

~ SWARTHMORE COLLEGE STUDENT SUMMER RESEARCH ~

**DIVISION OF THE NATURAL SCIENCES AND ENGINEERING (NSE)
RESEARCH FELLOWSHIPS FOR 2009**

Important deadlines:

- ⇒ **February 12:** Student applications for NSE division and HHMI research fellowships due to faculty mentors or departments; ask faculty about any additional department-specific guidelines.
- ⇒ **February 17:** Faculty forward completed applications to Julie MacMullan for HHMI or other NSE division funds.
- ⇒ **February 23:** Student applications due for specific College-wide fellowships (e.g. for support of research abroad; see details below).
- ⇒ **Before Spring Break:** Notification of funding decisions for HHMI and other NSE division fellowships.

Fellowships to support summer research for students in the Division of the Natural Sciences and Engineering are available from several sources. The departments in the Division are: Biology, Chemistry & Biochemistry, Computer Science, Engineering, Mathematics & Statistics, Physics & Astronomy, and Psychology. The sources and the criteria for the various fellowships and grants are outlined below.

NSE-specific funding opportunities

A. Howard Hughes Medical Institute (HHMI)

Coordinator: Amy Vollmer, Dept. of Biology - Acting HHMI Program Director (avollme1 or x8044)

A grant from **HHMI** provides summer research fellowships for Swarthmore students conducting research in biology and the related sciences. *In order to be eligible for HHMI support, applications from any NSE department must clearly describe (for the HHMI Committee's consideration) the biological or biomedical relevance of the proposed project.* Students receiving HHMI stipends will conduct full-time research for ten weeks during the summer under the guidance of a faculty member. Approximately fifteen awards will be made to support such research projects. An additional fifteen fellowships will be awarded to students that meet the criteria for any of the following three categories:

- ⇒ **Interdisciplinary projects.** As many as **five** HHMI awards are available for projects that are mentored by faculty from two different NSE departments. Students with special interdisciplinary science majors (e.g., Psychobiology) also are eligible for these. Since the goal is to foster collaborative interactions across departments within the college, projects mentored by faculty in two different departments will have higher priority for these fellowships than projects of interdisciplinary majors that are mentored by a single faculty member.
- ⇒ **First-year students of underrepresented minority groups.** As many as **five** HHMI fellowships will be awarded to first-year students who are members of groups that are underrepresented in the sciences and who will work with a Swarthmore faculty member from the NSE Division. This includes minority students and first-generation college students in any NSE department, and women in Engineering, Math & Stat, Computer Science, Chemistry & Biochemistry, or Physics & Astronomy. First-year students who are interested in summer research and believe that they qualify for one of these fellowships should discuss their interests and this funding opportunity with their favorite NSE faculty member(s).

- ⇒ **Off-campus research.** A limited number of HHMI fellowships will be awarded to support summer research to be conducted at off-campus laboratories. Applications for these stipends should be accompanied by two letters: one from the off-campus researcher who will directly mentor the student's project and one from a Swarthmore faculty member (from the NSE Division) who knows the student, has reviewed the proposal and will serve as the on-campus liaison.

B. Additional NSE Fellowships

Eugene M. Lang Summer Initiative Grant
Norman Meinkoth Premedical Research Fellowship
Surdna Summer Research
Pat Tarble Summer Research

Coordinator: Cheryl Grood, Dept. of Mathematics & Statistics - Chair, NSE Division (cgrood1 or x 6860)

These fellowships support ten weeks of full-time summer research by Swarthmore students in collaboration with a faculty member in any department in the NSE Division. Approximately fifteen to twenty such awards are available. Priority is given to students majoring in the field. Priority will also be given to students whose projects clearly reflect prior academic work in the area and the potential for thesis or project work in their senior year, and to students who have not received any other Swarthmore College funding for research-related activities.

In one case, the **Meinkoth**, additional conditions must be met. The grant will be **awarded on the basis of scientific merit to a rising junior or senior premedical student to allow the pursuit of laboratory research in the science on or off campus.** The **Norman Meinkoth Premedical Research Fellowship** was established in 2004 by Marc E. Weksler '58 and Babette B. Weksler '58 to honor Norman A. Menikoth's long service as a premedical advisor to students at Swarthmore College where he was professor of biology for thirty-one years and chairman and of the department for ten years.

College-wide funding opportunities targeted toward specific types of projects

Giles K. '72 and Barbara Guss Kemp Student Fellowship
The Arthur S. Obermayer '52 International Summer Internship
Anwural Quadir Summer Research Fellowship
Starfield Student Research Grant
David E. Fisher '79 - Arthur S. Gabinet '79 Summer Internship
Deborah A. DeMott' 70 Student Research Internship
Lenfest Student Fellowships

NSE Coordinator: Cheryl Grood, Dept. of Mathematics & Statistics - Chair, NSE Division (cgrood1 or x 6860)

These fellowships offer support, up to a maximum of \$3,750, for student projects that meet specific criteria, as described below. They are open to students in all three divisions (Humanities, Social Sciences, and Natural Sciences and Engineering). The chairs of the three divisions meet to consider the applications and then make recommendations for funding to the Provost.

