sea-Level Changes with the Stratigraphic Response and Paleocyanography of the Subtropical Pacific, \$100,000.

Dr. Kevin Lehmann, University of Virginia, Ultra-Broad Bandwidth Cavity Enhanced Spectroscopy with Application to Study of Combustion, \$100,000.

Dr. Katja Lindenberg, University of California, San Diego, Energy Propagation in Dense Granular Media, \$100,000.

Dr. Feng Liu, University of Utah, Strain Engineering of Organic Semiconducting Molecules: A First Principles Study, \$100,000.

Dr. Thomas Livinghouse, Montana State University, Asymmetric Hydroamination Catalyzed by Non-Metallocene Complexes of the Group III and Group IV Metals, \$100,000.

Dr. Raul Lobo, University of Delaware, Redox Centers from Brønsted Acid Sites and Defects in H-Zeolites: Formation, Structure and Reactivity in Hydrocarbon Catalysis, \$100,000.

Dr. Michel Louge, Cornell University, The Role of Erosion at the Head of Turbidity Currents - Experiments and Theory, \$100,000.

Dr. Jennifer Macalady, The Pennsylvania State University, Microbial Biogeochemistry of Isoprenoid Hydrocarbon Cycling, \$100,000.

Dr. Leonard MacGillivray, University of Iowa, Natural Ladderane Lipids via Template-Controlled Solid-State Reactions, \$100,000.

Dr. David Martin, University of Michigan, Bicontinuous Conducting Polymer Cubic Phases, \$100,000.

Dr. Stephen Martin, Virginia Polytechnic Institute and State University, Liquid Crystalline Membranes for Olefin/Paraffin Separations, \$100,000.

Dr. Gregory McKenna, Texas Tech University, Solid Rheology of Glassy Substances: Polymer and Colloidal Systems, \$100,000.

Dr. George McMechan, The University of Texas at Dallas, Estimation of True (Angle-dependent) Reflection Coefficients in 3-D Prestack Depth Migration of Seismic Data, \$90,000.

Dr. Kristopher McNeill, University of Minnesota, Photosensitizer-doped Organic Nanostructures and the Spatial Distribution of Singlet Oxygen, \$100,000.

Dr. Craig Merlic, University of California, Los Angeles, Oxidative Palladium Coupling Chemistry, \$100,000.

Dr. Stephen Miller, University of Florida, Replacing Polyvinyl Chloride with Novel Thermoplastics Derived from Natural Gas, \$100,000.

Dr. Robert Moss, Rutgers, The State University of New Jersey, Reactive Organic Intermediates from Diazirines, \$100,000.

Dr. Daniel Neumark, University of California, Berkeley, Solvated Electrons in Liquid Jets of Water and Ionic Liquids, \$100,000.

Dr. Paula Noble, University of Nevada, Reno, Use of Geochemical Proxies to Evaluate Paleosalinity and Carbon Flux in the Bell Canyon Formation, Guadalupe Mountains West Texas, \$62,840.

Dr. Amos Nur, Stanford University, Quantifying the Links between Geophysical and Geochemical Properties of Organic-Rich Shales, \$100,000.

Dr. Babatunde Ogunnaike, University of Delaware, Next Generation Regulatory Controller for Chemical Processes, \$100,000.

Dr. Elizabeth Papish, Drexel University, Novel Water-Soluble N-Heterocyclic Carbene Chelates for Transition Metal Catalysts, \$100,000.

Dr. Robert Pelcovits, Brown University, Dynamic Anchoring of Liquid Crystals at Fluid Interfaces, \$100,000.

Dr. Charles Perrin, University of California, San Diego, Reactions of p-Benzynes with Nucleophiles, \$50,000.

Dr. A. Pinkerton, University of Toledo, Characterization of Actinide - Ligand Bonding, \$100,000.

Dr. Vladimir Popik, University of Georgia, Light-Induced Ketonization - Elimination Reaction of Enol Forms of Gamma- and Delta- Hydroxy Ketones, \$100,000.

Dr. Edward Quitevis, Texas Tech University, Understanding the Role of Nanostructural Organization in the Intermolecular Dynamics of Room Temperature Ionic Liquids, \$100,000.

Dr. Thomas Rauchfuss, University of Illinois at Urbana-Champaign, Organometallic Chemistry of Methanogenesis: Modeling the Fe(CO)₂-GP Cofactor in the Enzyme Hmd, \$100,000.

Dr. Gregory Ravizza, University of Hawaii at Manoa, A Refined Chronology of Late Eocene to Late Oligocene Coral Reefs: Implications for Coral Calcification Under a Regime of Declining Atmospheric Carbon Dioxide and Changing Ocean Chemistry, \$150,000.

Dr. Alejandro Rey, McGill University, Computational and Topological Modeling of Mesophase Carbon Composites, \$100,000.

Dr. Yair Rosenthal, Rutgers, The State University of New Jersey, Assessing the Potential of B/Ca in Planktonic Foraminifera as a Proxy of Seawater pH: a Sediment Trap Calibration, \$99,563.

Dr. Nita Sahai, University of Wisconsin-Madison, Effect of Organic-Mediated Water Restructuring In Modifying Mineral Precipitation Rates, \$100,000.

Dr. Roberto Sanchez-Delgado, City University of New York, Brooklyn College, Heterolytic Activation of Hydrogen Promoted by Ruthenium Nanoparticles on Poly(vinylpyridine) and Hydrogenation of Aromatic Compounds, \$100,000.

Dr. Daniel Schwartz, University of Colorado, Single-Molecule Studies of Surfactant Dynamics at the Oil/Water Interface, \$100,000.

Dr. Thomas Seery, University of Connecticut, Dynamic Light Scattering from Light Absorbing Solutions, \$100,000.

Dr. Shahab Shamsi, Georgia State University, Synthesis Characterization and Fundamental Studies of Novel Chiral Ionic Liquid and Their Polymers, \$100,000.

Dr. John Shaw, Harvard University, New Approaches to 3D Structural Restorations Using Mechanical Constraints for Improved Petroleum Trap and Reservoir Characterizations, \$100,000.

Dr. Robert Sheridan, University of Nevada, Reno, Multiplicity Control in Carbenes Aided by the Trifluoromethyl Group, \$100,000.

Dr. Robert Sherrell, Rutgers, The State University of New Jersey, Development and Application of a Direct Coral Proxy for Surface Water Phosphate in the Paleo-Ocean, \$100,000.

Dr. Peter Siska, University of Pittsburgh, Ionization of Amides by Metastable Atoms in Crossed Molecular Beams, \$100,000.

Dr. T. Stack, Stanford University, Click-On SBA-15: Efficient Variable Loading of Oxidation Catalysts in Porous Silica, \$100,000.

Dr. James Tanko, Virginia Polytechnic Institute and State University, 'Radically' Green Approaches To Hydrocarbon Functionalization Via Allyl Transfer, \$100,000.

Dr. Andrew Teplyakov, University of Delaware, Role of Specific Reactive Sites on Silicon Nitride Surface in Catalysis of Isomerization and Addition Reactions, \$100,000.

Dr. Robert Tilton, Carnegie Mellon University, Mikroarm Star Copolymer Interfacial Activity and Emulsion Stabilization, \$100,000.

Dr. Michael Trenary, University of Illinois at Chicago, Transmission Infrared Studies of Hydrogen Storage Materials, \$100,000.

Dr. Ophelia Tsui, Boston University, Shear Modulus of a Molten Polymer Brush, \$100,000.

Dr. Chris Van de Walle, University of California, Santa Barbara, First-Principles Studies of Water Splitting at Semiconductor and Oxide Surfaces, \$100,000.

Dr. Paul Van Tassel, Yale University, Polyelectrolyte Adsorption at the Conducting Interface: A Simulation Study, \$100,000.

Dr. Igor Vasiliev, New Mexico State University, Core-Shell Heterostructures for Photovoltaic Energy Conversion, \$99,701.

Dr. John Walz, Virginia Polytechnic Institute and State University, Stability Behavior of Clay/Nanoparticle Suspensions, \$100,000.

