

Shielding Science: The Scientific Integrity Act and Enforcing Firewalls Between Science and Politics

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During the Trump administration, civil servants, watchdogs, and elected officials repeatedly accused political appointees of censoring, altering, or otherwise interfering with the work of scientists and civil servants at federal scientific agencies. In deliberate contrast to his predecessor, from his first day in office, President Biden has stated his commitment to restoring scientific integrity. But is executive action enough? Should Congress complement these executive actions with legislation? If so, how may Congress best provide firewalls between staff at scientific agencies and those who would improperly hinder their work?

This Note analyzes the historical context of, limits to, and potential for legislative protections for civil servants at scientific agencies, with particular focus on the recent Scientific Integrity Act. This Act, which has been introduced in each of the three prior Congresses, would insulate staff at scientific agencies from certain kinds of improper political interference. To be more effective, however, a future version of the Act should be revised to include stronger enforcement provisions.

To explore the need for and promise of the Scientific Integrity Act, this Note first places the Act in its historical context. This Note then explores limits to other existing protections. Finally, this Note examines the Act itself, arguing that the Act includes key protective provisions but that it will fail to achieve its full purpose unless it adds stronger enforcement mechanisms. These proposed tools would empower relevant officials to better investigate accusations against high-level political officials and create possible consequences for those who violate the Act.

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INTRODUCTION

On January 11, 2022, the Biden administration finally published its long-promised report on protecting scientific integrity at federal agencies.¹ Scientific integrity, which broadly refers to the ability of science to inform policy decisions unhindered by inappropriate political interference,² has become a high-profile issue in recent years following well-publicized incidents during the Trump and George W. Bush administrations in which journalists and watchdogs accused political officials of improperly meddling in scientific issues at federal agencies.³ The 2022 report, written by a task force that included forty-eight experts from twenty-nine government agencies,⁴ provided a variety of recommendations for executive actions to better insulate civil servants from such interference, including improved transparency initiatives and more open communication policies.⁵ The Biden administration followed up this report with another publication one year later, in which it filled in gaps in the first publication by providing a more

1. See *White House Office of Science & Technology Policy Releases Scientific Integrity Task Force Report*, OFF. OF SCI. & TECH. POL'Y (Jan. 11, 2022), <https://www.whitehouse.gov/ostp/news-updates/2022/01/11/white-house-office-of-science-technology-policy-releases-scientific-integrity-task-force-report/> [<https://perma.cc/E7NK-XAYV>]. The report was overdue by several months. See *Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking*, EXEC. OFF. OF THE PRESIDENT (Jan. 27, 2021), <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/memorandum-on-restoring-trust-in-government-through-scientific-integrity-and-evidence-based-policymaking/> [<https://perma.cc/2FY5-YDR5>] (promising that the report would be published “within 120 days of the appointment of its members”); *The White House Announces Scientific Integrity Task Force Formal Launch and Co-Chairs*, EXEC. OFF. OF THE PRESIDENT (May 10, 2021), <https://www.whitehouse.gov/ostp/news-updates/2021/05/10/the-white-house-announces-scientific-integrity-task-force-formal-launch-and-co-chairs/> [<https://perma.cc/6YUX-UDYA>] (noting that the Task Force was to convene for the first time on May 14, 2021).

2. See SCI. INTEGRITY FAST-TRACK ACTION COMM., NAT'L SCI. & TECH. COUNCIL, PROTECTING THE INTEGRITY OF GOVERNMENT SCIENCE x (2022), https://www.whitehouse.gov/wp-content/uploads/2022/01/01-22-Protecting_the_Integrity_of_Government_Science.pdf [<https://perma.cc/4UKM-AA87>] (providing the Biden administration's general understanding of scientific integrity) [hereinafter 2022 REPORT].

3. Watchdogs included both mainstream outlets (e.g., national newspapers) and specialized outlets (e.g., scientific journals) as well as non-profits like the Union of Concerned Scientists and Government Accountability Project. See *infra* Part I.B.

4. See Alondra Nelson & Jane Lubchenco, *Strengthening Scientific Integrity*, 375 SCI. 247, 247 (2022).

5. See generally 2022 REPORT, *supra* note 2. The report focused on five main areas for advice (building a culture of scientific integrity; protecting the integrity of the research process; communicating scientific information with integrity; procedures for safeguarding scientific integrity; and institutionalization of scientific integrity) and provided more specific recommendations within each of those categories. *Id.*

specific definition of scientific integrity, creating a model “scientific integrity policy” for agencies to adopt, and chartering a new subcommittee on scientific integrity placed under a cabinet-level board of advisors.⁶

Both the 2022 and 2023 reports from the Biden administration received a mixture of praise and criticism from long-time observers of federal science policy upon their release. While commending the reports’ responsiveness to the concerns of the scientific community, experts also noted that the reports did not lay out what specific consequences there might be for officials who actually violate scientific integrity policies.⁷ These policies, which are internal agency guidances that detail best practices for conducting and relying upon science free from untoward political interference,⁸

6. See generally SCI. INTEGRITY FRAMEWORK INTERAGENCY WORKING GRP., NAT’L SCI. & TECH. COUNCIL, A FRAMEWORK FOR FEDERAL SCIENTIFIC INTEGRITY POLICY AND PRACTICE (2023), <https://www.whitehouse.gov/wp-content/uploads/2023/01/01-2023-Framework-for-Federal-Scientific-Integrity-Policy-and-Practice.pdf> [https://perma.cc/35XY-FBWW] [hereinafter 2023 REPORT]. In May 2023, the White House even adopted its own scientific integrity policy for the first time. See WHITE HOUSE OFF. OF SCI. AND TECH., WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY (OSTP) SCIENTIFIC INTEGRITY POLICY 1 (2023), <https://www.whitehouse.gov/wp-content/uploads/2023/06/OSTP-SCIENTIFIC-INTEGRITY-POLICY.pdf> [https://perma.cc/286X-BT8V] [hereinafter OSTP Scientific Integrity Policy].”

7. See, e.g., Alexandra Witze, *How to Protect US Science from Political Meddling After Trump*, 601 NATURE 310, 310 (Jan. 11, 2022), <https://www.nature.com/articles/d41586-022-00059-w> [https://perma.cc/YE7K-9RRZ] (quoting Climate Science Legal Defense Fund executive director Lauren Kurtz, who stated with regards to the lack of enforcement recommendations in the 2022 report that “the devil is in the details, and the lack of specificity is frustrating”); Jeff Tollefson, *The Plan to ‘Trump-Proof’ US Science Against Political Meddling*, 613 NATURE 621, 622 (Jan. 12, 2023), <https://www.nature.com/articles/d41586-022-03307-1> [https://perma.cc/K44M-2HM8] (quoting Kurtz as stating “that’s a missed opportunity” with regards to the lack of enforcement details in the 2023 report); *Biden’s Scientific Integrity Task Force Not Up to the Task*, PUB. EMPS. FOR ENV’T RESP. (Jan. 12, 2022), <https://peer.org/bidens-scientific-integrity-not-up-to-the-task/> [https://perma.cc/DT4F-VU32] (stating that a “key finding of this Task Force is scientific integrity policies lack basic implementation and enforcement, but it does not lay out specific steps agencies must take or a timeline for doing so”); *Science Integrity Plan Throws Scientists Under the Bus*, PUB. EMPS. FOR ENV’T RESP. (Feb. 6, 2023), <https://peer.org/science-integrity-plan-throws-scientists-under-the-bus/> [https://perma.cc/5572-5S89] (stating that “[t]he White House’s new Model Scientific Integrity Plan touts the ‘free flow of scientific information,’ including speaking with the media and filing ‘different scientific opinions,’ but provides no enforceable legal safeguards for scientists who face reprisal for doing so”); Liz Borkowski, *A New Framework for Protecting Scientific Integrity at Federal Agencies*, PUMP HANDLE (Feb. 5, 2023), http://www.thepumphandle.org/2023/02/05/a-new-framework-for-protecting-scientific-integrity-at-federal-agencies/#.ZAZl1uzMJ_S [https://perma.cc/CC6F-RSPV] (noting that “I’m happy to say that in my view, it does provide a strong framework, although the enforcement mechanisms aren’t as concrete as what I hoped to see”).

8. See generally GRETCHEN GOLDMAN ET AL., UNION OF CONCERNED SCIENTISTS, PRESERVING SCIENTIFIC INTEGRITY IN FEDERAL POLICYMAKING (2017), <https://www.ucsusa.org/sites/default/files/attach/2017/01/preserving-scientific-integrity-in->

were widely adopted during the Obama administration; however, they provided inadequate defense during the Trump administration, when many political appointees ignored them with few consequences.⁹ The Biden administration's reports largely avoided tackling this enforcement issue, with the 2023 report simply noting that "consequences and remedies" for violations of scientific integrity should be "clearly articulated" by agencies.¹⁰

Jacob Carter, a research director at the non-profit Union of Concerned Scientists (UCS), which has long tracked scientific integrity issues, linked the vagueness of these enforcement provisions to the overall problem with crafting executive-only solutions to scientific integrity issues. That is, executive solutions are inherently impermanent because they can be rescinded or ignored by future administrations.¹¹ Carter argued that the "lack of clarity on accountability and enforcement points out the need for Congress to act swiftly on codifying scientific integrity processes in legislation."¹² While advocates have pushed for both executive and legislative solutions to scientific integrity concerns over the last two decades, with more attention paid to executive solutions than

federal-policy-making-ucs-2017.pdf [https://perma.cc/2AQL-78Y7]. Scientific integrity policies often contain statements affirming an agency's commitment to promoting science free of political interference; they may also provide media guidance to scientists, clarify how to approach differences of scientific opinions, and detail review mechanisms if an agency employee wants to report misconduct. *See id.* at 8 (comparing the provisions of various policies as of 2017); for more details on the metrics in the table, *see* GRETCHEN GOLDMAN ET AL., UNION OF CONCERNED SCIENTISTS, PRESERVING SCIENTIFIC INTEGRITY IN FEDERAL POLICYMAKING: APPENDIX B (2017) [hereinafter APPENDIX B], <https://www.ucsusa.org/sites/default/files/attach/2017/01/preserving-scientific-integrity-appendix-b.pdf> [https://perma.cc/FJ7G-UP7E].

9. Romany M. Webb & Lauren Kurtz, *Politics v. Science: How President Trump's War on Science Impacted Public Health and Environmental Regulation*, 188 PROG. MOL. BIOL. TRANSL. SCI. 65, 76 (2022) (noting that scientific integrity policies "clearly fell short of their goals during the Trump administration"); Press Release, Pub. Emps. for Env't Resp., Scientific Integrity Plan Throws Scientists Under the Bus (Feb. 6, 2023), <https://peer.org/science-integrity-plan-throws-scientists-under-the-bus/> [https://perma.cc/5572-5S89] (noting that the "Biden effort to reform scientific integrity policies is premised on the fact those policies are largely ineffective, as underlined by how they functioned during the Trump years").

10. 2023 REPORT, *supra* note 6, at 11.

11. Jacob Carter, *White House Releases New Scientific Integrity Task Force Report*, UNION OF CONCERNED SCIENTISTS (Jan. 11, 2022), <https://www.ucsusa.org/about/news/white-house-releases-new-scientific-integrity-task-force-report-0> [https://perma.cc/L9LB-DF6M].

12. Jacob Carter, *New White House Guidance Protects Federal Scientists and Their Work*, UNION OF CONCERNED SCIENTISTS (Jan. 12, 2023), <https://blog.ucsusa.org/jacob-carter/new-white-house-guidance-protects-federal-scientists-and-their-work/> [https://perma.cc/PQ5A-AC7A].

legislative ones,¹³ calls for a more permanent legislative solution have gained steam in recent years among advocates and scholars.¹⁴

These calls for legislation have not gone unheeded. In direct response to the Trump administration's actions, Representative Paul Tonko (D-NY) has repeatedly introduced a bill known as the "Scientific Integrity Act."¹⁵ This Act—which Representative Tonko introduced in slightly altered forms in the 115th, 116th, and 117th Congresses¹⁶—would have erected legislative firewalls between

13. These trends—increased focus on scientific integrity and increased attention toward executive solutions over difficult-to-pass legislative ones—largely began during George W. Bush's administration. The administration's high-profile conflicts with scientists prompted (1) Representative Henry Waxman (D-CA) to introduce a 2005 bill entitled the "Restore Scientific Integrity to Federal Research and Policymaking Act," and (2) spurred the Obama administration to mandate that all scientific agencies promulgate "scientific integrity policies." Restore Scientific Integrity to Federal Research and Policymaking Act, H.R. 839, 109th Cong. (2005); *Memorandum for the Heads of Executive Departments and Agencies on Scientific Integrity*, OFF. OF THE PRESS SEC'Y (Mar. 9, 2009), <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09> [<https://perma.cc/3Z7E-UZB2>] [hereinafter 2009 Press Release on Scientific Integrity]; *see also infra* Part II.B. The 2005 bill did not pass, but by the end of the Obama administration, twenty-four agencies had developed scientific integrity policies. *See* GOLDMAN ET AL., *supra* note 8, at 7.

14. *See* PREET BHARARA ET AL., NAT'L TASK FORCE ON RULE OF LAW & DEMOCRACY, PROPOSALS FOR REFORM VOLUME II 4 (Oct. 3, 2019), <https://www.brennancenter.org/our-work/policy-solutions/proposals-reform-volume-ii-national-task-force-rule-law-democracy> [<https://perma.cc/44C2-MX4H>] (proposing eleven different legislative ideas, ranging from "Congress should pass legislation that establishes scientific integrity standards for the executive branch and requires agencies to create policies that guarantee those standards" to "Congress should adopt additional statutory qualifications for certain senior executive branch positions"); Thomas O. McGarity & Wendy E. Wagner, *Deregulation Using Stealth Science Strategies*, 68 DUKE L. J. 1719, 1799 (2019) (arguing "[t]o be effective, the proposals advanced here must be imposed on the executive branch by Congress through legislation and enforced by the courts"); Letter from Pub. Emps. for Env't Resp. to Sci. Integrity Task Force (June 14, 2021), <https://peer.org/wp-content/uploads/2021/06/6-14-21-SI-and-Personnel-Policies-Must-be-Married.pdf> [<https://perma.cc/R3TS-5GNG>] (stating that "[t]he ideal solution would be for Congress to enact a Scientist Protection Act which would provide protections that are enforceable against the Executive Branch in court, in the same manner that, for example, the Whistleblower Protection Act is enforced").

15. *See* Press Release, Paul D. Tonko, U.S. Congressperson, Tonko Reintroduces Scientific Integrity Act (Feb. 3, 2021), <https://tonko.house.gov/news/documentsingle.aspx?DocumentID=3257> [<https://perma.cc/Y3R3-FCG6>]. Past versions of the Act had also been introduced in the Senate. *See* Press Release, Brian Schatz, U.S. Congressperson, Schatz, Tonko Introduce Legislation to Protect Integrity of Public Science (Mar. 13, 2019), <https://www.schatz.senate.gov/news/press-releases/schatz-tonko-introduce-new-legislation-to-protect-integrity-of-public-science> [<https://perma.cc/6RZS-A3Q4>]; Press Release, Brian Schatz, U.S. Congressperson, Nelson, Schatz, 25 Other Democrats Introduce Legislation to Prevent Political Tampering with Science (Feb. 8, 2017), <https://www.schatz.senate.gov/news/press-releases/nelson-schatz-25-other-democrats-introduce-legislation-to-prevent-political-tampering-with-science> [<https://perma.cc/4XYE-TPLY>].

16. Directly prior to the publication of this Note, Rep. Tonko reintroduced the Scientific Integrity Act, which is now under consideration by the 118th Congress. *See* Press Release,

career civil servants and political appointees at scientific agencies.¹⁷ Many high-profile scientific integrity conflicts come from political appointees interfering with the work of career scientists, and by mandating the creation of scientific integrity policies explicitly prohibiting covered individuals from altering science and censoring scientists,¹⁸ the Act would have made it more difficult for appointees to interfere with the work of career civil servants. Although many of the Act's provisions were already included in existing scientific integrity policies, the Act would have standardized these requirements and highlighted Congress's support for scientific integrity across parties and administrations.

The idea of a legislative solution is supported by many, although not all, observers and officials working in science policy. In a 2019 report advocating for legislation to combat scientific integrity issues, former Environmental Protection Agency (EPA) Administrator Christine Todd Whitman and former U.S. Attorney for the Southern District of New York Preet Bharara wrote, “[i]n today’s hyperpartisan climate, we need additional guardrails to cultivate an environment of free scientific inquiry, monitor political officials’ influence on experts’ work, ensure public access to government research and data, and deter and punish political interference . . . we need Congress to act.”¹⁹ Roger Pielke, Jr., a

Paul D. Tonko, U.S. Congressperson, Tonko Reintroduces Bipartisan Scientific Integrity Act (July 25, 2023), <https://tonko.house.gov/news/documentsingle.aspx?DocumentID=3948> [<https://perma.cc/3FX4-N67T>]. However, the text of the bill was not made available before this Note’s publication, and it therefore remains unclear which provisions of the bill have been changed since its prior incarnation.

17. Civil servants are apolitical federal employees hired for jobs that do not end at the conclusion of an administration, while political appointees are short-term hires by the executive branch that turn over after a presidential election results in a change of control. See Alex Tippett & Troy Cribb, *Political Appointee to Civil Servant: What the Public Should Know About “Burrowing In,”* CTR. FOR PRESIDENTIAL TRANSITION (Jan. 5, 2021), <https://presidentialtransition.org/blog/political-appointee-burrowing-in/> [<https://perma.cc/4F8M-PDFA>].

