Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Cancer Cell

CellPress

Voices

Diversity Is a Strength of Cancer Research in the U.S.

We stand against racism and discrimination in cancer research in the U.S. By sharing the stories of scientists from different ethnicities, identities, and national origins, we want to promote change through mentoring, active participation, and policy changes and to inspire the next generation of cancer researchers: we make better science together.

Miriam Merad
The Tisch Cancer Institute and the Precision Immunology Institute at the Icahn School of Medicine at Mount Sinai

Diversity Drives American Science

In 1998, during my first interview at Stanford I was struck by the diversity of the trainees and by the ease with which they were discussing science despite their heavy accents. Today, 20 years later, I continue to be as inspired by the diversity of the U.S. scientific community. My lab now consists of scientists from 16 different countries united by their passion for science and medicine. During the COVID-19 pandemic that severely hit New York, the Mount Sinai COVID team was a faithful representation of most U.S. labs, diverse in ethnicity and dominated by recent immigrants. The energy I felt among them had the most soothing effect during the pandemic bleakness. An energy unleashed against the COVID fight, often driven by immigrants determined to make the most of their opportunity to work in the U.S., and in so doing contributing to the force of American science and to its standing.

However, American standing in science was not always so prominent. Not long ago, Europe was the science epicenter. It took America significant investments and vision to reach its prominent place in science. This included the decision to welcome and train scientists from all over the world, many of whom have contributed to major medical discoveries that improved Americans' lives. Policymakers need to better understand the history of the sectors affected by visa restrictions and reflect on whether "America First" policies would have led America to become first in science. How fast the U.S. could lose its standing with these restrictions in place is unclear, but the histories of fallen empires often start with populism and isolationism, and America will not be immune to such destiny.

Avery D. Posey, Jr.
Perelman School of Medicine at the University of Pennsylvania

Curing the Cancer of Racism

Racism is a cancer within our society. We need not look further than the lack of racial diversity within university science departments and pharma to diagnose it. This malignancy, which initiated long before our individual life cycles and extends far beyond cancer research, perpetuates the discrimination and racial exclusions of our segregated past. Just as cancer researchers have identified the underpinnings of resistance within tumors and have developed cures, we are well suited to eradicate racism—and now is the time.

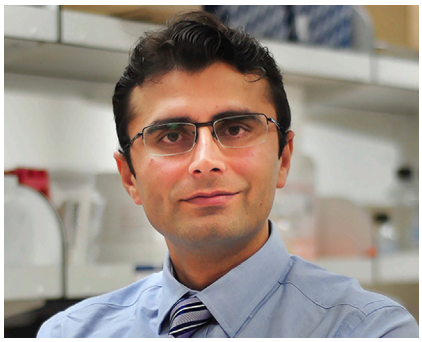
If the effects of racism in academic research could be radiologically measured, the diminishing pipeline of minority trainees transitioning at each career stage would illuminate as an area needing attention. While interest in STEM majors is similar among all undergraduate students, the number of underrepresented minorities trickles into virtual non-existence at the faculty level. At every institution where I interviewed, if hired, I would have been the only Black faculty member in the department, and, for many, the first. Fortification of mentoring and support networks for trainees of color is critical to improve the transition rate to faculty. Transformative mentors serve as advocates, share the back-of-the-envelope conversations, and fill gaps in knowledge on how the system works. However, racially exclusive practices are long standing, and counteracting initiatives are necessary. It is time that we are all adamantly intentional about racial inclusion and dismantling barriers to success. Imagine a world in which a rich diversity of thought, culture, and lived experiences within our laboratories contributes to cancer research breakthroughs of the future.

