IN TOUCH WITH BSCP

BIOMEDICAL SCIENCE CAREERS PROJECT

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Editor
Andrea Pyenson

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Corinne Broderick
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Brenda Hoffman
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Office of Academic Careers
Harvard Medical School

Joan Y. Reede, M.D., M.P.H., M.S.
Director,
Minority Faculty Development Program
Harvard Medical School

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Summer Jobs and Internships

There's no better time than the dead of winter to start planning for summer. For minority students interested in summer jobs and internships in the biomedical science and related fields this year, the possibilities are practically limitless. You just have to know where to look.

To help you get started, *In Touch with BSCP* spoke to educators throughout New England about this year's crop of summer programs. Our survey turned up several interesting possibilities — many of which can be stretched into opportunities for the coming academic year, or can lead to future summer positions.

Program directors recommend that students begin looking now for positions that will begin between late May and July. And if you don't know where to start looking, your guidance counselor or academic advisor are good places to start.

Following is a representative sampling of programs for the summer of 1994:

For High School Students

High School Health Careers Program (HSHCP)
University of Massachusetts Medical Center, Worcester

Description: This program exposes minority and disadvantaged high school students to biomedical careers, health professions and enrichment experiences.

Requirements: Students must have completed their sophomore or junior year of high school.

Application Process: Students must submit a complete application by April 1. For more information, call (508) 856-5541.

Introduction to Biotechnology
Massachusetts Bay Community College, Wellesley

Description: This program provides inner-city junior high and high school students with an introduction to biotechnology through work in the laboratory. For information, call (617) 237-1100, ext. 550.

Program for Biotechnical Education
Boston University Medical School, Boston

Description: This program provides high school juniors and seniors with the opportunity to work on research projects in the BU Medical Center laboratories.

Application Process: Applications must be turned in by the end of May. For an application, call (617) 638-5622 or 5623.

Minority High School Research Apprentice Program
University of Connecticut, Storrs, CT; University of Vermont, Burlington, VT; Boston University, Boston; Tufts University School of Veterinary Medicine, North Grafton, MA; Beth Israel Hospital,

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Mentor/Student Connections

William Ohley

William Ohley, Ph.D., professor and chairman of the Electrical Engineering department at the University of Rhode Island (URI) in Kingston, was the first person in his family to attend a four-year college — let alone graduate and go on for a Ph.D. And since he received his undergraduate degree in 1970, Ohley's career has been an interesting mix of academics and business.

A Native American whose family belongs to the Wappinger tribe, Ohley attended the University of Massachusetts Amherst, holding down a variety of summer jobs to pay his tuition. He joined the Reserved Officers' Training Corp. (ROTC) to get more money for school, and in 1970 received an educational delay that kept him out of the Viet Nam war. With no role models to rely on, "It took me a while to figure out the higher education system," Ohley recalls. "I didn't find out about graduate school until my senior year of college."

Financial Aid Questions?

If you have questions about federal financial aid programs, call:
1-800-4-FEDAID
9:00a.m. - 5:30 p.m.
Monday through Friday

You may also write to the:
Federal Student Aid Information Center
P.O. Box 84
Washington, D.C. 20044

Ohley received an M.S. from UMass in 1972. In 1973 he enrolled at the State University of New York at Stony Brook, where he earned a Ph.D. in Electrical Engineering. He then began a five-year teaching stint at URI, followed by a two-year stint designing medical instruments for Datascope Corp. in Montvale, New Jersey. After teaching for two years at Worcester Polytechnic Institute, Ohley returned to URI. He now heads up the Electrical Engineering department there and is a consultant for Datascope.

A mentor in the New England Board of Higher Education's Science and Engineering Academic Support Network since 1992 (see related story, next page), Ohley recently revived a Native American Association at URI. And last year he received a grant from the National Science Foundation to start a Native American Summer Science Camp on the URI campus. Through the program, which combines science education with athletics, Ohley's goal is to show Native American middle school students that "science is fun and you can make a living at it."

In addition to the camp, Ohley provides summer research opportunities for minority high school and college students through programs funded by the Academy of Applied Sciences and the National Science Foundation.

Through his experiences in academia and business, Ohley is a terrific role model for students who are interested in science but may not know how to turn that interest into a career. And he points out how intricately so many aspects of science are linked.

