

Preserving Scientific Integrity in Federal Policymaking

*Lessons from the Past Two Administrations and
What's at Stake under the Trump Administration*



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The Center for Science and Democracy at UCS works to strengthen American democracy by advancing the essential role of science, evidence-based decisionmaking, and constructive debate as a means to improve the health, security, and prosperity of all people.

More information about UCS and the Center for Science and Democracy is available on the UCS website: www.ucsusa.org

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Introduction

What should be done about a fast-spreading disease outbreak? Is that water safe to drink? What precautions are needed in the face of a dangerous incoming storm? Is that toy or medical device safe to use?

Every day, representatives of the US federal government make policy decisions about issues vital to Americans' health and safety. These decisions require the best possible scientific and technical assessments. Science is rarely the only consideration in a policy decision; feasibility, timing, and cost are others. But the government's unwavering commitment to having science play a strong role in policymaking is crucial to its ability to respond effectively to the complex challenges facing our nation—from public health issues to national security. Equally important, the government's reliance on independent, impartial science is essential for ensuring public trust in government and for upholding the democratic principles upon which the nation was founded.

In today's highly polarized political environment, it is vital to understand that a commitment to scientific integrity in federal policymaking is not a partisan issue. Rather, it is

an enduring bedrock principle upon which US democracy was built. Put quite simply, regardless of decisionmakers' political affiliation, good decisions require the best available independent information we can gather. Anything less undermines our democracy and threatens Americans' health and safety.

The United States faces increasingly complex problems. Much of the information needed for good policy decisions addressing these problems comes from the government's cadre of scientific and technical experts. As President George H.W. Bush explained in 1990,

Science, like any field of endeavor, relies on freedom of inquiry; and one of the hallmarks of that freedom is objectivity. Now more than ever, on issues ranging from climate change to AIDS research to genetic engineering to food additives, government relies on the impartial perspective of science for guidance.
(Bush 1990)

It is also important to recognize that the idea that scientific integrity should be embedded in federal policymaking has deep roots in our American democracy. The US government's commitment to promoting "science and the useful arts" is enshrined in the first article of the US Constitution. And, among many other examples, President Abraham Lincoln clearly recognized the need for independent scientific assessment in 1863 when he signed legislation founding the independent, nonprofit National Academy of Sciences to create "an institution of science . . . to guide public action in reference to science matters" (NAS 2016).

All modern presidential administrations have politicized science. But the issue came most forcefully to public attention in the early 2000s during the George W. Bush administration

Regardless of decisionmakers' political affiliation, good decisions require the best available independent information we can gather.



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Independent science is integral to effective policy, and it is up to the federal government to ensure its scientists are protected, supported, and amplified, so that the public and policymakers can make informed decisions.

as Democrats and Republicans alike recognized that censorship and manipulation of science was preventing science from fully informing public policy.

Bush administration officials manipulated, misrepresented, and suppressed inconvenient data and censored experts. They systematically chose science advisors based on ideology rather than scientific credentials, they prevented federal scientists from sharing their research and expertise, and they rewrote scientific reports to help justify predetermined policy decisions (UCS 2004a; UCS 2004b). The results were damaging for the country—eroding the health and safety protections Americans demand and deserve, along with trust in the information coming out of government agencies (Grifo et al. 2008). The evidence is clear: when policymakers undermine science, the public is left with laws and regulations that leave them exposed to unnecessary danger.

President Barack Obama pledged to “restore science to its rightful place” in government in his inaugural address (Obama 2009a). The Obama administration made significant advancements toward this cause, including putting forth a framework for addressing losses of scientific integrity in government and furthering data access and scientific advisory committee independence. But the work remains unfinished, as implementation of scientific integrity and related policies across agencies and departments remains inconsistent.

Although President Donald J. Trump has so far made few explicit statements about the role of science in his administration, he has made sweeping promises to clean up Washington (Johnson 2016). To govern effectively, his administration would be wise to demonstrate to the American people that its decisions will be informed by independent science in the service of the public interest. Decisionmaking processes that are informed by facts and evidence—rather than by influence and inclination—help to create legitimacy, public support, and a more effective executive branch. Because the integrity of science is vital to protecting the health and safety of all Americans, and thus to the success of the incoming administration, Union of Concerned Scientists (UCS) strongly recommends that President Trump make it a priority to promote and protect the critical role of independent, impartial science in federal decisionmaking processes. This includes ensuring that leaders in his administration respect the science-based mandates of federal agencies and the ability of scientists to pursue and communicate research results on critical public health, safety, and environmental issues.

Given the paramount importance of scientific integrity in federal policymaking, what do we know about how best to ensure it? UCS has worked to promote and uphold scientific integrity in policymaking for much of its nearly 50-year history. This report reviews lessons learned about scientific integrity in government under both Republican and Democratic administrations. It highlights best practices and recommends steps the Trump administration should take to ensure that its

Scientific integrity includes the open, reliable conduct, supervision, and communication of science as well as the appropriate use of science in policy creation.

legacy includes adherence to the highest standards of scientific integrity. By offering an up-to-date assessment of the status of scientific integrity in federal policymaking at the end of the Obama administration, this report also provides a framework for assessing the actions of the Trump administration.

What Is Scientific Integrity?

Scientific integrity refers to processes through which independent science fully and transparently informs policy decisions, free from inappropriate political, ideological, financial, or other undue influence. Scientific integrity includes the open, reliable conduct, supervision, and communication of science as well as the appropriate use of science in policy creation. While preventing research misconduct—including outright plagiarism or falsification of data—is part of scientific integrity, in the context of this report, *scientific integrity* applies more broadly to the proper use of science throughout federal decisionmaking processes. Principles of scientific integrity include the following (Goldman et al. 2015a; Grifo et al. 2008; UCS 2008a):

- **Independent Science.** Public policy decisions must be informed by expert scientific advice free from political or financial pressure. By relying on independent science, the government ensures that policy proposals are informed by evidence stemming from a credible scientific process. Processes that rely on independent science result in better policy decisions and improved public trust in those decisions. Components of independent science include peer review, disclosure of potential conflicts of interest, public availability of research findings and methodology, freedom to publish research, and deterrents against scientific misconduct.
- **Transparent Decisionmaking.** Scientific integrity requires public access to the science that underlies decisions as well as to information regarding how decisionmakers used that science. Such access can be granted while maintaining necessary confidentiality and respecting privacy concerns (such as those regarding medical data). Additionally, agency staff should not impede public access to the government scientists responsible for collecting, developing, and analyzing scientific data. It is essential that agencies strive to increase transparency within the regulatory process, both to reduce opportunities for political interference in science and to facilitate public knowledge of and participation in policymaking, particularly for rules that impact public health and safety.



