BIOMEDICAL SCIENCE CAREERS PROJECT

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Spotlight On Career Planning:

Advice from Kenneth C. Edelin, M.D.

According to Kenneth C. Edelin, M.D., it is never too early to begin planning for a career in the biomedical sciences. And he should know. Associate dean for Student and Minority Affairs at Boston University (B.U.) School of Medicine, professor of Obstetrics and Gynecology at B.U., and a practicing physician, Edelin speaks from personal experience and from the experiences of students he has been teaching and mentoring for the last 20 years.

"I think students who are interested in the biomedical sciences should begin planning their career strategies in middle- or high school, with a three-pronged attack," Edelin says. First, students should make sure they have a good science and math background and that science is a discipline they enjoy and do well in.

Next, he strongly advises that students develop good reading and reading comprehension skills. "I see too many students who are excellent in sciences but are not very effective or efficient readers," he says. "They can't read complex passages in a short period of time and retain what they have read. It's a real deficit once they reach college."

Finally, Edelin recommends that students experience various disciplines within the biomedical arena to see what appeals to them. "There are lots of opportunities for jobs and internships in colleges, universities and private industry," he says. "Students have to be aggressive about looking for them."

Once students reach college, they have to work to refine the skills they have and develop critical reasoning skills so they can apply knowledge they acquire toward problem solving. In graduate school, they have to fur-

ther refine their reasoning and math skills. "Good math skills are essential in both biomedical and behavioral sciences because graduate students have to do a lot of data analysis," Edelin explains. At this level, too, students need to be able to think creatively about solving problems - whether they are working to-



Kenneth C. Edelin, M.D.

ward a career in research, medicine, veterinary medicine or some other related field.

Internships, part-time and summer jobs are available to students at all levels. The Federal government publishes annual directories of summer programs for high school and college students, as does the Association of American Medical Colleges. The National Institutes of Health sponsors summer research programs at different universities and medical

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Financial Aid

Undergraduate Scholarship Program (UGSP) For Individuals From Disadvantaged Backgrounds

The National Institutes of Health (NIH) will offer scholarships to individuals from disadvantaged backgrounds to pursue undergraduate degrees in academic areas that support professions needed by the NIH. Students can receive up to \$20,000 per academic year for tuition, and qualified educational and living expenses incurred while attending college/university. All United States citizens, nationals or permanent residents who are from disadvantaged backgrounds are eligible. Priority is given to individuals who are underrepresented in biomedical/behavioral research, including students who are from minority groups, disabled or women. Applicants must be enrolled or accepted for enrollment as a fulltime student at a qualified accredited institution. Scholarship recipients agree to serve as NIH employees for 12 months for each academic year of scholarship support and for 10 consecutive weeks during each sponsored year. The employment obligation may be deferred during enrollment in graduate or professional school. For more information, call UGSP at 1-800-528-7689.

The Massachusetts Educational Financing Authority (MEFA) U. Plan MEFA recently launched a funding plan intended to help families afford future tuition at many Massachusetts colleges and universities. Under the plan, called "U. Plan," parents and adults invest in tuition certificates for a guaranteed percentage of tuition at participating institutions. The certificates earn tax-free interest and grow at a guaranteed rate of return. The

program protects students and their families from inflation.

When a student enrolls at a participating school, the investment is redeemed for the pre-planned rate of return and can be used for tuition and other mandatory fees for undergraduate study. If the money is not used for tuition, it will earn tax-free annually compounded interest based on the Consumer Price Index. There is no penalty if a person chooses to withdraw, if a student is not admitted to a specified college, or if a student earns a scholarship. For more information, call 1-800-MEFA (6332).

Health and Human Services On-Line Grant Information Service

The department of Health and Human Services (HHS) launched a free public-access computer network for finding and exchanging information about HHS and federal grant programs. The service, GrantsNet, is open to anyone who has a personal computer with Internet capability. GrantsNet will also provide a yellow-pages-style directory of granting offices, grants-management staff and grant-program personnel.

If you would like to be placed on a mailing list to receive news and updates on GrantsNet, send your name and organization, mailing address, internet address and phone number to:

Suzanne Neill, Internet: sneill@os.dhhs.gov or Charles Bish, Internet: cbish@os.dhhs.gov. Or call Suzanne Neill at (202) 690-5731.

Enrichment Opportunity

The University of Washington Western Consortium Minority Medical Education Program will

take place this year from June 18 through July 29 in Seattle. This highly structured six-week enrichment program for underrepresented minority students, offered at the University of Washington School of Medicine and the University of Arizona College of Medicine, is intended to help participants gain acceptance to medical schools.

To be eligible, students must:

- demonstrate a serious interest in a medical career;
- be from the following minority groups — African African/Black, American Indian/Alaska Native, Mexican-American/Chicano, or mainland Puerto Rican;
- complete at least one year of college qualified post-baccalaureate applicants are also eligible; and
- be a U.S. citizen or hold a permanent resident visa.

For more information contact Charlie Garcia, Director, Minority Affairs Program, University of Washington, at (206) 685-2489; or Linda Don, Minority Affairs, University of Arizona, at (602) 621-5531.



Jaime Murillo (right) chats with Jim Vigoreaux at BSCP Career Development Conference.

Student Profile

Leonard Jewell

For 32-year old Leonard Jewell, attending Tufts University School of Veterinary Medicine is, literally, a dream come true. It is also an impressive achievement on many levels, not the least of which is Jewell's status as the first African American male — and the fifth African American student — ever accepted at the school.

Though Jewell has always known he wanted to be a veterinarian, he wasn't always sure he would make it. After graduating from Framingham State College in 1986, with a B.S. in biology, he had to retake several undergraduate courses before being able to apply to veterinary schools. Then, the first time he applied, he was rejected. But he never gave up.