18. Scientific Integrity Act, H.R. 849, 117th Cong. §§ 2(b)(1)(B)–(C) (2021). The bill clarified that such policies must also include provisions allowing federal scientists and contractors to publish their work, contribute to peer review, and sit on advisory boards. See Scientific Integrity Act, H.R. 849, 117th Cong. §§ 2(b)(2)(A)(ii), (B), (D)(2021).

19. See BHARARA ET AL., *supra* note 14, at 4. The Brennan Center has subsequently strongly supported the Scientific Integrity Act in particular. See *Statement from the National Task Force on Rule of Law & Democracy in Support of the Scientific Integrity Act*, BRENNAN CTR. FOR JUST. (Nov. 13, 2019), <https://www.brennancenter.org/our-work/research-reports/statement-national-task-force-rule-law-democracy-support-scientific> [<https://perma.cc/R37K-QMST>] (in which all eight members of the bipartisan Task Force “strongly urge[d] the House of Representatives and the Senate to take up this important legislation and pass it into law”); Martha Kinsella, *Statement in Support of the Scientific Integrity Act*, BRENNAN CTR. FOR JUST. (June 5, 2020), <https://www.brennancenter.org/our->

political scientist often called as a witness by Republican members of Congress,²⁰ also saw a need for legislation, stating in 2019 testimony that “[s]cientific integrity legislation is important and necessary.”²¹ By contrast, after voting against the 2019 version of the Scientific Integrity Act, Representative Bill Posey (R-FL) criticized the idea of a legislative solution that provides increased authority to civil servants. Posey argued that such a bill gives more power to “unelected, unaccountable, unrecallable bureaucrats” and that, instead, Congress should play a bigger role.²² Representative Frank Lucas (R-OK), who originally voted against the 2019 bill before voting for an amended version, asserted that the original bill—which had a more robust section detailing scientists’ ability to speak to the media and review public

work/research-reports/statement-support-scientific-integrity-act [https://perma.cc/A9U4-KMPB] (“The Brennan Center strongly supports the Scientific Integrity Act and urges the Senate to pass this important legislation.”).

20. See Liz Borkowski, *Hearing Shows Bipartisan Agreement on the Need to Protect Scientific Integrity*, PUMP HANDLE (Aug. 6, 2019), <http://www.thepumphandle.org/2019/08/06/hearing-shows-bipartisan-agreement-on-the-need-to-protect-scientific-integrity/#.Y90moOzMLJ8> [https://perma.cc/8GA8-5VSC] (identifying Pielke as the Republican witness). Pielke, who has a background in political science, is often called as a Republican witness on scientific issues and is perhaps best known for his testimony demonstrating his skepticism on aspects of climate change science. For examples of his climate change testimony on behalf of Republicans, see Jason Samenow, *Unbalanced Climate-Change Hearing Proves Pointless*, WASH. POST (Mar. 29, 2017), <https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/03/29/unbalanced-climate-change-hearing-proves-pointless/> [https://perma.cc/B5P8-AJ2S]; Roger Pielke, Jr., *Mr. Pielke Goes to Washington*, THE HONEST BROKER BY ROGER PIELKE JR. (July 19, 2021), <https://rogerpielkejr.substack.com/p/mr-pielke-goes-to-washington> [https://perma.cc/KLX9-LTPM].

21. See *Hearing on Scientific Integrity in Federal Agencies Before the Subcomm. on Rsch. and Tech. & Subcomm. on Investigations and Oversight of the H. Comm. on Sci., Space, and Tech.*, 116th Cong. (July 17, 2019) (statement of Roger Pielke, Jr.), https://republicans-science.house.gov/_cache/files/1/2/12436896-8f39-4f86-9ac7-4b4873c681dc/20B8ED121655173E1BCE2F8CC1F4A1A8.2019-07-17-testimony-pielke.pdf [https://perma.cc/UA22-677G]. Pielke has continued to support the idea of scientific integrity legislation since his 2019 testimony; see @RogerPielkeJr, TWITTER (Jan. 27, 2021, 4:17 PM) <https://twitter.com/RogerPielkeJr/status/1354539053417254914> [https://perma.cc/BYB2-YCRS] (tweeting in response to the Biden administration’s January 2021 executive order on scientific integrity that the executive order “is very good, but legislation is still needed”).

22. See William Thomas, *Efforts Mounting to Reinforce Scientific Integrity at Agencies*, AM. INST. OF PHYSICS (Oct. 29, 2019), <https://www.aip.org/fyi/2019/efforts-mounting-reinforce-scientific-integrity-federal-agencies> [https://perma.cc/ST8C-QAE6]. Posey said it was the “responsibility of Congress” to determine what should be in scientific integrity policies and what the process around those policies should be. See *Full Committee Markup of H.R. 4091, H.R. 2051 and H.R. 1709, Before the H. Comm. on Sci., Space, & Tech.*, 116th Cong. (2019).

statements that rely on their work²³—took “a sledgehammer to the problem that requires a scalpel.”²⁴ Although momentum is growing for a legislative solution, it is not a universally accepted proposal, and the precise contents of any such legislation remain in dispute.

This Note argues that a legislative solution is, in fact, the best solution, and that Congress and the Biden administration should work together to strengthen, pass, and implement the Scientific Integrity Act. More specifically, this Note maintains that the version of the Scientific Integrity Act introduced in the 117th Congress is a useful, if flawed, proposal. Although the bill contains important provisions standardizing and mandating scientific integrity requirements, like the Biden administration’s reports, it remains vague on enforcement mechanisms that could be used to investigate and punish high-level political officials who violate scientific integrity policies. Without stronger enforcement language, the law may fail to sufficiently protect civil servants, mirroring the flaws of existing scientific integrity policies. Congress should adopt several existing executive proposals and fold them into the legislation, such as mandating inter-agency review panels for high-level scientific integrity disputes. Congress should also amend the bill to include the publication of investigative reports involving high-level political officials, as well as the possibility of other disciplinary actions for both civil servants and political appointees.

While a legislative solution may seem improbable considering congressional gridlock, the 2019 version of the Act did receive some bipartisan support.²⁵ This bipartisanship may reflect the idea that, as Professors Wendy E. Wagner and Thomas O. McGarity have noted, scientific integrity-related legislation “could also be the type of legislative reform that is attractive to members of Congress who are well aware of the fact that administrations—and

23. For Rep. Lucas’s amendment striking the communications provision, see Amendment to the Amendment in the Nature of a Substitute to H.R. 1709 Offered by Mr. Lucas of Oklahoma, 116th Cong. (2019). For the communications provision of the bill directly before Rep. Lucas’s amendment, see Amendment in the Nature of a Substitute to H.R. 1706, 116th Cong. §§ 5(f), (g), 4 (2019).

24. See Thomas, *supra* note 22.

25. In 2019, the House Science Committee approved a version of the bill by a twenty-five to six vote, with six Republicans voting in favor of the bill. See *id.* Notably, even the Republican witness at a 2019 Congressional hearing about the bill strongly supported the Act. See Borkowski, *supra* note 20 (identifying Roger Pielke, Jr. as the Republican witness at the hearing).

hence the scope of a party's political power—can swing dramatically from one election cycle to another.”²⁶ Therefore, while most attention remains on executive and judicial mechanisms, it is worth seriously considering the prospect of legislation and what the precise contents of an ideal bill could look like. Given attention and space for debate, an improved version of the Scientific Integrity Act could pass both chambers of Congress and be signed into law.

Although the issue of scientific integrity has received notable attention in recent years,²⁷ this Note is one of the first to conduct a significant scholarly analysis of the Scientific Integrity Act in particular. This Note begins by surveying the dimensions of, history of, and increase in political interference at scientific agencies. Part I outlines the scope of improper interference at such agencies and explores the rise in conflicts between scientists and political appointees over the last seven decades. This Part also advances explanations for why these issues may have become so prominent recently. In Part II, this Note examines the deficiency of existing protections, including scientific integrity policies, legislation, and judicial enforcement. Finally, in Part III, this Note examines the language of the Scientific Integrity Act, including an analysis of how Congress can and should improve the Act's enforcement provisions.

26. McGarity & Wagner, *supra* note 14, at 1800.

27. Outside of non-profits like UCS and PEER, which focus intensely but not exclusively on scientific integrity work, several legal scholars and advocates have also taken an interest in the subject. See, e.g., Albert C. Lin, *President Trump's War on Regulatory Science*, 43 HARV. ENV'T L. REV. 247 (2019) (arguing that the Trump Administration specifically targeted regulatory science and that the Administrative Procedure Act, among other laws, could prevent some of the abuse); Heidi Kitrosser, *Scientific Integrity: The Perils and Promise of White House Administration*, 79 FORDHAM L. REV. 2395 (2011) (focusing on the Obama administration's relationship with scientific information); McGarity & Wagner, *supra* note 14, at 1719 (tracing out “stealth science” strategies administrations have used to pursue deregulatory activities); BHARARA ET AL., *supra* note 14 (detailing a variety of legislative steps Congress could take to protect scientific integrity, although largely sidestepping discussion of enforcement mechanisms and the Scientific Integrity Act itself).

I. CONFLICTS BETWEEN POLITICS AND SCIENCE

Conflicts between scientists and those who would inappropriately suppress their work is neither a modern nor exclusively American phenomenon.²⁸ Over the last seventy years, however, disputes between scientists and political appointees within the U.S. federal government have settled into recognizable patterns. Examining these patterns and their development highlights one of the preliminary challenges any scientific integrity legislation must address: how to define a violation of scientific integrity. Moreover, understanding the tensions undergirding scientific integrity issues is key to improving and advocating for the Scientific Integrity Act.

A. DEFINING POLITICAL INTERFERENCE IN FEDERAL SCIENCE

Determining precisely where to draw the line between politics and science is not an easy task. Outside of legislation like the Endangered Species Act, under which decisions must rest only on the best available science,²⁹ political considerations are often a necessary and appropriate part of the policymaking process.³⁰ Yet historically, the breaking of unofficial executive branch norms surrounding the use of science has created as much concern among

28. See HEATHER E. DOUGLAS, *SCIENCE, POLICY, AND THE VALUE-FREE IDEAL* 113 (2009) (summarizing the oft-cited examples of Galileo Galilei and Trofim Lysenko, which demonstrate how improper interference has occurred in past centuries and other countries).

29. 16 U.S.C. § 1533(b)(1)(A). The Endangered Species Act (ESA) is not the only statute that requires decisions to rest on the best available knowledge. See, e.g., § 108(a)(2) of the Clean Air Act (CAA), 42 U.S.C. § 7408(a)(2) (requiring the EPA Administrator to issue air quality criteria that “accurately reflect the latest scientific knowledge”).

30. See, e.g., Wendy E. Wagner, *A Place for Agency Expertise: Reconciling Agency Expertise with Presidential Power*, 115 COLUM. L. REV. 2019, 2022 (2015) (arguing that “[f]oremost among the many unresolved institutional puzzles is ensuring the scientific competence of agencies while at the same time setting up mechanisms to provide for important sources of political input”); Francesca T. Grifo, *Scientific Integrity: The Way Forward*, 61 BIOSCIENCE 345, 345 (2011) (“I acknowledge that scientific information is rarely the only factor considered in federal decisions. Although researchers may not be pleased when the government places political, social, or economic considerations above science, this does not in itself sacrifice scientific integrity.”); Susan E. Dudley & Marcus Peacock, *Improving Regulatory Science: A Case Study of the National Ambient Air Quality Standards*, 24 SUP. CT. ECON. REV. 49, 81 (2018) (“In thinking about reforms to improve how science is used in developing regulations, clarifying which aspects of the decision are matters of science and which are matters of policy is essential to avoid both hidden policy judgments and the science charade.”); Kathryn A. Watts, *Controlling Presidential Control*, 114 MICH. L. REV. 683, 724 (2016) (arguing that “even if politics could be excised from rulemaking as a practical matter, it would be undesirable as a normative matter”).

civil servants and watchdogs as statutory violations. As such, to some observers, the distinction between proper and improper political influence in science-based decision-making may seem as imprecise as Justice Stewart's "I know it when I see it" definition of obscenity.³¹ By combining historical patterns with existing definitions of scientific integrity, however, it is possible to highlight the primary concerns that scientific integrity legislation is meant to tackle.

In particular, over time, actions deemed improper by various observers have developed into at least eight recognizable tactics:

1. Selectively editing documents, data, or websites;
2. Intentionally misrepresenting or tampering with the best-available science;
3. Unjustly firing, transferring, coercing, or demoting scientific staff;
4. Restricting staff communications;
5. Improperly weakening, disregarding, or revoking science-based regulations;
6. Shutting down or reducing enforcement systems with the goal of undercutting science-based regulations;
7. Appointing unqualified or conflicted people for agency positions or advisory board roles; and
8. Hollowing out agencies.³²

While some of these tactics clearly violate statutes (e.g., tampering with science-based regulations might violate the Administrative Procedure Act), others walk a trickier tightrope. For example, while there is no statute directly barring the president from hollowing out an agency, it appears fundamentally at odds with the president's constitutional duty to take care that

31. *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).

32. See Emily Berman & Jacob Carter, *Scientific Integrity in Federal Policymaking Under Past and Present Administrations*, J. SCI. POL. & GOVERNANCE, Sept. 2018, at 17 (identifying these eight types of violations and highlighting examples of relevant kinds of interference). This list of patterns is just one way to categorize types of political interference with government science; other observers and scholars have approached the issue slightly differently. See, e.g., CHRIS MOONEY, THE REPUBLICAN WAR ON SCIENCE 17–24 (2005) (labeling the recurring problems as (1) undermining science, (2) suppressing science, (3) targeting individual scientists, (4) rigging the process, (5) deliberately misstating scientific facts, (6) magnifying uncertainty, (7) relying on fringe viewpoints, (8) ginning up contrary 'science,' and (9) dressing up values in scientific clothing).

the laws are faithfully executed.³³ And while transferring some types of scientific staff is technically legal, it breaks long-held norms around personnel management.³⁴

It is difficult to collapse the variety of possible improper actions into a short definition, however, and not everyone agrees as to the boundaries of “improper interference.”³⁵ Notably, in its January 2023 Framework, the Office of Science and Technology Policy (OSTP) finally added a specific definition for all federal agencies to adopt,³⁶ labeling scientific integrity as “the adherence to professional practices, ethical behavior, and the principles of honesty and objectivity when conducting, managing, using the results of, and communicating about science and scientific activities.”³⁷ The definition adds that “[i]nclusivity, transparency, and protection from inappropriate influence are hallmarks of scientific integrity.”³⁸ While the report does not define “inappropriate influence,” it appears to consider a covert political motive as a sign of such influence, as covert actions are inherently at odds with transparency. Other definitions of scientific integrity exist, however; UCS has defined it as the “processes through which independent science fully and transparently informs policy decisions, free from inappropriate political, ideological, financial,

33. U.S. CONST. art. II, § 3.

34. See *infra* Part II.C (detailing the Senior Executive Service and criticisms of the transfer of Joel Clement).

35. The struggle with distinguishing between permissible and impermissible political influence in agency action is, of course, not limited to just the science policy process. See Kathryn A. Watts, *Proposing a Place for Politics in Arbitrary and Capricious Review*, 119 YALE L.J. 2, 9 (2009) (noting broadly that “[a]lthough drawing a precise line between permissible and impermissible influences [in agency actions] is difficult, legitimate political influences can roughly be thought of as those influences that seek to further policy considerations or public values, whereas illegitimate political influences can be thought of as those that seek to implement raw politics or partisan politics unconnected in any way to the statutory scheme being implemented”).

36. The Biden administration’s 2022 report intentionally refused to define precisely “scientific integrity,” noting that “*scientific integrity* is not specifically defined in this report but will be addressed in future work of the Task Force.” See 2022 REPORT, *supra* note 2, at 53. The 2023 report noted the new definition was added because “[a] substantial gap identified in the Report was that the US Federal Government lacked a consistent definition of scientific integrity.” See 2023 REPORT, *supra* note 6, at 8. The addition of the definition in the 2023 report may have also been prompted by a 2021 Congressional Research Service report that noted that, across federal agencies, “there is no uniform definition of scientific integrity.” See MARCY E. GALLO, CONG. RSCH. SERV., R46614, FED. SCI. INTEGRITY POLICIES: A PRIMER (2021), <https://crsreports.congress.gov/product/pdf/R/R46614> [<https://perma.cc/ZUA2-AUAM>].

37. See 2023 REPORT, *supra* note 6, at 8.

38. *Id.*

or other undue influence.”³⁹ Similar to the Biden administration, UCS does not define “inappropriate” or “undue influence.” Notably, the most recent iteration of the Scientific Integrity Act did not include definitions of “improper” interference or “scientific integrity” at all.⁴⁰

As such, while “scientific integrity” is difficult to pin down, it largely covers covert and evasive tactics in which administrations neglect principles of honesty and transparency when reviewing, conducting, and relying upon scientific information. While these tactics are sometimes technically legal, their evasive nature arguably undermines trust in science and government,⁴¹ potentially casting doubt on the legitimacy of agency decisions.⁴² In other words, politics playing a role in science-based decisions is not the issue; politics dictating the results of science and manipulating the science policy process is.

As a final point, “science” and “scientific agency” are also terms without clear definitions, although the Biden administration has recently attempted to give them shape. In its reports, the Biden administration defined “science” as “the full spectrum of scientific endeavors, including basic science, applied science, evaluation science, engineering, technology, economics, social sciences, and statistics, as well as the scientific and technical information derived from these endeavors.”⁴³ The reports also defined “federal science agency,” as “a Federal agency that conducts intramural research and/or funds extramural research activities.”⁴⁴ This definition is important because not all relevant agencies may have considered themselves covered by prior memorandums mandating scientific integrity policies. The Biden administration’s seeming stance—and the stance a future Scientific Integrity Act should take—is that agencies that fund, use, or rely upon science are required to adhere to scientific integrity requirements.