Government scientists must be guaranteed the freedom to not only conduct and publish research, but also voice their personal opinions on science and policy, provided they make clear they are not speaking for their agency.

- **Scientific Free Speech.** To flourish and to maintain their professional credibility, government scientists must be able to publish their research relevant to their agency's mission and communicate their findings in a timely manner. Further, federal scientists should have the right to express personal views on science and policy, provided they make clear they are not speaking for their agency. Federal employees who express differing scientific opinions or report political interference in science as a form of fraud, waste, or abuse in government should be protected from retaliation by both law and policy.
- **Statutory Compliance.** Some laws require decisions to be based solely on the best available science. For example, the Food and Drug Administration (FDA) approves prescription drugs based solely on evidence of their safety and efficacy. Other laws require science to be the only factor in some parts of decisions but not in others. For example, the Clean Air Act requires air pollution standards to be set using the best available science on the link between air pollution and health effects, but it allows other considerations (such as economic factors) to be considered when *implementing* standards. Misrepresentation of these statutes constitutes political interference in science.

DRAWING THE LINE BETWEEN SCIENCE AND POLICY DECISIONS

An understanding of scientific integrity and its role in federal policy begins with the tenet famously attributed to the late

New York Senator Daniel Patrick Moynihan: “We are each entitled to our own opinion, but no one is entitled to his [or her] own facts” (Shulman 2006). It is important to note that a difference of opinion on the appropriate policy action to take based on scientific findings does not signal a loss of scientific integrity, nor do differing informed opinions on the science itself. Policies are appropriately informed by many factors, including value judgments and the legal framework put in place by Congress for particular policy decisions. Therefore, *ignoring* science does not necessarily represent a loss of scientific integrity (though it may result in a loss of public trust and/or a less than effective policy), unless the law requires a decision be based solely on scientific information (as, for example, the Endangered Species Act [ESA] and Clean Air Act require, as the next section will discuss).

Public policies ought to be informed by independent science.

Problems arise, however, when political interference suppresses, distorts, or intervenes in the process of conducting, supervising, or communicating science within the federal government. Types of abuse include

- falsifying data or fabricating scientific or technical results;
- selectively editing agency scientific documents;
- exaggerating uncertainty while downplaying what is known;
- tampering with scientific procedures;
- appointing members of scientific advisory panels based on political, not scientific, credentials;
- intimidating, censoring, or coercing scientists;
- suppressing scientific findings;
- disregarding scientific findings when legally mandated to consider them; and
- allowing conflicts of interest in decisionmaking processes (Grifo et al. 2008).

Public policies ought to be informed by independent science. This does not mean that research funded by industry or other private sources is inherently flawed and should not be

considered in policymaking. Rather, it means that the funding sources for such research should be fully disclosed and that the research should have no strings attached that might predetermine or influence results—or that might give the appearance of such improper influence.

Background: Political Interference in Science during the Bush Administration

Over the years, political interference in science has occurred on both sides of the aisle. Back in 1924, for instance, during the Calvin Coolidge administration, Secretary of Commerce Herbert Hoover explicitly reminded reporters that his department’s Bureau of Mines was “created as a service bureau for the mining industry.” Taking their cue from Hoover’s pro-industry bias, government scientists intentionally designed epidemiologic studies to minimize evidence of health threats to coal miners, such as by including only “active” miners: anyone who had gotten sick enough in the mines to keep them from work was excluded from the statistics (Ross and Amter 2010).

In another example, after former presidential science advisor and Massachusetts Institute of Technology (MIT) President Jerome Wiesner opposed the government’s antibalistic missile program, President Richard Nixon tried to retaliate by cutting off federal research funds to MIT (Branscomb 2004). More recently, despite the government providing scientific evidence that supported lifting the ban on federal funding for needle-exchange programs, President William J. Clinton kept the ban in place due to political and moral considerations (Stolberg 1998).

Even taking into account many historical examples, George W. Bush’s administration politicized science to a degree otherwise unseen in modern times. In a harbinger of things to come, during his first year in office President Bush demoted his science advisor, marginalizing the advisor’s role and influence by requiring him to report not to the president but to the White House chief of staff and, as a result, keeping him out of the room during critical high-level administration decisions. President Bush appointed many regulatory agency heads who had worked for the very industries those agencies were supposed to regulate. And, starting in the early 2000s, reports began to surface about the Bush administration’s political interference in science in myriad ways on dozens of issues.

Policy decisions about endangered species during this period offer a particularly clear example of a pattern of abuse. The ESA requires that decisions about whether to list species as endangered or threatened be made solely on the basis of science (DOI-OIG 2006). The Bush administration repeatedly flouted this requirement.



In 2002, Vice President Dick Cheney directly interfered with efforts to protect two endangered species of fish, resulting in the death of an estimated 77,000 salmon in the Klamath River in Oregon.

Julie MacDonald, the deputy assistant secretary for Fish and Wildlife (FW) at the Department of the Interior (DOI), resigned from her position after revelations that she had edited and reshaped scientific reports. A 2008 investigation by the DOI Office of Inspector General (OIG) found that MacDonald had improperly influenced 13 of the 20 ESA listings it investigated and that “MacDonald’s zeal to advance her agenda has caused considerable harm to the integrity of the ESA program and to the morale and reputation of the FW as well as potential harm to individual species” (DOI-OIG 2008). The OIG investigation found, for example, that MacDonald had interfered in the process for a decision regarding the Sacramento splittail fish, despite a potential conflict of interest regarding her ownership of a revenue-generating farm located in the same region as the fish (DOI-OIG 2008). One Fish and Wildlife Service (FWS) scientist later told UCS that during the Bush administration, political appointees pressured scientists to alter documents in ways that would “negatively impact wildlife conservation” (Goldman et al. 2015b).

In fact, interference in science related to endangered species sometimes originated at the very top of the administration. Vice President Dick Cheney intervened in a number of instances to cut science out of these regulatory decisions. For example, the *Washington Post* reported that Cheney personally telephoned DOI officials to influence their efforts to protect two endangered fish species (Becker and Gellman 2007). Vice President Cheney’s interference in that case resulted in a massive fish kill, with an estimated 77,000 salmon washing up on the banks of the Klamath River (Becker and Gellman 2007).

During the George W. Bush administration, no scientific issue was subject to more political interference than climate change. President Bush appointed Phil Cooney, an ex-oil industry lobbyist, to head the White House Council on Environmental Quality. He was subsequently found to have rewritten sections of important climate change reports to exaggerate uncertainty around the science (Shulman 2006). Cooney additionally sent emails to Myron Ebell, a director at the oil industry-funded Competitive Enterprise Institute (CEI),

asking for CEI's help playing down the Environmental Protection Agency's (EPA) recent report linking human activity to global warming. In their discussion of possible tactics, Ebell suggested finding a "fall guy" as high up as possible and discussed calling for the firing of EPA head Christine Todd Whitman (Harris 2003). At the National Aeronautics and Space Administration (NASA), public affairs officials attempted to stifle scientists' speech regarding climate change, threatening James Hansen, the director of NASA's Goddard Institute for Space Studies, for example, with "dire consequences" and reviewing and restricting his private statements after he gave a lecture highlighting the danger of global warming emissions (Revkin 2006).

