

EDITOR'S JOURNAL

Who Owns Science?

LISA MARGONELLI

Only a few months into 2025, the scientific enterprise is reeling from a series of shocks—mass firings of the scientific workforce across federal agencies, cuts to federal research budgets, threats to indirect costs for university research, proposals to tax endowments, termination of federal science advisory committees, and research funds to prominent universities held hostage over political conditions. Amid all this, the public has not shown much outrage at—or even interest in—the dismantling of the national research project that they’ve been bankrolling for the past 75 years.

Some evidence of a disconnect from the scientific establishment was visible in confirmation hearings of administration appointees. During his Senate nomination hearing to head the department of Health and Human Services, Robert F. Kennedy Jr. promised a reorientation of research from infectious disease toward chronic conditions, along with “radical transparency” to rebuild trust in science. While his fans applauded, he insisted that he was not anti-vaccine, declaring, “I am pro-safety.”

But lack of public reaction to funding cuts need not be pinned on distrust of science; it could simply be that few citizens see the \$200-billion-per-year, envy-of-the-world scientific enterprise as their own. On March 15, Alabama meteorologist James Spann took to Facebook to narrate the approach of 16 tornadoes in the state,

taking note that people didn’t seem to care about the president’s threat to close the National Weather Service. “People say, ‘Well, if they shut it down, I’ll just use my app,’” Spann told *Inside Climate News*. “Well, where do you think the information on your app comes from? It comes from computer model output that’s run by the National Weather Service.” The public has paid for those models for generations, but only a die-hard weather nerd can find the acronyms for the weather models that signal that investment on these apps.

For all the trillions of dollars that American citizens have invested in science, it’s hard to find anything that says “Your tax dollars at work,” when you go in for a colonoscopy—never mind “Thank you for supporting the research that makes this app possible,” when you request an Uber on your GPS-enabled phone. Taxpayers may fund science, but they don’t get to own it. And so it was left to scientists themselves to stage rallies to “Stand Up for Science,” where they held signs reading “End cancer (not my funding),” and “Good luck getting to Mars without science.”

Distressing and disorienting as science’s sudden loss of financial and political support is, it will not come as a surprise to readers of *Issues*. This magazine has long interrogated the relationship between science and the public, exemplified by the debates between Vannevar Bush and Senator Harley Kilgore that preceded the founding of the National Science Foundation. Many

pages have been devoted to proposals to give the public greater agency, drawing from communities developing citizen science, open science, the science of science, public interest technologies, inclusive excellence, solutions-driven research, and ways to involve the public in actively setting research agendas. If *Issues* had a soundtrack over the last four decades, it might be a quavering theremin warning of the fragility of the compact between the American public and science growing louder over the years.

It's not clear what federal research funding will look like in a few years' time. What will happen to the many scientists in the United States and around the world who've worked to build and sustain this system? Will industry and philanthropy step into the breach, or will new funding models force a new type of science?

All this stressful uncertainty presents an opportunity to reimagine how the scientific enterprise works at every level—as National Academy of Sciences president Marcia McNutt and Arizona State University president Michael Crow discuss in this issue. The science policy community should see this as a chance to lead the process of re-

However, reconnecting the promises of science to social outcomes requires deeper commitments than branding—particularly as the last century's promises about national security and rising standards of living have given way to bipartisan anxieties about unregulated technology and the widening gap between tech's beneficiaries and those left behind. More than a decade ago, economist Mariana Mazzucato observed, "We have socialized the risk of innovation but privatized the rewards." When Elon Musk, the world's richest man, brandished his "chainsaw for bureaucracy" onstage at the recent Conservative Political Action Conference, he embodied this spoils system in a way unimaginable even a year ago.

Drawing from a wide variety of disciplines, experiences, and political perspectives will be helpful in considering how to repair this schism between science and social outcomes. In the days when Harley Kilgore walked around the Senate with a lucky horse chestnut in his pocket, the patent policy he favored, of free public access to discoveries made with public funds, was an obvious tool for the job. But today's science and technology

Lack of public reaction to funding cuts need not be pinned on distrust of science; it could simply be that few citizens see the \$200-billion-per-year, envy-of-the-world scientific enterprise as their own.

envisioning a stronger and more democratic relationship between science and society. Drawing upon decades of discussion, not to mention hundreds of *Issues* articles, the community should come together to explore how to give taxpayers greater ownership of science, greater say in what questions are explored, and greater agency in science's application to improve their own lives.

