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Promoting Diversity in Research



Championing an Inclusive Scientific Work Force

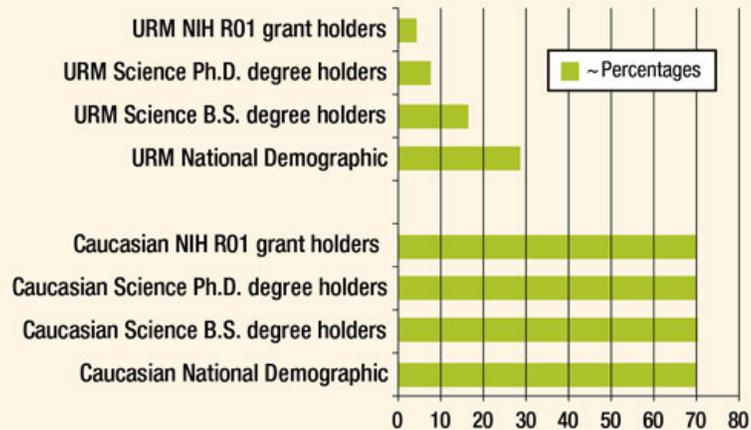
BY SHAWN R. DREW

What is diversity? In the sciences, it's the variety of interdisciplinary fields that we often combine to solve complex biomedical problems; it's the mathematician, biologist, neurologist and physicist working together. Diversity is also an array of human characteristics that differ among us and shape our experiences.

The Problem

A current problem in today's biomedical work force is the underrepresentation of certain groups—namely minorities (such as African-Americans, American Indians, Alaska Natives, Hispanic/Latino Americans and U.S. Pacific Islanders) and individuals with disabilities.

Disparity of Biomedical Science Representation



Sources: U.S. Census Bureau; NIH Office of the Director; National Science Foundation "Women, Minorities and Persons with Disabilities in Science and Engineering Report."

Note: Underrepresented minorities (URMs) in the biomedical sciences are African Americans, American Indians and Alaska Natives, Hispanic/Latino Americans and U.S. Pacific Islanders.

Note: While Asian Americans make up 4 percent of the U.S. population, they account for close to 14 percent of the scientific work force and are not considered underrepresented in the biomedical sciences in the U.S.

Figure 1 shows that there is a disparity in the proportion of underrepresented minorities (URMs) versus Caucasians in the sciences. While URMs represent approximately 29 percent of the U.S. demographic, they represent only approximately 4 percent of the National Institutes of Health R01 biomedical research grant holders. This same downward trajectory is not seen with Caucasians, whose representation is at or greater than parity at the noted levels. The underrepresentation in the sciences we see for URMs also holds true for individuals with disabilities: They represent 11 percent of the Bachelor of Science holders but only 1 percent of the population with scientific doctoral degrees.

You might wonder whether it really matters who is doing science as long as good science is being done. It does matter; research shows that diverse teams are better at solving complex problems (1). On homogeneous teams, unquestioned assumptions remain unquestioned, and everyone gets stuck in the same place. If we only listen to people who agree with us, we cease to grow. In the words of writer Walter Lippmann, "Where all men think alike, no one thinks very much."

Representation does not mean mere numbers or even a quota. It means having qualified individuals from various backgrounds, perspectives and influences to strengthen our ability to solve complex scientific problems. In doing this, diversity is not just a feel-good issue or simply the right thing to do; it benefits everyone through improved outcomes.

Additionally, scientific researchers are better able to relate to the general public when the scientific work force has adequate minority representation. Remember the Tuskegee syphilis experiment and the 40 years of unethical treatment of African-American men that left a lasting legacy of distrust of the medical/research community? It's that distrust that is an underlying reason why many African-Americans are not organ donors and do not participate in clinical trials. Furthermore, for the majority of this country, the autonomy of the individual in agreeing or disagreeing to participate as a research subject is paramount. But for some communities, especially some American Indian tribes, autonomy of the group outweighs that of an individual. When scientists do not reflect various communities they intend to study, there can be rampant mistrust and/or an underappreciation of certain cultural value systems.

