

M. ANTHONY MILLS

Who Should Decide How to Use Taxpayer Dollars to Fund Scientific Research?

After the firing of the National Science Board, legislators have an opportunity to establish a new balance between democratic accountability and protection from partisan meddling.

In late April, President Trump fired the National Science Board (NSB), yanking a federal science institution that had operated largely out of the public eye for more than 75 years into the center of a national controversy. Given the cuts and terminations that have already roiled the National Science Foundation (NSF)—the agency the board was created to govern—these firings were widely interpreted as another manifestation of the White House’s multifront “war on science.”

A little more than a month later, the Office of Management and Budget (OMB) proposed a new rule that would give political appointees the power to approve, reject, or terminate research grants to ensure compliance with the administration’s policy agenda. The OMB guidance and the NSB firings are only the latest examples of the Trump administration’s ongoing effort to exert more political control over the federal science bureaucracy, engendering public condemnation from elected representatives, leading scientists, and scientific institutions.

There are good reasons to worry about the effects these brash actions are having on America’s research enterprise. But the president’s critics should avoid calling for a return to the status quo ante, for example, by simply reinstating the members of NSB. With these latest moves,

Trump has exposed a real and important tension inherent in the federal scientific establishment: between the accountability a democratic society demands of publicly funded scientific institutions and the political independence these institutions seek in order to safeguard their integrity.

When pressed to justify the NSB firings, the White House pointed to “constitutional questions about whether non-Senate confirmed appointees can exercise the authorities that Congress gave the National Science Board” and expressed a hope that Congress would help rectify the problem. This is pretty rich, coming from an administration not exactly known for its solicitude for Congress. Whether or not this explanation was offered in good faith, however, Congress should seize the opportunity to restore legislative oversight of NSB with a view to establishing a more appropriate balance between democratic accountability and protection from partisan meddling—from this president as well as future ones.

Finding a role for government in science

The National Science Board was controversial when it was created, precisely because critics—who were, at the time, New Deal Democrats, not MAGA Republicans—feared

it would empower an unaccountable scientific elite. By contrast, many scientists and their allies in Congress—then conservative Republicans—insisted on independence from partisan, specifically presidential, control. This disagreement was a major sticking point in the long and acrimonious debate that preceded the establishment of NSF in 1950.

World War II had seen the successful mobilization of science to achieve astonishing technical feats, and there was broad political support for a continuing role for government in science during peacetime. But what role? Vannevar Bush, the chief architect of the mobilization of science under President Roosevelt, made the case in his famous 1945 report *Science, the Endless Frontier* for a new National Research Foundation that would fund academic research, characterized by the “free play of free intellects, working on subjects of their own choice, in the manner dictated by their curiosity.” Such “basic science,” Bush argued, would provide the seed corn for technological innovations that would stimulate the economy, improve human health, and shore up national defense.

the foundation be governed instead by a part-time board of distinguished private citizens, appointed by the president and confirmed by the Senate. To insulate the new institution from partisan politics, he envisioned that the board would set the policies for the foundation and appoint a director to carry them out.

Harry Truman, who by this time had succeeded Roosevelt as president, favored Kilgore’s proposal. He saw Bush’s as a nonstarter, later explaining that it would “vest the determination of vital national policies, the expenditure of large public funds, and the administration of important governmental functions” in a small group of private citizens. Bush’s foundation would thus “be divorced from control by the people to an extent that implies a distinct lack of faith in democratic processes,” he argued. But Truman’s vision of “control by the people” was control by the *president*. Accordingly, he and his allies proposed that the foundation be led instead by a presidentially appointed director in consultation with a presidentially appointed board.

Various legislative proposals were introduced on Capitol Hill reflecting these rival visions. The debate grew

There are good reasons to worry about the effects these brash actions are having on America’s research enterprise. But the president’s critics should avoid calling for a return to the status quo ante.

Bush’s report was a strategic document, intended to draw support away from a proposal by Senator Harley Kilgore, a New Deal Democrat from West Virginia. Kilgore was impressed by wartime planning and sought to apply those lessons to peacetime. Before Bush wrote *Endless Frontier*, Kilgore had proposed a National Science Foundation that, rather than deferring to scientists about what research to pursue, would instead link federal research to national priorities. Accordingly, he proposed that the foundation be administered by a director with the advice of a presidentially appointed board, which would include representatives from labor, industry, agriculture, small business, and education. The philanthropic-sounding name was intended to assuage scientists’ fears that a government agency would be bureaucratic in nature.