It soon became clear that such examples represented a pattern of abuse. In a 2006 UCS survey of climate scientists at seven separate federal agencies, 73 percent of respondents reported having perceived inappropriate interference with climate science research in the past five years, while 43 percent of respondents had *personally* perceived or experienced changes or edits to documents during review processes that changed the meaning of scientific findings (UCS 2006a).

In 2004, a scientist statement on scientific integrity endorsed by 62 prominent scientists—including 20 Nobel laureates and scientists that had served all Democratic and Republican administrations dating back to President Dwight D. Eisenhower—expressed concern about this misuse of science and urged the administration to "return to the ethic and code of conduct which once fostered independent and objective scientific input into policy formation" (UCS 2004a). The statement established abuses of scientific integrity as a threat to democratic governance, and many civil society organizations began working together to call attention to the problem.

UCS reports and surveys of government scientists further documented these abuses of science across the executive branch. By 2006, more than 12,000 US scientists had endorsed

the statement calling for a restoration of scientific integrity in federal policymaking, including some 49 Nobel laureates, 63 National Medal of Science recipients, and 171 members of the National Academy of Sciences (Shulman 2006).

Science was easily politicized due to a lack of transparency and a paucity of policies to safeguard against such abuses. Decisionmakers routinely sidestepped, altered, or suppressed science, to the detriment of the American public and our democracy. Between 2005 and 2007, UCS received survey responses from more than 3,000 federal scientists at four agencies on issues of scientific integrity (UCS 2008b; UCS 2006a; UCS 2006b; UCS 2005a; UCS 2005b). Their responses indicated that abuses of science were pervasive across agencies, across issue areas, and across levels of government. In addition, policies were put in place to restrict the types of science that could be used to assess endangered species decisions, to reduce transparency, and to place political appointees deeper inside agencies where they could more easily politicize science. By the end of the Bush administration, the role science played in informing government was diminished, federal scientists were demoralized, and public health and safety had suffered, as had public trust in an evidence-based democracy.

It was clear that reforms were needed to put policies in place and change agency culture in order to prevent such abuses in the future. Working with diverse stakeholders in government, academia, and civil society, UCS developed a comprehensive list of reforms aimed at changing government decisionmaking processes to address the misuse of science in decisionmaking. The reforms, compiled in the report *Federal Science and the Public Good*, recommended concrete steps for the incoming Obama administration, the 111th Congress, and new federal agency heads in order to protect federal scientists, ensure robust scientific input, increase transparency, and otherwise reform the decisionmaking process (Grifo et al. 2008).

Decisionmakers routinely sidestepped, altered, or suppressed science, to the detriment of the American public and our democracy.

Scientific Integrity in the Obama Administration: Progress, Missteps, and Unfinished Business

When President Obama took office in 2009, he vowed to restore science to its rightful place and took several meaningful steps to protect and advance the role that science plays in the federal government (Obama 2009a). However, progress slowed over the course of the administration, leaving important scientific integrity initiatives unfinished.

The Obama Administration Pledge to Uphold Scientific Integrity

In response to public and scientific community outcry and significant pressure from groups, including UCS, concerning the Bush administration's abuses, President Obama took several important steps in his first 100 days to address the issue of scientific integrity. First, he quickly elevated the science advisor position to report once again directly to the president, and he appointed several prominent scientists to high-level posts in his administration, including physicist and Harvard Kennedy School of Government Professor John Holdren as his science advisor and head of the White House Office of Science and Technology Policy (OSTP); Stephen Chu, director of the Department of Energy's (DOE) Lawrence Berkeley National Laboratory, as his secretary of energy; and Oregon State environmental scientist Jane Lubchenco as head of the National Oceanic and Atmospheric Administration (NOAA).

In March 2009, the White House issued a memorandum describing key elements of the Obama administration's plan to reform federal scientific integrity policy and directing the president's science advisor to develop a plan to restore scientific integrity to federal policymaking within 120 days (Obama 2009b). When announcing the signing of the policy, President Obama commented that promoting science is about "listening

to what [scientists] tell us, even when it's inconvenient—especially when it's inconvenient" (Obama 2009c). While this early memo signaled to federal agencies that scientific integrity would be a priority of the administration, it took nearly two years for OSTP to issue a follow-up memorandum providing guidelines for federal scientific integrity policies (Holdren 2010). The OSTP guidance laid out broad principles but left it up to the individual agencies to decide how to institutionalize the president's charge. Not all agencies waited for OSTP to lead. For example, the DOI released a forward-thinking secretarial order on scientific integrity in September 2010 (Salazar 2010).

In response to the 2009 White House directive, 24 federal agencies developed scientific integrity policies (see table, p. 8). The policies varied greatly in terms of their strength, scope, and completeness (Grifo 2013). Some policies, such as those of NOAA and the DOI, provided the kinds of protections necessary to create a strong culture of scientific integrity at federal agencies. Others, such as those of the Department of Transportation (DOT) and Department of Labor (DOL), contained broad statements but provided incomplete or inadequate protections for scientists. Some

In response to the 2009 White House directive, 24 federal agencies developed scientific integrity policies.