Dr. Qing Wang, The Pennsylvania State University, Synthesis of Novel Cross-Linked Fluoropolymer Networks and Nanocomposites with High Thermal Stability and Proton Conductivity, \$100,000.

Dr. Eric Weeks, Emory University, Using Emulsions to Study the Physics of Two-Dimensional Frictionless Granular Materials, \$100,000.

Dr. Paul Wenthold, Purdue University, Mass Spectrometric Studies of Hydrophobic Interactions in Binary Clusters, \$100,000.

Dr. Dorte Wildenschild, Oregon State University, Biosurfactant Enhanced Oil Recovery: A Pore-Scale Investigation of Interfacial and Microbial Interactions, \$143,552.

Dr. Uta Wille, University of Melbourne, Development of New Pathways for the Oxidative Transformation of Alkynes into Highly Reactive Carbonyl Compounds., \$50,000.

Dr. Evan Williams, University of California, Berkeley, Gaseous Nanodrop Calorimetry: Hydrogen Atom Generation and an Absolute Potential for the Standard Hydrogen Electrode, \$100,000.

Dr. John Wolfe, University of Michigan, New Synthetic Methods Involving Wittig Rearrangement Processes, \$100,000.

Dr. Judith Yang, Stevens Institute of Technology, Methanol Oxidation by Copper Catalysts Investigated by In-Situ UHV-TEM, \$100,000.

Dr. An Yin, University of California, Los Angeles, Investigating the Mechanics of V-shaped Conjugate Strike-slip Systems and Implications for Hydrocarbon Exploration, \$94,023.

Dr. Giovanni Zangari, University of Virginia, Materials and Architectures for Highly Efficient Photoelectrochemical Solar Cell Devices, \$100,000.

Type B**Awarded to Faculty in Non-Ph.D.-Granting Departments**

Dr. Scott Bur, Gustavus Adolphus College, Diels-Alder Reactions of Silyloxy Furans: Scope and Limitations, \$65,000.

Dr. Sylvain Canesi, Universite du Quebec a Montreal, Cycloaddition Reactions for the Formation of Indolines, Indoles and Benzofurans, and Subsequent Functionalization Reactions, \$64,800.

Dr. Catherine Clark, Chapman University, Solution Medium Effects on the Kinetics and Mechanism of Photolysis of Polycyclic Aromatic Hydrocarbons in Aqueous Medium, \$64,681.

Dr. Andrew Craft, University of Hartford, Effects of Mechanical Stress on the Phase Stability in Metal-Hydrogen Systems, \$65,000.

Dr. Emanuele Curotto, Arcadia University, Can Nitrogen Offer a Different Perspective on the Hydrogen Storage Problem? $(\text{NH}_3)_n\text{-(H}_2)_m$ Clusters from Cryogenic Storage as Novel Fuels, \$63,500.

Dr. Nancy Dopke, Alma College, Synthesis, Characterization, and Reactivity of Platinum/Ruthenium Heterometallic Complexes, \$61,000.

Dr. Michael Everest, George Fox University, Interaction of Polyoxometallates with Organically-Modified Silica, \$65,000.

Dr. Mark Forman, Saint Joseph's University, Pentacyclo[4.3.0.0^{2,4}.0^{3,8}.0^{5,7}]non-4-ene: Synthesis, Reactivity, Matrix Isolation Spectroscopy, Calculations, and Physical Study of Reaction Products, \$65,000.

Dr. Robert Francis, California State University, Long Beach, Development of a Young Pull-Apart Basin in the California Continental Borderland: High-resolution Seismic Reflection Profiling of San Pedro Basin, \$64,936.

Dr. Alan Gengenbach, University of Wisconsin-Eau Claire, Fundamental Studies of Metalloporphyrin Catalyzed Oxidation of Dibenzothiophenes, \$60,420.

Dr. Aaron Hartel, Winthrop University, Preparation of Mannich Bases and Their Corresponding Silyl Enol Ethers from 2-Acylaziridines, \$65,000.

Dr. Shawn Hitchcock, Illinois State University, Beta-Hydroxysalicylhydrazones: Chiral, Non-racemic Tridentate Catalysts for Asymmetric Synthesis, \$65,000.

Dr. Bruce Hrnjez, Yeshiva University, Solvent Effects in Supercritical Fluids, \$65,000.

Dr. Bilal Kaafarani, American University of Beirut, Design and Synthesis of Novel Pyrene Discotics and Their Investigation in Organic Photovoltaic Cells, \$65,000.

Dr. Matthew Kirby, California State University, Fullerton, A Combined Geophysical and Lithostratigraphical Investigation of a Young Pull-Apart Basin: Evaluating the Relationship Between Basin Sedimentation, Late-Quaternary Climate Change, and Tectonics (Lake Elsinore, Southern California), \$65,000.

Dr. Darius Kuciauskas, Rowan University, Porphyrin Nanostructures as Light Harvesting Antennas for Dye-Sensitized Solar Cells, \$65,000.

Dr. Robert LaDuca, Michigan State University, Synthesis, Structural Determination, and Physicochemical Property Studies of Novel Coordination Polymers Incorporating Kinked and Hydrogen-Bonding Capable Bifunctional Organodiimines, \$64,200.

Dr. Phyllis Leber, Franklin and Marshall College, Fundamental Studies on the Nature of Diradical Intermediates in [1,3] Carbon Migrations of Bicyclic and Tricyclic Vinylcyclobutanes, \$65,000.

Dr. Brian Linton, College of the Holy Cross, Hydrogen Bonding Peptides as Asymmetric Catalysts, \$60,000.

Dr. Anna Martini, Amherst College, Powder River Basin Coalbed Methane: Pathways and Rates of Microbial Gas Generation, \$65,000.

Dr. Robert Mathers, Pennsylvania State University, New Kensington Campus, Polymerizing Alkenes with Polar Functional Groups: New Polymerization Methods for Functional, Hyperbranched Fuel Additives with Ester, Ether, and Amide Linkages, \$65,000.

Dr. Erik Melchiorre, California State University, San Bernardino, Isotopic Identification of Ion Sources, Spatial Distribution, and Temporal Development of Biogenic Secondary Minerals Within Porous Rocks, \$65,000.

Dr. Jennifer Morford, Franklin and Marshall College, Mechanisms of Molybdenum Accumulation in the Solid Phase: The Influence of Organic Molecules, \$65,000.

Dr. Frank Peiris, Kenyon College, Photonic Crystals-based Hybrid Structures for Laser and Photovoltaic Applications, \$65,000.

Dr. Marc Perry, University of Alaska, Anchorage, N-Heterocyclic Carbenes in Iron-Catalyzed Cross-Coupling Reactions, \$65,000.

Dr. Ilya Polishuk, The College of Judea and Samaria, A Novel Theoretically-Based Approach for Developing Equation of State Models, \$44,000.

Dr. Donald Prothero, Occidental College, Magnetic Stratigraphy of the Miocene-Pliocene Etchegoin Group of the Western San Joaquin Basin, California, \$65,000.

Dr. Terry Puckett, University of North Alabama, Tectonic Evolution of the Caribbean Basin and Gulf of Mexico: Constraints from the Paleobiogeography of Greater Antillean Late Cretaceous Ostracodes, \$65,000.

Dr. Dion Rivera, Central Washington University, In Situ Spectroscopic Studies of the Behavior of Polyelectrolyte/Surfactant Mixtures at the Water/TiO₂ Interface Using Attenuated Total Internal Reflection Fourier Transform Infrared Spectroscopy (ATR-FTIR) and Multivariate Least Squares Data Analysis., \$65,000.

Dr. Michael Salazar, Union University, The Development of Accelerated Molecular Dynamics for Complex Gas-Phase Reactive Systems, \$65,000.

Dr. Bruce Selleck, Colgate University, Integrated Study of the Root Zones of Hydrothermal Dolomite Reservoir Systems, \$65,000.

Dr. Krzysztof Slowinski, California State University, Long Beach, Electrical Conductivity of Molecular Assemblies, \$65,000.