The **Deborah A. DeMott' 70 Student Research Internship** was established *to support a research project or internship for rising juniors or seniors.*

Andrew H. Schwartz '79 and his wife, Dagmar Schwartz, endowed the **David E. Fisher '79 - Arthur S. Gabinet '79 Summer Internship** to honor Andrew's friends and classmates, David E. Fisher '79 and Arthur S. Gabinet '79. Dr. Fisher was not only an exceptional student in the field of biology who became a leading physician and cancer researcher, he was also an outstanding musician, studying and performing as a cellist at the Curtis Institute while a full time student at Swarthmore. Mr. Gabinet, an Honors student of philosophy and literature at Swarthmore, resigned his partnership at an international law firm to become a

public servant, leading a field office of the U.S. Securities and Exchange Commission. In tribute to these two close friends, Andrew and Dagmar Schwartz created this internship *to support students working in life sciences or public service* who exemplify Dr. Fisher's and Mr. Gabinet's values, pursuing studies out of love of learning and devotion to the improvement of the human condition.

The **Giles K. '72 and Barbara Kemp Student Fellowship** supports internships and research projects *with a preference for students whose experiences will be abroad*. It was established by Giles and Barbara Kemp in 2005.

The **Lenfest Student Fellowship** was established to support research fellowships, internships and other summer opportunities for rising juniors or seniors. Garry and Marguerite Lenfest established the fund in 2008.

The **Arthur S. Obermayer '52 International Summer Internship** was established in 2005 and is intended to broaden and enrich the experience of a Swarthmore student. The grant shall be awarded *with preference to a domestic student who is studying in a major that may not inherently offer an international opportunity*. A student who has identified an opportunity for an internship, to conduct research, or to volunteer abroad can submit a proposal for support for travel and living expenses associated with the opportunity, up to a maximum of \$3,750. The application should include a description of the proposed project or activity, including where it will be carried out and how it will contribute to the applicant's program and enrich his/her Swarthmore experience. If the opportunity is in the form of an internship, a letter from the sponsoring agency or institution should be included with the application.

The **Anwural Quadir Summer Research Fellowship** was established to enable a Swarthmore student *to conduct research and/or explore and problem-solve on issues related to Bangladesh* and the student's major.

The **Starfield Student Research Endowment** supports student summer research fellowships in social justice *with a preference for students pursuing research in the areas of health services delivery/health policy and social, demographic, and geographic equity*. The fund was established in 2004 by Barbara Starfield '54 and Phoebe Starfield Leboy '57 to honor their parents, Martin and Eva Starfield, educators who instilled a love of learning and social justice in their daughters.

Fellowship Conditions

The standard fellowship for a research project lasting ten weeks is \$3,750. These research grants and fellowships are intended to allow students to engage in full-time research and to relieve students of the need to seek other employment during the summer. Therefore, a condition of the acceptance of any fellowship is that the student agrees to engage in full-time research for ten weeks and not to pursue other paid work on campus during the summer.

Moreover, a student may **not** receive more than the equivalent of one full stipend (\$3,750) during a single summer from any combination of College sources. This includes scholarship awards and other Swarthmore College fellowship programs, for example, the Mellon Mays Undergraduate Fellowship program, Evans Scholars, and the Summer Social Action Award (S2A2). Students who receive financial aid or fellowships from non-Swarthmore sources should also check whether the terms of their awards limit their eligibility for a Swarthmore summer stipend.

Although open to all students working on NSE projects over the summer, students who receive an HHMI fellowship for on-campus work are *expected* to attend an HHMI-funded summer seminar series co-ordinated by Professors Amy Vollmer and Cheryl Grood, and they are especially encouraged to participate in other HHMI-initiatives (such as the Science for Kids program) occurring during the summer.

Furthermore, all students receiving a summer research fellowship will be required to submit a report at the end of the summer about the research activities. Students receiving HHMI support should submit their report to Julie MacMullan in the Biology Department @ **jmacmull1**. Students receiving fellowships from other sources should submit their report to Joanne Kimpel in the Office of the Provost @ **jkimpell1**.

All reports are due no later than September 1. In addition, students receiving summer research fellowships from any of these sources will be expected to cooperate with requests from College offices to participate in surveys designed to assess their research experience.

N.B. TAXES ARE NOT WITHHELD FROM FELLOWSHIP AWARDS, NOR DOES THE COLLEGE REPORT THE AWARD TO THE IRS; HOWEVER, IT IS CONSIDERED INCOME TO THE RECIPIENT. WHEN FILING YOUR TAX RETURN, THE AMOUNT OF THE GRANT SHOULD BE REPORTED.