Ofelia Olivero
National Cancer Institute, National Institutes of Health

Socially Responsible Mentoring

There are multiple ways to react to social injustice. There are numerous avenues to voice, suffer internally, process, and heal. There are letters to sign, petitions to forward, marches to attend, placards to paint. Those are all valid expressions of dissent and appropriate vehicles to draw attention to historical injustices that plague this country. The lack of representation of minorities in science is a fact that cannot be denied. However, there are ways to implement change. Scientists who are Black or belong to other minority groups often feel they are not an integral part of the scientific community. They continuously experience both subtle and overt discrimination at their workplaces. A different kind of mentor, one who can see past ethnic differences and can nurture scientific talent, is vital for retaining those individuals in science. Beyond checking boxes and complying with quotas, a socially committed mentor can make a difference by training and retaining underrepresented minorities in science. Mentoring minority scientists requires a profound understanding and alignment of personal and professional values. Socially committed mentoring can support individuals to thrive even in a hostile environment. I hope this piece will encourage those who mentor minority scientists to continue changing lives by genuinely believing in their mentees and committing to their success. One at a time, socially committed mentors are creating the new generation of diverse scientific leaders who will serve a culturally rich and inclusive society.

The opinions expressed by Dr. Olivero are her own, and this material should not be interpreted as representing the official viewpoint of the U.S. Department of Health and Human Services, the National Institutes of Health, or the National Cancer Institute.



Pankaj K. Singh
Eppley Institute for Research in Cancer and Allied Diseases, University of Nebraska Medical Center

Diversity Promotes Research

Cancer research requires collaborations for ideas, reagents, technical expertise, and resources across disciplines. We can make great strides in our fight against cancer when people are allowed to work collaboratively on their scientific hypotheses. This may mean training for the latest technical or intellectual skills across the continents or neighboring countries. The new generation of scientists must be trained to impart knowledge and skills, allowing them to take on any research questions. However, visa issues and racism stifle the free-spirited nurturing of science.

Being an immigrant myself, I have had the opportunity to learn from the best. I have achieved all I could because of the unbiased support from my mentors and employers. Running one of the most culturally diverse labs at the Eppley Institute, as a PI I am aware that trainees come with different backgrounds, expectations, and skills. This diversity allows innovations and creativity in scientific thinking, bringing diverse ideas and diverse talent pools to the same platform to bolster scientific collaborations. We have collaborated with pioneers across the nation and the globe, and such partnerships have allowed us to work on scientific ideas beyond our skills and research expertise. I firmly believe that such enriched collaborations and rising above one's perceived notion of what this disease is or how to target it are needed to fight cancer. It's our job as mentors and scientists to ensure the growth of trainees in an unbiased manner to pass on the scientific baton to the next generation.

Ghassan Mouneimne
University of Arizona Cancer Center

Embrace Your Identity

LGBTQ individuals contribute unique ideas, values, and skills to cancer research. Since it generally falls on the individual to reveal or hide their sexual orientation/gender identity, the LGBTQ community constitutes an "invisible diversity" within the cancer research community. As a gay graduate student and postdoc, I never felt that I was a victim of discrimination. However, as a young faculty member, I was once advised at a training workshop by a senior scientist that I needed to present myself differently to be an effective communicator. At first, I wanted to dismiss this comment as a suggestion that I was dressed too casually for my presentation; however, when I looked around the conference room at other participants, I knew that dress code formality was not the problem, but perhaps my light blue oversized chiffon summer scarf was. This made me wonder how many opportunities I had missed in my early career because I "presented" myself in an unconventional way; it made me consider whether I should mask my

personal style in order to get ahead in the future. I realized that how much an individual conforms to social norms (i.e., for a gay man, how "gay" does one look or sound?) is inversely proportional to the risk of being a victim of discrimination. Nonetheless, since then, I decided as a scientist and educator to always embrace being different. Being an example for LGBTQ students and trainees is crucial for their development; concealing one's identity is demeaning, stressful, and potentially psychologically damaging. In academia, we should strive to create an environment where LGBTQ individuals are encouraged to be visible without facing the dilemma of deciding how much of themselves to reveal and how much to hide.