Dr. John Spence, California State University, Sacramento, Synthesis, Thermal, and Photochemical Reactivity of Highly Conjugated Ene-dienes, \$65,000.

Dr. David Taylor, Indiana University Southeast, Investigation of Source Material for the Proposed Jurassic - Cretaceous/Tertiary Angiosperm Biomarker Biscadinane, in Parallel to Known Angiosperm Lineage Biomarker Oleanane, \$65,000.

Dr. Mark Vitha, Drake University, Fundamental Studies of the Solvatochromism of Hemicyanine Dyes and Their Application to Characterize Micelles Used to Enhance Oil Recovery, \$63,000.

Dr. Adam Woods, California State University, Fullerton, Productivity and Environmental Conditions Following the Permian-Triassic Mass Extinction: Lower Triassic Rocks from the Western Canada Sedimentary Basin, \$65,000.

Type G

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

Dr. Neal Abrams, SUNY College of Environmental Science and Forestry, Synthesis of Novel Oxynitride Structures by Soft Chemical Routes, \$50,000.

Dr. Aleksei Aksimentiev, University of Illinois at Urbana-Champaign, Molecular Dynamics Study of Flow-Induced Desorption in Water-Oil-Sand Mixtures., \$50,000.

Dr. Aaron Aponick, University of Florida, Harnessing the Reactive Intermediates of Catalytic-Heterofunctionalization, \$50,000.

Dr. Aravind Asthagiri, University of Florida, Multi-Scale Modeling of the Evolution of Oxygen Phases on Pt Surfaces Under Realistic Reactive Conditions, \$50,000.

Dr. Dilipkumar Asthagiri, The Johns Hopkins University, Molecular Basis of Tetrahydrofuran-Induced Enclathration, \$50,000.

Dr. Valeri Barsegov, University of Massachusetts Lowell, Computer Simulation Studies of Forced Rupture Kinetics of 'Hydrophobic Bonds' Between Hydrocarbon Chains, \$50,000.

Dr. Theodore Betley, Harvard University, High Oxidation State, Late Transition Metals Featuring Metal-Ligand Multiple Bonds: Strategies for Sequential C-H Bond Activation and Functionalization, \$50,000.

Dr. Svilen Bobev, University of Delaware, Synthesis, Structural Characterization and Property Optimization of Novel Antimonides and Bismuthides – Promising Materials for Thermal-to-Electric Energy Conversion, \$50,000.

Dr. Michael Bockstaller, Carnegie Mellon University, Effect of Asymmetric Block Polydispersity on the Structure Formation and Mechanical Properties of Diblock Copolymers, \$50,000.

Dr. Stanko Brankovic, University of Houston, Structure - Property Relation of Monolayer Catalysts Obtained by Galvanic Displacement of Underpotentially Deposited Monolayers, \$50,000.

Dr. Matthias Brewer, University of Vermont, Fundamental Studies and Synthetic Applications of the Reaction of Hydrazones with 'Activated' Dimethyl Sulfoxide, \$50,000.

Dr. Jeffrey Catalano, Washington University, Iron Oxide Morphology and Composition as Possible Indicators of Sedimentary Redox Cycling, \$50,000.

Dr. Kevin Cavicchi, The University of Akron, Investigation of the Relationships Between the Morphology and Transport Properties of Sulfonated Block Copolymers Containing Glassy Hydrophobic Blocks, \$50,000.

Dr. Liwei Chen, Ohio University, Mechanism of Dielectric Property-Based Separation of Carbon Nanotubes, \$50,000.

Dr. Peng Chen, Cornell University, Single Au-Nanoparticle Catalysis at Single-Turnover Resolution, \$50,000.

Dr. Yong Chen, Purdue University, Experimental Studies of Graphene: Material Properties and Hydrogen Adsorption, \$50,000.

Dr. Eric Cochran, Iowa State University, Thermodynamics of Layered-Silicate/Block Copolymeric Nanocomposites via Self-Assembly, \$50,000.

Dr. Steven Corcelli, University of Notre Dame, Computational Studies of Hydrogen-Bond Dynamics in Methanol and Ethanol Probed by Ultrafast Infrared Spectroscopy, \$50,000.

Dr. Christopher Douglas, University of Minnesota, Development of Carbon-Carbon Bond Activation for Organic Synthesis, \$50,000.

Dr. Sergei Dzyuba, Texas Christian University, Ionic Liquid-Assisted Gelation of Organic Solvents, \$50,000.

Dr. Hani El-Kaderi, Virginia Commonwealth University, Synthetic Routes to Porous Polymers Containing Borazine and Diazaborole Building Blocks, \$50,000.

Dr. Joshua Figueroa, University of California, San Diego, Chelating Pyridyl Disulfide Ligands as Redox Modulators for Aerobic Oxidation, \$50,000.

Dr. Rebecca Flowers, University of Colorado, Targeted Geological Studies to More Rigorously Test Radiation Damage Control on Apatite (U-Th)/He Dates, \$50,000.

Dr. Pu-Xian Gao, University of Connecticut, A Systematic Study on Vapor-liquid-solid (VLS) Growth Process of Metal Oxide Nanodendrites, \$50,000.

Dr. Reza Ghiladi, North Carolina State University, Engineering Proteins for Facile Removal of Petroporphyrins from Crude Oil, \$50,000.

Dr. Brady Gibbons, Oregon State University, Advanced Transparent Conducting Materials for Thin Film Solar Cells, \$50,000.

Dr. Yi Gu, Washington State University, Effects of Hydrogen-Surface Interactions on Photogenerated Electron Diffusion in Zinc Oxide Nanowires, \$50,000.

Dr. Christopher Hartley, Miami University, Graphene Nanoribbons: Synthesis and Self-Assembly of Nanostructured Materials, \$50,000.

Dr. Michael Hickner, The Pennsylvania State University, Nanoporous Poly(aniline) Membranes for Size-Selective Separations, \$50,000.

Dr. Saswata Hier-Majumder, University of Maryland, Capillary Tension in Reactive Two-Phase Flow, \$50,000.

Dr. Zhangshuan Hou, University at Buffalo, State University of New York, Evaluating Overburden Impacts on Geophysical Responses and Their Applicability in Deep Water Reservoir Characterization Through Inverse and Forward Modeling, \$50,000.

Dr. Jiaying Huang, Northwestern University, Organic Nanowires: Morphological Engineering for Controlled Solid State Polymerization, \$50,000.

Dr. George Huber, University of Massachusetts Amherst, Biofuel Production by Aqueous-Phase Hydrogenation: A Combined Experimental and Theoretical Approach to Developing Improved Catalysts, \$50,000.

Dr. Elon Ison, North Carolina State University, Iridium (III) Complexes for Aerobic Oxidation, \$50,000.

Dr. Peng Jiang, University of Florida, Templated Subwavelength-Structured Antireflection Coatings for High-Efficiency Crystalline Silicon Solar Cells, \$50,000.

Dr. Shi Jin, City University of New York, College of Staten Island, Structure Engineering of Side Chain Perylene Tetracarboxylic Diimide Diblock Copolymers, \$50,000.

Dr. Rajesh Khare, Texas Tech University, Solvent-Temperature Superposition Rules for Predicting the Rheology of Wormlike Micellar Fluids, \$50,000.

Dr. Robert Klie, University of Illinois at Chicago, Using Atomic-Resolution Z-Contrast Imaging and Electron Energy-Loss Spectroscopy to Study the Role of Transition-Metal Promoters in Co-Based Fischer-Tropsch Heterogeneous Catalysts, \$50,000.

Dr. Marc Knecht, University of Kentucky, Biomimetic Synthesis of Heterogeneous Catalysts, \$50,000.

Dr. Suneel Kodambaka, University of California, Los Angeles, In Situ Electron Microscopy Studies of the Kirkendall Effect in Small Clusters, \$50,000.

Dr. LaShanda Korley, Case Western Reserve University, Hierarchically-Assembled Segmented Polyurethanes: Mechanical Reinforcement in a Multi-Phase Elastomeric System, \$50,000.

