

Disparities Persist in Cancer Careers

Progress made through government programs, but more work needed

Minority scientists—especially Black scientists—have long been underrepresented in the oncology workforce, a disparity often attributed to a low number of minority students starting and continuing careers in science and medicine. Although progress has been made through government programs that offer students of all ages opportunities to explore careers in oncology, more work is needed to promote diversity.

“I believe having a diverse group of cancer scientists and cancer caregivers is good for society in many ways. It’s more equitable, it’s better for patients, and it’s better for science,” said NCI Director Norman “Ned” Sharpless, MD, during an address at the American Association for Cancer Research (AACR) Virtual Annual Meeting II: June 22–24, 2020. “We need different ideas, different points of view, and different approaches.”

Historically, diversity among oncologists and cancer researchers has been lacking. In the United States, 13% of the population is Black or African American and 18% is Hispanic, but only 2.3% of practicing oncologists identify as Black or African American, and only 5.8% identify as Hispanic. The reasons for this stark difference are complex, but likely result from few minority students choosing careers in oncology, and many then leaving the field as they encounter roadblocks, such as limited mentoring and the inability to secure funding to advance their careers.

“For many communities, models of careers in science are quite scarce, so I think the issue of the pipeline ... really starts quite early,” said Lola Fashoyin-Aje, MD, MPH, of the FDA, during a panel discussion at the AACR meeting. To combat this issue, the FDA started the Oncology Center of Excellence Summer Scholars Program, a 6-week program that offers underrepresented high school students the opportunity to explore drug development. At the NCI, the Continuing Umbrella of Research Experiences (CURE) provides training and career development for underrepresented students starting in middle school and lasting until they are junior investigators.

However, Hannah Valantine, MD, of the NIH, noted that there have been many such programs for younger students over the years. “We have what I often call a proximal coronary stenosis, in that there is a blockage in the pipeline, and until we unblock that pipeline in the transition to faculty, I think we will limit the capability of even expanding the pipeline earlier,” she explained.

To this end, the NIH has launched two programs over the past year. One, Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC), provides funding and professional support to postdoctoral researchers from diverse backgrounds as they transition into faculty roles. The other, Faculty Institutional Recruitment for Sustainable Transformation (FIRST), is a \$241 million initiative that aims to change the culture of institutions. Roughly a dozen

institutions will each receive funding to hire 10 or more faculty members from underrepresented groups or who are allies, and to support work around racism, biases, and mentoring.

Another barrier to success for Black scientists is a gap in R01 funding rates compared with white applicants, which Valantine considers the “elephant in the room.” From 2014 to 2016, Black investigators were funded at a rate of 10.2%, compared with 18.5% for white investigators. This gap has been partly attributed to Black investigators choosing research topics more focused on community and population-level research, which may be less likely to excite reviewers (*Sci Adv* 2019;5:eaaw7238). It has also been linked to Black scientists receiving lower criterion scores during the review process (*Sci Adv* 2020;6:eaaz4868). A lack of funding can make it even more difficult to secure future funding, creating a cycle that is difficult to break.

“NIH funding is key to the perception of academic success, it is critical to promotion and tenure, it is the lifeblood of a large independent research enterprise, so if we don’t fix this, we will continue to miss out on the creative genius of underrepresented minority scientists,” Sharpless said. Pipeline programs such as CURE have largely eliminated this disparity for people who have participated, he added, but more work is needed. For example, the NIH is investigating potential biases in the review process and how they can be overcome, Valantine noted.

For Robert Winn, MD, director of the Virginia Commonwealth University Massey Cancer Center in Richmond, the way forward is less about developing new programs and more about taking action based on what we already know. “The reality is, many of us have been saying the same thing in the 60s, in the 70s, in the 80s—it’s like a fugue state, we keep going back to the same information,” he said. “We’ve had programs that have been validated—it’s not the issue that we don’t know, it’s the issue of the will.”

John Carpten, PhD, of the University of Southern California’s Keck School of Medicine in Los Angeles, agreed, offering suggestions such as proactively recruiting students from historically Black colleges and universities and modifying the grant review process to support diverse applicants. “Progress has been made, undoubtedly, but we still have a long way to go,” he said.

He added, however, that before the system can truly begin to change, people must begin acknowledging a larger and more systemic issue. “I really think we have to get to a point where people can begin to feel comfortable recognizing racism,” he said. “Racism is a hard word; we tend to want to use ... ‘diversity and inclusion’ because it sounds better—but we’ve got to become more uncomfortable if we’re really going to move the needle and see racism dispelled in America.” —*Catherine Caruso* ■



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