39. GOLDMAN ET AL., *supra* note 8, at 3.

40. Scientific Integrity Act, H.R. 849, 117th Cong. (2021).

41. Notably, trust in government has been declining for decades, and dropped steeply during the administration of George W. Bush in particular. While it is impossible to state based on the data that the Bush administration’s scientific integrity issues directly affected this drop, they likely played a role. *See Public Trust in Government: 1958–2022*, PEW RESEARCH CENTER (Jun. 6, 2022), <https://www.pewresearch.org/politics/2022/06/06/public-trust-in-government-1958-2022/> [<https://perma.cc/WAU8-6UAX>].

42. *See infra* note 206.

43. 2022 REPORT, *supra* note 2, at 53; 2023 REPORT, *supra* note 6, at 48.

44. 2022 REPORT, *supra* note 2, at 52; 2023 REPORT, *supra* note 6, at 47.

B. THE MODERN DEVELOPMENT OF POLITICAL INTERFERENCE IN FEDERAL SCIENCE

In addition to the written definitions of scientific integrity, briefly exploring the modern history of political interference with science can help better determine the contours of “improper” interference.⁴⁵ Scientific integrity concerns are neither new nor restricted to one party, and their build up over the last two decades highlights the need for the Scientific Integrity Act.

In the United States, political interference with scientific agencies has developed unique contours since the 1940s. After World War II, the federal government established or expanded several science-based agencies, a process that continued through the 1970s.⁴⁶ Although the New Deal idea of agency-as-expert faced some backlash,⁴⁷ scientists still retained high bipartisan support for much of that time.⁴⁸ Yet even in this era, politicians and scientists came into conflict over scientific issues. In one prominent example from 1953, Sinclair Weeks, President Eisenhower’s Secretary of Commerce, fired scientist Allen Astin, the head of the National Bureau of Standards, for not considering the “play of the marketplace” in a science-based product decision on battery additives.⁴⁹ The editorial board of *Science*, a leading academic journal, noted regarding Astin’s dismissal that “[s]cience and government have become so thoroughly intermixed in the past 15 years that it is hard to know where the one begins and the other leaves off. How to manage this marriage of necessity has become

45. For a more thorough investigation of the history of political interference in federal science since World War II, see Berman & Carter, *supra* note 32.

46. *Id.* at 4 (listing the National Science Foundation, Office of Naval Research, and Atomic Energy Commission as among the science-based agencies created in the decades following World War II).

47. See Wagner, *supra* note 30, at 2024–45.

48. Gordon Gauchat, *Politicization of Science in the Public Sphere: A Study of Public Trust in the United States, 1974 to 2010*, 77 AM. SOCIO. REV. 167, 170, 182 (2012) (demonstrating that public trust in science has declined primarily among conservatives and frequent church-goers since the 1970s, which is consistent with Mooney’s thesis [*supra* note 32] that the 1960s represented a high-water mark for bipartisan support of science).

49. See Editorial, *On the Astin Dismissal*, 117 SCIENCE 1, 3 (1953). Astin’s agency determined that AD-X2, an additive meant to prolong the life of batteries, was not effective, leading to a confrontation with business interests within the administration. Five months after demanding his resignation, however, Secretary Weeks asked Astin to return. See Jim Schooley, *Allen V. Astin: A Turning Point for the National Bureau of Standards*, NIST (June 19, 2019), <https://www.nist.gov/director/nbsnist-culture-excellence/allen-v-astin-turning-point-national-bureau-standards> [https://perma.cc/86CV-4EYK].

of concern recently to many thoughtful men.”⁵⁰ This early example of observers grappling with the line between politics and science foreshadows later incidents in which administrations attempted to undercut scientific conclusions by firing or transferring key personnel.

Over the next thirty years, conflicts between scientists and politicians continued to bubble, with both the Johnson and Nixon administrations receiving criticism for their politicization of previously nonpartisan scientific advisory committees.⁵¹ After President Nixon dismissed the President’s Science Advisory Committee for refusing to support plans to fund research on supersonic airplanes,⁵² Congress reacted by passing the Federal Advisory Committee Act (FACA) to govern the functioning and staffing of federal advisory committees, a law still in effect today.⁵³ Notably, science-based legislation maintained high support during much of this period, with Congress churning out a variety of environmental legislation, including the Clean Air Act and Clean Water Act.⁵⁴ Backlash against environmental legislation began to build in the late 1970s, with President Carter ultimately signing the Paperwork Reduction Act, a regulatory review law that has since been used to undercut many science-based regulations.⁵⁵

During the 1980s, political maneuvers to undermine science and scientists at federal agencies began to develop into more clearly distinct tactics. These tactics, which the Reagan administration advanced as part of its prominent deregulatory agenda, included nominating agency heads openly hostile to the work of their own agencies; targeting specific advisory board and

50. See Editorial, *On the Astin Dismissal*, *supra* note 49.

51. The Johnson administration politicized the previously non-political President’s Science Advisory Committee (PSAC), a council of scientists that provided advice to the president on scientific and technological matters, by imposing a political litmus test for potential members based on their attitudes toward the Vietnam War. See ZUOYUE WANG, *IN SPUTNIK’S SHADOW: THE PRESIDENT’S SCIENCE ADVISORY COMMITTEE AND COLD WAR AMERICA* 262 (2008).

52. Supersonic airplanes were meant to carry passengers farther distances at significantly higher speeds; while Nixon strongly supported research on developing the planes, most PSAC members did not, pointing to noise issues, high costs, and adverse environmental effects. See Berman & Carter, *supra* note 32, at 6.

53. Federal Advisory Committee Act, Pub. L. 92-463, § 1 (1972).

54. Berman & Carter, *supra* note 32, at 4, 18.

55. President Carter’s most high-profile scientific integrity violation (as modern scholars would classify it) arguably occurred when his administration buried a report on oil reserves that did not fit with the Carter administration’s political message. See Berman & Carter, *supra* note 32, at 5–7. For more information on how regulatory review has been used to undercut scientific regulations, see generally Wagner, *supra* note 30.

agency staffers whose priorities differed from those of the administration; allowing conflicts of interest into science-based decision-making processes; and misrepresenting the best-available science.⁵⁶ Notable headlines under this administration included the discovery of a “hit list” of civil servants at the EPA that the Chamber of Commerce wanted fired⁵⁷ and the conviction of an EPA political appointee for perjury and obstruction of a Congressional investigation after lying about conflicts of interest related to a Superfund site.⁵⁸ The Reagan administration also pioneered many techniques used to manipulate scientific models.⁵⁹

The idea of “scientific integrity” fully bloomed, however, during the administration of George W. Bush.⁶⁰ Observers widely viewed the George W. Bush administration as antagonistic toward science, leading to increased concerns about what became known as “scientific integrity violations.”⁶¹ In 2005, a bipartisan group of scientists that had advised every administration since the 1950s decried the ways in which the Bush administration “often manipulated the process through which science enters in its decisions,” writing, “[o]ther administrations have, on occasion, engaged in such practices, but not so systematically nor on so wide

56. See Berman & Carter, *supra* note 32, at 7–10.

57. See Dale Russakoff & Howard Kurtz, *Compiler of EPA ‘Hit Lists’ Resigns*, WASH. POST (Mar. 16, 1983), <https://www.washingtonpost.com/archive/politics/1983/03/16/compiler-of-epa-hit-lists-resigns/a934af45-cdad-4407-927d-a164ca7364ed/> [<https://perma.cc/UR6S-DM9Q>]; Caroline Rand Herron, Michael Wright & Carlyle C. Douglas, *The Nation; A ‘Hit List’ For EPA*, N.Y. TIMES (Sept. 9, 1984), <https://www.nytimes.com/1984/09/09/weekinreview/the-nation-a-hit-list-for-epa.html> [<https://perma.cc/VL3E-U6W8>].

58. See Philip Shabecoff, *Rita Lavelle Gets 6-Month Term and Is Fined \$10,000 for Perjury*, N.Y. TIMES (Jan. 10, 1984), <https://www.nytimes.com/1984/01/10/us/rita-lavelle-gets-6-month-term-and-is-fined-10000-for-perjury.html> [<https://perma.cc/9SMT-FU8V>]. “Superfund sites” are especially toxic places designated by the EPA that require extensive cleanup. See *What is Superfund?*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/superfund/what-superfund> [<https://perma.cc/8CPF-69KQ>].

59. See McGarity & Wagner, *supra* note 14, at 1730–31.

60. The presidencies of George H.W. Bush and Bill Clinton were not without controversy, but there were significantly fewer documented conflicts in those presidencies as compared to those found in the Reagan and George W. Bush administrations. See Berman & Carter, *supra* note 32, at 6.

61. See, e.g., Watts, *supra* note 30, at 698 (“[I]t seems clear that the White House’s willingness to meddle with at least some scientific decisions served as yet another mechanism through which presidential control occurred during the Bush administration.”); SHULMAN ET AL., UNION OF CONCERNED SCIENTISTS, SCIENTIFIC INTEGRITY IN POLICYMAKING: AN INVESTIGATION INTO THE BUSH ADMINISTRATION’S MISUSE OF SCIENCE 20–22 (2004) (detailing a variety of Bush administration actions UCS deemed improper); MOONEY, *supra* note 32 (labeling the Bush administration’s actions as part of a “Republican war on science”).

a front.”⁶² Incidents included the administration’s silencing of climate scientists,⁶³ editing of scientific documents related to endangered species,⁶⁴ nominating scientists with “thin” credentials and fringe views to advisory committees,⁶⁵ and spreading incorrect information about the relationship between abortion and breast cancer.⁶⁶ Some of these actions violated statutes—for example, editing documents to affect endangered species listings is unlawful under 16 U.S.C. § 1532(b)(1)(A), which requires that listing decisions are based only on the best available science—while others, like the attempt to keep climate scientist James Hansen from speaking about his research, undermined long-held norms around the freedom of government scientists to present their work to the public.⁶⁷

In response, the Obama administration publicly touted its intention to promote scientific integrity, publishing a variety of memoranda advocating for scientific integrity policies.⁶⁸ While data supports the idea that there were fewer conflicts around scientific integrity under the Obama administration,⁶⁹ the administration nonetheless received sharp criticism for several of its activities, including the Food and Drug Administration’s (FDA) underhanded refusal to lift age restrictions for Plan B access

62. 2004 Scientist Statement on Restoring Scientific Integrity to Federal Policy Making, UNION OF CONCERNED SCIENTISTS (July 13, 2008), <https://www.ucsusa.org/resources/2004-scientist-statement-scientific-integrity> [<https://perma.cc/HV8N-RV75>].

63. See Andrew C. Revkin, *Climate Expert Says NASA Tried to Silence Him*, N.Y. TIMES (Jan. 26, 2006), <https://www.nytimes.com/2006/01/29/science/earth/climate-expert-says-nasa-tried-to-silence-him.html> [<https://perma.cc/BXH2-8RAD>].

64. See Felicity Barringer, *Interior Official Steps Down Over Rules Violation*, N.Y. TIMES (May 2, 2007), <https://www.nytimes.com/2007/05/02/washington/02interior.html> [<https://perma.cc/Q76G-LFQU>].

65. See Gerald Markowitz & David Rosner, *Politicizing Science: The Case of the Bush Administration’s Influence on the Lead Advisory Panel at the Centers for Disease Control*, 24 J. PUB. HEALTH POL’Y 105, 113 (2003).

66. See Lawrence K. Altman, *Panel Finds No Connection Between Cancer and Abortion*, N.Y. TIMES (Mar. 7, 2003), <https://www.nytimes.com/2003/03/07/us/panel-finds-no-connection-between-cancer-and-abortion.html> [<https://perma.cc/HUU9-EZYJ>].

67. See Revkin, *supra* note 63.

68. 2009 Press Release on Scientific Integrity, *supra* note 13; Memorandum from John P. Holden to the Heads of Executive Departments and Agencies on Scientific Integrity (Dec. 17, 2010), <https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf> [<https://perma.cc/PW28-BTCC>] [hereinafter 2010 Press Release on Scientific Integrity].

69. GRETCHEN GOLDMAN ET AL., UNION OF CONCERNED SCIENTISTS, PROGRESS AND PROBLEMS: GOVERNMENT SCIENTISTS REPORT ON SCIENTIFIC INTEGRITY AT FOUR AGENCIES 2 (2015).

despite evidence showing Plan B was safe at younger ages.⁷⁰ As Professor Kathryn Watts has noted, the Plan B controversy spanned both the Bush and Obama administrations, and “[n]otably, the White House’s influence over the FDA’s regulation of Plan B operated in a clandestine manner during both the Bush and Obama administrations.”⁷¹ The Obama administration also received pushback from the scientific community for its handling of a report on the safety of fracking.⁷²

The Trump administration’s activities prompted another major surge of interest in scientific integrity, and many observers have labeled that administration’s interference with scientific activities as unique in breadth and approach.⁷³ Several institutions, including UCS, Columbia Law School, and the Brookings Institution, created detailed trackers listing alleged instances of improper political interference at scientific agencies.⁷⁴ Among the administration’s most well-reported improprieties were an attempt to pass a regulation that would have prevented the EPA from relying on certain public health data when creating science-based regulations;⁷⁵ the “Sharpiegate” incident in which the

70. Watchdogs criticized the Obama administration’s refusal to lift age restrictions for Plan B access despite evidence showing Plan B was safe at younger ages. See Brady Dennis & Sarah Kliff, *Obama Administration Drops Fight to Keep Age Restrictions on Plan B Sales*, WASH. POST (June 10, 2013), https://www.washingtonpost.com/national/health-science/obama-administration-drops-fight-to-keep-age-restrictions-on-plan-b-sales/2013/06/10/a296406e-d22a-11e2-a73e-826d299ff459_story.html [<https://perma.cc/DG48-2RRK>].

71. Watts, *supra* note 30, at 710.

72. Berman & Carter, *supra* note 32, at 13.

73. See, e.g., *id.* at 14–16 (arguing that while the Trump administration mostly expanded the scope and scale of existing tactics, it occasionally did pioneer new ones, including outright ignoring scientific evidence); Webb & Kurtz, *supra* note 9, at 76 (arguing that “under President Trump, attacks on science were much more frequent and widespread [and] also took on a different flavor”); McGarity & Wagner, *supra* note 14, at 1732 (arguing that “[t]he Trump administration appears to be continuing many of these model maneuvers [originated under the Bush administration]. But it is also innovating new techniques”).

74. *Attacks on Science*, UNION OF CONCERNED SCIENTISTS (Mar. 16, 2023), <https://www.ucsusa.org/resources/attacks-on-science> [<https://perma.cc/65DE-UJB7>]; *Climate Deregulation Tracker*, COLUMBIA L. SCH., <https://climate.law.columbia.edu/climate-deregulation-tracker> [<https://perma.cc/B43T-6AL9>]; *Tracking Regulatory Changes in the Trump Era*, BROOKINGS INST. (Feb. 3, 2023), <https://www.brookings.edu/interactives/tracking-regulatory-changes-in-the-biden-era/> [<https://perma.cc/LD4W-KMRR>]. By the end of the Trump administration, UCS’s tracker had cataloged over 200 incidents by its metrics, and Columbia Law School’s tracker—a joint project with the Climate Science Legal Defense Fund—had cataloged almost 350 anti-science actions. See ANITA DESIKAN & JACOB CARTER, UNION OF CONCERNED SCIENTISTS, GETTING SCIENCE BACK ON TRACK: VOICES OF SCIENTISTS ACROSS SIX FEDERAL AGENCIES 2 (2023); Webb & Kurtz, *supra* note 9, at 66.

75. See Lisa Friedman, *E.P.A. to Limit Science Used to Write Public Health Rules*, N.Y. TIMES (Nov. 11, 2019), [<https://perma.cc/FTA9-9GUG>] (explaining how the Trump

Trump administration rebuked government forecasters for issuing public safety warnings about Hurricane Dorian and ultimately demoted the Chief Scientist of the National Oceanic and Atmospheric Administration (NOAA);⁷⁶ and its attempts to manipulate data and messages about COVID-19, including pressuring the Food and Drug Administration to approve unverified treatments supported by the administration.⁷⁷ Such activities disproportionately affected underserved communities, including low-income communities and communities of color.⁷⁸

The Biden administration has attempted, with some measurable success,⁷⁹ to reverse course. As with the Obama administration, however, the Biden administration has not avoided all controversy. Eric Lander, President Biden's first science advisor, stepped down after allegations of mistreating staff, and Jane Lubchenco, a deputy director at OSTP and one of the authors of the 2022 report,⁸⁰ was penalized for failing to disclose a conflict of interest when co-authoring a paper.⁸¹

administration's proposed rule entitled "Strengthening Transparency in Regulatory Science" would have weakened science-based policymaking).

76. See Umair Irfan, *Trump's "Sharpiegate" Grudge May Have Cost NOAA's Acting Chief Scientist His Job*, VOX (Oct. 31, 2020), <https://www.vox.com/2020/10/31/21540150/noaa-trump-hurricane-sharpiagate-science-zeta-dorian> [<https://perma.cc/T5ZQ-X4U5>]. The incident was labelled "Sharpiegate" after President Trump presented a map of the storm's forecast that appeared to have been edited with a black marker. See Caitlin Oprysko, *An Oval Office Mystery: Who Doctored the Hurricane Map?*, POLITICO (Sept. 4, 2019), <https://www.politico.com/story/2019/09/04/donald-trump-sharpi-hurricane-map-1481733> [<https://perma.cc/34WQ-8BWE>].

