Director Lander, the time is now

The Biden administration's decision to elevate the Director of the White House Office of Science and Technology Policy (OSTP) to a cabinet-level position is a win for science. Eric Lander, confirmed in May by the Senate, is now advising the president on the scientific, engineering, and technological policies of the US government. As Dr. Lander carries out this task, we hope that he keeps in mind what President Biden asked him in a letter in January: “How can we guarantee that the fruits of science and technology are fully shared across America and among all Americans?”

The challenges ahead are formidable. The devastating health and economic impacts of two major crises—climate change and the COVID-19 pandemic—have revealed deep societal fault lines that prevent the United States from drawing on the talents of all Americans to tackle these problems. Thus, there is an urgent need for smart and socially minded policy-making.

If the fruits of science and technology are to be truly shared, they should be produced by all Americans. This cannot happen if the scientific enterprise tolerates insidious systemic racism and sexism. That membership in the US National Academies of Sciences, Engineering, and Medicine remains predominantly white and male speaks volumes. Such stark disparity also exists in federal institutions that support research and training in science, technology, engineering, and mathematics (STEM) and biomedicine. For example, National Institutes of Health (NIH) intramural senior investigators from underrepresented groups (Black, Hispanic, Alaska Native/American Indian) constitute only 5.1% (and women only 24%), and Black scientists remain 55% less likely than white scientists to receive NIH’s extramural funding. This year, the agency announced that all NIH Institutes and Centers are now jointly focused on identifying and correcting structural racism. However, this acknowledgment of the problem is only a first step. For example, although funding research on health disparities through the new NIH UNITE initiative is important, it is essential to recognize that such initiatives will not solve racial inequality problems in science. A system that pigeonholes scientists into a narrow racial interest bin must be overhauled. Racially underrepresented scientists are as likely to put the first humans on Mars, for example, as they are to solve health disparity problems. Therefore, OSTP should work with all federal research agencies to eliminate bias throughout their systems and in existing and new funding programs.

A major charge placed on OSTP by President Biden is to ensure that science and technology flourish in America. This starts with making inclusive STEM education a priority, as many STEM classrooms at top US universities still lack students from underrepresented groups. Despite all the efforts to address education equity, the US educational system is still producing disproportionately fewer racially underrepresented Americans for jobs in science and engineering. For example, in 2019, Black, Hispanic, American Indian/Alaska Native, and Native Hawaiian/Other Pacific Islander groups received 4.4, 12.1, 0.4, and 0.2% of engineering bachelor’s degrees, respectively. This underrepresentation is most stark for Blacks, who make up 14% of “Gen Z” (6 to 24 years old). Similarly, women accounted for only 22.5% of engineering bachelor’s degrees in 2019. Left uncorrected, the negative impact on the US technical workforce size and innovation will be vast, as students of color will soon represent nearly 48% of high school graduates. Moreover, COVID-19 pandemic hardships might cause an exodus of women and racially underrepresented role models—those most affected by the pandemic—from STEM, setting back already lagging equity efforts.

Concomitantly, leadership within national funding agencies and at federally funded universities must change. These positions cannot remain the privilege of white men—only 14% of higher education administrators are non-white despite their 38% representation in the population. Women and non-white scientists cannot continue to be given junior fellowships, only to be derailed from professional advancement later by majority gatekeepers. A cultural change is also needed to retain those in the STEM career pipeline. Accountability systems for discrimination, sexism, racism, and harassment need overhauls—their burden cannot continue to crush and end the careers of victims and truth-tellers.

The answer to President Biden’s question to Director Lander is clear: OSTP must guide the administration toward policies that mandate all stakeholders to attract, nurture, and promote the best and brightest across all populations in the United States. The steps toward implementing these policies will be hard. Nevertheless, the American people are ready, and the time is now.

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Science 373 (6550), 7.
DOI: 10.1126/science.abk1976