Though a trusted advisor to President Roosevelt, Bush was a Republican, and he rejected the “whole New Deal philosophy that is reflected in that sort of urge for a great bureaucratic organization controlling everything in sight.” He wanted the government to “support” rather than “control” research. Accordingly, he proposed that

particularly heated after 1947, when Republicans gained control of Congress for the first time since the New Deal. The conservative senator Robert Taft took what was described as “a no-compromise position” opposing presidential appointment of the foundation’s director, even going against his own party at one point. In August, Truman vetoed legislation, introduced by Republican Senator Alexander Smith of New Jersey, that made the director responsible to the board rather than the president. It was not until 1950, after Democrats regained control of Congress, that a compromise bill, “salvaged from the wreckage of the earlier science bills,” as one historian put it, was passed and signed into law by President Truman.

The new law granted the president more control over NSF than Bush and his allies preferred, but nevertheless preserved a special role for NSB. It specified that the board consist of 24 members “eminent in the fields of the basic sciences, medical science, engineering, agriculture, education, or public affairs,” each appointed for six-year terms. This clearly reflected Bush’s meritocratic vision, even if the inclusion of agriculture was a nod to Kilgore. On the controversial issue

of control, the law specified that both the director and the board shall be “appointed by the President, by and with the advice and consent of the Senate,” ensuring the political oversight Truman and his allies demanded. Crucially, however, the law also empowered NSB to set policy for the foundation and to oversee the director’s activities, ensuring that the board retained the governing function that Bush and his allies sought.

In explaining why he endorsed this compromise, Taft conceded that the director would be appointed by the president, something he was previously unwilling to compromise on. “I felt confident that a director subject to appointment by the President would be subject to all kinds of political pressure.” But, he explained, the new bill stipulated that the director, though presidentially appointed, was nevertheless “subject to the direction of the board,” particularly when it came to distributing money for research grants. For his part, President Truman declared that the successful compromise “satisfactorily met the objections I expressed to the earlier bill.”

The resulting governing structure, though unusual, proved enduring for over 75 years. So why has the Trump administration alighted on it now?

Increasing democratic accountability

In a statement sent to several news outlets after the firing, the White House cited a 2021 Supreme Court case called *United States v. Arthrex*, which held that the appointment of government officials who wield significant decisionmaking authority must be confirmed by the Senate or else be directly supervised by those who have. The implication is that the administration believes the members of NSB, who were not Senate confirmed, were unconstitutionally appointed.

Whether or not the administration reached for this legal argument simply as *ex post facto* rationalization of the firings, *Arthrex* highlights a potential constitutional issue that is of Congress’s own making. Although the original statute establishing NSB required that its members be approved by the Senate, Congress removed this provision in 2011 as part of a larger effort to streamline the number of officials it needed to confirm—effectively granting the president control over the board.

This has proven to be an error, and not only because it inadvertently provided future President Trump with a legal rationale to fire the board. In principle at least, NSB has significant policymaking authority, which is likely why Congress required the president to receive the advice and consent of the Senate in appointing NSB members in the first place. After all, the debate that preceded the enactment of the 1950 statute concerned whether the board was sufficiently politically accountable precisely because of its perceived authority.

FYI: Science Policy News reported that, in light of

Arthrex, NSB “took steps to ensure that its activities did not run counter to the ruling,” for instance by emphasizing “that its positions were recommendations ... not approvals or orders.” The idea seems to be that by reframing its role to be subordinate to the NSF director, NSB could avoid running afoul of *Arthrex*. In a similar way, the Supreme Court directed the Patent Trial and Appeal Board—the institution at issue in the *Arthrex* case—to make its judges’ decisions reviewable by the director of the Patent and Trademark Office, a position that requires Senate confirmation.

But this legal remedy may not be available to NSB, at least not without a legislative fix. Not only does the 1950 statute empower the board to establish policies—not merely recommendations—it states explicitly that “no final action shall be taken by the Director” in exercising his or her core duties “unless in each instance the Board has reviewed and approved the action proposed to be taken.” In other words, Congress granted the board the legal authority to review the activities of the director, not the other way around.

