FOREIGN INFLUENCES

Are Foreigners Squeezing Minorities Out?

Frank Morris doesn't mince words when he talks about graduate school treatment of minority scientists: He calls it "The New Slavery"—which, as he explained in a paper written last year, is "the denial of doctoral opportunities for African-American students in American universities in a de facto low-wage American economy." Political scientist Morris, dean of graduate studies at the historically black Morgan State University in Baltimore, Maryland, thinks he knows the reason for this denial: Graduate schools prefer foreigners to blacks. Over the past two decades, he notes, the numbers of foreign nationals in U.S. science and engineering have climbed steadily. Yet U.S. minorities still comprise only a tiny percentage of U.S. researchers, just as they did in the 1970s.

There's an "overwhelming preference for international students and especially international Asian students" in U.S. graduate programs in the sciences, claims Morris. Foreigners get the best financial support as graduate students, he says, and admissions criteria also favor foreigners.

That's a serious charge, and it got a flurry of attention in both the popular and educational press last year. But is it true? Scientists deny any kneejerk preference for foreign graduate students, and the deans of American graduate education stoutly defend their efforts to attract minorities. They point out that financial support is available for virtually any qualified black, Hispanic, or American Indian who wants to pursue higher education in science.

Indeed, few minority scientists appear willing to go along with Morris' notion that foreigners get better treatment. But many do agree with the more general idea that the readily available supply of foreign students allows U.S. universities to slack off in their efforts to train minorities. Says George Hill of Meharry Medical College, a historically black school: "Institutions which are extremely well endowed have not used their resources to attract talented outstanding minority students into science"—because all those international students have lulled them into complacency.

Putting foreigners first. Morris, who garnered national attention last year when *The New York Times* featured him in a front page story, has outlined his views in a 28-page paper in which he notes that the numbers of foreign Ph.D.s have risen much faster than those of minorities. Since most science graduate students earn stipends through university research and teaching assistantships, he argues that U.S. taxpayers, through both state and federal support of universities, are subsidizing the training of the country's economic competitors while failing to nurture homegrown talent. "Non-American citizens benefit most from the best graduate assistance [that is, assistantships] while African-American doctoral recipients benefit...least," he writes.

Indeed, Hispanics and especially blacks are much more likely than foreigners (and somewhat more likely than U.S. whites) to rely primarily on fellowships and personal funds to pay for grad school; foreigners are most likely to rely on university support in the form of teaching or research assistantships, according to data from the National Academy of Sciences (see chart below).

These research assistantships are worth more than scholarships because they come with "the key to a lab," says Howard Adams, who runs the Graduate Engineering Degrees for Minorities program from Notre Dame University. When students work on a research project for a professor, they have opportunities to see what research is all about, to interact with the professor, and may even find the basis for a paper or dissertation, says Adams. "A fellowship is the kiss of death because it doesn't come with anything," he says.

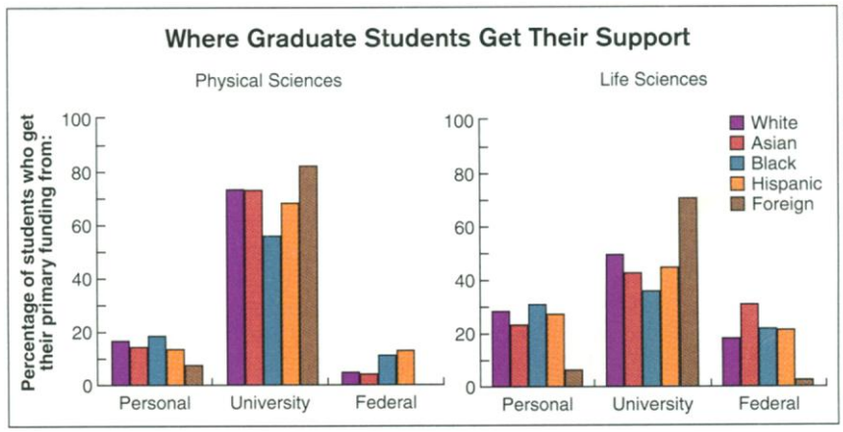
Taking up Morris' line, Israel Tribble Jr., who runs the McKnight Doctoral Fellowship Program for minorities in Tampa, Florida, says that scientists actually seek out foreign research assistants because they are seen as workaholics. Foreigners, particularly Asians, says Tribble, "are so humble....They will eat and sleep [in the lab]...because their whole body and soul is tied up in this experience. Faculty members like this."

