Science has always been political

This month marks the 75th anniversary of Vannevar Bush’s paper, “Science—The Endless Frontier.” The report set out the rationale and structure of a system to fund science in the United States; it is the Magna Carta of American science. Science published a summary of Bush’s paper on the same day it was submitted to President Harry Truman, and Bush’s close relationship with the magazine is evident by the number of times he wrote and was quoted in Science during the 1940s.

Bush’s report and advocacy seized on the historical moment. He was a driving force behind the Manhattan Project, and the scientists who developed the atomic bomb at Los Alamos were viewed as American heroes who won World War II with their minds (we now correctly regret the carnage of Hiroshima and Nagasaki and have more sophisticated views about the danger of nuclear weapons). Bush shrewdly recognized that it was a high-water mark for American trust in science.

He used this political capital to create the federally funded scientific establishment in the United States.

Bush’s document is widely celebrated by U.S. scientists, because it sets out many of the nation’s most cherished principles. It is fundamentally based on the idea that professors should conduct basic research with federal dollars because universities offer a home for free inquiry and students can be trained in this environment of knowledge creation. It is one of the earliest and most persuasive cases for professors as teacher-scholars. He was passionate that university researchers should be free from government influence, and later tangled in the implementation of his vision with Senator Harley Kilgore, who felt that the government should force more applied research with more federal entitlements.

There is a disconnect, however, in how we remember this. Although Bush is often held up as a model for keeping politics out of science, his writing and efforts were unmistakably political. “Science—The Endless Frontier” is first and foremost a masterwork of political persuasion. Yes, it eventually ends up with professors carrying out curiosity-driven research without government intervention, but the exposition that leads to this conclusion is nothing short of a jeremiad—a prophecy of American deterioration without immediate investment in science. Perhaps deep in his psyche, basic research was important to Bush for its beauty and transcendent qualities, but in reading his three arguments for federal science, he believed it was crucial for American survival.

Bush begins with an argument that is still the most politically useful in American science—“For Our National Security”—leverages the support that Bush and his colleagues obtained in building the atomic bomb as well as the fear that Americans had of adversaries that could gain an advantage in military technology. “And for the Public Welfare” posits that scientific capability and a trained scientific workforce are necessary for a flourishing economy in the United States.

These arguments still work today. It would be hard to find Congressional testimony from scientific advocates over the intervening 75 years that didn’t echo some of these themes. But Bush’s paper is not without its critics. He was not an advocate for the humanities and social sciences; when he led the Carnegie Institution of Washington, he discontinued the archaeology program and he clearly states the primacy of natural science in “The Endless Frontier.” Further, he sets up a syllogism by first stating that science is useful to the country, in order to argue for unfettered basic inquiry, which implies that basic knowledge must therefore also be useful. For many nonscience colleagues, this instrumentalism undermines the ability of academic institutions to make the case for knowledge as a public good.

Bush’s paper is nothing if not political. Especially when viewed through the lens of coronavirus disease 2019 (COVID-19) and the dangerous antiscience movements of today, it is time to move away from properring Vannevar Bush and his essay as symbols of nonpolitical science. His legacy is precisely the opposite: that science thrives when its advocates are shrewd politicians but suffers when its opponents are better at politics.

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