In practice, NSB has evolved to function more like a conventional advisory body than the governing board it was intended to be. Since 1950, Congress has made some statutory changes to reflect this reality. But by law, NSB still retains the authority to “establish the policies of the Foundation” and to “delegate” various “powers and functions” to the director, including policymaking functions. For this reason, a court may determine based on the text of the relevant statutes and the *Arthrex* precedent, that Congress should not have removed the requirement that NSB members be Senate-approved, at least not without specifying in law that they are subordinate to the director.

Either way, Congress should act. By appealing to the need for congressional approval to justify its political control over NSB, paradoxically, the administration has handed Congress a gift. Restoring the requirement that NSB members be confirmed by the Senate would increase democratic accountability by providing legislative oversight of NSF’s governing structure—something justified on the merits and which the administration claims, however implausibly, to want. Doing so would also shield the board from partisanship by preventing the current or any future president from exercising arbitrary authority—something the president’s critics rightly want.

Ultimately, a board accountable to Congress would likely prove—and historically did prove—both more resilient and more politically legitimate than one merely accountable to the president. But Congress should not only restore the status quo by reinstating the requirement that NSB be Senate-confirmed. It should go further by taking this opportunity to ask a more fundamental question: Is NSF’s governing structure, inherited from the mid-twentieth century, still the best way to promote science in service of the public interest?

“A special type of organization”

NSF’s structure reflected a confidence, prevalent in mid-twentieth century America, about scientists’ unique capacity to act in a disinterested manner. As Senator Smith put it when defending his bill, scientists are “not at all controlled by the consideration of who pays them the money ... They are inspired by their interest in the subject, by their dedication to the pursuit of knowledge.” In this he was proposing that scientists can be trusted to make policy decisions—including those that affect science—without putting their own interests first.

Not everyone shared that confidence. Even at the time, critics charged that empowering scientists to control federal science funding amounted to asking the fox to guard the hen house. “The moral character of politicians,” declared one Kilgore ally, “is just as high as the moral character of the American scientists.” Hence it would be better to follow standard organizational practice and have the foundation be led by a single administrator, accountable to the president, with scientists serving merely in an advisory capacity.

Bush himself was not quite as sanguine as Smith. He

promote fundamental research is novel, and therefore justifies a special type of organization.”

In hindsight it’s clear that both sides recognized the risk that federal science could be captured by special interests; they disagreed about which organizational structure could best mitigate that risk. From today’s vantage point, Bush’s warnings about the corrupting influence of presidential power look prescient, whereas the New Dealers’ confidence in the presidency as a benign vehicle for democratic accountability seems naive. At the same time, Truman and his allies were farsighted in recognizing that a system of sustained government funding for scientific research would inevitably make scientists claimants, among others, in the competition for public resources.

When Kilgore and Bush proposed their rival versions of the foundation, they both envisioned a single government entity that would serve as the nation’s preeminent science institution. The question of who governed it was therefore paramount. But even by the time of its creation in 1950, NSF had become one—relatively small—federal science agency among many. Today, its less than \$10 billion budget is a

Restoring the requirement that NSB members be confirmed by the Senate would increase democratic accountability by providing legislative oversight of NSF’s governing structure.

worried that federal science agencies could become little more than mechanisms for scientists to funnel public resources to benefit themselves. He privately told a colleague in 1953 that it would be “fatal” if such a perception took hold among the public. Federal support of academic science, he insisted, must be “aimed at broadening the base of research in the country,” not merely the “subsidy of the universities.” But if properly designed, he and his allies hoped, NSB could act impartially as neither a partisan tool nor a single-issue science interest group.

“We may as well admit,” Bush’s friend and Harvard University president James Conant told Congress, “that there will be difficulty in providing for the wise expenditure of this money. Human nature being what it is.” But this was precisely why he supported Bush’s proposal: “a board will be more likely to take an impartial view than a single administrator.” Moreover, a board “is hard to get at and harder still to push around.” Conant conceded that such a governing structure, though common in higher education, was a “novel procedure” in government. But “the whole idea of having the Federal Government make grants in aid to

fraction of the nearly \$50 billion Congress spends on the National Institutes of Health, and NSB is one of many sources of science advice in government.