Progress on Scientific Integrity Policies at Federal Agencies

	Scientific Integrity Policy	Peer Review Policy	Media Policy	Social Media Policy	Procedure for Allegations	Public Reporting of Allegations	Differing Scientific Opinions Policy	Scientific Integrity Official	Whistleblower Certification
US Dept. of Commerce	Some Progress	Nonexistent or Poor	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Some Progress
US Dept. of Energy	Strong	Some Progress	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Strong	Some Progress
US Dept. of Interior	Strong	Some Progress	Some Progress	Strong	Strong	Strong	Some Progress	Strong	Some Progress
US Dept. of Labor	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Some Progress	Some Progress	Some Progress	Some Progress	Strong
US Dept. of Transportation	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Some Progress	Strong
US Dept. of Agriculture	Strong	Strong	Some Progress	Some Progress	Strong	Some Progress	Nonexistent or Poor	Strong	Some Progress
Centers for Disease Control and Prevention	Strong	Strong	Strong	Some Progress	Some Progress	Some Progress	Some Progress	Strong	Nonexistent or Poor
US Consumer Product Safety Commission	Some Progress	Nonexistent or Poor	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Some Progress	Nonexistent or Poor	Some Progress
US Environmental Protection Agency	Strong	Strong	Strong	Some Progress	Some Progress	Strong	Some Progress	Strong	Some Progress
US Fish and Wildlife Service	Strong	Some Progress	Some Progress	Strong	Strong	Some Progress	Some Progress	Strong	Nonexistent or Poor
US Food and Drug Administration	Some Progress	Nonexistent or Poor	Some Progress	Strong	Nonexistent or Poor	Some Progress	Strong	Strong	Nonexistent or Poor
National Aeronautics and Space Administration	Some Progress	Some Progress	Some Progress	Some Progress	Some Progress	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Some Progress
National Institute of Standards and Technology	Some Progress	Some Progress	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor
National Institutes of Health	Nonexistent or Poor	Strong	Some Progress	Strong	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor
National Oceanic and Atmospheric Administration	Strong	Some Progress	Strong	Some Progress	Strong	Strong	Some Progress	Strong	Nonexistent or Poor
National Science Foundation	Strong	Some Progress	Strong	Some Progress	Some Progress	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Strong
Nuclear Regulatory Commission	Nonexistent or Poor	Strong	Some Progress	Some Progress	Nonexistent or Poor	Some Progress	Nonexistent or Poor	Nonexistent or Poor	Strong
US Geological Survey	Strong	Strong	Some Progress	Strong	Strong	Strong	Some Progress	Strong	Nonexistent or Poor

■ Strong
 ■ Some Progress
 ■ Nonexistent or Poor

Under the Obama administration, federal agencies have taken steps to establish policies and practices intended to safeguard scientific integrity. Some have instituted a clear procedure for scientific integrity matters, put an official in charge of scientific integrity, and completed the Office of Special Counsel's whistleblower certification as required under the Whistleblower Protection Enhancement Act (WPEA). But there is still much work to do. As the table shows, many agencies are still weak when it comes to fully developing the components of a robust scientific integrity policy. For full references for this table, please see Appendix B, online at www.ucsusa.org/PreservingScientificIntegrity.

agency policies, such as those of the FDA and the Department of Commerce (DOC), fell in the middle of the pack, providing some protections for their scientists while neglecting other important aspects of scientific integrity.

For some agencies, the sum of their reform effort was simply writing a new scientific integrity policy, because they devoted few if any resources to its implementation. However, several agencies also appointed scientific integrity officers to oversee implementation of the scientific integrity policy as well as convened internal scientific committees composed of staff from across the agency. Scientific integrity officers vary by agency in terms of the time they have to devote to the issue and their placement within the agency. For example, NOAA has a full-time scientific integrity officer who reports to the highest-ranking civil servant at the agency, allowing the officer some insulation from political influence as well as high-level access to agency staff. Other agencies, including the Centers for Disease Control and Prevention (CDC), have scientific integrity officers who devote significant fractions of their time to other issues.

Scientific integrity committees, such as those at the EPA and the DOI, provide another way to ensure that scientific integrity is a focus throughout the agency: they bring more staff into conversations about scientific integrity and allow for a broader reach to staff in diverse parts of the agency.

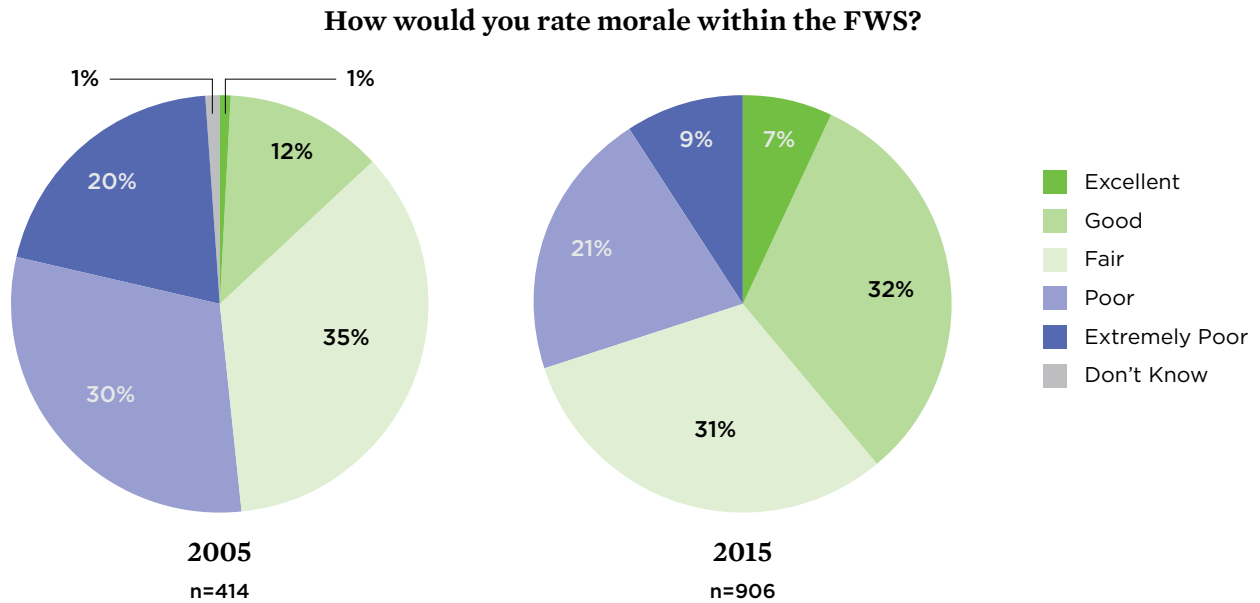
UCS surveys of federal scientists indicate a decrease in the number of scientific integrity issues observed under the Obama administration as compared to the Bush administration and an improvement in morale among federal scientists concerning issues pertinent to scientific integrity (Goldman et al. 2015b) (Figure 1, p. 10). At the FWS's Ecological Services Division, for example, one indicator—the proportion of scientists reporting morale as excellent or good—tripled from 13 percent to 39 percent between a 2005 and a 2015 survey of scientists (Goldman et al. 2015b; UCS 2005b). An FWS scientist wrote, “Since the last Bush administration, I do not feel that we have been unduly pressured to alter or change any scientific information to fit any agenda.”



Architect of the Capitol/Creative Commons (Flickr)

President Barack Obama has taken positive steps during his administration to protect science, but there remains much more to be done to ensure scientific integrity in decisionmaking throughout the government.

FIGURE 1. Morale at the Fish and Wildlife Service



In a 2015 UCS survey of federal scientists, it appeared that morale had improved in the FWS Ecological Services Division compared with 2005. More than double the proportion of Ecological Services scientists reported morale as excellent or good. A two-sample t-test between survey results found that these results were significantly different at a 95-percent level ($p=0.0000$).