Dr. Delmar Larsen, University of California, Davis, Characterizing and Directing the Initial Dynamics in Multi-Component Solar Powered Water Splitting Inorganic Photocatalysts, \$50,000.

Dr. Kenneth Lau, Drexel University, Chemical Vapor Deposition Design and Synthesis of Polymers for Alternative Energies, \$50,000.

Dr. Taehun Lee, City University of New York, City College, Effects of Air Pressure and Wettability on Drop Impact on Dry Surfaces, \$50,000.

Dr. Heather Lewandowski, University of Colorado, Energy Transfer in a Trapped Gas of NH Molecules, \$50,000.

Dr. Liang-shi Li, Indiana University, A New Type of Discotic Liquid Crystals for Organic Solar Cells, \$50,000.

Dr. Matthew Liberatore, Colorado School of Mines, Nanoscale Characterization for Improving Turbulent Drag Reduction with Polymers, \$50,000.

Dr. Jianbo Liu, City University of New York, Queens College, Gas-Phase Reverse Micelles: Formation, Structure and Application, \$50,000.

Dr. Ryan Lopper, University of Utah, Addition-cycloisomerization of Propargylcyanamides; Efficient Access to the 2-aminoimidazole Core, \$50,000.

Dr. Vassiliy Lubchenko, University of Houston, Charge Transfer in Amorphous Photovoltaics and Energy Storage Media, \$50,000.

Dr. Norman Mannella, The University of Tennessee, Spectroscopic Studies of Thermoelectric Transition Metal Oxides, \$50,000.

Dr. Lindsay McHenry, University of Wisconsin-Milwaukee, Element Mobility During Zeolitic Alteration of Volcanic Ash: Implications for Tephra Correlation in Sedimentary Basins, \$50,000.

Dr. Anne McNeil, University of Michigan, Nickel-Catalyzed Polymerizations: Mechanistic Studies and New Reaction Development, \$50,000.

Dr. Julia Medvedeva, Missouri University of Science and Technology, Earth-Friendly Transparent Conducting Oxides From First-Principles Investigations: Calcium Aluminates, \$50,000.

Dr. Dennis Desheng Meng, Michigan Technological University, Demulsification of Water-Oil Emulsion by Nano-Structured Surfaces, \$50,000.

Dr. Matthew Meyer, University of California, Merced, Intramolecular and Intermolecular Kinetic Isotope Effects for Highly Stereoselective Oxazaborolidine Catalyzed Reductions, \$50,000.

Dr. Bahram Moasser, Georgetown University, Aqueous Metal-Ligand Bifunctional Hydrogenation of Carbon Dioxide, \$50,000.

Dr. Andrew Moran, University of North Carolina at Chapel Hill, Ultrafast Dynamics of Photoinduced Charge Injection in Dye-Sensitized Single Wall Carbon Nanotubes, \$50,000.

Dr. Dane Morgan, University of Wisconsin-Madison, Ab Initio Modeling of Fast Oxygen Conductors for Solid Oxide Fuel Cells, \$50,000.

Dr. Stephen Moysey, Clemson University, The Use of Electrical Measurements to Investigate Multiphase Flow Channeling During Reservoir Production, \$50,000.

Dr. Oscar Navarro, University of Hawaii at Manoa, Synthesis of Polymers for Photovoltaic Cells by Cross-Coupling Reactions Mediated by NHC-Palladium Complexes (NHC = N-Heterocyclic Carbene), \$50,000.

Dr. Ryan O'Hayre, Colorado School of Mines, Catalyst Engineering Using Support-Dopant Modification: Towards Intelligent Design of Catalyst Systems, \$50,000.

Dr. Wendy Panero, The Ohio State University, Carbon Sequestration in the Earth's Mantle, \$50,000.

Dr. Garegin Papoian, University of North Carolina at Chapel Hill, Investigating Topological Transitions Among Soft Mesoscopic Structures in Microemulsions with All-Atom and Coarse-Grained Simulations, \$50,000.

Dr. Weiqun Peng, George Washington University, Tracer Diffusion in Polymer Gels: Quenched Randomness and Thermal Fluctuations, \$50,000.

Dr. Janice Phillips, The University of Southern Mississippi, Effect of Naphthenic Acids on the Dielectric Response, Particle Aggregation, and Sedimentation Behavior of Asphaltene Suspensions, \$50,000.

Dr. Danilo Pozzo, University of Washington, Interfacial Structure and Stability of 'Pickering Emulsions' Subjected to Freeze-Thaw Cycling, \$50,000.

Dr. Nikolai Priezjev, Michigan State University, Numerical Modeling of Fluid Droplet Spreading and Contact Angle Hysteresis, \$50,000.

Dr. Weilin Qu, University of Hawaii at Manoa, Investigation of Flow Boiling Heat Transfer to Binary Mixtures in Micro-Channels, \$50,000.

Dr. Subramanian Ramakrishnan, Florida State University, Latex Composite Ultrafiltration Membranes, \$50,000.

Dr. Markus Raschke, University of Washington, Ultrahigh Spatial Resolution Infrared Spectroscopic Imaging of the Phase Behavior of Block-Copolymer Nanostructures, \$50,000.

Dr. Sundeep Rayat, Kansas State University, Substituent Effects on the Photochemistry of 1,4-Disubstituted Tetrazolethiones, \$50,000.

Dr. Alan Rempel, University of Oregon, Hydrate Distribution, Dissociation, and Growth in Sediments, \$50,000.

Dr. Nathaniel Rosi, University of Pittsburgh, DNA-Derived Building Blocks for the Construction of Porous Metal-Organic Framework Materials, \$50,000.

Dr. Daniel Seidel, Rutgers, The State University of New Jersey, Binuclear Metal Complexes as Asymmetric Catalysts, \$50,000.

Dr. Jared Shaw, University of California, Davis, Catalytic Alpha-Functionalization of Alkyl Nitriles, \$50,000.

Dr. Xiaodong Shi, West Virginia University, Development of Chiral Lewis Base as Novel Nucleophilic Catalysts and Their Application in Asymmetric Synthesis, \$50,000.

Dr. Zuzanna Siwy, University of California, Irvine, Measuring Ion Currents Carried by Ionic Liquids in Nanopores of Well-defined Geometry and Surface Chemistry, \$50,000.

Dr. Scott Snyder, Columbia University, The Development of New Halogenation Reactions of Broad Utility, \$50,000.

Dr. Pablo Sobrado, Virginia Polytechnic Institute and State University, Studies on Group 5 Diiron Monooxygenases: Insight into the Mechanism of Regulation of the Diiron Center, \$50,000.

Dr. Corey Stephenson, Boston University, Synthesis of Chiral Allenyl Ethers: Memory of Chirality in the Cyclization Reactions of Oxyallyl Cations, \$50,000.

Dr. Ying Sun, State University of New York at Binghamton, Effect of External Flow Fields on Self-Assembly of Colloidal Suspensions: Modeling and Experiments, \$50,000.

Dr. Izabela Szlufarska, University of Wisconsin-Madison, Atomistic Simulations of Tribological Properties of Ultra-Nanocrystalline Diamond, \$50,000.

Dr. Yayoi Takamura, University of California, Davis, Superlattices of Perovskite Structured Materials for Solid Oxide Fuel Cells, \$50,000.

Dr. Dimitri Talapin, University of Chicago, Solution-Processed Inorganic Semiconductors for Thin-Film Photovoltaics, \$50,000.

Dr. Weiping Tang, University of Wisconsin-Madison, Catalytic Enantioselective Halogenation of Olefins, \$50,000.

Dr. Michael Tauber, University of California, San Diego, Terahertz Time-Domain Spectroscopy of Organic Molecular Films, \$50,000.

Dr. Michael Taylor, University of Kansas, Evolution of Active Extensional Basins in the Hinterlands of Orogenic Plateaus; Implications for Petroleum Reservoir Exploration, \$50,000.

Dr. Alexei Tivanski, University of Iowa, Fundamental Investigations of the Molecular Basis of Conductance in Flexible Polymer/Metal Nanostructures, \$50,000.

