SURE AWARDS MADE FOR SUMMER '02

Seventeen Stonehill College students will work with eleven faculty members on a variety of research projects over the coming summer of 2002. The scholars and their faculty mentors are the seventh group to work under the Stonehill Undergraduate Research Experience (SURE) program, whose purpose is to provide students with an opportunity to perform significant, publishable research under the guidance of an experienced faculty researcher. The research experience will help to provide students with a competitive advantage in graduate and professional school applications and in post-college employment opportunities, as well as to provide assistance to faculty in research activities.

Christopher J. Levasseur '03 will work with **Craig Almeida**, Assistant Professor of Biology and Director of the Biochemistry Program, on the *Characterization of a Targeted Gene Replacement Method in the Nematode C. elegans*. Levasseur, a Biochemistry major, will assist in the research project involving the characterization of a technique to alter specific DNA sequences in a model organism, specifically the free-living soil nematode *Caenorhabditis elegans*. The goal of their research is to begin to develop this technique so that it can be used as a major tool by other *C. elegans* researchers in their pursuits to elucidate gene function, with the goal of understanding the molecular basis of genetically inherited diseases and the potential development of treatment strategies.

Jonathan Gagnon '03 will work with **Roger M. Denome**, Associate Professor of Biology, on the *Development of a Field Guide to Stonehill.* Gagnon, a Biology major, will assist in the production of a computer-based "field-guide" to Stonehill's campus. The field guide will be a compilation of descriptions of the biology and ecology of the entire campus. This component of the *Guide* will emphasize the terrestrial vertebrates (birds, mammals, amphibians, reptiles) and vascular plants (trees, shrubs and herbaceous plants, grasses, ferns). The final product will also contain maps of campus trails, with annotations describing "points of interest." The *Guide* will contain less extensive discussions of the fungi, geology and archeology of the campus. Gagnon will also assist in designing the multimedia material will be used in the guide (e.g. MP3's of bird, mammal and amphibian vocalizations).

Andrea Lafont '03 and **Shannon Sheridan '03** will work with **Roger M. Denome,** Associate Professor of Biology, on *Molecular Population Genetics of Massachusetts Skunks.* Lafont and Sheridan, both Biology majors, will assist in determining the levels of genetic variation in striped skunks from a variety of areas in Massachusetts. The purpose of this study is to expand on previous work on skunks to investigate geographic variation in this extremely abundant species. The results of this project are of interest to wildlife managers, primarily because skunks are a major reservoir for rabies.

Sarah L. Staszak '03 will work with **Richard B. Finnegan**, Professor of Political Science, on *Challenges to Democracy in Ireland.* Staszak, a Political Science major, will assist Prof. Finnegan in conducting research directed at producing a book charting the political and ideological dynamics of the challenges to representative democracy in Ireland in the twentieth century. Staszak will read a variety of primary and secondary sources, synthesize information into components for each chapter, and draft sections of chapters.

Jaqueline Lombard '03 will work with **Geoffrey P. Lantos**, Professor of Business Administration, on a *Consumer Behavior Experimental Exercises Workbook.* Lombard, a Multidisciplinary Studies major, will work to continue and complete a project Professor Lantos began with a previous SURE scholar and which he is field testing in his classroom this semester. The *Workbook* will be an update of and major expansion on the applied exercises in *Application of Consumer Behavior: Readings and Exercises* by Gail Tom. Lombard will do research for and writing on the background textual material for the exercises, peruse publications for print ads, explore corporate Web sites for behavioral concepts, create consumer scenarios to be analyzed, and suggest new topics and exercises to include.