Design and manufacture of medical instruments, and the clinical testing that follows, are just two of many fields in which expertise in the physical and biological sciences is a plus. "To design medical instruments, as I do, it is important to understand how the body works," Ohley explains. "For example, you can't very well design instrumentation to monitor bodily functions without understanding those functions." And once they are produced, instruments must go through a three-stage testing process — in simulated, animal and clinical trials — before they can be approved by the Food and Drug Administration. The testing is done by physiologists, biologists, biomedical engineers, doctors and nurses.

Ohley cites some of his former students as other examples of people who combine physical and biological sciences in their lives and livelihoods. "One of my first Ph.D. students is now a radiologist, and he has said he feels he would not be nearly as successful if he did not have the background in electrical engineering," Ohley says. "Another, who received an M.S. in electrical engineering, went from being a biomedical engineer in the anesthesiology department at Mass General Hospital to designing medical instruments for Siemens Medical Systems."

Ohley is committed to continuing his work with minority students — particularly Native Americans — both through the New England Science and Engineering Network, and through programs at URI. While the camp is currently limited to regional residents, Ohley is trying to get funding to open it up to students from other New England states. For more information, contact Professor Ohley at: Electrical Engineering Department, University of Rhode Island, Kingston, RI 02881. ◆

Molette Richardson

Ever since she was a little girl, growing up in Florence, South Carolina, Molette Richardson has known that she wanted to be a veterinarian. The 27-year-old fourth-year student at the School of Veterinary Medicine at Tuskegee University, in Tuskegee, Alabama, is well on her way to realizing her dream.

After majoring in biology at St. Augustine College in Raleigh, North Carolina, Richardson was accepted into the prestigious program at Tuskegee. For the first two years, she was interested in pursuing a career in veterinary research. But after participating in a summer internship at Genetics Institute, a biopharmaceutical company in Cambridge, Mass., Richardson changed her plans.

According to Alfred L. Gaskin, D.V.M., associate director of Laboratory Animal Resources at Genetics Institute, and director of the internship program, "My primary goal in establishing this program was to make sure veterinary students, especially minority students, have the opportunity to be exposed to laboratory animal medicine." He points out that, unbeknownst to many people, there are over 2,000 facilities in the United States that use animals for research — and only 750 practicing laboratory veterinarians in the country. Richardson heard about the program, which has slots for two to three fourth-year veterinary students each summer, from another Tuskegee student who had participated in it the previous summer.

For approximately three months — from late May through late August — interns are introduced to the upkeep and operation of a laboratory animal facility. They begin each morning doing rounds — checking the health of the rabbits, mice, hamsters, rats and frogs in the lab to make sure no animals are in distress or discomfort. "We are very conscious of the animals' welfare," Richardson notes. They also perform many of the routine tasks of lab animal operations, like cleaning cages and keeping records of research projects and results. And they perform surgeries and a variety of biomethodological techniques for the researchers, many of whom are not trained in any *in vivo* techniques.

Gaskin explains that he introduces the interns to laboratory animal medicine "in a didactic and applied manner." He only takes fourth-year students because the responsibilities of the interns include surgery, which is not taught until the third year of veterinary school.

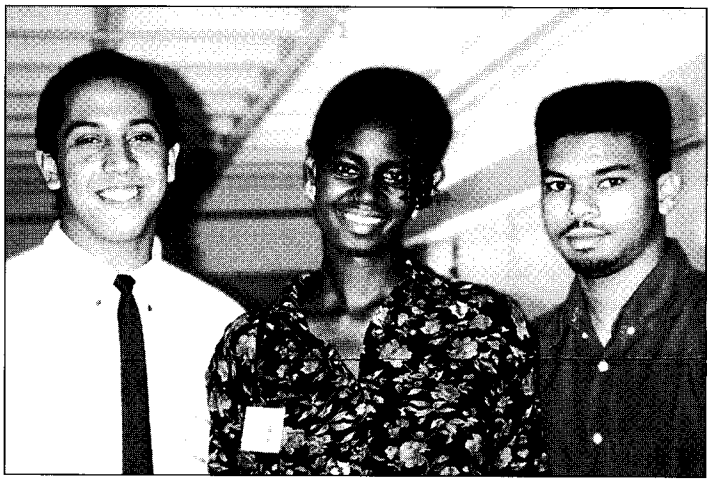
"Working with Dr. Gaskin and seeing what he does gave me a better feel for lab animal medicine, and I liked what I saw," Richardson says. "Before I went to Genetics Institute, I had been planning to go on for a Ph.D. in pathology. But I've changed my plans slightly and have decided to do a residency in laboratory animal medicine *and* pursue a Ph.D. in pathology."

