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The importance of using science to solve social problems (essay)

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The Future of Science

Science is under attack. We have been hearing this for decades, and it is truer now than ever before. The Trump administration's attempt to obtain names of civil servants who attended climate-related meetings ^[1], the proposal to cut the EPA's research office by up to 42 percent ^[2] (including the entirety of the Global Change Research Program), the overturning of policies that are grounded in scientific consensus and vital to our survival, the disdain with which Trump and his allies dismiss scientific evidence -- these all constitute clear assaults on science. In response, scientists are mobilizing to resist the Trump agenda, including with a proposed March for Science ^[3] (previously called the Scientists' March on Washington).

If we strike while the iron is hot, this could be an opportunity not just to defend some abstract understanding of "science" but also to advance a much stronger vision of how science can serve the common good. Scientists and others in the STEM fields ^[4] should make lasting commitments to stand in solidarity with the people of the world most harmed not just by the Trump administration but also by oppression and exploitation in all their forms.

The pursuit of scientific knowledge for the betterment of society has already long been shackled. Ask Marc Edwards. He's the Virginia Tech professor who worked with people in Flint, Mich., to expose the poisoning of their water supply. In an interview titled "Public Science Is Broken ^[5]," Edwards criticized the "perverse incentives" offered to faculty members and the risks involved in challenging the people who provide research funding. He concluded, "We're all on this hedonistic treadmill -- pursuing funding, pursuing fame, pursuing h-index -- and the idea of science as a public good is being lost."

That treadmill is not the science we need to defend. Nor is the science that profits agribusiness at the expense of impoverished farmers, torments villagers with the threat of drone strikes or otherwise privileges the acquisition of knowledge beneficial to corporate and military interests above that which supports human needs.

We should also be wary of defending science when it is imagined to be the province solely of an expert elite. We can respect the knowledge science produces while recognizing the many people

from diverse social backgrounds who contribute to it: not just Ph.D.s but also farmers, members of environmental justice communities, people living with illnesses under research and many others.

The science we should rally to defend is that which people pursue with political consciousness for the benefits it brings to society and the planet. Lest anyone see that as too utilitarian, I would hasten to emphasize that charting the stars, learning the language of dolphins and pursuing a great many other subjects that bring us enlightenment qualify as benefiting society, provided we keep a sharp eye on how such knowledge is acquired and applied.

More than just defending such science, we must create a vibrant movement of STEM workers who see their survival and liberation as tied to the survival and liberation of poor people, people of color, people in the global South and others who are most vulnerable to the disasters our political and economic systems have produced.

This is hardly the first time scientists have organized to engage politically. In the United States today, the [Union of Concerned Scientists](#) [6] is perhaps the most familiar organization that continues to promote, mainly through policy advocacy, what it calls “science for a healthy planet and a safer world.” Their work remains invaluable.

However, we should also recognize other groups in different times and places, many of which have adopted more activist approaches and an analysis more sharply focused on wresting science from the oppressive power structures of capitalism, racism, sexism, militarism and imperialism, and placing it in the service of social needs. The British Science and Society Movement of the late 1930s and 1940s, the Indian [Kerala Sasthra Sahithya Parishad](#) [7] founded in 1962, and the Philippine [AGHAM: Advocates of Science and Technology for the People](#) [8] founded in 1999 are just a few examples.

The United States once had its own activist science organization, called Scientists and Engineers for Social and Political Action, better known as Science for the People. The [original organization](#) [9] formed in 1969 out of the rising tide of opposition to the war in Vietnam. Although it folded in 1989, its members carried their cause forward. Former SftP members have been involved in improving health and safety for factory workers, mobilizing farming communities to document and resist pesticide exposure, working with communities in Eritrea and Malawi to develop sustainable energy technologies, researching and promoting agro-ecological approaches to farming in the United States and Latin America, and many other areas of politically engaged, socially conscious science.

The Science for the People movement is currently being [revitalized](#) [10]; chapters are now forming on campuses at Columbia, Cornell and Emory Universities; the Massachusetts Institute of Technology; and the Universities of Massachusetts at Amherst, Pennsylvania and Tennessee at Knoxville. Numbers will no doubt swell as the Trump administration helps make the stakes clearer to STEM workers and students across the country and the world.

In times of political crisis, some people may be tempted to embrace science as an apolitical force of reason. While science does offer reason, it does not do so in a political vacuum. We have political choices to make. We have to decide what kind of science is worth making and worth fighting for. We have to make that science. And we have to fight for it.

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[2] https://www.washingtonpost.com/news/energy-environment/wp/2017/03/01/white-house-proposes-cutting-epa-staff-by-one-fifth-eliminating-key-programs/?utm_term=.b717883e3cc2

[3] <https://www.marchforscience.com/>

[4] https://en.wikipedia.org/wiki/Science,_technology,_engineering,_and_mathematics

[5] <http://www.chronicle.com/article/The-Water-Next-Time-Professor/235136>

[6] <http://www.ucsusa.org/>

[7] <http://www.kssp.in/>

[8] <http://www.agham.org/>

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