Dr. Mesfin Tsige, Southern Illinois University at Carbondale, Surface Properties of Fluorinated and Semifluorinated Alkanes, \$50,000.

Dr. Remke Van Dam, Michigan State University, Three-Dimensional Stratigraphic Models of Sedimentary Deposits Using Full-Resolution Ground-Penetrating Radar, \$50,000.

Dr. Latha Venkataraman, Columbia University, Understanding Electronic and Thermal Transport at the Single Molecule Scale, \$50,000.

Dr. Alexey Vertegel, Clemson University, Immobilization of Enzymes on Nanoparticles for Catalysis in Non-aqueous Media, \$50,000.

Dr. Petia Vlahovska, Dartmouth College, Effect of Surfactant on Drop Electrohydrodynamics, \$50,000.

Dr. Jessica Whiteside, Brown University, Molecule-Specific Investigation of Lake-Level and Ecosystem Control of Organic Matter Sources in Oil Shale of the Green River Formation, Wyoming, Colorado, and Utah, \$50,000.

Dr. Travis Williams, University of Southern California, A Heterobimetallic Catalyst for C-C Bond Formation from C-H Precursors, \$50,000.

Dr. Pak Wong, University of Arizona, Diffusion of Structured Polymers in Confined Environments, \$50,000.

Dr. Shoujun Xu, University of Houston, Optically-Detected Magnetic Resonance Imaging for Fluids in Porous Materials, \$50,000.

Dr. Ting Xu, University of California, Berkeley, Microdomain Orientation of Diblock Copolymer-Based Supramolecules in Thin Films, \$50,000.

Dr. Tao Ye, University of California, Merced, Dynamic Surfaces and Directional Nanoscale Motion, \$50,000.

Dr. Yadong Yin, University of California, Riverside, Magnetically Recoverable Catalysts Using Hierarchical Magnetite/Silica Nanoassemblies as Supports, \$50,000.

Dr. Xiangwu Zhang, North Carolina State University, Protonic-Electronic Mixed-Conducting Nanofibers for Energy Conversion, \$50,000.

Dr. Jie Zheng, The University of Akron, Molecular Simulation Study of Transport and Adsorption of Liquids through Nanoporous Block Copolymers, \$50,000.

Dr. Kirk Ziegler, University of Florida, Improving Photoactive Surface Area of Dye-Sensitized Solar Cells Through Supercritical Fluid Dye Penetration, \$50,000.

Dr. Shengli Zou, University of Central Florida, Theoretical Investigation for the Enhanced Absorption of Nanostructured Semi-Conductor Materials, \$50,000.

Type GB

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

- Dr. Janet Asper**, University of Mary Washington, A New Solution Phase Protecting Group Strategy for Alkyl Guanidines, \$50,000.
- Dr. Zerihun Assefa**, North Carolina Agricultural and Technical State University, Disruption of Metal-Metal Interactions and Extended Linear Chains by Organic Solvent Molecules, \$50,000.
- Dr. Jason Belitsky**, Oberlin College, Synthesis of Indole Oligomers Via Iterative Suzuki Couplings, \$50,000.
- Dr. Benny Chan**, The College of New Jersey, Building Block Approach to Designing Chalcogenide Materials, \$50,000.
- Dr. Timothy Clark**, Western Washington University, Chelation Directed C-H Functionalization Reactions with Ruthenium Boryl Complexes, \$50,000.
- Dr. Stephen Contakes**, Westmont College, Bio-Inspired Two-Site Bimetallic Hydrocarbon Activation Catalysts, \$50,000.
- Dr. Elizabeth Davie**, Assumption College, New Synthetic Methodology for Ring Formation, \$50,000.
- Dr. Angela Dickens**, Mount Holyoke College, Understanding the Formation of a Major Terrestrial Carbon Sink: A Molecular Isotopic Study of an Andean Watershed, \$50,000.
- Dr. Lifeng Dong**, Missouri State University, A Novel Approach for Controlled Synthesis of Single-Walled Carbon Nanotube-Supported Pt Nanoparticle Catalysts and Electrochemical Properties, \$50,000.
- Dr. C. Downey**, University of Richmond, Synthesis of Chiral Carboxylic Acid Derivatives via Three-Component Coupling Reactions with Ynoate Electrophiles, \$50,000.
- Dr. Jussi Eloranta**, California State University, Northridge, Spectroscopy of Polycyclic Aromatic Hydrocarbons in Bulk Superfluid 4He , \$50,000.
- Dr. Christine Hahn**, The University of Texas of the Permian Basin, Mechanistic Studies on Organogold Complexes. Toward the Development of Novel Homogeneous Catalysts for C-O, C-N, and C-C Bond Formations, \$50,000.
- Dr. Eric Hawrelak**, Bloomsburg University of Pennsylvania, Catalytic Synthesis of Biologically Active Heterocycles with Organocobalt Complexes, \$50,000.
- Dr. Istvan Kiss**, St. Louis University, Description of Complicated Reaction Systems with Optimal Mathematical Complexity: Experimental Applications to Electrocatalytic Water Gas Shift Reaction and Hydrogen Oxidation, \$50,000.
- Dr. Yvette Kuiper**, Boston College, Deformation Mechanisms and History of the Purgatory Conglomerate, Rhode Island, \$50,000.
- Dr. Hee-Seung Lee**, University of North Carolina at Wilmington, Ab Initio Studies on the Catalytic Roles of Platinum-Doped Carbon Nanotubes in Fuel Cell Electrodes, \$50,000.
- Dr. Richard Lepkowitz**, Rose-Hulman Institute of Technology, Determination of the Aggregation Propensity of Small to Large Chromophores of Asphaltene Using an Excited-State Absorption Correlation Spectroscopy Microscope, \$50,000.
- Dr. James MacKay**, Elizabethtown College, Enantioselective Nucleophilic Catalysis for the Synthesis of beta-Lactams and other Nitrogen Containing Heterocycles from Isocyanates, \$50,000.
- Dr. John Magyar**, Barnard College, Metal Uptake and Regulation in a Methanogenic Microorganism Isolated from the Rancho La Brea Tar Pits, \$50,000.
- Dr. Ryan McCulla**, St. Louis University, Atomic Oxygen $\text{O}(3\text{P})$: Photogeneration and Reactions with Biomolecules in Aqueous Media, \$50,000.
- Dr. Catherine Oertel**, Oberlin College, Solvothermal Synthesis of Inorganic-Organic Network Materials Based on Tetrathiometalate (MS_4^{2-} , M = Mo, W) Anions, \$50,000.

Dr. Nate Onderdonk, California State University, Long Beach, Sedimentary Basin Inversion in Rotational Tectonics, \$50,000.

Dr. Michael Rygel, State University of New York at Potsdam, Alluvial Architecture of the Springhill Mines and Ragged Reef Formations: Fluvial Reservoir Characteristics Linked to Paleogeomorphology, \$50,000.

Dr. Matthew Schrenk, East Carolina University, Quantifying Pressure Effects Upon Anaerobic Petroleum Biodegradation, \$50,000.

Dr. Radu Semeniuc, Eastern Illinois University, Novel Organic-Inorganic Hybrid Cage Architectures Incorporating Azacrown Ethers and 1,3,5-Triazine Scaffolds, \$50,000.

Dr. Noah Snyder, Boston College, Dam-Controlled River Deltas as Meso-Scale Analogues for Offshore Sedimentary Systems, \$50,000.

Dr. Thomas Sommerfeld, Southeastern Louisiana University, Excess Electrons Bound to Ammonia Clusters and Nano-Droplets: *Ab Initio* Calculations, Model Development, and Simulation, \$50,000.

Dr. Gillian Stewart, City University of New York, Queens College, The Roughage Effect of Mineral Material on Marine Grazers: Potential Implications for the Global Carbon Cycle, \$50,000.

Dr. Alycia Stigall, Ohio University, Using Genetic Modeling of Sedimentary Parameters to Predict Species' Geographic Range Shifts in Response to Environmental Change, \$50,000.

Dr. John Thurston, Albertson College of Idaho, Molecular Models for Bi/Mo Oxidation Catalysts, \$50,000.

