

Science's new frontier

The year 2020 saw a reusable rocket launch two astronauts into space, multiple COVID-19 vaccines developed in record time, and a robot that could write a persuasive op-ed. In the United States, the year also saw public distrust of science contribute to the worst health crisis in modern history. This contrast highlights a sharp dichotomy in the role of science in American public life: breathtaking discovery and innovation alongside growing distrust of scientific evidence and recommendations. How can the country reconcile this dissociation?

The problem is that few Americans have access to scientific institutions, to the process of research and discovery, and to scientists themselves. Elite American universities lead in scientific R&D, but low-income and even middle-class students are underrepresented. Clinical trials, a core part of medical research, often do not reflect America's demographic and socioeconomic diversity. A recent poll reported that more than 80% of Americans could not name a living scientist. If most Americans are not scientifically knowledgeable or engaged, they are less likely to trust scientific evidence and rally together to tackle future pandemics, confront climate change, or adopt new technologies.

To bridge this disconnect, the Biden administration could launch an "American Science Corps" (ASC) to elevate science as a central part of American culture. Such a nonpartisan agency, federally funded and administered, would employ early-career scientists in underserved urban and rural communities to fulfill the goal expressed by Alondra Nelson, the Office of Science and Technology Policy's newly appointed deputy director for science and society: "to situate [scientific] development in our values of equality, accountability, justice, and trustworthiness." Eventually placing 20,000 full-time ASC service members across the country, each serving roughly 16,500 Americans, would create a cooperative extension service—for science.

The ASC is inspired by the Agricultural Extension Service, which, for over a century, has employed county agents at land-grant universities. The agents serve as a conduit between academic researchers and farmers, designing educational programs that respond to local needs and communicating farmers' problems back to researchers. Equally ambitious, the ASC would administer civic science workshops, public events, and train-

ing programs to engage Americans on the nuances and assumptions associated with scientific research and discovery. The ASC would enable dialogue that redirects science toward problems that plague local communities but often remain blind spots for academic researchers.

ASC service members would receive training from communications experts and behavioral and social scientists. Training would include learning how to listen to community needs and engage in forums that scientists have traditionally avoided, such as places of worship, state and county fairs, farmers' markets, town halls, local theaters, libraries, community colleges, and sporting events. To attract talent, the ASC needs to become a viable career option. The scientific enterprise incentivizes research careers, but full-time jobs in public engagement are often considered fringe, alternative, or second-rate choices. Potential ASC service members exist among the Ph.D. students and postdocs whose academic job prospects have been diminished by the pandemic. Elevating ASC service members to the same prestige and compensation as those of researchers would attract highly qualified scientists committed to pursuing this new career, giving them time to build trust and carry out long-term programs that can lead to lasting change.

We estimate that deployment of 7000 ASC service members for a pilot year would cost \$500 million—a mere 0.4% of annual federal R&D spending across the Departments of Defense

and Energy, National Science Foundation, National Institutes of Health, and National Aeronautics and Space Administration. This relatively small investment would bolster the missions of these departments and agencies, ensure a stronger workforce, and encourage greater public support for their work while benefiting public health, economic justice, and national security. As the economy adapts to new technologies, ASC service members could help retrain and bring new skills to American adults. The ASC would also counter misinformation and conspiracy theories arising from gaps in trust in science.

Uniting the country around the conviction that science can improve the life of every American would be one of the most important public investments of the century. Without such an effort, vast swaths of Americans may not benefit from, or participate in, "the endless frontier" of scientific progress.

—Aaron F. Mertz and Abhilash Mishra

"...pursuing this new career...to build trust...can lead to lasting change."

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