At an elemental level, the community might search for politically feasible ways to build awareness of the role of science in American life. The revelation that no one knows who owns the models that power their weather apps, never mind the research that powers their cancer care, might be a starting place. In the future, perhaps data, models, and research will be branded as "Paid for by Taxpayers," much as Intel created its "Intel Inside" insignia to make its chips visible across a range of products and experiences. In the aggregate, such a pointillistic approach might begin to rebrand Steve Jobs's iPhone, which contains the work of as many as 5,000 different academic research groups, into "ourPhone" in the public imagination.

ecosystem includes new players and more sites for creative policymaking. For example, the country's much-vaunted venture capital system gained some of its superpowers through tax advantages for limited partnerships and capital gains. When today's venture capitalists invest in technology start-ups, their search for astronomical growth incentivizes the development of products that reduce labor costs. Restructuring venture capital's tax advantages could encourage investments that bring more benefits to American workers.

Another perennial question is how best to empower the public to decide what areas of research should be pursued. As political scientist Dave Guston has written, there have been many efforts across the executive branch and agencies to democratize science policy. But the science enterprise has largely resisted sharing power, meaning that only the loudest public voices break through. Famously, in 1993, breast cancer activists, inspired by the success of advocates for AIDS research, went around the health agencies to pressure the Department of Defense (DOD) to lead the Breast Cancer Research Program. More recently,

Brian Wallach, a staffer on Obama's 2008 campaign, led a successful quest—which included founding two advocacy organizations and filming a documentary—to increase funding for amyotrophic lateral sclerosis (ALS) at NIH and DOD. Should it require such superhuman (and supra-agency) efforts to alter the research agenda?

If fairer, more representative approaches to steering research are not available, the public will be left to use the methods now at hand: referendums, like the one that led to California's controversial stem cell initiative, and politicians who promise reforms. Recent trials of participatory technology assessment, which gave NASA insight into the public's desire for the agency to defend the planet against asteroids, suggest nuanced ways to align research with society's goals. Other possibilities include decentralizing decisionmaking to state or regional institutions, adding citizens to agency review panels, and bringing members of the public into interdisciplinary research teams. There may even be worthy ideas that were long ago discarded, such as a suggestion in 1945 that scholarships for scientific training include a period of public service.

science journalists present highly polished information that aligns with their institutions' missions, whether that is science literacy, advocacy, or entertainment.

Despite a proliferation of new ways to deliver information, and insights from apps like iNaturalist, where volunteers have successfully combined machine learning and social media, there are few places outside a library where a person can get exactly the information they want. In most contexts, people are viewed as passive recipients of knowledge or—worse—targets, rather than partners and adopters. Why don't citizens have access to a reliable, not-for-profit search engine that can provide answers to their questions? They have, after all, paid for the research.

Solving the disconnects between science and society will require much more than good ideas and good intentions—it will require the political will to bring the fragmented institutions of science together. Today's political environment precludes the science community from making its old pitches to Congress; it will need to break old habits, build new bonds at personal, local, and regional levels, and reconsider the way it works.

The science policy community should see this as a chance to lead the process of re-envisioning a stronger and more democratic relationship between science and society.

There are myriad unexplored paths that might give the public the ability to oversee and derive benefits from public research—including some that could garner support across the political spectrum. In this issue, science funder Stuart Buck and open science advocate Christopher Steven Marcum argue that science agencies should make unfunded research proposals public, both to provide transparency in how they make award decisions and to enable other players to fund research proposals that align with their goals.

Finally, the entire scientific enterprise should consider ways to communicate research that give citizens agency. In the late-nineteenth century, agricultural research stations began sending farmers information about applying scientific methods on their farms. The cooperative extension service built on this model to help rural citizens improve their families' crop yields, health, and incomes. Today the public is left to search for answers among for-profit search engines, hallucinating large language models, or the mosh pit of public forums like Reddit. Meanwhile, a professionalized class of science communicators, public relations specialists, and

Amid these challenges lies an opportunity to do more than simply secure funding for science. From its beginnings in seventeenth-century salons, the social system of modern science has worked to build trust among scientists. You can feel this trust at any scientific conference—just look at the way people leave their backpacks lying around! But trust, particularly in institutions, is scarce and declining in the American public at large. Contributing to the rebuilding of trust is one way that the culture of science can make good on its debt to the public.

In this issue, you'll find articles exploring insights from polling about public trust in science, how philanthropy might encourage engaged research between universities and communities, lessons learned from state science advising programs, and advice for scientists who want to reach across the aisle. Looking forward, *Issues* will continue to find lessons and inspiration in the knowledge and experiences of our contributors, readers, and others. We welcome your letters and will work to enrich this discussion in person, virtually, and in print.