Jesse L. Hart '03 and **Alison Moore '04** will work with **Louis J. Liotta**, Associate Professor of Chemistry, on the synthesis of novel molecules that hold great potential both medicinally and

agriculturally. The synthesis of these molecules must be done in such a way as to carefully control their exact three dimensional shapes. Hart, a Biochemistry major, and Moore, a Biology major, will assist in Professor Liotta's long-term research funded by the Petroleum Research Fund of the American Chemical Society. A means of efficiently converting commercially-available sugars into these novel compounds has been developed in the Liotta laboratory. The students will build on work done in previous summers by earlier SURE scholars and will be responsible for developing and carrying out a series of reactions which will convert commonly available sugars into these novel molecules. Once the compounds are synthesized, Hart and Moore will be responsible for their purification and characterization.

Emily Edenburn-MacQueen '03, **Richard Howdy '03**, and **Kevin Semelrath '04**, work with **Bob Peabody**, Professor of Biology, **Diane Peabody**, Research Professor of Biology, and **Maura Tyrrell**, Associate Professor and Chair of Biology, on *Evolutionary Potential of A. gallica Fruit-Body Cells.* In 1985 Diane and Bob Peabody discovered that *A. gallica* fruit bodies were haploid rather than diploid as had previously been reported in the literature. Because populations of diploid cells produce fruit bodies, this raised the intriguing possibility that fruit bodies might be composed of cells that are genetically different from one another. Between 1994 and 2000, Diane, Bob, and several students used genetic markers to test and ultimately demonstrate the validity of the genetic mosaic hypothesis. Maura Tyrrell became involved with the project several years ago when she began working with Botany and Ecology students on projects testing for effects of various environmental variables on among-cell variation in growth rates.

Sean Kinney '04, **Joe Primo '03**, and **Kathrine A. Sheehan '05**, will work with **Erika Schluntz**, Acting Director of International Studies and Assistant Professor of Religious Studies on the *Dailey Homestead Excavations.* This project, whose goal is to expand the Stonehill community's knowledge and appreciation of our campus's social history, focuses on the historical research and archaeological excavation of an eighteenth century farmhouse located on campus. This summer the work will continue and build upon that work begun with earlier SURE Scholars. Hunt, an English and Religious Studies double major; Kinney, a Religious Studies major; Primo, a double major in Ancient Studies and Religious Studies; and Sheehan, a Religious Studies major will research the history of the site, and learn and apply the processes of archaeological excavation.

Laura R. Ingalls '05 will work with **Cheryl S. Schnitzer**, Assistant Professor of Chemistry, on *Studying Copper and Nickel Complexes at the Gas-Liquid Interface with a Bubble Column.* Heavy metal contamination in drinking water is a common environmental concern for inner-city residents. One way to facilitate the removal of heavy metals from water is to aerate the sample, causing the metal to collect at the surface. For this particular projects, which builds on a previously funded SURE project, Ingalls, a Chemistry major, will help to answer the following questions: (1) How effectively do copper and nickel metal complexes adsorb to the gas-liquid interface? (2) How does variation of the ligand in the metal complex affect adsorption? (3) When copper and nickel ions are both present, does preferential adsorption occur?

Ryan Hirschfeld '04 will work with **Leon J. Tilley**, Assistant Professor of Chemistry, on the *Synthesis of Octaazadodecahedrane*. Hirschfeld, a Biochemistry major, will attempt to synthesize the cyclic aza-cage compound, octaazadodecahedrane, one of several "particularly beautiful" compounds about which numerous questions of geometry and energy have been asked; its synthesis would provide potential answers to some of these questions. Hirschfeld will be responsible for designing syntheses of the compound using an ammonia/glyoxal reaction under a variety of conditions, and for investigating the outcomes of these reactions using different analytical methods.

SURE Scholars will begin the program on _____ for an eight or ten week period. They will engage in weekly meetings to discuss the progress of their projects and other topics of general interest, and will be paid a stipend for their full-time service. All SURE Scholars will present summaries of their summer's work at an all-campus poster session in the early fall. The SURE program is partially funded by a grant from the Arthur Vining Davis Foundations.

Students and faculty members who wish to pursue a SURE research project for the summer of 2003 may contact the Office of Academic Development, Duffy 119-A, ext. 1069, for further information. The deadline for applications for the summer of 2003 is _____.