Dr. David Vosburg, Harvey Mudd College, Rapid, Controlled Assembly of Polyenes for Studying Pericyclic Reaction Cascades, \$50,000.

Dr. John York, Stetson University, Investigating Copper-Thiophene Binding Interactions: Impact on the Desulfurization of Hydrocarbon Fuels by Adsorption Processes, \$50,000.

Dr. Rui Zhang, Western Kentucky University, Generation and Kinetic Studies of High-Valent Metal-Oxo Intermediates, \$49,948.

Type SE**ACS PRF Grants for Scientific Education**

Dr. Christer Aakeroy, Midwest Organic Solid-State Chemistry Symposium XIX, Midwest Organic Solid-State Chemistry Symposium XIX, June 6-7, 2008, Manhattan, KS, \$2,400.

Dr. Rigoberto Advincula, ACS Division of Polymer Chemistry, US-Japan POLYMAT 2008 Summit: Innovations and Opportunities in Polymer Materials for Energy and Optoelectronic Devices, August 10-13, 2008, Ventura Beach, CA, \$3,600.

Dr. Mu-Hyun Baik, ACS Division of Physical Chemistry, Advances in the Electronic Structure of Transition Metal Systems and Organometallics, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Partha Basu, ACS Division of Inorganic Chemistry, Frontiers in Metal Dithiolene Chemistry, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Dor Ben-Amotz, ACS Division of Physical Chemistry, Water Mediated Interactions, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$2,400.

Dr. David Berkowitz, ACS Division of Organic Chemistry, Advances in Combinatorial Catalysis and Screening, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Frank Blum, ACS Division of Polymer Chemistry, Organic/Inorganic Hybrid Materials II, at the ACS Polymer Division Workshop, March 2-5, 2008, Ventura, CA, \$3,600.

Dr. Jay Brandes, Skidaway Institute of Oceanography, Unknown Knowns and Known Unknowns: Chemical Oceanography in a Changing World, Savannah, GA, Feb. 24-28, 2009, \$3,600.

Dr. Shaowei Chen, Federation of Analytical Chemistry and Spectroscopy Societies, Electron Transfer Chemistry and Nanostructured Materials, at the 35th FACSS Meeting, Sept. 28-Oct. 2, 2008, Reno, NV, \$3,600.

Dr. Jingguang Chen, ACS Division of Colloid and Surface Chemistry, Biological and Biomimetic Interfacial Electron Transfer, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$1,200.

Dr. Louise Criscenti, ACS Division of Geochemistry, Advanced Approaches to Investigating Adsorption at the Solid-Water Interface, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$2,400.

Dr. Cathleen Crudden, CSC Division of Inorganic Chemistry, Advances in Catalysis Towards New Materials and Energy Sources, at the 91st Canadian Chemistry Conference and Exhibition, May 24-28, 2008, Edmonton, Alberta, \$2,400.

Dr. Alan English, ACS Division of Polymer Chemistry, NMR Spectroscopy of Polymers, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Lucio Frydman, ACS Division of Physical Chemistry, Fundamental Advances in Contemporary NMR Spectroscopy, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Michael Fryzuk, ACS Division of Inorganic Chemistry, Activation of Dinitrogen: Past, Present and Future, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$2,400.

Dr. Daniel Giammar, The Geochemical Society Inc., Molecular-Scale Chemical and Biogeochemical Processes Affecting the Mobility of Metal and Radionuclide Contaminants in the Subsurface, 2008 Goldschmidt Conference, July 13-18, Vancouver, BC, \$2,400.

Dr. Philip Grandinetti, Rocky Mountain Conference on Analytical Chemistry, NMR Symposium, at the Rocky Mountain Conference on Analytical Chemistry, July 27-31, 2008, Breckenridge, CO, \$3,600.

Dr. Lyal Harris, Structural Geology & Tectonics Division GAC, Physical Simulations in Geosciences: Applications of New Technologies, at the Annual Meeting of the Geological Association of Canada, May 26-28, Quebec City, Canada, \$2,400.

Dr. Douglas Henderson, ACS Division of Physical Chemistry, Inhomogeneous Electrolytes, at the ACS Northwest/Rocky Mountain Regional Meeting, June 2008, Park City, UT, \$3,600.

Dr. Nancy Hensel, Council on Undergraduate Research, The Role of Primarily Undergraduate Institutions in Transformative Research, \$5,000.

Dr. Cecilia Hernandez, American Chemical Society - Project SEED, ACS Project SEED Summer Experiences for Economically Disadvantaged High School Students, \$50,000.

Dr. Alan Heyduk, ACS Division of Inorganic Chemistry, Guilty Pleasures: The Joys of Metal Complexes of Non-Innocent, Redox-Active Ligands, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Robin Hicks, CSC Division of Inorganic Chemistry, Main Group Chemistry: a Symposium in Honour of Neil Burford, Tris Chivers, and Rich Oakley, at the Canadian Chemistry Conference and Exhibition, May 24-28, 2008, Edmonton, Alberta, Canada, \$3,600.

Dr. Dennis Hore, CSC, Division of Analytical Chemistry, Spectroscopy at Surfaces and Interfaces, at the Canadian Society for Chemistry Conference, May 24-28, 2008, Edmonton, Alberta, \$1,200.

Dr. Jennifer Irvin, ACS Division of Polymeric Materials: Science and Engineering, Electroactive Polymers for Energy Conversion and Storage, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Philip Jessop, ACS Division of Industrial and Engineering Chemistry, Ionic Liquids for Liquid Separations, at the 236th ACS National Meeting, \$2,400.

Dr. Richard Johnson, UNC-CH, 32nd Reaction Mechanisms Conference, June 25-28, 2008, Chapel Hill, NC, \$3,600.

Dr. Anatoly Kolomeisky, ACS Division of Physical Chemistry, Recent Advances in Biophysical Chemistry of Transport by Biomolecular Motors and Machines, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$1,200.

Dr. P. Leahy, American Geological Institute, American Geological Institute's Minority Participation Program, \$75,000.

Dr. Yuri Lvov, ACS Division of Polymeric Materials: Science and Engineering, Nanoassembly-from Fundamentals to Applications, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$2,400.

Dr. Brian Mather, ACS Division of Polymer Chemistry, Branched Polymers in Emerging Technologies, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Krzysztof Matyjaszewski, ACS Division of Polymer Chemistry, Controlled/Living Radical Polymerization, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Jimmy Mays, ACS Division of Polymer Chemistry, Polymer Surfaces and Interfaces: Loops, Branches, and Brushes, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Gordon Miller, ACS Division of Inorganic Chemistry, 2008 F.A. Cotton Award Symposium celebrating Prof. John D. Corbett, Iowa State University, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$2,400.

Dr. Sergiy Minko, ACS Division of Polymeric Materials: Science and Engineering, Responsive and Interactive Polymer Materials and Multicomponent Systems, at the ACS National Meeting August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Alexander Morgan, ACS Division of Polymeric Materials: Science and Engineering, Fire and Polymers 2008, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Ralf Peetz, MARM ACS, Engineered Polymeric Materials, at the Middle Atlantic Regional Meeting (MARM 2008), May 17-21, 2008, Bayside, NY, \$2,400.

Dr. Marina Petrukhina, ACS Division of Inorganic Chemistry, Fullerene Fragments and Carbon Nanotubes: Designed Synthesis, Unusual Reactions, and Coordination Chemistry, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$3,600.

Dr. Edward Rosenberg, University of Montana, 4th International Symposium on Bioorganometallic Chemistry, July 6-10, 2008, Missoula, MT, \$2,400.

Dr. Brenda Ross, Clay Minerals Society, Clay Minerals Society Awards Symposium at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$2,400.

Dr. Ira Sasowsky, Karst Waters Institute, Karst from Recent to Reservoirs: International Conference on Paleokarst and Multi-Permeability Flow Systems, June 7-10, 2008, Rapid City, SD, \$3,600.

Dr. George Schatz, ACS Division of Physical Chemistry, Centennial Symposium of the Physical Division of the American Chemical Society, at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$2,400.