What the NIH Is Doing

To increase the diversity of the scientific work force, the NIH requires all applicants for its predoctoral and postdoctoral institutional research training (T32) grants to submit a plan to recruit and retain individuals from underrepresented groups. At the National Institute of General Medical Sciences, we take a very serious look at these plans and their outcomes. The plans to enhance diversity are first considered by the initial review group, then by the National Advisory General Medical Sciences Council and finally by an administrative staff committee. Applications with unacceptable diversity plans are barred from funding until an updated plan is acceptable, regardless of the priority score.

NIH also provides research supplements to promote diversity in health-related research. Those "diversity supplements" provide funds to an existing NIH research grant to support an underrepresented student or postdoctoral fellow to work in a grantee's lab. Each NIH institute or center, much like academic departments, has different policies or practices for program implementation. At NIGMS, we allow more than one student or postdoctoral fellow per NIGMS grantee for this program. This encourages principal investigators to bring multiple underrepresented participants into their labs. Also unique to NIGMS is that, beyond the college level, we expect PIs to indicate how they will foster the transition of their underrepresented graduate student or postdoctoral fellow over to traditional funds. We think of the diversity supplement program as a hand up, not a handout or entitlement, and we expect our mentors to aid in transitioning their trainees to mainstream training mechanisms.

10 Things You Can Do

There are several ways you can help increase diversity in the biomedical sciences:

1. Take on a leadership role in the diversity debate. You can "lead from below" until the "tone at the top" of your institution is as committed as you are to increasing diversity in the sciences. Organize campuswide discussions on diversity issues.
2. Participate in the NIH diversity supplement program and other underrepresented-student development programs supported by the NIGMS Minority Opportunities in Research Division.
3. Attend national minority-oriented science student conferences, such as the Annual Biomedical Research Conference for Minority Students and the Society for the Advancement of Chicanos and Native Americans in Science meeting, to recruit underrepresented students. More than 2,000 URM students attend each conference annually to present scientific research. A good way to interact with students is as a judge.
4. Establish partnerships with academic institutions that have high concentrations of underrepresented students. The partnerships can be used to both recruit students to your program and better prepare students for your programs. For example, talk to students and faculty at minority-serving institutions about what it takes to be competitive enough to enter your graduate program.

5. Establish partnerships with local organizations that hold health and science fairs where underrepresented groups are prevalent. These efforts go a long way to help establish trust of the medical research community.

6. Contact the office of disability services on your campus or at your company and ask officials for advice on how to make science more accessible.

7. Google "recruit student disabilities," and tons of useful information will come up to help you reach out to these individuals.

8. Ensure that your Web sites, brochures and other marketing materials have welcoming and inclusive language. Do you include images of people from diverse backgrounds? Instead of saying "Persons with disabilities are welcome to apply," try "People with disabilities are valued members of our institution." In order to reach out to others, look inward and ask questions like: What is our message? Is our program/institution welcoming and accommodating? What is our track record? Who is delivering our message?

9. Update your business cards to include Braille; this is a great way to showcase an inclusionary spirit.

10. Publish your findings on diversity issues. Describe your approaches and conclusions regarding issues of diversity. Web sites like Diverse Issues in Higher Education (<http://diverseeducation.com/home.html>) or Inside Higher Ed (www.insidehighered.com) are useful sources to accomplish this.

Reference

1. Scott E. Page (2007) *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies*. Princeton, NJ and Oxford: Princeton University Press, , pp. 448.

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Online Resources Information on NIH/NIGMS diversity programs:

- NIH T32 training program: <http://bit.ly/4GxEUQ>
- Frequently asked questions about NIH T32 required recruitment and retention plan to enhance diversity: <http://bit.ly/7AF80m>
- NIGMS Research Supplements to Promote Diversity in Health-Related Research: <http://bit.ly/6PGZCe>
- NIGMS Minority Opportunities in Research Division programs: www.nigms.nih.gov/Minority

Minority-oriented science student conferences:

- Annual Biomedical Research Conference for Minority Students: www.abrcms.org
- Society for the Advancement of Chicanos and Native Americans in Science: www.sacnas.org

Academic institutions with a high concentration of underrepresented students:

- Department of Education: For details on historically black colleges and universities, Hispanic-serving institutions and tribal colleges: www.ed.gov/index.jhtml
- Appalachian College Association: www.acaweb.org
- Gallaudet University (for deaf and hearing impaired undergraduates): www.gallaudet.edu

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