SOURCE: GOLDMAN ET AL. 2015B.

“Communication with the public has greatly improved since the Bush days,” stated one NOAA scientist. A CDC scientist noted, “I experienced true and systematic censorship of science in my years working under Bush and [CDC Director] Gerberding. I definitely feel much more open in this regard under Obama and [CDC Director] Frieden.” Another CDC scientist concurred: “Scientific integrity is much better than it was under the Bush administration. There was a lot of political meddling in what was ‘allowed’ to be done, said, and published. The last six years have been much better—current administration lets us do our work” (Goldman et al. 2015b).

THE CHALLENGE OF CULTURE CHANGE

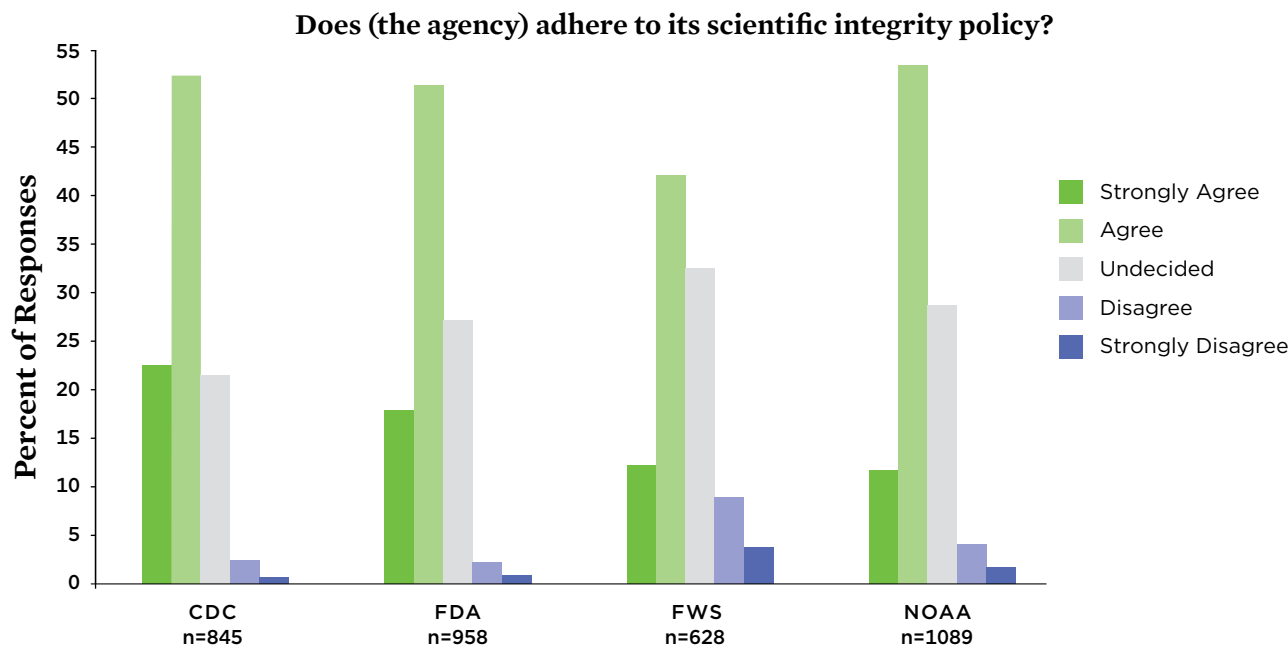
All told, after eight years of the Obama administration, federal agencies have made varying levels of progress related to scientific integrity. As noted above, some agencies have assigned an official to be specifically in charge of ensuring scientific integrity, created clear procedures for the handling of allegations of scientific integrity violations, and undergone whistleblower certification as required under the Whistleblower Protection Enforcement Act (WEPA), among other actions. But there is still much to do, as many agencies have not

published policies that fully address the multitude of issues related to scientific integrity.

Yet the mere existence of scientific integrity policies, even when comprehensive and strong, has not proven sufficient to drive all the necessary changes in agency practices. In addition to strong policies, the creation of a culture of scientific integrity requires training and reinforcement. Scientists in government need to feel that they can conduct their research and do their jobs unfettered by political interference and that their findings will be released, recognized, and unaltered. The American public deserves no less.

Federal scientists and people outside the government continue to report challenges to science-based decisionmaking, including political influence on scientific work, barriers to scientific free speech, and a lack of adherence to scientific integrity policies. A 2015 UCS survey of 7,000 government scientists across four agencies—the CDC, the FWS, the FDA, and NOAA—found that agencies continue to face challenges implementing their scientific integrity policies (Goldman et al. 2015b). (UCS did not survey the EPA because the agency was conducting its own internal survey; as of this writing, the agency has yet to publish its results.)

FIGURE 2. Adherence to Agency Scientific Integrity Policies



A 2015 UCS survey of federal scientists across four agencies found that of survey respondents who were aware of their agency’s scientific integrity policy, the majority agreed that the agency adhered to this policy. But a substantive number of respondents were undecided or disagreed that their agencies followed the policy.

SOURCE: GOLDMAN ET AL. 2015B.

Awareness of agency scientific integrity policies was only moderately widespread among survey respondents, despite the four agencies having comprehensive scientific integrity policies in place. The FWS had the highest rate, with 79 percent (632 respondents) reporting awareness of the agency’s scientific integrity policy. NOAA had the lowest, with 66 percent (1,092 respondents) reporting awareness. Of respondents who reported awareness of the scientific integrity policy, 55 to 75 percent believed their agencies adhered to this policy, with 75 percent of CDC scientists (635 respondents) at the high end and 55 percent of FWS scientists (342 respondents) at the low end (Figure 2). One NOAA scientist commented, “Whistleblower laws and scientific integrity policies help in terms of being able to bring issues to light, but our scientists need to be informed about the details of these policies (updated yearly),” while an FWS employee noted that they had responded as “undecided” because “while we are all encouraged to read and follow [the FWS scientific integrity policy], there is no formal training. Most people don’t have the time to read it so [they] don’t” (Goldman et al. 2015b).

In 2012, Congress passed the Whistleblower Protection Enhancement Act (WPEA) by unanimous consent. The law

strengthened whistleblower protections across the government and explicitly protected scientists who report waste, fraud, or abuse. Despite this strengthened law, many agencies have still not completed the certification the law requires (known as the Office of Special Counsel 2302(c) Certification Program), and concerns remain about retaliation against whistleblowers.