Sins of admission. Morris also has complaints about admissions criteria, charging that relying too heavily on Graduate Record Exam (GRE) scores benefits foreigners and keeps minorities out. Foreigners do in fact have higher math GRE scores than U.S. citizens of any color. According to the Educational Testing Service (ETS), in the 1991-92 academic year, non-U.S. citizens averaged 637 on the quantitative section of the test, compared with 410 for U.S. blacks, and 541 for U.S. whites. Even on the verbal portion, foreigners outscore blacks, on average, although they are well behind whites.

That doesn't mean that blacks aren't qualified doctoral candidates, Morris argues. "The 'super blacks' is a very, very small universe," says Morris, but "what [universities] ignore is there are many others with medium GPAs that can produce Ph.D.s." For example, most of the awardees of the McKnight program, which offers minorities 5-year graduate stipends, don't fit "the typical profile that grad schools have been looking for," says director Tribble. In fact, most McKnight science fellows have combined GRE scores of less than 1000. Yet since the program began in 1984, 85% of the 192

MORGAN STATE UNIV.

Charges of bias. Frank Morris says scientists prefer foreigners.



Support structures. Minority students get less university funding than noncitizens.

awardees have stayed on track to a doctorate in science—"the best retention rate of any Ph.D. program in the country," says Tribble. So far, 28 students have gotten their Ph.D.s, mostly from Florida universities—not bad considering that it takes almost 9 years to complete a Ph.D. in science these days.

He and others argue therefore that universities should be investing more in training minorities—even those who don't score highly. To Morris, at least, current policies regarding minority admissions to graduate school almost add up to a conspiracy. As he puts it in his position paper: "There clearly seems to be a move afoot to freeze out American minorities, especially African-American males, from future faculty positions."

"There clearly seems to be a move afoot to freeze out American minorities."

—Frank Morris

No favoritism. University officials at mainstream universities, not surprisingly, see things differently. Certainly no one denies the basic facts: much of the country's scientific Ph.D.-producing machinery runs on foreign nationals, and there are vanishingly few underrepresented minorities in that apparatus, especially in the highly quantitative fields—such as math, engineering and physics—where foreigners, especially Asians, predominate. But, as Jules LaPidus, a chemist and director of the Council of Graduate Schools puts it: "Morris' argument is we have a lot of foreigners and too few minorities. The question is, are these two facts related?" He, and most others in the research world, are doubtful.

With respect to admissions scores, deans around the country insist that the GRE score issue is a red herring. Although Morris calls the use of cut-off scores for admissions "widespread and systemic," school officials deny this practice. "Rigid cutoffs are probably the exception rather than the rule," says John Wiley, dean at the University of Wisconsin graduate school; at Wisconsin, GRE scores aren't even required for admission. At the California Institute of Technology, assistant provost David Goodstein says that he does not know of any schools that use cutoff scores. In fact, he and others insist admissions decisions generally go the other way, favoring U.S. citizens over foreigners. Says Charlotte Kuh, who heads the GRE office at ETS, "The chance that a foreign student will be admitted is much lower than the chance that a U.S. citizen and especially a minority will be admitted."

This certainly appears to be true at the University of California, Berkeley. This year, of 127 foreign applicants to the graduate program in molecular and cell biology, only five were accepted, according to Barbara Harashida, affirmative action officer for biological sciences. And of the 53 graduate students accepted, 13 were minorities, including five of the seven black applicants.