Dr. Peter Stair, ACS Division of Petroleum Chemistry, George A. Olah Award in Hydrocarbon or Petroleum Chemistry: Symposium in Honor of Israel E. Wachs, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. James Stivers, ACS Division of Biological Chemistry, (I) Pfizer Award Symposium in Honor of Carsten Krebs (II) Unnatural Amino Acids: Changing Nature's Catalytic Repertoire, (III) Nucleic Acid Chemical Biology at the ACS National Meeting, August 17-21, 2008, Philadelphia, PA, \$1,200.

Dr. Timothy Swager, Massachusetts Institute of Technology, Future Faculty Workshop: Diverse Leaders of Tomorrow, \$10,000.

Dr. Robert Tilton, ACS Division of Colloid and Surface Chemistry, Surfactants from Renewable Resources, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Wilfred Tysoe, ACS Division of Colloid and Surface Chemistry, Symposium Honoring 2008 Arthur W. Adamson Award Winner, Francisco Zaera, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Christoph Weder, ACS Division of Polymer Chemistry, Stimuli Responsive Polymers, at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$3,600.

Dr. Hongcai Zhou, ACS Division of Inorganic Chemistry, Metal-Organic Frameworks: What Are They Good for? at the ACS National Meeting, April 6-10, 2008, New Orleans, LA, \$2,400.

Type UFS**Undergraduate Faculty Sabbaticals**

Dr. Bert Chandler, Trinity University, Preparation and Characterization of Supported Nanoparticle Catalysts for Biorenewables Conversion.

Dr. Paul Fischer, Macalester College, Exploration of New, Highly Nucleophilic Group VI Metal Carbonyl Anions as Tunable Precursors for Transition Metal Boranes with Unsupported M-B Dative Bonds.

Dr. Andrew Sykes, University of South Dakota, Characterization of Proton-Conducting Membrane Materials for Fuel Cell Applications.

Type SRF

Summer Research Fellowships

Type AC

Dr. Derek Briggs, Yale University, Structural, Molecular and Isotopic Composition of Organic Fossils and Their Relationship to Modern Counterparts: Role of Lipids in Kerogen Formation, \$8,000.

Dr. R. Karl Dieter, Clemson University, Asymmetric Synthesis via Organocopper Chemistry, \$8,000.

Dr. Carey Johnson, University of Kansas, Investigation of Dye-Protein Interactions and Optimization of Fluorescence-Based Assays for Target Binding of Calmodulin, \$8,000.

Dr. Richard Jones, The University of Texas at Austin, Thin Film Growth of Amorphous Metal-Phosphorus Alloys, \$8,000.

Dr. Gerald Meyer, The Johns Hopkins University, Photogeneration of Reduced Catalysts with Vibrationally Hot Electrons, \$8,000.

Dr. Monica Olvera de la Cruz, Northwestern University, Charge Heterogeneities in Cationic-Anionic Co-Assemblies, \$8,000.

Dr. Dmitrii Perepichka, McGill University, Surface Confined Polymerization: Towards 2-D Conjugated Organic Polymers, \$8,000.

Dr. Luis Smith, Clark University, Determining the Effect of Local Structure on Acidity in High Surface Area Oxides, \$8,000.

Dr. Timothy White, The Pennsylvania State University, Vitrinite Reflectance, Basin Thermal History, and a Link to Seafloor Methane Seeps, Cretaceous Western Interior Basin, United States, \$8,000.

Dr. Xiaoxiang Zhang, University of South Florida, Bio-Inspired Cobalt Catalysts for Carbene and Nitrene Transfer Reactions, \$8,000.

Type B

Dr. Colin Abernethy, Keene State College, Investigation of the Lewis Acidic Properties of N-Heterocyclic Carbene Ligands and Their Implications for Catalysis, \$8,000.

Dr. Dhiraj Sardar, The University of Texas at San Antonio, Synthesis, Photoluminescence, and Laser Characteristics of Rare Earth Ions Embedded in HEMA, a Polymeric Plastic Host, \$8,000.

Type G

Dr. Ilya Bindeman, University of Oregon, Rare Oxygen and Sulfur Isotopes of Volcanogenic Sulfate Aerosols in Sedimentary Rocks as a Robust Correlation Tool, \$8,000.

Dr. Margaret Cheung, University of Houston, Hydrophobic Interaction in Surfactants and Hydrocarbons from the Pore Scale to the Reservoir Scale, \$8,000.

Dr. Louis Madsen, Virginia Polytechnic Institute and State University, Solute Morphology And Transport In Polymeric Fuel Cell Materials, \$8,000.

Dr. Slava Rotkin, Lehigh University, Theoretical Investigation of Ionomeric Polymer-Nanotube Composites as Novel Materials for Solar Energy Applications, \$8,000.

Dr. Terry Xu, University of North Carolina at Charlotte, Novel Boron-Based Nanomaterials for Thermoelectric Energy Conversion, \$8,000.

Type GB

Dr. Alexander Simms, Oklahoma State University, Controls on the Development of Mixed Siliciclastic/Carbonate Under-Filled Incised Valleys: Lessons from the Late Pleistocene/Holocene History of Baffin Bay, Texas, \$8,000.

Type SUMR

Supplements for Underrepresented Minority Research

Type AC

Dr. Catalina Achim, Carnegie Mellon University, Investigation of Polynuclear Transition Metal Complexes with Spin Transition, \$5,000.

Dr. Anthony Dixon, Worcester Polytechnic Institute, Connecting Catalytic Chemistry to External Particle Conditions via Computational Fluid Dynamics, \$5,000.

Dr. John Dorgan, Colorado School of Mines, Non-Equilibrium Nanoblends for Petrochemical Separations, \$5,000.

Dr. Daniel Dyer, Southern Illinois University at Carbondale, Design and Synthesis of Liquid Crystalline Polymer Brush Films, \$5,000.

Dr. Bruce Garetz, Polytechnic University, Laser- and Electric-Field-Induced Nucleation in Supersaturated Solutions and Supercooled Melts, \$5,000.

Dr. T. Gunnoe, North Carolina State University, Development of Catalytic Reactions using Well-Defined Monomeric Cu(I) Complexes with Non-Dative Heteroatomic Ligands: Fundamental Exploration of Scope and Mechanism of C-X (X = N, O or S) Bond Forming Reactions, \$5,000.

Dr. Richard Jones, The University of Texas at Austin, Thin Film Growth of Amorphous Metal-Phosphorus Alloys, \$5,000.

Dr. Douglass Kalika, University of Kentucky, Investigation of Structure and Dynamics in Novel Nanocomposite Membranes, \$5,000.

Dr. Michael Kessler, Iowa State University, ROMP Healing Agent Development for Self-Healing Materials, \$5,000.

Dr. Nicholas Leadbeater, University of Connecticut, Development of Coupling Reactions Catalysed by Ultra-Low Concentrations of Metal Catalysts Using Microwave Heating, \$5,000.

Dr. Thomas Livinghouse, Montana State University, Asymmetric Hydroamination Catalyzed by Non-Metallocene Complexes of the Group III and Group IV Metals, \$5,000.

Dr. Leonard MacGillivray, University of Iowa, Natural Ladderane Lipids via Template-Controlled Solid-State Reactions, \$3,700.

Dr. William Malachowski, Bryn Mawr College, Sequential Birch Reduction-Allylation/Cope Rearrangement for the Enantioselective Construction of Carbocyclic Quaternary Stereogenic Centers, \$5,000.

Dr. Jordan Poler, University of North Carolina at Charlotte, Synthesis of Novel Metallodendrimers for Electron Transfer Processes at Nanoscale Interfaces, \$5,000.

Dr. John Protasiewicz, Case Western Reserve University, A New Twist on Pincer Complexes for Catalysis, \$5,000.

Dr. Shahab Shamsi, Georgia State University, Synthesis Characterization and Fundamental Studies of Novel Chiral Ionic Liquid and Their Polymers, \$5,000.