Lingyin Li
Stanford ChEM-H Institute

My Story as an Immigrant

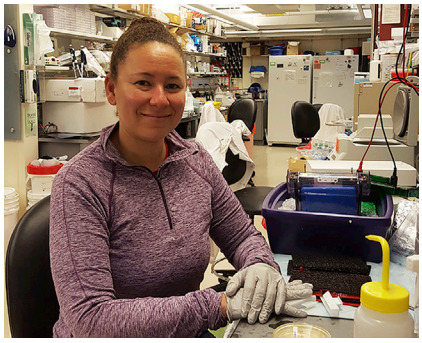
My great-grandfather, a politician/revolutionist, established many schools in my hometown, Xi'an, China, among which was the first school for girls, where his three daughters studied. My grandmother was an award-winning elementary school teacher and raised my mother to crush gender barriers. My mother was an accountant, good with numbers, and I grew up seeing her work relentlessly. My aunt came to the U.S. to study immunology as part of the first group of Chinese students since the wars. So of course I was not raised to accept that "literature is for girls, math is for boys," as my elementary school math teacher said. After the math and physics departments of the University of Science and Technology of China rejected me, I majored in polymer physics and joined the lab of Yi Xie, a world-renowned female scientist. When I came to the U.S. for graduate school, my advisor, Laura Kiessling, a certified genius, always supported me. My postdoctoral advisor, Tim Mitchison, an immigrant himself and known for his support of women, let me be myself and told me to never change even when I showed my rebellious nature. He helped me get my green card, which allowed me to become a U.S. citizen later. I was recruited to the Stanford ChEM-H Institute among a group of misfits from different backgrounds and disciplines who finally found where they belonged. My story is a mixture of rebellious nature, luck, and support. As immigrants, our risk-taking nature enable us to join the workforce of cancer research; we get used to the feeling of loneliness in uncharted research territories. Our resourcefulness helps us think outside the box, and our humility prepares us to accept the unknowns and frequent failures, but our relentless optimism ultimately keeps our eyes on the horizon.

LaShanale M. Wallace
St. Jude Children's Research Hospital

Accepting the Challenge

I view cancer as a global puzzle, where contributions from scientists of all backgrounds are needed. Growing up in a small California city, I felt at a disadvantage when it came to pursuing a career in science, due to the lack of mentors who shared my racial identity. This played a role in my decision to attend a historically Black college and university, where I hoped to satisfy my need for Black representation from professors and peers. Participating in research programs with goals of diversifying science played a huge role in building my scientific confidence and ultimately choosing research as my career path. However, that confidence completely diminished after I was rejected from every graduate school that I applied to. I was discouraged, but peers and mentors inspired me and showed me that it was still possible to reach my goal, despite feeling underqualified and as an outsider at most institutions. As a trainee, facing my insecurities of belonging in this realm has been my greatest challenge. However, seeing other Black scientists be recognized by their peers has shown me it is possible, and it has influenced my decision to advocate science to underrepresented populations. I truly believe in the value of reaching and educating youths of all ages. Therefore, I promote the need for diversity by participating in STEM panels, outreach programs, and primary school scientific modules. With these experiences I hope to inspire the next generation and create a narrative that Black women can be scientists.

This is the opinion of the writer and should not be interpreted as representing the views of St. Jude Children's Research Hospital.



Tikvah K. Hayes
Dana-Farber Cancer Institute, Harvard Medical School

Representation Matters

Mentors serve integral roles in molding the next generation of scientists. When I started my postdoctoral fellowship, I was a member of Dr. Levi Garraway's laboratory and was extremely enthusiastic about the prospect of having a Black mentor guiding me as I developed my independent research program. Unexpectedly, 6 months into my fellowship Dr. Garraway accepted a position at Eli Lilly and dissolved his laboratory. With his departure, I found myself in an environment without any Black research faculty mentors, wondering how I should move forward. I was fortunate to join a neighboring laboratory and am ever grateful for the opportunities and support my current mentor, Dr. Matthew Meyerson, has provided over the last few years.

Unlike many of my colleagues, mentors who share my experiences are scarce in the current academic landscape. The search for Black mentors in my specific field led me beyond my institution and even my state. As I survey the academic landscape, I keep circling back to the low representation of Black faculty in STEM. This is too often attributed solely to a weak pipeline, but that is only a piece of the problem. Many qualified Black faculty candidates aren't getting the same opportunities as their colleagues, as is reflected in data collected by the NIH, which argues that without intentional intervention the disparity will continue to grow. Tackling this impediment will require significant institutional investment and a strong commitment to creating a more diverse environment. As I think about the next generation of scientists, I believe they deserve to have mentors that are reflections of them. You can't aspire to become what you can't see.