Application Procedures

For HHMI, Lang, Meinkoth, Surdna, or Tarble awards (NSE division-specific)

Students: To apply for a summer research fellowship from any of these sources, a student must submit an application to their faculty research mentor by **February 12**, consisting of:

- ⇒ an application cover page (use the form at the end of this announcement);
- ⇒ a brief (less than 250-word) description of the research project, including the research goals, where and when the work will be done, and an explanation of how the research will benefit the student's academic program; and
- ⇒ a current grade report (available at no charge upon request at the Registrar's Office), or a copy of the most recent Degree Progress Audit sent to the student at the beginning of the current semester.

Faculty: In order for the students' application to be eligible for funding, their faculty mentor should complete the "FACULTY" section of the application cover page and also attach a letter of support, which includes information about where the work will be done, how it will be supervised, and, if supervising the work, how it fits into the faculty member's research program.

Additional requirement for off-campus research projects: Proposals for projects to be conducted with off-campus research mentors should include a letter of support from the off-campus researcher who has agreed to mentor the student's project. This letter should include an explanation of where the work will be done and how it will be supervised. Applications for off-campus stipends also should include a letter of support from a Swarthmore faculty member (from the NSE Division) who knows the student and has reviewed the proposal.

Faculty mentors should forward each student's completed application by **Noon - February 17** to **Julie MacMullan** in Biology (Martin 324) for projects that are potentially eligible for HHMI support, **or** for projects that are to be considered only for NSE Division funds. Students can expect to be notified of the outcome of their proposals before Spring Break.

Additional application forms are available in Department offices and/or websites. They are also available at <http://www.swarthmore.edu/x10805.xml> or at <http://www.swarthmore.edu/NatSci/nsgrants/nsindex.html>.

For College-wide awards

These awards are administered under a different process, with a different timetable, from the one described above. Applicants for these awards should read carefully the specific guidelines for particular fellowships above, and then complete an online application form, labeled as *Social Sciences application form*, available at <http://www.swarthmore.edu/summerresearch.xml>

The required supporting materials are described in detail on the form, but they include a description of the research project, a grade report, and a letter of support from a faculty member. Applications for DeMott, Fisher-Gabinet, Kemp, Lenfest, Obermayer, Quadir, or Starfield awards are due **February 23** and should be submitted to **Rose Maio**, Administrative Coordinator for the Divisions, in Kohlberg 232.



SWARTHMORE COLLEGE
2009 APPLICATION

for
Summer Research Fellowships in the Division of Natural Sciences and Engineering

STUDENT TO COMPLETE: This section is due to your faculty sponsor by Thursday, February 12, 2009.

Name: _____ Class Year: _____ Major/Minor _____ Pre-med: []

Faculty Sponsor & Department: _____ Topic of Research Project: _____

If you have previously received a summer grant from Swarthmore College what was the funding source? _____

Are you applying for other summer 2009 funding from Swarthmore College? If yes, name funding source _____

This application must contain the following items in order to receive funding consideration:

- => Brief description of the research project, including the research goals, when and where the research will be done, and how the research will benefit the student's academic program (limit to no more than 250 words). (student responsibility)
=> Grade report (available at no charge from the Registrar's office) or copy of the most recent Degree Progress Audit, as provided by the Registrar at the beginning of the current semester. (student responsibility)
=> Letter of support from a faculty member hosting research, confirming where the research will be done, how it will be supervised, and how it relates to the faculty member's research efforts. (faculty responsibility)
=> If research is off-campus, a letter from an on-campus faculty liaison must be included. (faculty responsibility)

Students receiving summer research fellowships are required to submit a one-page report about their summer research activities by no later than September 1. Additionally, students receiving summer research fellowships will be expected to cooperate with requests from College offices to participate in surveys designed to assess their research experience and attend summer seminar series.

If I am awarded a fellowship, I agree to comply with the above-mentioned requests: _____ (SIGNATURE).

FACULTY SPONSOR TO COMPLETE: This application is due by 12:00 noon on Tuesday, February 17, 2009.

This project is eligible for support from: (check all that apply)

- [] HHMI on-campus research, without special criteria [] NSE Division
[] HHMI on-campus first-year student from underrepresented groups [] Internal Dept. Funds (from faculty member's department)
[] HHMI on-campus interdisciplinary research [] Individual Faculty Grant
[] HHMI off-campus student research (with on-campus faculty liaison)

I plan to be on campus for the following summer period: _____

Have you applied for other support for this student? If so, please name source. _____

I have attached a letter of support for the student named in this application. [] (check)

If my student is awarded an HHMI fellowship, he/she will be allowed to participate in HHMI-supported summer activities, such as: the summer seminar series and optional help with the Science for Kids program: _____ (initial).

THE TOTAL AWARD FROM ALL COLLEGE SOURCES MAY NOT EXCEED \$3,750.00