

Henry Dreyfus Teacher-Scholar Awards Program

<u>Institution</u>	<u>Awardee</u>	<u>Department</u>	<u>Area of Interest</u>
2006			
College of the Holy Cross	Kimberley A. Frederick	Chemistry	Studies of flow processes in microfluidic systems involving polyelectrolyte multilayers, thermoresponsive polymers and guanosine gels
Macalester College	Keith T. Kuwata	Chemistry	Computational studies of oxidation intermediates that serve as aerosol precursors and free radical sources in the troposphere
Mount Holyoke College	Wei Chen	Chemistry	Probing the Fundamentals of Wetting and Biocompatibility for the Design of New Materials
The College of William and Mary	John C. Poutsma	Chemistry	Investigation the consequences of non-protein amino acid substitution on the thermochemistry and fragmentation patterns of small peptides
University of North Carolina at Wilmington	Michael Messina	Chemistry and Biochemistry	Viewing enzyme active sites as "quantum controllers" of proton transfer, we propose a quantum control study of the quantum dynamics of proton transfer and tunneling in enzyme active sites.
University of South Alabama	David C. Forbes	Chemistry	Thermally induced decarboxylation of carboxymethylsulfonium betaines results in formation of the corresponding sulfur ylides in situ.
University of Wisconsin-Eau Claire	Stephen Drucker	Chemistry	We will use jet-cooled cavity ringdown spectroscopy to characterize a series of cyclic enones in their triplet excited states.

2005			
Barnard College	Linda H. Doerrer	Department of Chemistry	Transition metal complexes with fluorinated aryloxy ligands are investigated for reactivity with strongly oxidating reagents and potential organic substrate oxidation.
Furman University	Jeffrey T. Petty	Department of Chemistry	Small silver and platinum nanoclusters will be investigated for their potential use as fluorescent biological labels and as chiral catalysts.
Mount Holyoke College	Darren G. Hamilton	Chemistry	Design, synthesis, and characterization of self-organizing molecular systems expressing useful emergent properties.
New Mexico Institute of Mining and Technology	Donald H. Weinkauf	Department of Chemical Engineering	Conformal plasma polymer coatings for the surface modification of micron and nanoscale particles: reactor design and coating characterization
State University of New York at Geneseo	Wendy K. Pogozelski	Chemistry	We will measure deletion events in mitochondrial DNA as a function of gamma ray dose and investigate the effect on NADH:Q oxidoreductase.
Swarthmore College	Kathleen P. Howard	Department of Chemistry and Biochemistry	Development and application of spectroscopic methods (NMR and EPR) to the conformational analysis of membrane-bound viral proteins

Henry Dreyfus Teacher-Scholar Awards Program

<u>Institution</u>	<u>Awardee</u>	<u>Department</u>	<u>Area of Interest</u>
University of Richmond	Carol A. Parish	Department of Chemistry	Computational investigations of biologically important systems: Determining the conformational flexibility of HIV protease inhibitors and the cyclization barriers in enediyne warhead drugs.
2004			
Amherst College	Sandra L. Burkett	Chemistry	Polymerization from inorganic lamellae: nanocomposites of polymer brushes and organically functionalized synthetic clays.
Bates College	Rachel N. Austin	Chemistry	The reaction mechanisms and active site structures of diiron monooxygenases.
California State University, Los Angeles	Matthias Selke	Chemistry & Biochemistry	The reactivity, kinetics, and mechanisms of singlet oxygen reactions with metal-bound amino acids and heteroatoms.
Colby College	Julie T. Millard	Chemistry	Small molecule-DNA interactions with an emphasis on the mechanism of anti-cancer activity.
Concordia College	Darin J. Ulness	Chemistry	An investigation of the fundamental behavior of light-matter interaction in liquids using noisy light spectroscopy.
Santa Clara University	Michael R. Carrasco	Chemistry	Site-specific attachment of small organic molecules to peptides and proteins; structure and function of peptides and proteins altered by attached molecules.
University of the Sciences in Philadelphia	Guillermo Moyna	Chemistry & Biochemistry	Use of theoretical ¹³ C chemical shift surfaces and experimental NMR data in the study of the conformation and dynamics of histo-blood group antigen oligosaccharides.
University of Wisconsin - Eau Claire	James A. Phillips	Chemistry	Matrix-isolation FTIR-spectroscopic, computational, and crystallographic studies of condensed phase effects on structure in nitrile donor-acceptor complexes.
Wheaton College	Daniel L. Burden	Chemistry	The use of single-molecule techniques for the study of ion-channel dynamics and the optical manipulation of DNA.
2003			
Furman University	Paul S. Wagenknecht	Chemistry	Exploitation of metal complexes of new constrained macrocyclic ligands in electronic energy transfer studies and catalysis
James Madison University	Gina M. MacDonald	Chemistry	An infrared investigation of substrate binding, salt effects and domain movement in yeast phosphoglycerate kinase
Mount Holyoke College	Sean M. Decatur	Chemistry	Studies of protein folding and misfolding in vitro: isotope-edited infrared spectroscopy of protein aggregates
Oberlin College	Matthew J. Elrod	Chemistry	Overall rate constant and branching ratio kinetics measurements of the reaction of alkene-derived peroxy radicals with nitric oxide
Occidental College	Eileen M. Spain	Chemistry	Interfacial chemistry of microbial processes relevant to biofilms and nanotechnology
Swarthmore College	Paul R. Rablen	Chemistry	A Computational Investigation of the Mechanism of Addition of Carbenes to Bicyclobutanes and Cyclopropenes

Henry Dreyfus Teacher-Scholar Awards Program

<u>Institution</u>	<u>Awardee</u>	<u>Department</u>	<u>Area of Interest</u>
Wabash College	Scott E. Feller	Chemistry	Computational studies of lipid-protein interactions
2002			
Haverford College	Karin S. Akerfeldt	Chemistry	Synthetic peptides: applications to Ca ²⁺ -binding proteins of the EF-hand type, voltage-gated ion channels and novel biomaterials
Southwest Missouri State University	Mark M. Richter	Chemistry	Electrochemiluminescence of ruthenium(II) polyazine complexes containing crown-ether moieties in the presence of metal ions
The College of William and Mary	Robert J. Hinkle	Chemistry	Rearrangements and substitution reactions in beta,beta-disubstituted alkenyl(aryl)iodonium salts: exploiting the extremely labile aryliodonio moiety
The University of North Carolina at Charlotte	Daniel Rabinovich	Chemistry	An investigation of the syntheses and structures of nickel compounds in a sulfur-rich environment that mimics hydrogenase enzymes
Trinity University	Christopher Pursell	Chemistry	Heterogeneous chemistry on solid films of nitric acid, ammonia, and hydrogen sulfide
Western Washington University	James R. Vyvyan	Chemistry	Computational investigation of phenol epoxide cyclizations