77. See Daniella Diaz & Jen Christensen, *House Oversight Subcommittee Report Says Trump Officials Had Pressure Campaign on Hydroxychloroquine, Other FDA Issues*, CNN (Aug. 24, 2022), <https://www.cnn.com/2022/08/24/health/hydroxychloroquine-trump-fda-pressure-committee-report/index.html> [<https://perma.cc/76GV-MUWA>].

78. Anita Desikan et al., *An Equity and Environmental Justice Assessment of Anti-Science Actions During the Trump Administration*, 44 J. PUB. HEALTH POL'Y 148, 148 (2023).

79. DESIKAN & CARTER, *supra* note 74 (summarizing the survey data and noting that the "results indicate that federal scientists had mostly positive perceptions both of their agencies and of the Biden administration's efforts to restore science in decisionmaking").

80. 2022 REPORT, *supra* note 2, at i, v.

81. Tollefson, *supra* note 7, at 621.

C. TENSIONS UNDERPINNING INCREASES IN CONFLICTS BETWEEN POLITICS AND SCIENCE

As detailed *supra*, conflicts between civil servants and political appointees at scientific agencies have increased over time and coalesced into a variety of tactics used to undermine science.⁸² While it is easy to tie this change purely to partisan politics, the issues run deeper, implicating complicated questions around bureaucracy, the Constitution, and even philosophy. To successfully strengthen and pass a bipartisan Scientific Integrity Act, Congress must navigate these difficult tensions and disagreements over the relationship between science and politics.

One practical reason for the increase in conflicts between political appointees and civil servants at scientific agencies is the divide between government scientists and deregulatory interests as the administrative state has grown.⁸³ Because the number of regulations has increased over the years,⁸⁴ and because properly rolling back science-based rules is a long process, presidents and political appointees have instead embraced what Wagner and McGarity call “stealth science” strategies when they want to

82. DESIKAN & CARTER, *supra* note 74, at 2 (noting that UCS tracked 98 attacks on science during the eight years of the Bush administration, 19 during the Obama administration, and 206 during the four years of the Trump administration). While UCS’s numbers only catalog actions that fall under UCS’s definition of “attacks on science” and only reach back to the Bush administration, *id.*, they provide a general picture of the extremity of the surge in anti-science actions during the Trump administration in particular.

83. Deregulatory interests may be profit-motivated; that is, when science-based regulations threaten bottom lines, industries are incentivized to undermine those regulations. Deregulatory interests may also be more ideologically motivated; that is, there are those who believe that the federal government should allow more individual freedom, or at least leave regulation to state governments better able to assess local needs. For a description of problematic profit-motivated activities, see Genna Reed et al., *The Disinformation Playbook: How Industry Manipulates the Science-Policy Process—and How to Restore Scientific Integrity*, 42 J. PUB. HEALTH POL’Y 622, 623 (2021); for ideologically motivated activities, see also Clark A. Miller, *It’s Not a War on Science*, 33 ISSUES SCI. TECH. (2017), <https://issues.org/perspective-its-not-a-war-on-science/> [<https://perma.cc/6LFW-DMZY>]. Notably, although leaving more power to the states is a traditionally conservative position, it can cut the other way as well. See, e.g., Ilya Somin, *How Liberals Learned to Love Federalism*, WASH. POST (Jul. 12, 2019), https://www.washingtonpost.com/outlook/how-liberals-learned-to-love-federalism/2019/07/12/babd9f52-8c5f-11e9-b162-8f6f41ec3c04_story.html [<https://perma.cc/78F3-BX58>].

84. For an overview of the general increase in the number of regulations, see Susan E. Dudley, *Improving Regulatory Accountability: Lessons from the Past and Prospects for the Future*, 65 CASE W. RES. L. REV. 1027, 1028 (2015).

undermine science-based regulations.⁸⁵ Indeed, President Trump made deregulation a significant talking point, and one scholar has suggested that “the Trump administration [was] engaged in a war on regulatory science, not a war on research science.”⁸⁶ Combining the increase in regulations, the alliance between science and government, and the popularity of deregulatory rhetoric means that scientific issues bring a higher potential for conflict today than in the period immediately after World War II.

Over time, these conflicts have become increasingly connected to partisan politics.⁸⁷ Although all administrations since World War II have improperly interfered with science, there are more reported instances under Republican administrations than Democratic ones.⁸⁸ While the popularity of deregulation among Republican presidents is one factor affecting the partisan split,⁸⁹ it is not the full story. More broadly, in recent decades Democratic voters and politicians have had more confidence in science and scientists than their Republican counterparts.⁹⁰ This divide has grown even starker during the COVID-19 pandemic, with the gap

85. McGarity & Wagner, *supra* note 14, at 1722–23 (broadly describing the strategies as (1) manipulating science deep within the record, (2) depleting staff and funding at scientific agencies, and (3) subtly revising internal procedures, models, and policies to tip analysis in favor of a deregulatory policy).

86. Lin, *supra* note 27, at 271 (emphasis deleted from original).

87. MOONEY, *supra* note 32, at 4–5 (arguing that over the past fifty years, “the modern Right has adopted a style of politics that puts its adherents in increasingly stark conflict with both scientific information and dispassionate, expert analysis in general”); *see also* Webb & Kurtz, *supra* note 9, at 70 (recounting a Trump-era example where a political appointee at DOI reportedly tried to cancel a study on mountaintop coal mining because “science was a Democratic thing” (internal quotations omitted)).

88. *See supra* Part I.B. Multiple observers have noted the bipartisan-but-increasingly-tilted nature of scientific integrity violations. *See, e.g., Lewis Branscomb, Science, Politics, and U.S. Democracy*, 21 ISSUES IN SCI. & TECH (2004), <https://issues.org/branscomb-3/> [<https://perma.cc/Y4PM-QKD3>] (noting that “[b]oth parties have occasionally yielded to the temptation to punish scientists who objected to government policy by cutting their research funding. . . . But the past two years [under the Bush administration] have been unique in the number, scope, and intensity of press reports and scientists’ allegations of political interference with the processes for bringing objective scientific information and advice to government policy decisions”); DESIKAN & CARTER, *supra* note 74 (detailing UCS’s rough calculations of attacks on science under the last three administrations).

89. Lin, *supra* note 27, at 271 (arguing that “[l]ike other recent Republican administrations, the Trump Administration is reversing numerous regulatory measures aimed at protecting health and the environment. Those regulatory measures rely heavily on scientific data, and thus it is unsurprising that Republican administrations ‘attack science’s forms of truth-making, its databases, and its budgets . . . as part of a coherent strategy to weaken the power of the federal agencies that rely on them”).

90. *See* Jeffrey M. Jones, *Democratic, Republican Confidence in Science Diverges*, GALLUP (July 16, 2021), <https://news.gallup.com/poll/352397/democratic-republican-confidence-science-diverges.aspx> [<https://perma.cc/774K-JSM5>].

between Democrats and Republicans over confidence in both medical scientists and scientists increasing between 2019 and 2020.⁹¹ Democrats are also more likely to believe that scientists should take an active role in policy debates and to support strengthening science-based protections.⁹² While this Republican distrust may have its roots in conservative backlash against a strong federal government, the “collateral damage” is that there is now a partisan split over science more broadly.⁹³ Moreover, the civil service skews Democratic by historical design, meaning that increased conflicts during times of Republican administrations are not unexpected.⁹⁴

This partisan difference subsequently affects another factor that has led to increased conflicts between scientists and political actors: the growing number of political appointees within the federal bureaucracy. There are significantly more political appointees compared to merit employees today than there were in the decades after World War II.⁹⁵ Perhaps surprisingly, Democratic presidents “have increased the number and percentage of [political] appointees as much as Republican presidents,”

91. See Cary Funk et al., *Trust in Medical Scientists Has Grown in U.S., but Mainly Among Democrats*, PEW RSCH. CTR. (May 21, 2020), <https://www.pewresearch.org/science/2020/05/21/trust-in-medical-scientists-has-grown-in-u-s-but-mainly-among-democrats/> [<https://perma.cc/VK8B-9JJC>].

92. See Brian Kennedy & Cary Funk, *Democrats and Republicans Differ Over Role and Value of Scientists in Policy Debates*, PEW RSCH. CTR. (Aug. 9, 2019), <https://www.pewresearch.org/fact-tank/2019/08/09/democrats-and-republicans-role-scientists-policy-debates/> [<https://perma.cc/VK8D-GLMY>] (73% of Democrats vs. 53% of Republicans); see also McGarity & Wagner, *supra* note 14, at 1721 (citing a 2017 Pew poll that found 90% of Democrats as opposed to 52% of Republicans agreed with the statement that “the country should do whatever it takes to protect the environment”).

93. Naomi Oreskes & Erik M. Conway, *From Anti-Government to Anti-Science: Why Conservatives Have Turned Against Science*, 151 DAEDALUS 98, 98 (2022).

94. As law professor David Lewis highlighted, “much of the modern administrative state was created by Democratic presidents and Democratic majorities in Congress. As a consequence, ideological and policy commitments were locked into these agencies through personnel and statute.” See DAVID E. LEWIS, *THE POLITICS OF PRESIDENTIAL APPOINTMENTS: POLITICAL CONTROL AND BUREAUCRATIC PERFORMANCE* 53 (2008). As a result, as law professor Peter Strauss noted, “a Republican administration encounters a civil service likely to be much less sympathetic to its preferences than a Democratic one.” See Peter L. Strauss, *Possible Controls Over the Bending of Regulatory Science*, in *VALUES IN GLOBAL ADMINISTRATIVE LAW* 125, 128 (Gordon Anthony et al. eds., 2011).

95. See LEWIS, *supra* note 94, at 20–21 (noting that the percentage of federal employees in the merit system peaked at almost 88% in 1951 and has dropped since then, hovering around 50% in the early 2000s).

although the parties tend to target different agencies.⁹⁶ Administrations increase political appointees relative to merit-based workers by transferring employees, reorganizing agencies, using strategic vacancies, and applying political influence in the hiring of career officials, among other tactics.⁹⁷ This increased politicization is important both because political appointees are more beholden to presidential agendas and because political appointees lack the same job security protections enjoyed by civil servants.⁹⁸ If a president transforms civil servant positions into slots for political appointees, the president can more easily fire the employees and insert loyalists into those positions.⁹⁹

Increases in conflicts between political appointees and civil servants at scientific agencies also reflect arguably increasing tensions regarding the constitutionality of the administrative state itself.¹⁰⁰ In addition to questions around Congress' ability to delegate power to agencies,¹⁰¹ constitutional murkiness around the

96. *Id.* at 203. According to Lewis, Democrats politicize traditionally conservative agencies, while Republicans politicize traditionally liberal ones; *see id.* For a listing of government agencies according to perceived political leaning, *see id.* at 116.

97. *See id.* at 30–42.

98. *See* Lisa Rein, *Trump's 11th-Hour Assault on the Civil Service By Stripping Job Protections Runs Out of Time*, WASH. POST (Jan. 18, 2021), https://www.washingtonpost.com/politics/trump-civil-service-biden/2021/01/18/5daf34c4-59b3-11eb-b8bd-ee36b1cd18bf_story.html [<https://perma.cc/LAF8-VTGW>] (noting that President Trump's proposed Schedule F order, *see infra* note 98, would be dangerous because the civil servants affected “would be vulnerable to dismissal if they are considered poor performers or have resisted executing the president's priorities, effectively turning them into political appointees that came and go with each administration”).

99. Indeed, although it was revoked by President Biden before implementation, in his final days President Trump attempted to further escalate politicization at agencies by creating a “Schedule F” that would have transformed a wide swath of high-level civil servants—mostly those involved in policy-related positions—into political appointees. *See* Exec. Order No. 13957, 85 Fed. Reg. 67631 (Oct. 21, 2020) (revoked by Exec. Order No. 14,003, 86 Fed. Reg. 7231 (Jan. 22, 2021)). Commenters noted that these employees would no longer have had the same protections against firing enjoyed by civil servants, potentially making them a target. *See* Tom Spiggle, *Trump's Executive Order Would Diminish Civil Service Employment Protections*, FORBES (Oct. 28, 2020), <https://www.forbes.com/sites/tomspiggle/2020/10/28/trumps-executive-order-would-diminish-civil-service-employment-protections/?sh=186c6a067b3a> [<https://perma.cc/KVB9-SRGW>].

100. Although it is difficult to empirically demonstrate that tensions around the constitutionality of the administrative state are increasing, the fact that the Supreme Court has recently signaled some interest in weighing in on the so-called nondelegation doctrine shows a rising—and potentially turning—tide regarding constitutional understandings of agency power. *See* Julian Davis Mortenson & Nicholas Bagley, *Delegation at the Founding*, 121 COLUM. L. REV. 277 (2021). The *West Virginia v. EPA* decision, elevating the “major questions doctrine,” also implicates the constitutionality of the administrative state. *West Virginia v. EPA*, 142 S. Ct. 2587 (2022).

101. Specifically, U.S. CONST. art. I, § 1 vests all legislative power in Congress, art. II, § 1 vests executive power in the president, art. II, § 3 requires that the president “take Care

scope of executive power means that scholars are still debating how much power the president has over his own staff. With regard to the second point, the principal debate is whether presidents are “overseers” or “deciders.”¹⁰² Do presidents simply oversee the work of civil servants, or do they have the power to substitute the determinations of civil servants with their own political conclusions and to fire any executive employee at will? For strong unitary executive theorists—those that believe the president can control all discretionary executive activity—violating scientific integrity requires violating a statute because the president inherently has the power to control the entire executive branch.¹⁰³ In contrast, other scholars argue that restrictions on executive power like for-cause removal protections are constitutionally supported.¹⁰⁴ Regardless of one’s position, the result of this constitutional opaqueness is that political appointees and civil servants are structurally set up for conflict.

Finally, conflicts related to science in government are inextricable from complicated philosophical questions around the nature of science itself. Within the policy-making context, a principal philosophical debate is how to grapple with the idea that

that the Laws be faithfully executed,” and art. I, § 8, cl. 18 gives Congress the power to structure the government as it deems “necessary and proper.” Differing interpretations of these clauses and how they interact leads to different views on the structure and scope of the administrative state. For a conservative view, see, e.g., PHILIP HAMBURGER, *THE ADMINISTRATIVE THREAT* (2017) (taking an anti-administrative view by strictly reading Art. I, § 1 as precluding delegation and emphasizing the importance of retaining separation of powers); for a contrasting view, see Gillian Metzger, *Foreword: 1930s Redux: The Administrative State Under Siege*, 131 *HARV. L. REV.* 2, 89–90 (2017) (accepting the premise of delegation and arguing that in fact, the “modern national administrative state is the constitutionally mandated consequence of delegation. . . . [P]rofessional and expert government employees are now constitutionally required as well, and perhaps also the civil service, insofar as such career staff are necessary to ensure expertise and institutional stability in agencies”).

102. See Peter L. Strauss, *Overseer, or “The Decider”?* *The President in Administrative Law*, 75 *GEO. WASH. L. REV.* 696 (2007).

103. See Kitrosser, *supra* note 27, at 2403 (defining unitarians as those who argue that “as a matter of constitutional law, the President must control all discretionary executive activity in the United States. Under the theory’s strongest version, the President must be able not only to fire executive personnel at will but to directly supplant their decisions (with or without firing them) with his own decisions”) (citations omitted).

104. Brief as Amici Curiae Supporting Court-Appointed Amicus Curiae in Support of the Judgment Below, *Seila Law LLC v. Consumer Financial Protection Bureau*, 140 S. Ct. 2183 (2020) (No. 19-7), 2020 WL 402711 (emphasizing that the “necessary and proper” clause allows for broad removal protections that can protect executive employees from the president).

knowledge production is inherently laden with various values.¹⁰⁵ This debate is notable because political actors who disapprove science-based regulations have increasingly attempted to cast the science underpinning those policies as “biased.”¹⁰⁶ Simply because science is not free of values, however, does not mean it is “biased” in the political sense. To successfully advocate for science-based policies, policymakers must be able to navigate discussions about the judgments needed in science versus overbroad allegations of bias.¹⁰⁷

II. THE LIMITS OF ATTEMPTED PRIOR SOLUTIONS

All branches of the federal government have at some point tackled problems related to scientific integrity. Most prominently, the Obama administration tried to solve the issue by promoting scientific integrity policies, but those have not had the full effect supporters hoped. The judiciary has also occasionally intervened on scientific integrity issues where judicial review is available. Finally, the legislative branch has proposed legislative solutions to various science-related conflicts, but some of those solutions have created their own problems.

A. THE NARROW UTILITY OF EXECUTIVE SOLUTIONS

The slow, deliberative nature of Congress—combined with arguably increased polarization¹⁰⁸—means that most attempted solutions to conflicts between politics and science have come from

105. DOUGLAS, *supra* note 28, at x (arguing that “science is not the value-neutral terrain that policymakers might desire, and any use of science must acknowledge the value choices embedded in that use, even accepting a scientific claim as adequately supported by a body of evidence”).

106. See BHARARA ET AL., *supra* note 14, at 3.

107. DOUGLAS, *supra* note 28, at 136 (arguing that instead of “attempting to purify the science, we should clarify the nature of the judgments needed in science so that the responsible decisionmakers can be more fully informed about the nature of the science advice they are receiving, and thus make appropriate and accountable decisions on that basis of that advice”).