Genetics Institute finds housing for participants and pays a generous stipend. Richardson advises other students, "If you think you're interested in lab animals, the Genetics Institute program is worth looking into. A summer there is like a first year of residency." ◆

New England Board of Higher Education Science/Engineering Academic Support Network

Last October, the Science/Engineering Support Network held its second annual conference at the Massachusetts Institute of Technology (MIT). At the conference, scientists and educators from colleges and universities throughout New England serve as mentors to the minority students who attend, working with them at the conference and throughout the academic year.

During the day-long conference in October, students received "inside" information on the rules of the academic and business worlds, with an emphasis on scientific/technical specialties; practical information on how undergraduate scientific and engineering studies differ from graduate studies; and advice on building a career path in science and engineering. In addition, students were advised on how to secure internships, undergraduate scholarships, graduate and postgraduate fellowships and summer job opportunities in their chosen fields.



Students at the Science/Engineering Conference

In the words of one student, "I was not aware that there were so many jobs and so much money out there waiting for any student committed enough to take advantage of them. I gained enough information and incentive from the conference to help me through the next six or seven years of school."◆

Upcoming Events and Important Dates

1994 Biomedical Science Careers Conference
Park Plaza Hotel
March 26, 8:00 - 5:00

For more information, contact the Minority Faculty Development Program, Harvard Medical School
(617) 432-2413

Allied Health Professions Admission Test (AHPAT)
Registration Deadline:
March 25, 1994
Test Date: April 30, 1994

For information, call
(800) 622-3231

Dental Admission Test (DAT)
Registration Deadline:
Feb. 28, 1994
Test Date: April 9, 1994

For information, call
(312) 440-2689

Graduate Record Exam (GRE)
Registration Deadline:
March 4, 1994
Test Date: April 9, 1994

For information, call
(609) 771-7670 or (510) 654-1200

Medical College Admission Test (MCAT)
Registration Deadline:
March 25, 1994
Test Date: April 23, 1994

For information, call
(510) 654-1200

Resources

Biomedical Science Careers Project New England Program Directory — 1994

This directory lists non-degree biomedical science and related programs sponsored by high schools, colleges, universities, professional and graduate schools, hospitals, private industry, foundations and governmental agencies — with special emphasis on programs for minority students. For more information, or a copy of the directory, contact:

Minority Faculty Development Program
Harvard Medical School
25 Shattuck Street
Boston, MA 02115
(617) 432-2413

Voices and Visions of Success in Pursuit of the Ph.D.: The Summer Research Opportunity Program

Written by Margaret Daniels Tyler, assistant dean of the Massachusetts Institute of Technology Graduate School, this book alerts undergraduates to summer research opportunities and provides inspiring personal testimonies from more advanced students who did summer research. An addendum to the book, also put together by Daniels Tyler, lists 100 research programs across the United States. For more information, contact:

Nancy Gaffney
Council of Graduate Schools
1 DuPont Circle, Ste 430
Washington, DC 20036
(202) 223-3791

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Boston; Massachusetts General Hospital, Boston; and other sites
Description: High school students are employed as laboratory assistants at a variety of sites.

Application Process: Applications are due in May for most locations. For more information, see your guidance counselor or science teacher, or call any of the locations listed above.

For College, Graduate Students and Above

Research Fellowship Program for Minority Students
UMass Medical Center

Description: Research Fellows work in laboratories, and attend and give seminars.

Application Process: The application deadline is March 1. For more information, call (508) 856-2444.

Academy of Applied Sciences Fellowship Program
University of Rhode Island, Kingston

Description: High school, college and graduate students spend the summer at URI pursuing research in electrical engineering.

Application Process: For information, call (401) 792-2505.

The programs above represent only a minority of opportunities. Call references for more information.◆