NIH Uncovers Racial Disparity in Grant Awards

It takes no more than a visit to a few labs or a glance at the crowd at a scientific meeting to know that African-American scientists are rare in biomedical research. But an in-depth analysis of grant data from the U.S. National Institutes of Health (NIH) on page 1015 in this issue of *Science* finds that the problem goes much deeper than impressions. Black Ph.D. scientists—and not other minorities—were far less likely to receive NIH funding for a research idea than a white scientist from a similar institution with the same research record. The gap was large: A black scientist’s chance of winning NIH funding was 10 percentage points lower than that of a white scientist.

The NIH-commissioned analysis, which lifts the lid on confidential grant data, may reflect a series of slight advantages white scientists accumulate over the course of a career, the authors suggest. But the gap could also result from “insidious” bias favoring whites in a peer-review system that supposedly ranks applications only on scientific merit, NIH officials say.

The findings have shaken NIH. “I was deeply dismayed,” says Director Francis Collins: “This is simply unacceptable that there are differences in success that can’t be explained.” With NIH Deputy Director Lawrence Tabak, Collins has authored a response on page 940. “Now we know, and now we have a chance to do something about it. The leadership here is absolutely committed to making that happen,” Collins says.

But for black applicants, even after accounting for the large number of non-U.S. citizens within that group, a 10-percentage-point gap remained because their proposals were more likely to be unscored or receive a low score. “It’s shockingly different,” Ginther says. While agreeing that “the general conclusion is probably right,” University of Chicago professor emeritus and biostatistician John Bailar cautions that the exact size of the gap is “in question” because Ginther’s team used incomplete data and relied on “a lot of big assumptions,” such as linear scaling of data.

Why didn’t black scientists’ proposals do as well? One possibility is that more of the applications were of lower quality, Ginther says. She and her co-authors suggest that white scientists may enjoy a “cumulative advantage” in grant-writing—for example, through better access to mentors and research collaborations. Still, if that were the explanation, there should have been a gap for Hispanic scientists, too, suggests biologist Richard Morimoto of Northwestern Univer-

The initial surprise was that R01 proposals from black Ph.D. scientists (including 45% non-U.S. citizens) were extremely rare. They totaled only 1.4% of all applications, compared with 3.2% for Hispanics and 16% for Asian scientists. (By contrast, African Americans make up about 13% of the U.S. population.) About 60% of all proposals were deemed good enough to be scored; the rest were turned away with no score. Among highly scored grants, minority groups were funded just as often as white scientists. But when Ginther’s team included both scored and nonscored proposals, they found stark differences: While 29% of applications from whites were funded, only 25% of Asian applications were and only 16% of those from black scientists (see table). In raw numbers, only 185 of nearly 23,400 funded R01 grants were from black Ph.D. scientists—less than 1%.

Ginther’s team sought to account for possible confounding factors, including the applicant’s training, publication record, previous research awards, type of institution, and country of origin. “We did everything but read the proposals,” Ginther says. The difference in grant success rate for Asians, 87% of whom were not U.S. citizens, disappeared when only U.S. citizens were included. This makes sense, Kington says, because difficulties with English might make it challenging for native Asians to write a strong proposal.

STUDY AT A GLANCE

| 83,188 | R01 applications from Ph.D.s analyzed |
| 40,069 | Unique Ph.D. investigators |
| 1149 | R01 applications from black Ph.D.s |
| 337 | Expected awards to black Ph.D.s if same success chance as whites |
| 185 | Actual awards to black applicants |

Seeking answers. Donna Ginther and Raynard Kington probed why grant success rates were lower for black scientists.
A Minority Viewpoint

Although a study published today in Science (p. 1015) raises the specter of potential racial bias in grant reviews at the U.S. National Institutes of Health (see main text), several black biomedical scientists who’ve served on NIH study sections say they’ve seen no direct evidence of this.

“...more subtle kinds of bias can’t be ruled out.”

One expert on racial inequality, economist Samuel Myers of the University of Minnesota, Twin Cities, calls for the same type of comprehensive analysis to be done for NSF: overall funding rates for black scientists who apply for NSF grants are about 4 percentage points lower than for whites, according to the agency’s own data since 2002. “It’s not a high percentage, and we don’t know how statistically important it is, but we do track it,” says NSF spokesperson Maria Zacharias. Looking only at research grants “would reveal a much larger disparity,” Myers suggests.

Publicizing that young black scientists have such a hard time winning NIH’s R01s, some leading black biomedical scientists say, may unfortunately make things worse. The paper “could have a chilling impact on our ability to mobilize and inspire young people,” says Reed Tuckson, executive vice president of UnitedHealth Group in Minnetonka, Minnesota. James Hildreth, dean of the college of biological sciences at the University of California, Davis, says that although race never came up in his section’s review discussions, he can’t rule out knowing a grant applicant was a member of a minority group might unconsciously influence his decision—in a positive direction. A more likely explanation for the race gap, Brown suggests, is that young black scientists have a harder time finding mentors to whom they can relate; as a result, they may not receive as much training or guidance in grant writing. “There just aren’t as many people for African Americans,” Brown says.

The mentoring issue cuts both ways, Wormley notes. The time constraints imposed by serving on minority recruitment committees and mentoring students often leaves precious little time for minority scientists to do their own research. “As an underrepresented minority, you want to give back,” he says. “But as an minority scientist told me once, ‘You do no one, especially other minorities, any good if you don’t get tenure.’” Make no mistake, he says: Receiving an R01 is essential to success in the biomedical field at a research university: “If you do not get an R01, you probably will not make tenure.”

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