108. See Michael Dimock & Richard Wike, *America Is Exceptional in the Nature of Its Political Divide*, PEW RSCH. CTR. (Nov. 13, 2020), <https://www.pewresearch.org/fact-tank/2020/11/13/america-is-exceptional-in-the-nature-of-its-political-divide/> [https://perma.cc/P93R-39AE] (concluding that “Americans have rarely been as polarized as they are today”); *c.f.* Cynthia R. Farina, *Congressional Polarization: Terminal Constitutional Dysfunction?*, 115 COLUM. L. REV. 1689, 1693 (2015) (arguing that “the rhetoric around congressional polarization—particularly around the likely continuation of partisan warfare and legislative gridlock—is far more negative than the existing evidence can justify”).

the executive branch. Such attempted solutions range from the creation of scientific integrity policies to the installation of Scientific Integrity Officers (SIOs). As many critics have pointed out,¹⁰⁹ while executive-only remedies have proven useful, they provide incomplete protection. Not only are scientific integrity policies effectively unenforceable against high-level political appointees, they are also inconsistently drafted and implemented across scientific agencies. Two major benefits of passing an amended Scientific Integrity Act would be to standardize protections and to provide clearer enforcement against violators of the policies.

As noted *supra*, the most prominent executive branch solutions have been the scientific integrity policies implemented at federal agencies. In December 2010, the Obama administration proposed that agencies develop scientific integrity policies which would (1) ensure a culture of scientific integrity, (2) strengthen the actual and perceived credibility of government research, (3) facilitate the free flow of scientific and technological information, and (4) establish principles for conveying scientific and technological information to the public.¹¹⁰ More than two dozen agencies now maintain such policies.¹¹¹

109. Both the existence of, and the limits of, these policies have been extensively discussed in scholarship and the media. For examples of such discussions in legal scholarship, see *supra* note 27.

110. 2010 Press Release on Scientific Integrity, *supra* note 68, at 1–2.

111. These policies have historically varied significantly in scope and breadth. See JACOB CARTER ET AL., UNION OF CONCERNED SCIENTISTS, PRESIDENTIAL RECOMMENDATIONS FOR 2020: A BLUEPRINT FOR DEFENDING SCIENCE AND PROTECTING THE PUBLIC 3 (2020); TARYN MACKINNEY ET AL., UNION OF CONCERNED SCIENTISTS, STRENGTHENING SCIENTIFIC INTEGRITY AT FEDERAL AGENCIES 3 (2020), <https://www.ucsusa.org/sites/default/files/2020-08/si-report-roadmap-for-science.pdf> [<https://perma.cc/JLP2-ECED>]. The EPA, for example, has a detailed policy stating that (1) scientists and managers have the right to freely express their personal views, provided they state they are not speaking on behalf of the EPA; (2) mandating that selection of members for advisory committees be based on expertise, knowledge, and contribution to the relevant subject areas; and (3) prohibiting managers and agency leadership from intimidating scientists, among other provisions. See U.S. ENVIRONMENTAL PROTECTION AGENCY, SCIENTIFIC INTEGRITY POLICY, https://www.epa.gov/sites/default/files/2014-02/documents/scientific_integrity_policy_2012.pdf [<https://perma.cc/PF69-DW49>]. Implementation of the policy is overseen by an SIO, who coordinates—when needed—with the Office of Inspector General. *Id.* at 16. The Department of Commerce’s policy, in contrast, is much less detailed; it includes limited instructions on media interactions, professional development, and federal advisory committees, and no details on any other topics. See *generally* Memorandum from Cameron F. Kerry to All Chief Counsels and General Counsels (Dec. 16, 2011), https://2010-2014.commerce.gov/sites/default/files/documents/2012/april/scientific_integrity_memorandum_dtd_2011-12-16.pdf [<https://perma.cc/4KS3-PSYV>]. As of this Note’s

These policies are merely guidances, however, and the Trump administration showed how easily they may be ignored¹¹²—particularly in light of the fact that they are not subject to judicial review.¹¹³ Indeed, the lack of consequences for violating these policies during the Trump administration likely further undermined their utility. Erik Olsen, an attorney at the Natural Resources Defense Council, commented that “if you have routine violations of the [EPA’s] policy with no known consequences, it means that it’s a paper tiger that isn’t worth the paper it’s written on.”¹¹⁴ Policies known to be ineffective will not likely serve as sufficient deterrent to future violations. Moreover, some critics charge that having ineffective policies is worse than having no policies at all because civil servants will rely on insufficient policies to their own detriment.¹¹⁵

One issue undermining these policies is that officials tasked with their implementation are civil servants, who often have less power than the political appointees they are tasked with investigating.¹¹⁶ Indeed, high-level political appointees were at the center of many Trump-era disputes, and this power imbalance made responding to scientific integrity violations difficult.¹¹⁷ In April 2017, for example, the Sierra Club filed a complaint with the

publication, agencies had not yet updated their policies to comply with OSTP’s new framework.

112. See Wendy Wagner, *It Isn’t Easy Being a Bureaucratic Expert: Celebrating the EPA’s Innovations*, 70 CASE W. RES. L. REV. 1093, 1101 (2020) (arguing that “while an agency’s scientific-integrity policies help to protect the work of staff scientists, these policies remain both incomplete and effectively unenforceable”).

113. See Nathan Cortez, *Information Mischief Under the Trump Administration*, 94 CHIKENT L. REV. 315, 345 (2019).

114. Sharon Lerner, *The Fight to Clean Up the EPA*, INTERCEPT (Apr. 26, 2021), <https://theintercept.com/2021/04/26/epa-corruption-cleanup/> [<https://perma.cc/XR2L-4D7J>].

115. *Scientific Misconduct Carries No Penalties*, PUB. EMPS. FOR ENV’T RESP. (June 14, 2021), <https://peer.org/scientific-misconduct-carries-no-penalties/> [<https://perma.cc/Z9VX-5JMA>] (quoting PEER’s Executive Director, who argued that “since [scientific integrity policies] invite detrimental reliance upon the false promises of protection and quality control, in some sense as they function today, these policies are worse than nothing”).

116. See Charles T. Goodsell, *Review: Relations Between Political Appointees and Career Officials: Principal-Agent or Moral Equals?*, 36 PRESIDENTIAL STUD. Q. 323, 326 (2006) (reviewing a series of books on political appointees and civil servants and noting that “the relationship between appointees and careerists is, in the final analysis, superior to subordinate”).

117. See Alexandra Witze, *How to Protect US Science from Political Meddling*, 601 NATURE 310, 310 (2022) (noting that “[m]any agencies already had such [scientific integrity] policies in place when Trump took office in 2017. They simply were not strong enough to withstand the suppression of science that occurred. One major problem was that top officials were sometimes involved in integrity breaches—and agencies struggled with how to respond to such events”).

EPA's Office of Inspector General alleging a violation of the EPA's scientific integrity policy after then-Administrator Scott Pruitt made statements denying climate change.¹¹⁸ The Office of Inspector General then referred the complaint to Francesca Grifo, the EPA's SIO, effectively pitting a mid-level civil servant against the head of an entire agency.¹¹⁹ A panel of officials convened by the EPA's Scientific Integrity Committee to review the complaint ultimately ruled in Pruitt's favor, clearing him of a scientific integrity violation because "expressing an opinion about science is not a violation of the EPA Scientific Integrity Policy."¹²⁰ Although this decision received pushback from some in the environmental community,¹²¹ it is potentially best understood as career staffers making a reasoned calculation that taking on top-level political appointees in this circumstance would result in a high-profile affair that might be damaging to scientific integrity efforts more broadly.¹²² Moreover, it is unclear how Administrator Pruitt might

118. During a March 2017 interview on CNBC, in response to a question on whether he believed carbon dioxide was the primary cause of climate change, Pruitt stated "No. I think that measuring with precision human activity on the climate is something very challenging to do and there's tremendous disagreement about the degree of impact. So no, I would not agree that it's a primary contributor to the global warming that we see. But we don't know that yet We need to continue the debate and continue the review and the analysis." For the scientific integrity complaint (which includes a copy of Pruitt's comments), see Letter from Sierra Club to EPA Office of the Inspector General 1–2 (Mar. 14, 2017), <https://s3.documentcloud.org/documents/3536439/Sierra-Club-Scientific-Integrity-Complaint-3-14.pdf> [<https://perma.cc/L8RH-NR8Y>].

119. Law professor Rena Steinzor noted at the time that Grifo would have to be "very gutsy" while investigating Pruitt. See Georgina Gustin, *EPA Watchdog Could Spark Internal Clash Over Pruitt's Climate Denial*, INSIDE CLIMATE NEWS (Apr. 6, 2017), <https://insideclimatenews.org/news/06042017/environmental-protection-agency-scott-pruitt-climate-change-denialist-fossil-fuels/> [<https://perma.cc/QNE2-4H2W>].

120. See Letter from Thomas H. Sinks, Director Office of the Science Advisor for the US EPA Scientific Integrity Review Panel, to Elena Saxonhouse and Joanne Spalding, Senior Attorney and Chief Climate Counsel of the Sierra Club Environmental Law Program, <http://freebeacon.com/wp-content/uploads/2017/08/Sierra-Club-letter.pdf> [<https://perma.cc/2ES4-Y6ZQ>].

121. For example, NRDC attorney John Walke posted a scathing Twitter thread in which he noted that "[w]hat's revealing is HOW [the SI] Panel avoided finding any fault w that, both here & as indication Trump Science Integrity Policy may be dead end." See @JohnDWalke, TWITTER (Aug. 1, 2017, 5:17 PM), <https://twitter.com/JohnDWalke/status/892494537813372928> [<https://perma.cc/B38G-DA4J>].

122. Michael Halpern, *Scientific Integrity Policies Do Not Make Agencies the Fact Police*, UNION OF CONCERNED SCIENTISTS (Mar. 31, 2017), <https://blog.ucsusa.org/michael-halpern/scientific-integrity-policies-do-not-make-agencies-the-fact-police/> [<https://perma.cc/KTP7-PELM>] (pointing out that, with regard to the then-ongoing Pruitt investigation, "I worry that scientific integrity officials will be quickly overwhelmed if the policies are used to fact check statements made by public officials. If scientific integrity officials are expected to police the statements of political appointees, they would spend all of their time looking at

have been reprimanded, and so the career staff could have endured potential retaliation for little benefit.

Still, scientific integrity policies arguably do remain useful even in times of antagonistic administrations, which may partly explain why the Biden administration is focusing on their improvement. In addition to serving as best practices, the policies can explain how to handle disputes between scientists, helping to resolve purely scientific or otherwise non-political conflicts before they reach public or political awareness.¹²³ The EPA, for example, publishes an annual report of all adjudicated allegations their SIO¹²⁴ has handled that year, most of which do not make the news. Many of these disputes are non-political, concerning issues such as allegations of self-plagiarism and laboratory sabotage.¹²⁵ Scientific integrity policies can also publicize improprieties, another useful role. As a former high-level UCS employee pointed out, one important power of the policies is that ignoring them is the same thing as an administration saying “we think political manipulation of the sciences is a good thing.”¹²⁶ Scientific integrity policies promote best practices, making it easier to publicly determine when administrations are improperly placing politics over science.

Moreover, although high-level political appointees may still be able to evade compliance with these policies, the Biden administration’s 2022 and 2023 reports make useful several suggestions toward improving and entrenching these policies. On a basic level, the 2023 report provides a model scientific integrity policy, which—if adopted by all agencies—would allow observers to more easily determine when a violation has occurred. Perhaps

these kinds of allegations, and have little time left over to investigate actions that can have the most significant effects on science-based decision making”).

123. As of 2020, the scientific integrity policies at the EPA, FDA, and DOE clearly explained how to handle differences of scientific opinion. See MACKINNEY ET AL., *supra* note 111, at 3.

124. Not all agencies have designated SIOs; although the Biden administration’s 2023 report now mandates them, as of 2020, only eight agencies had designated SIOs. For the Biden administration’s model scientific integrity policy mandating SIOs and scientific integrity committees, see 2023 REPORT, *supra* note 6, at 36; for the number of SIOs through 2020, see MACKINNEY ET AL., *supra* note 111, at 3.

125. See *Allegations of a Loss of Scientific Integrity 2016*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/scientific-integrity/allegations-loss-scientific-integrity-2016> [<https://perma.cc/9MME-A3NY>].

126. Maggie Koerth, *Trump Finds the Weak Spot in Obama’s Protections for Scientists*, FIVETHIRTYEIGHT (Jan. 24, 2017), <https://fivethirtyeight.com/features/trump-finds-the-weak-spot-in-obamas-protections-for-scientists/> [<https://perma.cc/BVE8-MZZL>].

most importantly, the 2023 report includes a charter for the newly established National Science and Technology (NSTC) Subcommittee on Scientific Integrity, which is comprised of career SIOs from federal agencies and staff members of executive departments.¹²⁷ The charter empowers the subcommittee to review “inquiries related to senior-level officials, political appointees, and SIOs,”¹²⁸ meaning that the council could weigh in on high-profile scientific integrity incidents and thereby provide cover for any individual SIO tasked with investigating an incident. Notably, many of the reports’ suggestions could be incorporated into a new Scientific Integrity Act.

B. JUDICIAL SOLUTIONS AS LIMITED CONSTRAINTS ON POLITICAL INTERFERENCE

On occasion, federal courts have intervened when they have determined that political considerations have affected evidence-based decisions to an improper degree. Such decisions sometimes involve a court finding that an agency’s decision was “arbitrary and capricious” under the Administrative Procedure Act (APA).¹²⁹ Additionally, in two major cases, *Massachusetts v. EPA* and *Dep’t of Commerce v. New York*, the Supreme Court indicated its willingness to more publicly rebuke agencies for improperly relying on political considerations in the science policy process. Recent changes in the Court’s composition,¹³⁰ however, have likely

127. See 2023 REPORT, *supra* note 6, at 59–60.

128. *Id.*

129. Reversals under the APA in particular received notable attention under the Trump administration, although other laws, including FACA, conflict of interest laws, and whistleblower protections are also relevant to the scientific integrity space. See Lin, *supra* note 27, at 272.

130. Many scholars agree that the current Supreme Court is increasingly skeptical of administrative agencies. See, e.g., Adam J. White, *Reining in the Bureaucrats*, COMMENTARY (July/August 2022), <https://www.commentary.org/articles/adam-white/regulatory-agency-overreach/> [<https://perma.cc/GA8P-TBVP>]; Blake Emerson, *The Binary Executive*, 132 YALE L.J.F. 756, 757 (2022); Nathan Richardson, *Antideference: COVID, Climate, and the Rise of the Major Questions Doctrine*, 108 VA. L. REV. 174, 193 (2022). While the Roberts Court was already skeptical of administrative government before Justice Amy Coney Barrett’s ascension tilted the court conservative by a 6-3 margin—with Chief Justice Roberts himself often writing witheringly about the federal bureaucracy—the addition of Justice Barrett may increase the Court’s actual activism regarding limits to the administrative state. For the Roberts Court’s (at least rhetorical) skepticism pre-2021, see Gillian E. Metzger, *The Roberts Court and Administrative Law*, 2019 SUP. CT. REV. 1, 67 (2020) (arguing that “[a] striking characteristic of many Roberts Court administrative law opinions is their sharp rhetorical attack on the administrative state and bureaucracy. Chief Justice Roberts deserves the top award for the most pointed prose in this regard”). For the

limited the already narrow applicability¹³¹ of the holdings in those two cases. Moreover, litigation is a slow process that is only available for certain kinds of political interference, meaning that rectifying violations of scientific integrity through judicial options is not a tenable long-term solution.

The primary way in which courts seem to have protected agency science from politics is by ruling that an administration used a flawed process under the APA to rescind or promulgate regulations.¹³² The APA requires agencies to follow certain procedures—including creating “notice and comment” periods in which the public can comment on a proposed rule—during informal rulemaking,¹³³ and failure to follow the APA is judicially reviewable.¹³⁴ Under the APA, most major rules can only be reversed through additional notice-and-comment rulemaking, a long and tedious process.¹³⁵ A court is allowed to set aside an agency’s actions, findings, and conclusions if those actions are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”¹³⁶ Although the APA was the product of disillusionment towards government experts that catalyzed in the

speculated effects of Justice Barrett on administrative law, *see, e.g.*, Jody Freeman, *What Amy Coney Barrett’s Confirmation Will Mean for Joe Biden’s Climate Plan*, VOX (Oct. 26, 2020), <https://www.vox.com/energy-and-environment/21526207/amy-coney-barrett-senate-vote-environmental-law-biden-climate-plan> [<https://perma.cc/DNE3-F7YX>]; *but see* Jim Saksa, *Barrett, With Scalia as Model, May Be a Moderate on Regulation*, ROLL CALL (Oct. 8, 2020), <https://rollcall.com/2020/10/08/barrett-with-scalia-as-model-may-be-a-moderate-on-regulation/> [<https://perma.cc/P26X-EBB2>]. While the court has not yet ruled on *Chevron* doctrine or the non-delegation principle since Justice Barrett’s arrival, two major points of contention in administrative law, the rise of the “major questions doctrine” may reflect increased anti-administrative activism from the Supreme Court. *See* Richardson, *supra*, at 193–94.

131. Lin, *supra* note 27, at 272 (arguing in 2019 that “limited aspects of the Trump Administration’s war on regulatory science are subject to enforceable legal contracts” because “[i]n some instances, applicable law grants the executive branch wide discretion, and in other instances, no enforceable laws apply”).

132. *Id.* at 279 (arguing in 2019 that “[r]eview under the APA is likely to be the most important judicial check on the Trump Administration’s war on regulatory science”).

133. 5 U.S.C. § 553.

134. 5 U.S.C. § 702.