Dr. Sergey Vyazovkin, University of Alabama at Birmingham, Nanostructuring and Thermal Behavior of Polymers: Toward Improving Longevity of Important Petroleum Derived Products, \$5,000.

Dr. Richard Weiss, Georgetown University, Chiral and Prochiral Singlet Biradical Pairs as Probes of Reaction Cages in Polymer Films, \$5,000.

Dr. John Welch, State University of New York at Albany, The Preparation of Optically Active Pentafluorosulfanylated Building Blocks: Selectivity and Reactivity in Synthesis, \$5,000.

Dr. Xiaoxiang Zhang, University of South Florida, Bio-Inspired Cobalt Catalysts for Carbene and Nitrene Transfer Reactions, \$5,000.

Type B

Dr. Cecilia Anaya de Parrodi, Universidad de las Americas, Puebla, Design of Nitrogen, Phosphorus and/or Sulfur-based Catalysts for the Enantioselective Hydrosilylation of Prochiral Ketones., \$5,000.

Dr. Chad Booth, Texas State University-San Marcos, New Membranes for Enhanced Purification of Natural Gas at the Wellhead, \$5,000.

Dr. Timothy Hanks, Furman University, Topotactic Polymerization of Diacetylene-Containing SAMs as a Method for Surface-Derivatization of Nanoparticles, \$5,000.

Dr. Evan Lemley, University of Central Oklahoma, Simulation and Experimental Investigation of Energy Losses in Dividing Flow, \$3,500.

Dr. Carol Parish, University of Richmond, A Computational Investigation of Molecular Recognition and Binding Free Energies in Host-Guest Systems, \$5,000.

Dr. J. Rawling, University of Wisconsin-Platteville, Quaternary Eolian Stratigraphy of the Central Plain of Wisconsin, \$5,000.

Dr. Michael Roth, University of Northern Iowa, Better Understanding the Behavior of Hexane Deposited onto Graphite Using Improved Computer Simulations, \$5,000.

Dr. Keith Russell, Northern Kentucky University, Ion Sensitive Push-Pull Pyridoannulenes, \$4,000.

Dr. Bela Torok, University of Massachusetts-Boston, Asymmetric Heterogeneous Catalytic Hydrogenations, \$5,000.

Type G

Dr. Luis Ayala, The Pennsylvania State University, Characterizing Multiphase Transport and Flow Dynamics in Complex Natural Gas Network Topologies, \$5,000.

Dr. Shawn Burdette, University of Connecticut, Investigation of O₂ Activation with Metallodendrimer Models of Copper Monooxygenases, \$5,000.

Dr. Barry Dunietz, University of Michigan, Control of Molecular Organo-metallics Conductance via Changes in the Ligation Scheme, \$5,000.

Dr. Reza Ghiladi, North Carolina State University, Engineering Proteins for Facile Removal of Porphyrins from Crude Oil, \$4,000.

Dr. Ksenija Glusac, Bowling Green State University, Controlled Electron Transfer in Hydrogen Bonded Systems, \$5,000.

Dr. Bradley Holliday, The University of Texas at Austin, Rhodium-containing Conducting Metallopolymers: Utilizing Electronic Changes on the Polymer Backbone to Remotely Attenuate Metal-ligand Interactions, \$5,000.

Dr. Sukwon Hong, University of Florida, Chiral Acyclic Carbene Ligands for the Asymmetric Suzuki Coupling Reaction, \$5,000.

Dr. Jeremy Hourigan, University of California, Santa Cruz, Quantifying Sediment Dispersal Rates in a Transcontinental Drainage Using Zircon U/Pb: (U-Th/He) Chronometry, Amazon River, \$5,000.

Dr. Shi Jin, City University of New York, College of Staten Island, Structure Engineering of Side Chain Perylene Tetracarboxylic Diimide Diblock Copolymers, \$5,000.

Dr. Zuleima Karpyn, The Pennsylvania State University, Estimation of Macroscopic Fracture Transport Properties from Micro-Scale Flow Structures and Fracture Geometry, \$5,000.

Dr. Aaron Massari, University of Minnesota, Structural Dynamics in Conducting Polymer Systems Probed with In-Situ Electrochemical Two-dimensional Infrared Spectroscopy, \$5,000.

Dr. Amy Prieto, Colorado State University, Ionic Liquids: Versatile Solvent Systems for Nanoparticle Synthesis, \$5,000.

Dr. Beatriz Roldan Cuenya, University of Central Florida, Gas-Phase Heterogeneous Catalysis on Metal Nanoparticles: Size-Dependence, \$5,000.

Dr. Slava Rotkin, Lehigh University, Theoretical Investigation of Ionomeric Polymer-Nanotube Composites as Novel Materials for Solar Energy Applications, \$5,000.

Dr. Sachin Shanbhag, Florida State University, Modeling the Crystallization of Polymers from Solutions and Melts, \$5,000.
Dr. Linda Shimizu, University of South Carolina, Functional Zippers to Organize Synthetic and Biological Polymers, \$5,000.
Dr. Rhett Smith, Clemson University, Tunable Ligands for Rhodium-Catalyzed Hydroformylation, \$5,000.
Dr. Ming Su, University of Central Florida, Structure-Performance Correlations in Nanocolumn-Array Supported Nanoparticle Films for Solar Energy Conversions, \$5,000.
Dr. Sergey Vasenkov, University of Florida, Molecular Transport on Various Length Scales in Novel Nanostructured Porous Materials with a Hierarchy of Pore Sizes, \$5,000.
Dr. Alexey Vertegel, Clemson University, Immobilization of Enzymes on Nanoparticles for Catalysis in Non-aqueous Media, \$4,179.

Type GB

Dr. Jon Antilla, University of South Florida, Brønsted Acid-Catalyzed Asymmetric Additions to Imines, \$5,000.
Dr. Di Gao, University of Pittsburgh, Investigating the Stability of Interfacial Films in Crude Oil Emulsions by Light Transmission Through Gold Nanoholes, \$5,000.
Dr. Kimberly Henthorn, Missouri University of Science and Technology, Effect of Particle Properties on Particle Entrainment in Liquid Flow, \$5,000.
Dr. Christopher Hyland, California State University, Fullerton, Synthesis and Transition Metal-Catalyzed [3+2] Cycloadditions of Methyleneaziridines, \$5,000.
Dr. Chang Ji, Texas State University-San Marcos, Synthesis of Thionitrites Using Electrogenerated Cobalt(I) Salen as the Mediator, \$5,000.
Dr. Brent Krueger, Hope College, Simulating Linear and Nonlinear Optical Spectra in Condensed Phase Systems with a Mixed Molecular Dynamics and Quantum Mechanical Method, \$5,000.
Dr. Jeremy Kua, University of San Diego, Boron-Containing Covalent Organic Frameworks: Simulating Dynamics of Self-Assembly, \$3,735.
Dr. Anna Larsen, Ithaca College, Advancing Organometallic Catalysis via Incorporating Weakly-Coordinating Carborane Anions into Cationic Half-Sandwich Electrophilic Complexes, \$5,000.
Dr. Joshua Lawrence, Centenary College of Louisiana, Scope and Mechanism of Aromatic Perfluoroalkylation by Iron Reagents, \$5,000.
Dr. Sunghee Lee, Iona College, Fundamental Studies on the Interfacial Properties of Individual Aqueous Microdroplets in Hydrocarbons, \$5,000.
Dr. Jose Lopez, Saint Peter's College, Fundamental Studies of Plasmas Generated and Maintained in Spatially Confined Geometries: Capillary Plasma Electrode Discharges, \$5,000.
Dr. Jocelyn Nadeau, Marist College, Probing Through-Space Charge Migration in Segmented Conducting Polymers, \$5,000.
Dr. Robert Sammelson, Ball State University, Borohydrides as Reagent and Catalyst in Carbon-Carbon Bond Formation, \$4,000.
Dr. Henry Scott, Indiana University South Bend, Mantle Generation of Heavy Hydrocarbons, \$5,000.
Dr. Hua Zhao, Savannah State University, Effect of Ionic Liquid Properties on the Enzyme Stabilization Under Microwave Radiation, \$5,000.