In their responses to the 2015 UCS survey, scientists across agencies were divided on the level of awareness of and practices surrounding whistleblower rights and on concerns about retaliation (Figure 3, p. 12). Although the majority of scientists

Federal scientists and people outside the government continue to report challenges to science-based decisionmaking.

felt they had been adequately briefed on their whistleblower rights under the WPEA (53 to 75 percent across all agencies surveyed), only about half of the respondents reported they could openly express any concerns about the mission-driven work of their agencies without fear of retaliation (53 to 58 percent). The agency with the greatest proportion of scientists who reported adequate briefing on whistleblower protections was the FWS, with 75 percent (606 respondents).

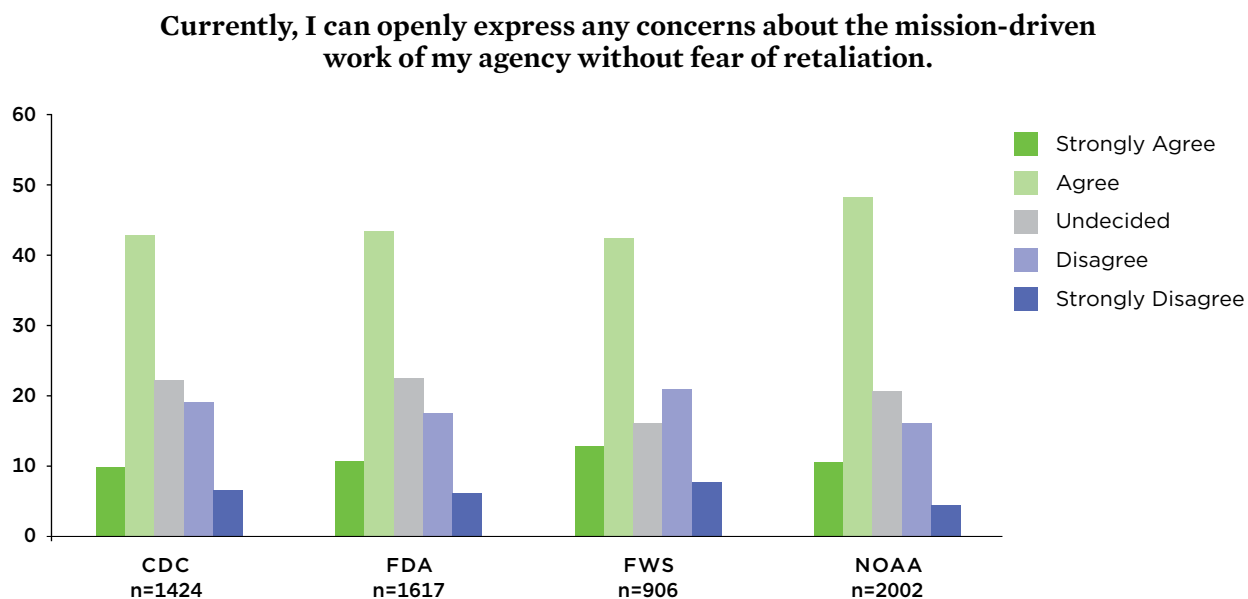
Even at the FWS, however, some respondents expressed fear in open-ended responses about using their whistleblower rights. One respondent wrote, “Until staff employees see that

they will not be retaliated against and that those individuals who have violated our policies and laws are punished, no one will come forward and stand up for scientific integrity for fear of retribution. I have personally heard . . . employees say they witnessed or [are] knowledgeable about a scientific integrity violation but will not come forward for fear of retribution.” Another FWS respondent noted, “Managers should actively solicit input from field biologists and not cultivate a ‘culture of fear’ where voicing one’s opinion can involve negative consequences” (Goldman et al. 2015b).

Even with scientific integrity policies in place, instances of and concerns about political interference have continued during the Obama administration (Boxes 2, p. 15; 5, p. 22; and 6, p. 27). This is not surprising, as political interference occurs in every administration to one degree or another, and top officials are appointed to advance administration priorities. In the 2015 UCS survey of federal scientists, a significant number (46 to 73 percent across agencies surveyed) reported that the level of consideration of political interests at their agencies was too high (Figure 4, p. 14). The greatest proportion of respondents reporting this concern was at the FWS (73 percent, 601 respondents).

Even with scientific integrity policies in place, instances of political interference have continued during the Obama administration.

FIGURE 3. Freedom to Express Professional Opinions without Fear of Retaliation



Half of respondents in a 2015 UCS survey of federal scientists—52 to 59 percent across agencies—felt they could express concerns about the mission-driven work of their agencies without fear of retaliation.

SOURCE: GOLDMAN ET AL. 2015B.

Restoring the Role of Climate Change Science in Policy

From the start, the Obama administration recognized climate science, acknowledged the risks associated with climate change, and allowed federal climate science to be communicated and to inform policy.

By contrast, the George W. Bush administration suppressed and distorted climate science and the view held by the vast majority of experts in the field that human-caused emissions of carbon dioxide and other heat-trapping gases are the primary cause of global warming (UCS 2004b). Despite promises from President Bush that “my administration’s climate change policy will be science-based,” his two terms were marked by widespread political interference in the work of federal climate scientists, editing of official scientific documents by political appointees, and a general attempt to foster uncertainty about robust scientific conclusions (Donaghy et al. 2007; UCS 2004b; Bush 2001).

Chief of Staff of the White House Council on Environmental Quality Phil Cooney altered and deleted climate science research from several government reports in an effort to sow doubt about the environmental impacts of climate change (Revkin 2005). Cooney had previously worked as a lobbyist for the American Petroleum Institute and left government in 2005 to work at ExxonMobil (Ball 2005).

In 2006, James Hansen, the director of NASA’s Goddard Institute for Space Studies, reported that agency officials had attempted to prevent him from speaking about the science behind climate change. Officials even threatened Hansen, telling him that there would be “dire consequences” if he continued to make statements about climate change (Revkin 2006).

Scientists were largely excluded from internal climate policy discussions. Rosina Bierbaum, a Clinton administration appointee to the OSTP who also served during the first year of the Bush administration, said that “the scientists [who] knew the most about climate change at OSTP were not allowed to participate” in deliberations on the issue by the White House inner circle (Mooney 2001).

In 2007, the US Supreme Court ruled in *Massachusetts v. EPA* that the EPA had the authority to regulate global warming emissions under the Clean Air Act and that if the EPA judged pollutants to be a threat to public health and welfare, the EPA would be required to act to regulate them (*Massachusetts v. EPA* 2007). The EPA spent much of 2007 internally reviewing

the impacts of climate change, and it recognized the scientific evidence that global warming emissions endanger public health (Burnett 2008). When the EPA sent its finding to the White House Office of Management and Budget (OMB), however, an OMB representative called the EPA administrator and asked him to retract the email and say it had been sent in error (Eilperin 2008). When the EPA refused, the White House failed to open the email because doing so would require the EPA to move ahead with the formal regulatory process and make the documents public (Barringer 2008). The EPA was thus effectively prohibited from acknowledging the science necessary to carry out the Clean Air Act to address climate change.