135. *See* McGarity & Wagner, *supra* note 14, at 1720–21.

136. 5 U.S.C. § 706(2)(a). Moreover, the Supreme Court has further clarified that an agency reversal (e.g., rescinding of an existing rule) is arbitrary and capricious “if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *See* *Motor Vehicles Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

1940s,¹³⁷ it has turned into a significant, if limited, tool for protecting science-based regulations from improper political considerations.¹³⁸

Although the “arbitrary and capricious” test is deferential toward agencies,¹³⁹ courts relied on it repeatedly to reverse Trump administration actions. Trump-era agency policies lost 192 times when challenged in court, versus just 54 victories.¹⁴⁰ Several of those losses included arbitrary and capricious findings where the administration had attempted to undermine science-based policies. These losses included a decision in which the District of Idaho found that the administration’s attempt to open protected sage grouse habitat to oil and gas development was arbitrary and capricious because, among other concerns, the “new data” the government relied upon did not provide a “reasoned justification” for the reversal of its prior position;¹⁴¹ a decision in which the District of Montana found that the EPA’s attempt to finalize a rule reducing its ability to use public health data was arbitrary and capricious because the rule was promulgated without complying with the APA’s notice requirement;¹⁴² and a decision in which the Northern District of California found that the EPA’s denial of the plaintiff’s rulemaking petition on asbestos-related health risks was “arbitrary and capricious” because the EPA never satisfactorily explained why it did not collect relevant information from companies.¹⁴³

In the past, the Supreme Court has also used the arbitrary and capricious standard when it implicitly senses that the balance

137. See Wagner, *supra* note 30, at 204–25.

138. Lin, *supra* note 27, at 272. Although the APA can protect scientists, some scholars and officials worry that the rulemaking process can also skew rules toward industry. See Wendy Wagner et al., *Deliberative Rulemaking: An Empirical Study of Participation in Three Agency Programs*, 73 ADMIN. L. REV. 609, 612 (2021) (noting that the left “portrays agencies as repositories of critical policy expertise but worries that the institutional processes through which they carry out their mandates leave them vulnerable to ‘capture’ by regulated parties”).

139. See McGarity & Wagner, *supra* note 14, at 1773.

140. See *Roundup: Trump-Era Agency Policy in the Courts*, N.Y. UNIV. INST. FOR POL’Y INTEGRITY (Apr. 1, 2021), <https://policyintegrity.org/trump-court-roundup> [<https://perma.cc/G3YT-VRBM>].

141. *W. Watersheds Project v. Bernhardt*, 519 F. Supp. 3d 763, 791 (D. Ida. 2021).

142. *Env’t Def. Fund v. EPA*, 515 F. Supp. 3d 1135, 1152 (D. Mont. 2021). For more details on the controversial rule, see Lisa Friedman, *EPA to Limit Science Used to Write Public Health Rules*, N.Y. TIMES (Nov. 11, 2019), <https://www.nytimes.com/2019/11/11/climate/epa-science-trump.html> [<https://perma.cc/UF4V-FP8L>].

143. *Asbestos Disease Awareness Org. v. Wheeler*, 508 F. Supp. 3d 707, 724 (N.D. Cal. 2020).

between political considerations and agency expertise has tipped too far toward political considerations. In particular, some legal scholars have contended that the Court's 2007 decision in *Massachusetts v. EPA* was "part of a trend in which the Court ha[d] at least temporarily become disenchanted with executive power and the idea of political accountability and [was] concerned to protect administrative expertise from political intrusion."¹⁴⁴ The issue was not that the agency relied on some political considerations, but that the Court found the "pendulum may have swung too far . . . in the direction of strong presidential administration, and that they wish[ed] to nudge it in the other direction."¹⁴⁵ While *Massachusetts v. EPA* was a technical decision on arbitrary and capricious grounds, the court's critique of political overreach operated in the background.

Similar logic arguably undergirded the Court's more recent decision in *Dep't of Commerce v. New York*. In *Dep't of Commerce*, the Court addressed issues arising out of then-Secretary of Commerce Wilbur Ross's attempt to add a citizenship question to the 2020 Census over the objections of agency staff.¹⁴⁶ When the case finally reached the Court, Chief Justice Roberts ultimately determined that Secretary Ross's actions were not arbitrary and capricious but that his actions were nonetheless improperly "pretextual" because his stated rationale did not match the evidence.¹⁴⁷ As law professor and former Department of Justice official Justin Levitt later commented, *Dep't of Commerce* demonstrated that "this Court is not wholly prepared to abdicate its role as a check on the executive branch."¹⁴⁸

144. Jody Freeman & Adrian Vermeule, *Massachusetts v. EPA: From Politics to Expertise*, 2007 SUP. CT. REV. 51, 54 (2007). In *Massachusetts v. EPA*, the Court found that the EPA's rejection of a rulemaking petition related to climate change was arbitrary and capricious because the EPA "offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change." 549 U.S. 497, 535 (2007). Under Freeman and Vermeule's theory, *Massachusetts v. EPA* was part of a line of cases, including *Gonzales v. Oregon* and *Hamdan v. Rumsfeld*, in which Justice Stevens and Justice Kennedy joined together to overrule executive actions they found improperly placed politics over expertise. See Freeman & Vermeule, *supra*, at 52.

145. *Id.* at 109.

146. *Dep't of Commerce v. New York*, 139 S. Ct. 2551 (2019). Secretary Ross had claimed he wanted to add a citizenship question so he could assist the Department of Justice with enforcing the Voting Rights Act, but evidence showed that was not the case. *Id.* at 2575.

147. *Id.* at 2568, 2575.

148. Justice Levitt, *Noncensus: Pretext and the Decennial Enumeration*, AM. CONST. SOC'Y, <https://www.acslaw.org/analysis/acs-supreme-court-review/nonsensus-pretext-and-the-decennial-enumeration/> [<https://perma.cc/U996-5CHA>].

It is difficult to read these cases as applying beyond their immediate controversies, however, and it would be inadvisable to rely on today's Supreme Court to protect science from improper political influence. Specifically, the holding of *Massachusetts v. EPA* does not turn on political interference, making it impossible for lower courts to apply that background principle. Additionally, while *Dep't of Commerce* did turn on the relevant concept of pretext, the peculiar nature of Chief Justice Roberts' majority opinion, as well as its lack of broad application by lower courts, means it would be risky for agencies and advocates to rely on *Dep't of Commerce* as a judicial backstop for future collisions between politics and science.¹⁴⁹ Moreover, the Court's composition has changed radically in recent years,¹⁵⁰ indicating that its occasional willingness to intervene in favor of agency expertise is likely a historical footnote.¹⁵¹ Lower courts may take heed of the ideological leaning of the Court and refuse to use the APA to rule on political interference issues.

There is a final reason to be skeptical that courts can function as more than last resort solutions to certain aspects of political

149. See *Census Act—Review of Administrative Action—Judicial Review of Pretext—Department of Commerce v. New York*, 133 HARV. L. REV. 372, 381 (2019) (arguing “there is no reason to think *Department of Commerce* will be a basis to subject other administrative decisions to similarly searching review”); but see Hannah M. Flesch, *Honesty in Reason: How Department of Commerce v. New York Began to Tackle the Problem of Regulatory Dishonesty*, 110 GEORGETOWN L.J. 659, 677–78 (2022) (as of the article's publication in mid-2022, “[t]here are indications among lower courts that litigants are using *Department of Commerce* as an additional ground to challenge allegedly dishonest conduct by administrative agencies”).

150. It is worth keeping in mind that *Dep't of Commerce* was a 5-4 decision, with Chief Justice Roberts once again serving as the swing vote. See *Dep't of Commerce v. New York*, 139 S. Ct. 2551 (2019) (Chief Justice Roberts' majority was joined by all four liberal justices). As such, his vision of the Supreme Court's role with regard to policing this political line in agency functions is less important today. For his past vision, however, see Benjamin Eidelson, *Reasoned Explanation and Political Accountability in the Roberts Court*, 130 YALE L.J. 1748, 1754 (2021) (viewing Roberts' critical fifth votes in *Dep't of Commerce* and *Department of Homeland Security v. Regents of the University of California* as promoting a vision of courts as “political ombudsmen—one might even say umpires—who will rarely second-guess the executive branch's policy judgments themselves, but who will police the reason-giving process to ensure that the public has a fair opportunity to evaluate and respond to those same decisions”).

151. See *supra* note 130; see also Peter W. Stevenson, *Chief Justice Roberts: From Key Swing Vote to Potential Bystander?*, WASH. POST (May 20, 2021), <https://www.washingtonpost.com/politics/2021/05/20/chief-justice-john-roberts-key-swing-vote-potential-bystander/> [<https://perma.cc/6DAC-658J>] (noting that Justice Barrett's confirmation meant that “Chief Justice John G. Roberts Jr. is no longer as likely to be a swing vote on the court—marking a sudden change to the amount of power Roberts has to steer the direction of the court”).

interference in science: litigation is an expensive, time-consuming process. When agencies attempt to undo a science-based rule on the grounds of improper considerations, the slow process can be a boon. The longer it takes to undo a rule, the longer that rule is in place, and a more science-friendly administration might be elected before the rule is entirely unwound. On the other hand, when plaintiffs challenge new rules or policies they believe were improperly promulgated, it may take years to receive a judicial decision on actions that may have widespread environmental or public health ramifications.¹⁵²

C. THE LESSONS FROM AND LIMITS OF PAST LEGISLATIVE SOLUTIONS

Congress has occasionally proposed bills directly in response to conflicts between politics and science. Notably, some improper interference at scientific agencies has been the product of political appointees manipulating the very reforms meant to protect or improve agency functioning. Although scholars generally agree that existing legislative shields for civil servants, including whistleblower statutes, provide at least some limited protections against scientific integrity problems,¹⁵³ this manipulation demonstrates that passing reform legislation is a double-edged sword. The Scientific Integrity Act must be carefully crafted to avoid both manipulation by future administrations and concerns about agency over-insulation.

One example of past partially successful yet manipulated legislation includes FACA. Enacted in 1972, FACA established guidelines for the composition and conduct of advisory committees and “represented a significant change in the uncertain historical balance between Congress and the President over his use of advisory committees.”¹⁵⁴ There are now dozens of scientific committees spread across myriad agencies, some of which—like

152. See McGarity & Wagner, *supra* note 14, at 1772–73 (arguing that litigation is a “limited tool” in part because of the “stark reality that litigation tends to drag on for years, which could be consistent with deregulatory goals in some cases”).

153. See, e.g., Lin, *supra* note 27, at 295; Letter from Pub. Emps. for Env’t Resp. to White House Off. of Sci. & Tech. Policy Re: Scientific Integrity Framework Suggestions (Mar. 29, 2022), https://peer.org/wp-content/uploads/2022/03/3_29_22Scientific-Integrity_Framework_Comments.pdf [<https://perma.cc/2SR5-JKDR>] [hereinafter Letter Re: Scientific Integrity Framework Suggestions].

154. See Jay S. Bybee, *Advising the President: Separation of Powers and the Federal Advisory Committee Act*, 104 YALE L.J. 51, 55 (1995).

the Clean Air Scientific Advisory Committee (CASAC) at the EPA—are established by statute.¹⁵⁵ While FACA has provided important guidelines and protections for scientific advisors, it has proven to be an insufficient solution due to political manipulation. In particular, § 5(b)(2) of FACA requires “the membership of the advisory committee to be fairly balanced in terms of the points of view represented.”¹⁵⁶ The statute does not detail what “fairly balanced” means, however, and scientific advisory committees have grappled with politicians nominating scientists with conflicts of interest or extreme outlier viewpoints to committees using this provision as justification.¹⁵⁷ Most recently, journalists and watchdogs highlighted instances in which the Trump administration improperly dismissed the nominations of qualified individuals and accepted those who were, in the views of a former advisor, too inexperienced.¹⁵⁸ As McGarity and Wagner note, “[a]s long as FACA gives political appointees this broad discretion in assembling science advisory boards, some administrations will

155. For CASAC’s enacting legislation, see 42 U.S.C. § 7409(d)(2). Other scientific advisory committees may be dismissed at any time by any administration. See WENDY GINSBERG & CASEY BURGAT, CONG. RSCH. SERV., R44232, CREATING A FEDERAL ADVISORY COMMITTEE IN THE EXECUTIVE BRANCH 1 (2016).

156. 5 U.S.C. app. § 5(b)(2).

157. Although diversity of viewpoints is a critical part of the science policy process, the George W. Bush administration alarmed several watchdogs by selecting scientific advisors with “fringe” viewpoints and rejecting the nominations of qualified appointees who held views that differed from the administration’s political stance. See SHULMAN ET AL., *supra* note 61, at 20, 22 (describing, among other examples, the rejection of three qualified experts on ergonomics from a peer review panel at the National Institute for Occupational Safety and Health). In response to concerns about the way the Bush administration was handling scientific advisory committee appointments, Representative William Clay Lacy, Jr. (D-MO) introduced the Federal Advisory Committee Act Amendments of 2008, which would have required advisory committee appointments be made without regard to political affiliation unless required by statute. See Federal Advisory Committee Act Amendments of 2008, H.R. 5687, 110th Cong. (2008). This bill did not pass, however, and a similar bill introduced in 2010 met the same fate. See Federal Advisory Committee Act Amendments of 2010, H.R. 1320, 111th Cong. (2010).

158. See Lisa Friedman, *EPA to Disband a Key Scientific Review Panel on Air Pollution*, N.Y. TIMES (Oct. 11, 2018), <https://www.nytimes.com/2018/10/11/climate/epa-disbands-pollution-science-panel.html> [<https://perma.cc/R6TY-874Y>]. Data shows that scientific advisory committee memberships and meetings decreased markedly during President Trump’s transition year and that the makeup of EPA’s advisory boards shifted from 79% academia and 6% industry in 2017 to 50% academia and 23% industry in 2018. See GENNA REED ET AL., UNION OF CONCERNED SCIENTISTS, ABANDONING SCIENCE ADVICE: ONE YEAR IN, THE TRUMP ADMINISTRATION IS SIDELINING SCIENCE ADVISORY COMMITTEES 6 (Jan. 2018), <https://www.ucsusa.org/sites/default/files/attach/2018/01/abandoning-science-advice-full-report.pdf> [<https://perma.cc/NLA3-WRAB>]. The remaining percentage of advisory board members in 2018 were consultants (9%), government employees (9%), or members of nongovernmental organizations (9%). *Id.*

exploit that freedom to stack or otherwise manipulate peer review bodies to achieve favorable outcomes.”¹⁵⁹

FACA is not the only piece of administrative reform legislation that has been subject to manipulation or otherwise been undermined to interfere with scientific work. In 1978, President Jimmy Carter signed the Senior Executive Service (SES) into law.¹⁶⁰ Frustrated by an inefficient bureaucracy, Congress intended the SES to create a “cadre of high-level managers in the government who would provide leadership for agencies across administrations and ensure productivity and efficiency within the government.”¹⁶¹ While evaluations vary as to the effectiveness of the SES as a reform mechanism, in 2017, the Trump administration directly undermined the SES by transferring dozens of SES managers at the Department of the Interior (DOI) to positions unrelated to their skillsets. Joel Clement, an SES employee involuntarily transferred from climate change projects to oil accounting, later filed a whistleblower suit against DOI.¹⁶² Clement had no experience with oil accounting and argued that his transfer was an attempt to reduce DOI’s work on climate change and otherwise grind DOI’s scientific work to a halt.¹⁶³ Thus, the SES—which was meant to create an efficient bureaucracy—was manipulated to create an inefficient bureaucracy instead. Had it been passed, the Scientific Integrity Act of 2021 may have helped prevent Clement’s transfer, as it precluded political considerations

159. McGarity & Wagner, *supra* note 14, at 1801.

160. The SES was created as part of the Civil Service Reform Act, which also created the Merit Systems Protection Board. See Charles S. Clark, *After 40 Years, A Look Back at the Unlikely Passage of Civil Service Reform*, GOV’T EXEC. (July 3, 2018), <https://www.govexec.com/management/2018/07/after-40-years-look-back-unlikely-passage-civil-service-reform/149458/> [<https://perma.cc/C3UK-VT7Z>].

161. See MAEVE P. CAREY, CONG. RSCH. SERV., R41801, THE SENIOR EXECUTIVE SERVICE: BACKGROUND AND OPTIONS FOR REFORM (2012).

162. See Joel Clement, *I’m a Scientist. I’m Blowing the Whistle on the Trump Administration*, WASH. POST (July 19, 2017), https://www.washingtonpost.com/opinions/im-a-scientist-the-trump-administration-reassigned-me-for-speaking-up-about-climate-change/2017/07/19/389b8dce-6b12-11e7-9c15-177740635e83_story.html [<https://perma.cc/S5Q9-JR39>].

163. *Id.* The DOI’s Office of Inspector General later released a “scathing” report where it faulted the administration’s poor recordkeeping for its inability to determine whether Clement’s transfer was unlawful retaliation for having previously spoken out on climate change. See Neela Banerjee, *Investigators: We Can’t Tell if Interior Dept. Reassignments Were Legal Due to Lack of Records*, INSIDE CLIMATE NEWS (Apr. 12, 2018), <https://insideclimatenews.org/news/12042018/zinke-interior-department-staff-reassignments-inspector-general-report-whistleblower-joel-clement-doi-scientist/> [<https://perma.cc/Q9FY-5SJZ>].

from influencing certain personnel actions.¹⁶⁴ Still, the way in which the SES was twisted so as to undermine its initial goals demonstrates that reform legislation may not always achieve the ideals legislators had in mind.