Minority support. When it comes to support, graduate education officials again insist that qualified minority students have no trouble getting aid. "Any minority that comes into the sciences I can guarantee a 4-year support package for," says assistant graduate dean Robin Fisher of the University of California, Los Angeles. "I don't have anything comparable to that for a foreign student."

Nonetheless, Kuh says that university officials are coming to realize that the critics like Morris have a point with regard to at least one complaint: The "pattern" of financial support does affect students' success in grad school. Several university scientists told *Science* they couldn't understand complaints about fellowships, since fellowships give a student freedom to do research anywhere. But Kuh, echoing Adams, says fellowships "do not necessarily lead the student to a faculty mentor." And since finding a mentor may be harder for minority students in the first place, funding mechanisms ought to facilitate the process. For this reason, says Kuh, "the current thinking now is that the shape of aid is quite important...the best thing is a mix" of fellowships and assistantships.

So a number of universities are now trying to make sure that minorities in particular get that mix. At the University of Colorado, for example, Albert Ramirez, associate vice chancellor for faculty affairs, says that if a graduate student has assistance under a minority program, "We ask the department to make the commitment of picking up a comparable amount," which usually means a teaching or research assistantship, thus helping to get the student involved in the life of the department.

Pipeline problem. But adjusting the mix of student aid is a long way from agreeing that foreigners are taking grad school spots away from minorities. Scientists and graduate deans alike insist that's not happening, and that the problem really starts earlier, because there are not enough U.S. minorities in the pipeline to graduate school. They agree with molecular geneticist Howard Kuramitsu of the department of pediatric dentistry at the University of Texas Health Science Center in San Antonio, who has had postdocs from Japan, Poland,

Black Schools, Foreign Faculty

The debate concerning foreigners and minorities has focused on graduate students, but there's also been growing concern over the increasing number of non-black professors—many of them foreign—at historically black colleges and universities. These schools aim to provide role models and show that science is a desirable and realistic career for blacks—goals that may be threatened by a high proportion of nonblack faculty.

And that's just the situation that now exists at many historically black schools. "It is a rather obvious phenomenon on any of these campuses—you think it's a black school until you get to the engineering department," says Reginald Wilson, senior scholar at the American Council on Education.

In 1989, a survey of 88 such schools found that only 58% of the faculty were black Americans. At that time, foreign faculty were 7.5% of the total—most of them in the sciences. Since then, the proportion of foreigners appears to have risen. At historically black Florida A & M University, for example, perhaps one-third of the science and engineering faculty are foreign born. Of the 10 new science faculty hired over the past 5 years, half have been foreign, says James Ammons, associate vice president for faculty affairs. Tugaloo College in Mississippi reports that last year, eight of its 19 science professors were from other countries.

School officials say they have nothing against foreigners per se, they just wish there were more blacks—especially in science, which is "the area of greatest need for role models" for students, says Florida A&M president Frederick Humphries, himself a physical chemist.

Part of the reason behind the trend may be that foreigners are more likely to accept the lower salaries offered at some black institutions, says Wilson. But the root cause is simply in the academic marketplace, says Humphries. "Everybody realizes that particularly in science and engineering it's very difficult to hire minorities, but there's a readily available pool of international faculty."

–C.H.

What Works
Building a Global Lab

When cell biologist George Langford was a young professor at the University of North Carolina, Chapel Hill, in the early 1980s, he faced a problem common to minority scientists: He felt isolated in his own lab. Langford, who was the only black in his department, had trouble recruiting graduate students and finding collaborators. So, he went to Europe.

To be exact, he went to France, where several eager collaborators had invited him to visit the Marine Station at Villefranche. Soon after, he also began a fruitful collaboration with researchers at the Technical University of Munich in Germany. "It's not that there's an absence of racism in Europe," says Langford. "It's that you're seen as an American first, and that's a major advantage psychologically."

DARTMOUTH MEDICAL SCHOOL

Continental style. George Langford *(standing at left)* found international success.