In 2009, under President Obama, the EPA was permitted to issue its science-based “Endangerment Finding” that provided documentation of the science indicating that global warming emissions endangered public health and welfare in the United States. This cleared the path for the EPA to regulate global warming emissions under the Clean Air Act (EPA 2009). Once the EPA’s endangerment finding was released, the Obama administration took swift action to propose science-based rules on power plant and transportation emissions, using the EPA’s authority under the Clean Air Act (White House 2016a; EPA 2015a; White House 2012).

The Obama administration also took a step toward clearer disclosure to investors of public companies’ carbon footprints and efforts to reduce them with the release of the Securities and Exchange Commission guidance on climate change disclosure (SEC 2010). Expanding on this, the Federal Acquisition Regulatory Council in 2016 proposed a rule that would require disclosure of global warming emissions and climate-related risk data for companies contracted to work with the General Services Administration (GSA), NASA, or the Department of Defense (Federal Register 2016).

It is important to note that the two administrations differed not only in their climate policies but also in their treatment of scientific findings. Climate-related agencies in the Obama administration have noted the change that enables them to conduct their work with less political interference. As one NOAA scientist put it in response to a UCS survey, “During the Bush years, we were told not to use the term *global warming*. . . Also, our scientific publications were subject to review by headquarters. . . I have not heard of that going on recently” (Goldman et al. 2015b).

In answers to open-ended questions, respondents commented on how they perceived the previous administration’s legacy to affect the current level of political interference. One FWS employee reflected, “Because the Bush administration was so intent about staffing the FWS with like-minded people for eight years, and because the Obama administration has done nothing to counter it, many FWS employees feel like we’re still in the Bush administration” (Goldman et al. 2015b).

These accounts of concerns about adherence to agency scientific integrity policies and whistleblower protections may suggest that agency culture has not caught up with its policies and more needs to be done to ensure that scientific integrity policies are put into effective practice.

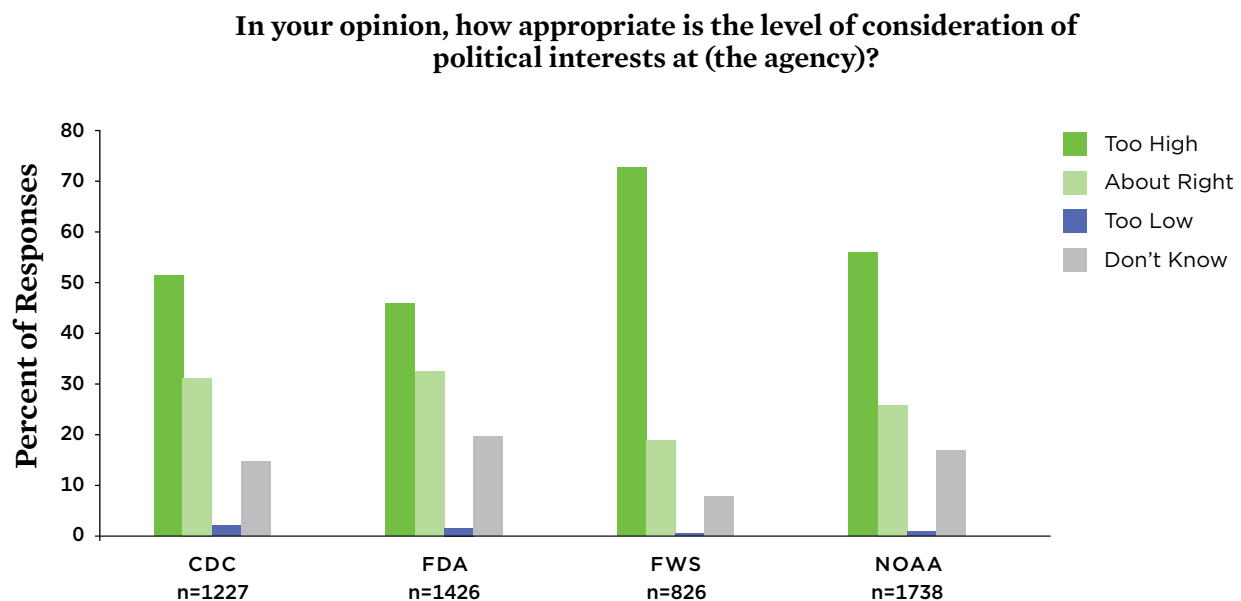
Ideally, each agency should have a scientific integrity officer who is responsible for implementing scientific integrity and related policies. In larger agencies, support staff are also essential. Investment in scientific integrity staff can save resources by making agencies more efficient, with less time spent mitigating internal conflicts or managing full-blown scandals. Current and former scientific integrity officials report spending significant time giving informal advice to

Ideally, each agency should have a scientific integrity officer and support staff.

scientists and managers. This consultation helps employees understand their rights and responsibilities, as well as how these align with overall agency responsibilities, policies, and practices. With clarity, scientists are less likely to do anything that gets them into trouble or embarrasses the agency, and managers are more likely to respect the rights of their staff.

To be effective, however, scientific integrity officers need adequate visibility, stature, and independence. The officer should report to the agency science advisor or the highest-ranking civil servant. When additional layers of bureaucracy are present, it can be more difficult for officers to carry out their responsibilities and easier for them to be compromised by political or other pressures.

FIGURE 4. Consideration of Political Interests at Agencies



Many federal scientists responding to a 2015 UCS survey felt that too much consideration was given to political interests at their agencies. This feeling was particularly true at the FWS, where 73 percent of respondents reported the level of consideration of political interests was “too high.” FWS respondents also noted that interference can come from the legacy of previous administrations affecting current work.

SOURCE: GOLDMAN ET AL. 2015B.

BOX 2.

The Bush and Obama Administrations Ignore the Science on Emergency Contraception

The FDA is required to approve drugs that are safe and effective based solely on the best scientific information available, not on economic or political interests. Yet the last two presidential administrations politicized science around access to the emergency contraceptive pill now known as Plan B One-Step—preventing and delaying access to a drug that scientific evidence had determined to be safer than Tylenol (*Tummino v. Hamburg* 2013).

In 2001, two years after the FDA approved Plan B as a prescription-only product, the Center for Reproductive Rights filed a citizens' petition on behalf of more than 70 medical and public health organizations to make the pill available without a prescription (CRR n.d.). In April 2003, Plan B's manufacturer submitted an application to change the pill's designation to "over the counter" (CRR n.d.). That December, FDA scientific advisory committee members voted 23 to 4 to approve the switch (Harris 2005).