III. THE SCIENTIFIC INTEGRITY ACT

Although existing scientific integrity policies are useful tools, they fall short of fully preventing improper political interference from detrimentally affecting the functioning of scientific agencies. Similarly, judicial review and existing piecemeal legislative protections do not provide complete cover for agency science or scientists. The best solution would be to rework the last version of the Scientific Integrity Act to more thoroughly establish its investigatory powers delegation and enforcement mechanisms.¹⁶⁵ This Part reviews existing non-legislative scientific integrity proposals and how they could be worked into the 2021 version of the Act and proposes a few other new solutions that could also be included. This Part also clarifies which of these proposals may work best given practical and political limits.

A. CENTRAL PROVISIONS AND THE BIPARTISAN NATURE OF PAST SCIENTIFIC INTEGRITY ACTS

The 2017, 2019, and 2021 versions of the Scientific Integrity Act varied slightly in content; however, their basic principles and provisions remained the same. In particular, all three versions of the Act introduced in the House of Representatives established the principle that “science, the scientific process, and the communication of science should be free from politics, ideology,

164. Scientific Integrity Act, H.R. 849, 117th Cong. § 3(b)(4)(C), § 3(j)(3)(A) (2021).

165. It is worth noting at the outset of this Part that the 2017 Scientific Integrity Act was not the first scientific integrity legislation introduced to Congress. In 2005, Representative Henry Waxman introduced the Restore Scientific Integrity to Federal Research and Policymaking Act. A less-detailed predecessor to the recent Scientific Integrity Acts, Waxman’s bill would have insulated civil servants by preventing federal employees from (1) tampering with federal research, (2) censoring scientific findings funded by the government, and (3) disseminating false information, among other provisions. The House bill and its Senate companion, however, never made it out of committee, and failed to attract any Republican cosponsors. Like the recent bills, the 2005 bill also lacked any clear enforcement provisions. For the House bill, see Restore Scientific Integrity to Federal Research and Policymaking Act, H.R. 839, 109th Cong. (2005). For the Senate bill, see Restore Scientific Integrity to Federal Research and Policymaking Act, S. 1358, 109th Cong. (2005).

and financial conflicts of interest.”¹⁶⁶ To achieve this goal, each version of the Act required federal agencies that fund or conduct scientific research to develop and enforce scientific integrity policies featuring a minimum set of provisions. These provisions included a declaration that scientific conclusions are not made on political considerations and selection of personnel based on experience and credentials.¹⁶⁷ The 2019 version added a section on “leadership in the scientific community,” which stated that scientists may sit on advisory boards, contribute to academic peer-reviews, and join leadership positions for scientific organizations.¹⁶⁸ The 2019 Act also initially added a communications section, which would have given scientists more power over responding to media requests and making personal statements.¹⁶⁹

Although the 2017 version of the Act never reached the floor of the House of Representatives despite having more than 200 (all Democratic) cosponsors, the 2019 version fared better, making it out of committee by a 25–6 bipartisan vote.¹⁷⁰ To gain Republican votes, Democrats in the House Committee on Science, Space, and Technology agreed to drop the newly added communications provision.¹⁷¹ The amendment striking this section, proposed by Representative Lucas, ultimately won his vote as well as those of five other Republicans. Representative Lucas later explained that deleting the media provision was important to him because “every administration deserves the opportunity to shape policy and message.”¹⁷² Although six Republicans still voted against the bill, the large bipartisan majority that approved the 2019 committee

166. Scientific Integrity Act, H.R. 1358, 115th Cong. § 3(3)(1) (2017); Scientific Integrity Act, H.R. 1709, 116th Cong. § 2(3) (2019); Scientific Integrity Act, H.R. 849, 117th Cong. § 2(3) (2021).

167. H.R. 1358 §§ 6(d)(1), 6(d)(2)); H.R. 1709 §§ 3(h)(1), 3(h)(2); H.R. 849 §§ 3(b)(4)(A), 3(b)(4)(B).

168. H.R. 1709 § 3(c).

169. See Thomas, *supra* note 22.

170. See Jeffrey Mervis, *Scientific Integrity Bill Advances in U.S. House with Bipartisan Support*, SCIENCE (Oct. 17, 2019), <https://www.science.org/content/article/scientific-integrity-bill-advances-us-house-bipartisan-support> [<https://perma.cc/BVS6-RXT4>].

171. *Id.*

172. *Id.* Control over media access to scientists has long been a point of contention between politicians and advocacy groups. Some organizations believe that barriers on scientist statements amounts to a “gag rule.” See Jeff Ruch, *OSTP Slips Gag Rule into Model Scientific Integrity Policy*, PUB. EMPS. FOR ENV’T RESP. (Jan. 30, 2023), <https://peer.org/ostp-slips-gag-rule-into-model-scientific-integrity-policy> [<https://perma.cc/DFT6-R52W>].

version of the Scientific Integrity Act indicates that a scientific integrity bill can gather significant bipartisan support even in a hyperpartisan environment.

Notably, the 2021 edition of the bill largely copied the 2019 version, indicating that Representative Tonko was interested in keeping the bill bipartisan. The 2021 bill ultimately had 186 cosponsors, including the science-friendly Republican Brian Fitzpatrick (R-PA), although the remaining cosponsors were all Democrats.¹⁷³ By increasing the specificity of the Act's scope, clarifying definitions, and adding investigative and enforcement provisions, the Act may actually attract more bipartisan support, as it establishes the Act as actively promoting transparency and efficiency, which are common goals across parties, rather than making a political statement.

B. INEFFECTIVE ENFORCEMENT AND ACCOUNTABILITY CONCERNS

In its past iterations, the Scientific Integrity Act provided little in the way of teeth. The relevant provisions largely consisted of the requirement that (1) SIOs post annual reports on their agency's public website, which some agencies already do, and (2) agency heads submit a report describing an incident to the head of OSTP and the relevant congressional committees.¹⁷⁴ Although the Act required that agencies adopt scientific integrity policies, there would still be little incentive for antagonistic administrations to comply with these policies. Moreover, OSTP is a White House office, and so is controlled by the party in power, and congressional oversight has become an increasingly limited tool to fix perceived abuses.¹⁷⁵ Therefore, simply reporting to OSTP and Congress is unlikely to lead to sufficient oversight or repercussions for violating the policies.

173. *Cosponsors: H.R. 849–117th Congress*, CONGRESS.GOV, <https://www.congress.gov/bill/117th-congress/house-bill/849/cosponsors> [<https://perma.cc/BF3U-MUKC>]. While Representatives attempted to attach the bill to the America COMPETES Act, this strategy did not succeed.

174. Scientific Integrity Act, H.R. 849, 117th Cong. § 3(f) (2021).

175. See Molly E. Reynolds, *Improving Congressional Capacity to Address Problems and Oversee the Executive Branch*, BROOKINGS INST. (Dec. 4, 2019), <https://www.brookings.edu/policy2020/bigideas/improving-congressional-capacity-to-address-problems-and-oversee-the-executive-branch/> [<https://perma.cc/5H7S-5X8Y>] (asserting that Congress lacks the internal capacity to gather and process the information necessary for oversight which forces Congress to rely on outside sources or leave oversight work undone).

Observers and officials on both the left and the right have criticized the lack of enforcement power contained in past versions of the Act. Representative Posey, a Republican, voted against the 2019 bill partly because its lack of stipulated penalties for scientific integrity violations made it a “paper tiger.”¹⁷⁶ Dana Gold, senior counsel at the Government Accountability Project, a left-leaning non-profit focused on whistleblowers, also argued the bill lacked teeth. She opined that the bill failed to include a provision “that would give employees the right to report alleged violations free from reprisal.”¹⁷⁷ Although scientists have some rights under the Whistleblower Protection Enhancement Act of 2012, Gold wanted more specific provisions added to the Scientific Integrity Act.

In contrast, some observers see room for improvement in scientific integrity legislation more broadly but find the Scientific Integrity Act adequate as currently drafted. In particular, Bharara and Whitman’s 2019 report on legislative proposals to curb political interference at scientific agencies largely avoided explicit discussion of the Scientific Integrity Act. It did note, however, that the Act “would establish clear standards, and a mechanism to enforce them, while giving agencies flexibility to craft policies that fit their unique needs.”¹⁷⁸ The report did not discuss which particular mechanisms the authors found useful, however. Although Bharara and Whitman’s report provides several thoughtful proposals for legislation concerning political interference in federal science,¹⁷⁹ this Note disagrees with their statement that the existing enforcement mechanisms of the Scientific Integrity Act are sufficient.¹⁸⁰

176. Thomas, *supra* note 22.

177. Ramin Skibba, *A Plan to Boost Scientific Integrity in the Federal Government*, UNDARK (Dec. 2, 2019), <https://undark.org/2019/12/02/improving-scientific-integrity-federal-government/> [<https://perma.cc/VQ5E-ESJV>].

178. BHARARA ET AL., *supra* note 14, at 8.

179. *Id.*

180. The Brennan Center has subsequently supported the latest Scientific Integrity Act without mentioning enforceability concerns. See Mira Ortegón, *Restoring Scientific Integrity in the Federal Government*, BRENNAN CTR. FOR JUST. (Jan. 24, 2022), <https://www.brennancenter.org/our-work/analysis-opinion/restoring-scientific-integrity-federal-government> [<https://perma.cc/J7YC-KW5W>].

C. AMENDING THE SCIENTIFIC INTEGRITY ACT

There are three primary areas in which the Scientific Integrity Act could be improved. First, the Act should define scientific integrity and mandate certain disclosures; second, the Act should create inter-agency committees to investigate high-profile instances of scientific integrity misconduct allegations; and finally, the Act should discuss how both civil servants and political appointees might be explicitly or implicitly punished or their actions reversed.

1. *Defining Scientific Integrity and Promoting Transparency*

Notably, none of the last three versions of the Scientific Integrity Act provided a definition of scientific integrity. Without a clear definition of scientific integrity, the Act may be too vague to attract significant support and too vague to enforce. As such, one simple proposal is that the Scientific Integrity Act adopt the scientific integrity definition used in the Biden administration's 2023 report. The Act could even single out particular kinds of "improper interference" it wants to address, although such an inclusion may make the Act *too* specific, as administrations could navigate around an overly narrow definition.

Moreover, Congress should consider integrating existing proposals around regulatory transparency into the Act. One proposal supported by multiple scholars is to require that agencies disclose the content of White House attempts to influence regulatory actions.¹⁸¹ Other scholars have proposed that, instead, legislation could require that the initial scientific analysis is what is publicly published, which would allow political appointees to influence policy but would preserve the staff's version of the relevant scientific information in case it is needed for judicial review.¹⁸² While both proposals have merit, this Note proposes that the Scientific Integrity Act adopt a version of the first approach by including a provision that clarifies that although an agency need not rely solely on the best-available evidence in most cases, the agency must consider the evidence in good faith and

181. Watts, *supra* note 30, at 735 (arguing that "[o]ne approach to achieving greater transparency would be to compel agencies to disclose the nature and content of White House attempts to influence rulemaking proceedings. This idea has ample support").

182. McGarity & Wagner, *supra* note 14, at 1792–93.

explain in writing its reasons for deviating from the evidence if it does so.¹⁸³ That way, if an agency misstates its reasons for ignoring science or attempts to justify its decision by suppressing or undermining the science, an SIO or scientific integrity committee can more easily determine that doing so was “improper.”¹⁸⁴ Political considerations should still be a key piece of policymaking, but they should be better disclosed.

2. *Detailing the Composition and Creation of Review Panels*

One starting point for better enforcement of the Scientific Integrity Act would be to mandate inter-agency review panels to allow for better investigations of incidents involving high-profile officials. Individual SIOs do not have the authority to fully investigate scientific integrity violations by high-level political appointees, and simply placing SIOs inside Inspectors General offices would both reduce SIO independence¹⁸⁵ and possibly open them up to more political oversight.¹⁸⁶ Instead, the Scientific

183. The idea that agencies consider the science and explain their deviations is akin to *Calvert Cliffs*'s interpretation of the requirements under the National Environmental Policy Act (NEPA). See *Calvert Cliffs' Coordinating Committee v. U.S. Atomic Energy Commission*, 449 F.2d 1109, 1115 (D.C. Cir. 1982) (“We conclude, then, that Section 102 of NEPA mandates a particular sort of careful and informed decisionmaking process and creates judicially enforceable duties. . . . [I]f the decision was reached procedurally without individualized consideration and balancing of environmental factors—conducted fully and in good faith—it is the responsibility of the courts to reverse.”). This Note does not suggest that violations of the Scientific Integrity Act should all be judicially reviewable, however; rather, an agency's failure to adequately consider science fully and in good faith could be reviewed by SIOs and through other administrative procedures.

184. This proposal also resembles Watts's suggestion that arbitrary and capricious review should treat certain political inputs as fundamentally acceptable components of the rulemaking process as long as those political considerations are adequately disclosed. See Watts, *supra* note 35, at 8 (“[T]he heart of the argument set forth here is that what count as ‘valid’ reasons under arbitrary and capricious review should be expanded to include certain political influences from the President, other executive officials, and members of Congress, so long as the political influences are openly and transparently disclosed in the agency's rulemaking record.”). Arbitrary and capricious review, however, only covers the rulemaking process, whereas the Scientific Integrity Act covers non-regulatory agency actions as well.

185. One possible concern about placing SIOs inside Inspectors General offices is that it would discourage scientists from approaching SIOs to mediate purely scientific disputes, which, as detailed *supra* Part II.A, is a core feature of their jobs.

186. While Inspectors General historically had a fair measure of independence, the Trump administration made an “unprecedented move” by firing or sidelining multiple Inspectors General; see Jen Kirby, *Trump's Purge of Inspectors General, Explained*, VOX (May 28, 2020), <https://www.vox.com/2020/5/28/21265799/inspectors-general-trump-linick-atkinson> [https://perma.cc/8ZBP-MEG2].

Integrity Act should officially mandate these inter-agency committees, which can include Inspectors General but need not.

These panels could operate in several different forms. One option is to create a fully independent panel containing no serving executive officials.¹⁸⁷ Another option is to permanently establish a version of the new NSTC subcommittee, which contains a mix of agency SIOs and other executive officials.¹⁸⁸ Yet another option would be to create a new kind of panel composed of a variety of SIOs, Inspectors General staff, and other career civil servants who have volunteered for occasional scientific integrity committee service. In any case, individual SIOs could handle the initial complaints, and then elevate these complaints to this higher independent committee where needed. Overall, this Note views the best option as legislatively creating a version modeled on the NSTC subcommittee, as it has already been established and many of its procedures are in place or are in the works. Additionally, regardless of the style of independent committee, the Scientific Integrity Act should clearly spell out transparent procedures for investigation and a timeline for investigating and publishing results, and—as requested by advocacy groups—there should be an appeals process following the panel’s determinations.¹⁸⁹

3. *Creating the Possibility of Sanctions, Review, and Publicity*

Actually punishing those who violate scientific integrity is a difficult process. For civil servants, agencies have more leeway to take action. Public Employees for Environmental Responsibility (PEER), a whistleblower defense and advocacy organization, has suggested that, as an executive proposal, OSTP “should require agencies to impose penalties for those found to have violated the [scientific integrity] policy. For example, supervisors found to have

187. This proposal comes from PEER; *see* Letter Re: Scientific Integrity Framework Suggestions, *supra* note 153.

188. 2023 REPORT, *supra* note 6, at 59.

189. For more details related to this proposal, *see* Letter from Center for Progressive Reform et al. to White House Off. of Sci. & Tech. Policy Re: Improving Agency Scientific Integrity Policies (Apr. 13, 2023), https://jiwh.publichealth.gwu.edu/sites/jiwh.publichealth.gwu.edu/files/Organization_Letter_Scientific_Integrity_Framework.pdf [<https://perma.cc/SG3D-D4RC>] [hereinafter Letter Re: Improving Scientific Integrity Policies]. This letter, signed by 13 organizations including PEER and UCS, suggests that a decision to investigate could have a deadline of ten working days, a determination could have a deadline of 45 working days, and the appeals process could be limited to 30 working days.

retaliated against a whistleblower are punished with a three-day suspension with the possibility of demotion. A second offense is punishable by removal.”¹⁹⁰ The Scientific Integrity Act could largely pull the same language around suspensions from the Whistleblower Protection Act and follow the same procedures; including these provisions in the Act would give them significantly more force than if OSTP were to implement them.¹⁹¹ Congress could also add provisions more similar to the Hatch Act, which, in addition to suspensions, creates the possibility of fines for federal employees found to have violated protections in the laws.¹⁹² By creating the potential for warnings and suspensions—which this Note views as a better option for civil servants than fines—the Scientific Integrity Act would spell out clear violations for civil servants who violate the policy.

Punishing senior political appointees—the most high-profile violators of scientific integrity policies—is trickier. As PEER has pointed out, “political appointees . . . are beyond the reach of the civil service disciplinary process. They are only answerable to the political official who appointed them.”¹⁹³ While low-level officials are sometimes punished by the Merit Systems Protection Board (MSPB) for violations of the Hatch Act, the Office of Special Counsel (OSC)—which brings whistleblower and Hatch Act cases before MSPB—does not believe it can constitutionally pursue discipline against highest-level officials (Senate-confirmed political appointees and White House commissioned officers) beyond potentially fining them.¹⁹⁴ Currently, in cases involving

190. Letter Re: Scientific Integrity Framework Suggestions, *supra* note 153. The relevant part of the code is 5 U.S. Code § 7515.

191. Notably, in OSTP’s scientific integrity policy published in May 2023, it argued that “[v]iolators of scientific integrity should be taken as seriously as violations of government ethics, with comparable consequences.” See OSTP Scientific Integrity Policy, *supra* note 6.