Those international collaborations have been a crucial factor in his success. Today, he is a high-profile cell biologist, who runs one lab at Dartmouth and another one every summer at the Marine Biological Laboratory at Woods Hole. And in both labs, he deliberately fosters a diverse atmosphere, where he and his students collaborate with foreign visitors.

Such colleagues typically perform a variety of vital services for young scientists: they nominate them to professional societies, steer good students to their labs, help troubleshoot experiments, and identify hot ideas. But minority scientists like Langford often have trouble breaking into the informal networks that supply this kind of help. "One of the biggest challenges I had to face was how to become part of a good network of individuals who could provide good and meaningful feedback," he says. "Social networks are very important in science. You can't perform science in a vacuum."

So ever since his 1985 journey, Langford has sought foreign collaborators, and he encourages his students to do the same. In the last year, colleagues and students from Russia, Germany, Ghana, and Kenya have come to his labs, and their work has been published in major journals. In turn, Langford's American students have gone overseas. "I encourage students to go abroad to try to develop good connections with international colleagues," says Langford. "For minority students, in particular, this should be viewed as one strategy to use." And to make it a more accessible strategy, the National Institutes of Health (NIH) have just begun a new program to train minority students abroad (see, p. 1135).

The trip to Europe is, in fact, a well-trod path for minority scientists. The pioneering black biologist Ernest Everett Just—whose chair Langford holds at Dartmouth—also went to Europe in the 1930s to find collaborators. Indeed, in the '40s and '50s many of the few black American scientists were trained in Europe, since they were legally barred from many U.S. institutions. Overseas, they found scientists who had high expectations of American researchers, regardless of racial or ethnic background. That's still true today, and it isn't always the case back home, says Langford. "When I collaborated with some of my white male colleagues who were my own age, I just got the feeling my opinion wasn't valued, and that their expectations weren't as high for me," he explains.

Langford has made sure that feeling isn't a part of his own lab. Darien Cohen, a 25-year-old black graduate student from Savannah, Georgia, says he was drawn to Langford's lab because it's a place where everyone is taken seriously regardless of race, academic background, or nationality. "I don't have to expend a lot of energy to get people to deal with me on a scientific level," he says.

For example, Cohen says that in other labs, he's worried about asking "dumb questions" about science, fearing that whites will think his ignorance means that blacks, in general, can't cut it science. But in Langford's lab, he asks questions freely.

The diverse culture of the lab has allowed Cohen to make a diverse group of friends. While running Western blots in the lab at Woods Hole, he befriended Dieter Weiss of the Technical University in Munich, discussing everything from motor molecules to German reunification. That collaboration led to a 1992 paper in *Nature* on the way a myosin-like protein works like a motor to move organelles inside the cell.

Those friendships are critical for succeeding in science—and for enjoying the enterprise. Says Langford: "When you sense that others are including you, and that the attitude is that everyone in the lab has something to contribute, then it's easier to be open and creative. This, to me, is a lot of fun."

–Ann Gibbons

Mexico, India, and China in his lab—but "very few Americans." Says Kuramitsu: "If we did not have access to these fellows, these jobs would go begging."

But microbiologist John Alderete, of the same university, thinks schools should—and could—do more to ensure that they are not letting minority talent go to waste. "What have the ivory tower schools done to go out there in the field and purposefully try to get minority students?" he asks. With so many foreigners coming in, many universities have less incentive to seek out good minority students, he believes. For example, says Alderete, schools will say there are few minorities in the eligible pool based on the number of applications they receive, but they're not trying hard enough to accommodate minorities who slipped out of the pool halfway through the admissions process, by missing deadlines or failing to complete all forms. "A good progressive admissions department gets on the phone, and makes contact" with such students, he says. But Alderete acknowledges that it's "hard to get hard data" on the numbers of qualified minorities who are slipping through the net.

Indeed, the secret to getting more minorities fired up about science and willing to submit to the long arduous years of graduate training is still elusive. But shifting more resources away from foreign students is unlikely to be much of a solution.

–Constance Holden