

Pathways: A National Mentorship Program for High School Students Underrepresented in Science and Medicine

“So, tell me again what this is?” my mother asked me. Between stirring a steaming pot and leaning over to peek into a hot oven, she added, “It’s like a magazine for doctors?”

Standing in the kitchen doorway, I held its crisp pages against my chest—my very first publication in a scientific journal. Even though my name was squeezed in between many others, seeing it in print transformed hundreds of hours in the lab into a heart-swelling pride at having contributed to the human knowledge base.

It wasn’t my mother’s fault that this was my household’s introduction to academic journals. In my working-class family of Caribbean immigrants, construction workers, policemen, custodians, nurses, and devoted stay-at-home parents like my mom often filled our home, but no one who worked in science or medicine.

This meant that, when growing up, I never strove to become a researcher. Working weekends as an EMT during college, I stumbled across the idea as I watched a patient I had just transported to the hospital being enrolled in a study on wound regeneration.

I was enticed by the possibility of studying the underlying processes of healing for my patients, but laboratory research was foreign and intimidating. Did I have the necessary skills or knowledge? Was research in conflict with my wanting to become a physician? Who would I ask about exploring it?

An occasional bad cold or flu as children meant that my sisters and I had a notion of being a “doctor”—at least from a distance. But the concept of a clinician–scientist, the academic, the doctor who not only provided state-of-the-art standard-of-care but pushed the boundaries of what that standard-of-care is, the type of doctor I would eventually aspire to become, didn’t exist. The only scientists I knew were comic book villains.

Diversity in science and medicine is persistently lacking because of the myriad challenges underrepresented students face on the pathway to becoming researchers.^{1,2} For me, those challenges included applying to graduate school with little money, finding mentors who shared my racial identity, and reconciling my interest in the frontiers of science and medicine with the fact that millions lack access to the medicine we have already. But the first challenge, given the absence of scientists in my social network, was simply knowing the pathway exists.

Efforts to foster interest in science among young men and women who will increase representation by gender, race, ethnicity, and socioeconomic status should go beyond increasing exposure to the subject of science and seek to increase exposure to actual scientists. A national mentor match, modeled on Big Brothers Big Sisters for America,³ could seed the careers of a generation of new scientists from underrepresented backgrounds and thus enrich the field with a massive influx of diverse ideas and perspectives.⁴

Underrepresented high school students would be matched with practicing scientists, including doctoral and post-doctoral trainees, for mentorship. Formalizing the mentorship match allows mentors to be vetted to protect participants. It would provide a means to track the success of mentorship and to disseminate mentorship education. It can provide tracking, which allows mentors to be credited academically by their institutions, so that, for mentors, time spent mentoring is not a tax but rather an investment in themselves and, through their mentees, the future of science.

I propose that, if selected, the funds from this competition be used to establish a pilot mentorship match in the state of California. This pilot would be committed to rapid cycles of evaluation and improvement and designed in partnership with the Lasker Foundation.

I have been fortunate. Researchers, some underrepresented themselves but many who were not, saw my interest and reached out to adopt me into the world of science and medicine. They have shown me already-beaten pathways, given me tools to clear pathways of my own, and at times allowed me to walk with them down theirs. For them, I am immensely grateful for having changed the trajectory of my life. We could do the same for thousands of students, and do it earlier, increasing the chances of their success and furthering the distance they will travel in their own journeys.

1. Li D, Koedel C. Representation and Salary Gaps by Race-Ethnicity and Gender at Selective Public Universities. *Educational Researcher*. 2017;46:343-54.
2. Nelson D, Brammer C. A National Analysis of Minorities in Science and Engineering Faculties at Research Universities. 2010.
3. Mitchell J. 2017 Big Brothers Big Sisters of America Annual Impact Report. 2019.
4. Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads: National Academy of Science, National Academy of Engineering, and Institute of Medicine. 2011.