RESEARCH IN CHEMISTRY AND BIOCHEMISTRY
*DENISON UNIVERSITY: 2007-2008*

Academic year and summer research projects at Denison create a stimulating and creative environment for learning and doing science at the frontiers of knowledge. A number of full-time undergraduate appointments are available for summer projects in the Department of Chemistry and Biochemistry. A wide range of areas is represented in the investigations currently being conducted by faculty and students. Representative topics are listed below.

- Attenuated total reflection infrared spectroscopy studies of water uptake by waxy thin films that mimic the plant cuticle. ***Annabel M. Edwards***

- NMR - intensive studies related to carbocation rearrangements and carbohydrate structures; applications of $Cu_2Asp_4$ (copper (II) aspirinate); function of chlorophyll and related molecules. ***Thomas A. Evans***

- Synthesis and characterization of methylene bridge substituted calixarenes. ***Jordan L. Fantini***

- NMR spin relaxation studies and molecular dynamics simulation of flexible molecules (polymers, peptides) in solution. ***Michael M. Fuson***

- Studies of Molecular Evolution, including: purification and characterization of RNA polymerases from plant tissue; expression of recombinant proteins in bacterial cells; characterization of transcription patterns in live plants; hunting for rapidly-evolving proteins; protein structure modeling. ***Peter Kuhlman***

- Surface and materials characterization of ion-conductive polymer electrolyte films; using atomic force microscopy and electrochemical methods. ***Anthony R. Layson***

- Investigation of biologically important molecules including peptides and collagen using solid phase peptide synthesis and NMR. ***Sonya L. McKay***

- Purification and characterization of post-translational modifying enzymes from prokaryotic and eukaryotic organisms. Using Atomic Force Microscopy to measure single molecule binding events. Measuring silicate binding groups on glass substrates with amino acid analysis. ***Charles W. Sokolik***

- Studies of cell surfaces and cell membranes; penicillin-binding proteins and their interactions. ***Kimberly Musa Specht***

Summer stipends for 10 weeks of full-time work also include a housing allowance and access to Denison's outstanding recreational facilities. Denison undergraduates are eligible to apply as long as they expect to be enrolled at Denison in Fall 2008. Selection will be based on the applicant's potential to benefit from the research experience based on academic record, laboratory skills, and career plans.

*For more information contact any faculty member in the department*.