Yet as the only federal agency whose primary mission is to promote basic science, NSF remains vitally important to the nation’s research ecosystem, and higher education in particular. By challenging its governing structure, while also leaving the agency without a Senate-confirmed director for more than a year, the current administration is, very crudely, forcing Congress and the public to grapple once again with a fundamental question about the role of science in a democratic society: Who gets a seat at the table when deciding how to use taxpayer dollars to fund scientific research intended to benefit the public as a whole?

A new vision for federal science

When Congress addressed this question in the years-long debate that led up to the establishment of NSF, the resulting political compromise was hardly perfect. But it did produce an institutional arrangement that enjoyed a high degree of bipartisan support and served the country well for the

better part of a century. Congress should take advantage of the Trump administration's firing of NSB to take up this question once again with a focus on establishing a new bipartisan consensus. The goal should not be simply to protect the board, but to secure the effectiveness and legitimacy of NSF for the next 80 years.

Should NSB be restored to its original form? Or would NSF be better off with a more traditional bureaucratic structure—NSB serving in a purely advisory capacity—as critics have long argued? Should NSB membership be restricted to those “eminent in the fields of the basic sciences, medical science, engineering, agriculture, education, or public affairs” or include representatives of a wider range of interests, as Kilgore wished? Or can today's society foresee new options to develop more democratic or legislative-centered modes of science governance? These are questions that Congress must ask.

At stake is much more than NSF. Congress must respond to the unprecedented turmoil the administration's aggressive actions have created across the federal scientific establishment, including the recent move to

In principle at least, Congress is better positioned than the White House to represent Americans' diverse views and interests—as well as to translate these into durable policy through deliberation and compromise. Historically, Congress has not fulfilled this role by directly controlling scientific research; instead, it's shaped federal science indirectly by setting policy priorities, providing advice and consent on presidential appointees, and, of course, deciding whether and how much money to spend on what kind of research.

Congress still has these powers and even exercises them, but it tends to do so reactively. Congress must reassert its role in leading democratic deliberation about how federal science can best serve the American public—which includes deciding what place scientists themselves should occupy in that system. The result would surely be an imperfect compromise, but that is precisely how enduring and democratically legitimate policies are forged.

However much they chafe at the scrutiny and publicity that comes with congressional oversight, federal science agencies have historically benefited from the legitimacy

The current administration is, very crudely, forcing Congress and the public to grapple once again with a fundamental question about the role of science in a democratic society.

give political appointees power to veto research grants for ideological reasons. But in doing so, Congress must avoid the temptation of retrenchment. Like the NSB firings, the OMB guidance hits on something real. The federal research enterprise *should* be democratically accountable. Inadequate accountability has arguably contributed to a system that has been criticized as insular and risk averse and is facing falling measures of public trust.

From Truman to Trump, the populist critique of federal science has been that delegating policy decisions to scientific experts does not shield policy from politics so much as it obscures politics behind a facade of disinterestedness. In recent decades, scholars of science and technology studies have echoed and developed these critiques. But partisan control by the White House is medicine that is worse than the disease. It portends a future in which federal science policy seesaws between ideological fashions every four to eight years, undermining what Alexander Hamilton called “steady administration.”

The presidency is neither the only nor the best means of ensuring democratic accountability of federal science.

and durability that comes with Congress's imprimatur—as has the public. As Robert Taft put it in 1950, the bill that created NSF “is literally a product of bipartisan work. Both Democrats and Republicans have worked on it in three congresses, and I think the result which has come out should be satisfactory to everyone.” Congress now has an opportunity—and an obligation—to establish a new vision of federal science for the twenty-first century on a democratic foundation that can withstand the tempestuous partisanship characteristic of our times.

M. Anthony Mills is a senior fellow at the American Enterprise Institute and the director of its Center for Technology, Science, and Energy. He is concurrently associate professor of the practice at the University of Notre Dame's John J. Reilly Center for Science, Technology, and Values.

This article is part of an exploration of science's social contract that is generously supported by The Kavli Foundation, the Rita Allen Foundation, and the Dana Foundation.