During the years between college and veterinary school, Jewell worked as a researcher at Repligen, a Cambridge-based biotechnology company; a researcher at the Joslin Diabetes Center; and a clinic attendant at Angell Memorial Animal Hospital.

Though he is generally happy at Tufts, Jewell says he has mixed feelings about being in such a minority. "I can't believe the situation is like this in 1995," he says. "If this were the '60s, I would feel like this is a major accomplishment. Now, I feel it's a travesty."

So, in addition to his studies, Jewell has become an active member of the school's small, student-run Diversity Committee. The group's first goal is to introduce diversity into the curriculum. Like many medical and veterinary schools, Tufts utilizes the problem-based learning approach, in which students learn by studying real cases. The Diversity Committee is working with the administration to add cases that introduce issues of diversity. The group also is trying to attract visiting lecturers of color. Jewell explains, "We are interested in getting folks of color from all eco-

Who What Where

In December, 1994, the BSCP hosted a Biomedical Career Development Conference for minority postdoctoral fellows and junior faculty. The conference represented a milestone for the BSCP. Founded two years ago to bring minority students into the biomedical careers pipeline, the organization has expanded its efforts toward assisting those in the next phase of their career development. Following are a few letters from conference participants.

The meeting last Saturday was... a real experience. I left the hotel with a renovated spirit, full of energy, enthusiasm, positivism. As a foreign, I often felt isolated and in disadvantage. Thanks to the meeting, that is history. I learned that the world has many people willing to give help and support others; [many] of these people were at the meeting. Words such as persistence and advice such as `Go out and talk to people' will always be in my mind. INFORMATION is the key word. It represents a big part of our chance to succeed...

Jaime E. Murillo, M.D.

I just wanted to ... thank you for putting together an excellent conference. Please contact me if there are any conferences in the near future or if I can be of any assistance...

Rene Casara Massachusetts General Hospital, Plastic Surgery

If you have any thoughts or experiences you would like to share, please send them to Joan Reede at: Harvard Medical School, Minority Faculty Development Program, 164 Longwood Avenue, Boston, MA 02115. You may also fax letters to Joan at (617) 432-3834. Or send e-mail to: JREEDE@WARREN.MED.HARVARD.EDU.

nomic backgrounds to come to the school" — as students and educators.

Jewell's committee is also working on developing a mentoring program for local high school students. "We're planning to 'adopt' a high school and work with the kids there," he explains, adding that the veterinary school already has committed to allowing five or six local high school students to participate in its Minority High School Research Apprentice Program, free of charge, next summer.

Once he graduates, Jewell is interested in combining veterinary practice with social outreach for children. "I love animals and kids — and I want to be involved in advocacy for poor children and children of color," he says.

Jewell also will have more than \$120,000 in loans to repay — even though he is on financial aid. But he advises any students interested in veterinary medicine to pursue it at all costs. "Being here is incredible. It's like I'm living my dream. Motivation comes from doing what you really love. And I love what I'm doing now."

There are veterinary schools in the country that are less expensive than Tufts. The best bet is to find one in your home state. "But if this is your dream, it doesn't matter how much it costs," Jewell says. "Even though I'm going to owe a lot of money when I graduate, it would be much worse to wake up when I'm 50 and realize I wasted my life."

Admission Test Dates and Registration Deadlines

Allied Health Professions Admission Test (AHPAT)

Registration Deadline: March 24, 1995 Test Date: April 29, 1994 For information, call (800) 622-3231

Graduate Record Exam (GRE)

Registration Deadline: April 28, 1995 Test Date: June 3, 1995 For information, call (609) 771-7670 or (510) 654-1200

Medical College Admission Test (MCAT)

Registration Deadline: March 24, 1995 Test Date: April 22, 1995 For information, call (319) 337-1357

Scholastic Aptitude Test (SAT)

Registration Deadline: March 31, 1995 Test Date: May 6, 1995



A sampling of programs at B.U. Medical School

Partnership with South Cove Health Center in Chinatown, Boston

Each summer, B.U. provides academic enrichment, mentoring and exposure to various health professions for 18 Asian-American students in sixth through eighth grades. Mentors, who are medical or post-bac-calaureate students, follow the participants for the next four years, giving them advice on how to prepare for college.

Macy Foundation Program

Minority high school students who have expressed an interest in life sciences or medicine, have scored at a certain level on their PSATs, and maintain a certain grade point average can be selected to receive academic enrichment, mentoring, SAT preparation, assistance with homework and help preparing for college. Mentors stay with students through college. If they continue to have an interest in medicine, they may be offered early acceptance to medical school.

Early Medical School Acceptance

B.U. has an arrangement with 10 colleges and universities (mostly in the South) where underrepresented minorities make up the majority of the student body through which qualified students can be accepted early for medical school. Students, selected in their sophomore year, spend two summers at B.U., shadowing doctors and taking courses. They spend their senior year at B.U., finishing their undergraduate work and taking courses at the Medical School. If they maintain a B average, they can go on to B.U. Medical School, where they will receive credit for previous medical course work.

Post-Baccalaureate Program

Students who have the ability to succeed in medical school but who have failed to be accepted spend 15 months at B.U. acquiring extra academic, science and reading skills, and taking courses at the Medical School. Seventy percent of students who have been in this program have been accepted to medical school and all are doing very well.

Continued from cover

schools all over the country. These programs frequently pay a stipend.

B.U. Medical School offers several programs for minority high school, college and post-graudate students (see box above) — many of which were initiated by Edelin when he became associate dean of minority affairs. "So often minority students

don't get the encouragement, skills or academic underpinning they need to be successful in a biomedical career," he says. "This is our way of making sure they have the tools and skills they need to be successfull at whatever they want to do."