192. See *Federal Employee Hatch Act Information*, OFF. OF SPECIAL COUNS., <https://osc.gov/Services/Pages/HatchAct-Federal.aspx> [<https://perma.cc/BT9E-XR98>].

193. Letter from Pub. Emps. for Env’t Resp. to White House Off. of Sci. & Tech. Pol’y Re: Scientific Integrity and Personnel Policies Must be Married (June 14, 2021) [hereinafter Letter Re: Marrying Scientific Integrity and Personnel Policies].

194. Under whistleblower laws, individuals seeking corrective action for situations in which an agency has subjected the individual to a legally protected activity file a complaint with OSC; OSC may then decide to prosecute the case before the MSPB. See *Whistleblower Q&A*, U.S. MERIT SYS. PROT. BD. (Mar. 18, 2023), <https://www.mspb.gov/appeals/whistleblower.htm> [<https://perma.cc/RUC6-PWWW>]. OSC also controls complaints under the Hatch Act; if OSC charges an employee with a Hatch Act violation, those charges also are adjudicated before the MSPB, although for insufficiently egregious violations OSC may send a warning letter instead. See *How to File a Hatch Act Complaint*, U.S. OFF. OF SPECIAL COUNS., <https://osc.gov/Services/Pages/HatchAct-FileComplaint.aspx> [<https://perma.cc/>

Hatch Act violations, OSC sends its findings to the president, who may choose not to act.¹⁹⁵

While it may not be possible to discipline the highest-level officials in the same manner that civil servants are disciplined, Congress could still implicitly punish them by providing avenues for reversing at least some of their actions. As several science policy organizations noted in an April 2023 letter to OSTP, whistleblower laws do not currently protect topics such as policy dissent.¹⁹⁶ The Scientific Integrity Act could explicitly incorporate this concern, prohibiting—as suggested in the letter—retaliation based upon the content of scientific research or for expressing differing professional opinions. Notably, while MSPB cannot punish high-level political appointees for whistleblower violations, MSPB can grant corrective action, and the Act could explore how to use a similar mechanism to protect scientists from retaliation for policy or research disputes.¹⁹⁷ As a more extreme solution, Congress could also make at least some violations of the Scientific Integrity Act judicially reviewable. In their proposal for a narrow “regulatory science” law (bifurcating the scientific and policy processes for informal rulemakings), McGarity and Wagner specifically called for judicial review, which “would thus provide a sharper focus for courts’ review of science than is currently present in judicial review of agency rulemakings.”¹⁹⁸ While judicial review is a long and complicated process, it may be attractive to those who believe some of these issues must be heard by an Article III judge.

Z8FR-F8QG]. Notably, in a 2021 report, OSC reiterated that it does not believe it has the power to discipline Senate-confirmed presidential appointees or senior White House officials, as “there are significant constitutional concerns with the MSPB disciplining commissioned officers.” See U.S. OFF. OF SPECIAL COUNS., INVESTIGATION OF POLITICAL ACTIVITIES BY SENIOR TRUMP ADMINISTRATION OFFICIALS DURING THE 2020 ELECTION 46 (2021), <https://osc.gov/Documents/Hatch%20Act/Reports/Investigation%20of%20Political%20Activities%20by%20Senior%20Trump%20Administration%20Officials%20During%20the%202020%20Presidential%20Election.pdf> [<https://perma.cc/CL9H-2QQ4>]. OSC has recommended a statutory change that would allow for OSC to pursue substantial fines against Senate-confirmed political appointees and White House commissioned officers for Hatch Act violations. Because the MSPB did not have a quorum between January 2017 and March 2022, the most OSC could do was publicize problems. See *Frequently Asked Questions about the Lack of Quorum Period and Restoration of the Full Board*, U.S. MERIT SYS. PROT. BD. (Feb. 27, 2023).

195. See U.S. OFF. OF SPECIAL COUNS., INVESTIGATION OF POLITICAL ACTIVITIES BY SENIOR TRUMP ADMINISTRATION OFFICIALS DURING THE 2020 ELECTION, *supra* note 194, at 46.

196. Letter Re: Improving Scientific Integrity Policies, *supra* note 189.

197. Prohibited Personnel Practices, 5 U.S.C. § 2302(b).

198. McGarity & Wagner, *supra* note 14, at 1786–87.

As a more achievable solution, however, Congress should at least implicitly punish political appointees by amplifying the publicity around their scientific integrity violations.¹⁹⁹ For example, the Scientific Integrity Act should clarify that the inter-agency committee must publish their reports on any investigations. The Act could also require that this committee maintain a database of these reports, creating a centralized way to find all past investigations. Notably, agency reports on scientific integrity abuses, such as the NOAA report published after “Sharpiegate,”²⁰⁰ are one of the key ways the public learns about scientific integrity abuses. Where disciplinary actions are not possible, public awareness of an abuse can lead toward public pressure for a different response and possibly even affect electoral outcomes.²⁰¹ While a president might approve of the scientific integrity violations of their appointees, it is less likely that the public—which generally supports science—will be so supportive in the long run.

Of course, Congress could pass much farther-reaching laws than the legislation and amendments discussed and proposed here. The thoughtful ideas put forward by Bharara and Whitman would all make excellent legislation, and Congress would do well to consider their proposals.²⁰² McGarity and Wagner have also put forward interesting proposals for amending FACA and the

199. The importance of publicity as one way to punish political appointees has been supported by organizations working in the federal scientific integrity space. See Letter Re: Improving Scientific Integrity Policies, *supra* note 189 (suggesting that “[w]hen an investigation determines that a political appointee has caused the loss of scientific integrity, the identity of that official should be made public and reported through their chain of command” and to the NSTC subcommittee and relevant Cabinet official.).

200. Andrew Freedman & Jason Samenow, *NOAA Leaders Violated Agency’s Scientific Integrity Policy, Hurricane Dorian ‘Sharpiegate’ Investigation Finds*, WASH. POST (June 15, 2020), <https://www.washingtonpost.com/weather/2020/06/15/noaa-investigation-sharpiegate/> [https://perma.cc/JDM3-LCEH].

201. Letter Re: Marrying Scientific Integrity and Personnel Policies, *supra* note 193 (recommending that, because political appointees cannot easily be punished, at least they can publicly be named and shamed; specifically, PEER recommends that “[w]hen a Scientific Integrity Officer or review panel determines that a political appointee has engaged in scientific misconduct or caused the loss of scientific integrity, the identity of that official should be reported both to the White House and to the relevant Cabinet Officer. That report should be publicly displayed on the agency website”); McGarity & Wagner, *supra* note 14, at 1790 (highlighting the power of media reporting on scientific issues by arguing that “news leaks have played an important role in disciplining abuses in the past, and they can continue to serve this role in the future”).

202. See BHARARA ET AL., *supra* note 14 (analyzing eleven different comprehensive legislative proposals covering the topics of “integrity and accessibility of government research and data” and “accountable and qualified government officials.”).

Freedom of Information Act.²⁰³ But as a practical and necessary starting point, Congress should update and pass an improved version of the Scientific Integrity Act, which would improve the efficiency and transparency of government and provide a measure of insulation to civil servants who currently lack protection.

E. ARGUMENTS AGAINST AN UPDATED SCIENTIFIC INTEGRITY ACT

While both legislators and commentators have at times argued against the idea of a Scientific Integrity Act,²⁰⁴ the overall concept has not faced as much resistance as one might expect. Indeed, during the 2019 House hearings on the bill, all three congressional witnesses—including the witness chosen by Republican members²⁰⁵—argued in favor of passing the Act. While past versions of the Scientific Integrity Act never received the level of bipartisan support they ultimately required, the bills' failure to pass may simply reflect a lack of priority in addition to partisan uncertainty. Addressing criticisms of the idea of scientific integrity legislation is worthwhile, particularly legislation that has stronger enforcement provisions, in the event a new version of the Act rises on Congress's agenda.

First, as Representative Posey argued in 2019, the Act (both improved and unimproved) could be criticized for giving too much power to unelected bureaucrats.²⁰⁶ On a practical level, however, the Scientific Integrity Act does not extensively dilute the power of political appointees, who still have authority to set agendas, shape

203. McGarity & Wagner, *supra* note 14, at 1800–02 (recommending more specific rules for selecting members of scientific advisory committees and that the FOIA exception for deliberative process privilege should be amended so that it does not cover political manipulation of science).

204. *See supra* Introduction for past legislative resistance to the bill. The Scientific Integrity Act has also received pushback from some commenters in the space, including “JunkScience” blog author and former Trump EPA transition team member Steve Milloy. *See* Steve Milloy, *You'll Be Surprised Who is Trying to Empower the Deep State at EPA*, DAILY SIGNAL (Nov. 15, 2019), <https://www.dailysignal.com/2019/11/15/these-republicans-are-trying-to-empower-the-deep-state-at-epa/> [<https://perma.cc/9WSY-QT92>]. Milloy is a former tobacco and coal lobbyist who has questioned the link between tobacco and secondhand smoke and whose views are widely discredited by scientists. *See A Big Polluter Lobbyist Served Secretly on Trump's EPA Transition Team*, NRDC (Feb. 24, 2017), <https://www.nrdc.org/trump-watch/big-polluter-lobbyist-served-secretly-trumps-epa-transition-team> [<https://perma.cc/P9M8-77QP>].

205. *See supra* Introduction.

206. *See supra* Introduction.

messaging, and refuse to act on scientific evidence where not legally required to do so. Rather, the Act primarily encourages transparency and accountability. If an administration does not want to pursue a policy goal it is not legally required to pursue, the updated Act simply requires that political appointees do so in a manner that does not involve underhanded tactics like manipulating science or retaliating against scientists; such openness ultimately creates more trust in government.²⁰⁷ Moreover, Congress still retains oversight power, meaning it can investigate any instance where it believes such civil servants have overextended their authority. Additionally, the Constitution arguably requires that the executive branch retain and defer to agency expertise;²⁰⁸ implicit within that argument is that such expertise cannot be manipulated. And relying on agency expertise, as opposed to pure policy preference, helps preserve the constitutionality of delegation.²⁰⁹

Second, critics may argue that the Scientific Integrity Act will slow down the core functioning of agencies. As detailed *supra* Part II.A, one important function of scientific integrity policies is that they help resolve purely scientific disputes before they create further problems; some might argue that the more robust enforcement provisions in an improved Act may discourage scientists from reporting these non-political problems due to fear of being swept up in a larger bureaucratic process. This fear may be ameliorated, however, by clearly articulating different enforcement processes for disputes involving purely scientific questions versus disputes with political appointees. While high-level disputes should be raised to the level of the inter-agency committee, purely scientific disputes should remain with individual SIOs.

207. Watts compared the political involvement of both the Bush administration and Obama administration in refusing to set stricter ozone standards, noting that President Bush “operated largely through OMB, consistent with Bush’s general preference for covert control,” where President Obama operated in the public eye, as his “own written statement and OIRA’s return letter made it crystal clear that Obama personally decided to pull the plug” on the new standards. Watts argued that President Obama’s open involvement “enhance[d] political accountability and transparency” and “also arguably furthered efficiency and coordination values,” whereas President Bush’s “style of covert command . . . rais[ed] questions about the legitimacy of the EPA’s decisionmaking process.” See Watts, *supra* note 30, at 715–16.

208. See Metzger, *supra* note 101, at 89–90.

209. Levitt, *supra* note 148.

Relatedly, critics may argue that the Scientific Integrity Act simply adds *more* bureaucracy to a bloated system.²¹⁰ But an improved Scientific Integrity Act, while adding more panels and procedures, is meant to *improve* bureaucratic efficiency. If political appointees have less room to improperly interfere with science and scientists, they will throw fewer wrenches into agency processes, allowing agencies to carry out their functions without fear of manipulation or retaliation. Moreover, political interference during the Trump administration arguably accelerated a hollowing out of federal agencies,²¹¹ making it *more* difficult for agencies to actually accomplish their legislatively required functions.

CONCLUSION

In May 2018, news broke that the Trump administration had suppressed an agency study on per- and poly-fluoroalkyl substances (PFAS), a group of chemicals whose nonstick properties have been used to make everything from cookware to cosmetics to firefighting foam.²¹² Scientific studies have increasingly shown the dangers of these substances, and the report from the Agency for Toxic Substances and Disease Registry (ATSDR)²¹³ would have shown that PFAS were dangerous at a far lower level than the EPA had previously called “safe.” In emails released through the Freedom of Information Act (FOIA), an unidentified White House aide working with the EPA and Department of Defense (DoD) argued that the “public, media, and Congressional reaction to these numbers is going to be huge” and that “[w]e (DoD and EPA) cannot seem to get ATSDR to realize the potential public relations nightmare this is going to be.”²¹⁴ Following these emails, the study

210. The idea of an inefficient federal bureaucracy is a common conservative talking point. See, e.g., Donald J. Devine, *Reforming the Federal Bureaucracy: Challenge and Opportunity*, HERITAGE FOUND. (Dec. 10, 2018), https://www.heritage.org/sites/default/files/2018-12/BG3357_0.pdf [<https://perma.cc/N77A-8LGM>].

211. Dan Balz, *Crisis Exposes How America Has Hollowed Out Its Government*, WASH. POST (May 16, 2020), <https://www.washingtonpost.com/graphics/2020/politics/government-hollowed-out-weaknesses/> [<https://perma.cc/P23E-TXUU>].

212. Annie Snider, *White House, EPA Headed off Chemical Study*, POLITICO (May 14, 2018), <https://www.politico.com/story/2018/05/14/emails-white-house-interfered-with-science-study-536950> [<https://perma.cc/4VM5-9E52>].

213. ATSDR is a public health agency that is part of the Department of Health and Human Services. See Agency for Toxic Substances and Disease Registry, ATSDR, <https://www.atsdr.cdc.gov/> [<https://perma.cc/J8SW-4Y6Q>].

214. *Id.*

remained unpublished for months.²¹⁵ But a few weeks after the reveal of the administration's suppression and the subsequent media storm, ATSDR released the study.²¹⁶ Since then, Congressional bills on PFAS cleanup have received bipartisan support,²¹⁷ with politicians on both sides of the aisle advocating for faster cleanup of contaminated sites and expressing concern for those affected.²¹⁸

Were the Scientific Integrity Act in place, it would have arguably been more difficult for the White House to suppress this important study. Those responsible for its burial would likely have been investigated and publicly named, and fear of bad publicity or even punishment may have deterred their actions altogether.²¹⁹ Instead, because no legislation was in place, the executive branch was able to bury this study, endangering public health and safety in the process. While the history of federal science in the United States is not without significant blemishes,²²⁰ on the whole modern federal science and federal scientists serve key protective duties to the American public. Science and scientists can and should be

215. *Id.*

216. Emily Atkin, *The White House Tried to Suppress a Bombshell Study Because They Were Afraid of the PR*, MOTHER JONES (June 22, 2018), <https://www.motherjones.com/environment/2018/06/the-white-house-tried-to-suppress-a-bombshell-study-because-they-were-afraid-of-the-pr/> [<https://perma.cc/SS7Q-EXGR>].

217. *See, e.g.*, Press Release, Jeanne Shaheen, U.S. Senator, Shaheen, Peters, Moran Reintroduce Bipartisan Bill to Bolster and Expand Federal Research to Effectively Address PFAS Contamination (Feb. 23, 2023), <https://www.shaheen.senate.gov/news/press/shaheen-peters-moran-reintroduce-bipartisan-bill-to-bolster-and-expand-federal-research-to-effectively-address-pfas-contamination> [<https://perma.cc/V8S8-KLWD>]; Press Release, Thom Tillis, U.S. Senator, Tillis Co-Sponsor Bipartisan PFAS Accountability Act (May 9, 2019), <https://www.tillis.senate.gov/2019/5/tillis-co-sponsors-bipartisan-pfas-accountability-act> [<https://perma.cc/BNW8-MT3M>].

218. *Bipartisan Group of Senators Introduce PFAS Accountability Act*, TOM CARPER (May 10, 2019), <https://www.carper.senate.gov/newsroom/press-releases/carper-bipartisan-group-of-senators-introduce-pfas-accountability-act/> [<https://perma.cc/MMN7-GEPD>] (quoting Senators Debbie Stabenow (D-MI), Marco Rubio (R-FL), Thom Tillis (R-NC), Maggie Hassan (D-NH), Jeanne Shaheen (D-NH), and Gary Peters (D-Mich) about their support of the bill).

219. No political appointee was ever identified as directly in charge of (or punished in conjunction with) suppression of the PFAS study.

220. The Tuskegee study, in which the federal government tracked Black men with syphilis over 40 years without telling them of their diagnosis or offering them treatment (and in some cases actively denying treatment), is arguably the most infamous example of the failures of federal science and federal scientific ethics. The fallout from the study still affects Black communities today. *See* Vann R. Newkirk II, *A Generation of Bad Blood*, ATLANTIC (June 17, 2016), <https://www.theatlantic.com/politics/archive/2016/06/tuskegee-study-medical-distrust-research/487439/> [<https://perma.cc/HUK9-2KT5>].

further protected by legislation to prevent abuses like those in the PFAS scenario.

Were Congress to pass the version of the Scientific Integrity Act proposed in the last Congress, it would still be a key piece of legislation, standardizing scientific integrity policies and publicly affirming Congress's approval of firewalls between scientists and politicians where necessary. But for truly lasting change, Congress should amend the bill to create stronger investigatory and enforcement protections, adding teeth to a bill with few. Such a version of the Scientific Integrity Act has great potential to curb the problem of political interference in federal science, better protecting the health and safety of the American public.