FDA officials almost always follow scientists' recommendations, but this case was different. The Bush administration's FDA turned down the application. One FDA official testified that Steven Galson, the acting director for the Center for Drug Evaluation and Research, "told me that he felt he didn't have a choice, and . . . that he wasn't sure that he would be allowed to remain as center director if he didn't agree with the [Not-Approvable] Action" (*Tummino v. Torti* 2009). Another FDA official testified that Janet Woodcock, then-FDA acting deputy commissioner, told the official that former FDA commissioner Mark McClellan "had [not] made [the decision] on his own but . . . the White House was involved . . . [I]t was made very clear that there were a lot of constituents who would be very unhappy with . . . an over-the-counter Plan B" (*Tummino v. Torti* 2009).

Plan B's manufacturer amended its application after the FDA's rejection, this time requesting an over-the-counter label only for women 16 and older (CRR n.d.). This age limit was arbitrary—the drug is considered safe and effective for all females of childbearing age—but the manufacturer was likely responding to political reality. The FDA delayed its decision several times, however, ultimately leading to the resignation of Susan Wood, the former assistant commissioner for women's health and director of the FDA Office of Women's Health in the Bush administration. Wood wrote in an email to FDA colleagues, "I can no longer serve as staff when scientific and clinical evidence, fully evaluated and recommended for approval by the professional staff here, has been overruled" (Kaufman 2005). After significant pressure, in August 2006,



Mike Mozart/Creative Commons (Flickr)

The FDA is responsible for ensuring the safety and efficacy of drugs, based on the best scientific information. However, when it came to the availability of emergency contraceptive pill Plan B One-Step, the FDA ignored evidence that the pill is safe for all women of child-bearing age, and repeatedly blocked efforts to make it available over the counter to all women.

the FDA approved Plan B as an over-the-counter medication for women 18 and older.

In March 2009, the same month President Obama announced that we must listen "to what [scientists] tell us, even when it's inconvenient," US District Judge Edward Korman ordered the FDA to approve Plan B without a prescription for women 17 and older and to reconsider other over-the-counter access restrictions (CRR n.d.). The FDA subsequently lowered its age limit by a year, from 18 to 17. Women 17 years and older still had to present proof of age to a pharmacist for the product, which was kept behind the counter (Kim 2013). This process limited the hours during which women could buy the drug and made it generally more difficult for them to obtain it.

In 2011, the manufacturer of Plan B One-Step submitted a supplemental application to remove the age limit for over-the-counter access (CRR n.d.). That December, FDA Commissioner Margaret Hamburg approved removing the age limit, writing that FDA experts, "including obstetrician/gynecologists and pediatricians, reviewed the totality of the data and agreed that it met the regulatory standard for a nonprescription drug and that Plan B One-Step should be approved for all females of childbearing potential" (Hamburg 2011).

Immediately following this announcement, however, Kathleen Sebelius, then secretary of the Department of Health and Human Services (HHS), overruled Hamburg. In so doing,

BOX 2. (CONTINUED)

she became the first health secretary ever to overrule the FDA publicly (Harris 2011). In advance of the 2012 election, President Obama and Sebelius attempted to justify the decision by claiming concern for the health of 10- and 11-year-old girls who would be eligible for the pill, despite the scientific studies in favor of the pill's safety for girls that age. In his defense of Sebelius, President Obama commented, "As I understand it, the reason Kathleen made this decision was she could not be confident that a 10-year-old or an 11-year-old going into a drugstore should be able—alongside bubble gum or batteries—be able to buy a medication that potentially, if not used properly, could end up having an adverse effect. And I think most parents would probably feel the same way" (Calmes and Harris 2011). This comment came despite the fact that medications with far more potential negative effects were already available over the counter at a fraction of the price (*Tummino v. Hamburg* 2013).

In April 2013, Judge Korman ordered the FDA to make emergency contraception available to women of all ages. In his decision, Korman upbraided the administration for misrepresenting the science, writing,

This case is not about the potential misuse of Plan B by 11-year-olds. These emergency contraceptives would be among the safest drugs sold over the counter . . . [I]nstead, the invocation of the adverse effect of Plan B on 11-year-olds is an excuse to deprive the overwhelming majority of women of their right to obtain contraceptives without unjustified and burdensome restrictions. (*Tummino v. Hamburg* 2013)

In his decision, Korman additionally quoted an article coauthored by the editor in chief of the *New England Journal of Medicine* stating that "any objective review makes it clear that Plan B is more dangerous to politicians than adolescent girls" (*Tummino v. Hamburg* 2013).

For a short time, the Obama administration continued to ignore the science and the court, as the FDA failed to comply with the judge's order and the Department of Justice appealed the ruling (Dennis and Kliff 2013; Freifeld and Vaughan 2013). The Obama administration's decision to appeal was roundly criticized by major editorial boards (Halpern 2013). After partially losing a bid to stay the availability of emergency contraception while the case went to appeal, the Obama administration finally announced on June 10, 2013, that it would drop its appeal (Shear and Belluck 2013). Ten days later, the FDA was finally permitted to follow its science-based mandate by approving Plan B One-Step for women of childbearing potential without age restrictions (FDA 2013).

Promoting Independent Science

It is crucial for public policy decisions to be informed by expert science advice that is free from political or financial pressure toward a certain outcome. While the Obama administration made solid gains in raising awareness about the consequences of special interest influence in government and the importance of science-based policies, weaknesses remain in the regulatory process. In order to achieve better policy decisions and increase public trust in those decisions, safeguards for the independence of science advice within the government need to be upheld in the Trump administration.

The Bush administration was characterized by a well-oiled revolving door between government offices and regulated industries.

PROGRESS ON REDUCING UNDUE POLITICAL INFLUENCE

President Obama stated that his administration was intent on reducing the "undue influence of special interests" within the federal government (Obama 2010a). The Bush administration, by contrast, was characterized by a well-oiled revolving door between government offices and regulated industries: officials of both intermingled their interests (Grifo et al. 2008). In 2009, President Obama issued a directive (Executive Order 13490) requiring all previously registered lobbyists and government appointees hired after 2009 to sign an ethics pledge. The pledge promised that appointees would not work on regulations or contracts pertaining to a former employer for two years after their appointment and that previously registered lobbyists hired by agencies would not participate in matter or issue areas on which they had previously lobbied (Obama 2009d).

The Office of Government Ethics (OGE) was charged with working with agencies to ensure that the ethics pledges were made available to all appointees and that the administration was held accountable on the issue via annual reports begun in 2009 (OGE n.d.). The OGE is also responsible for ensuring that its guidelines, entitled Standards of Ethical Conduct for Employees of the Executive Branch, are kept up to date. Within this document, the OGE lays out the definition of improper financial ties. It also details how individual

government employees and special government employees can file a conflict of interest waiver if a conflict is deemed unlikely to affect the employee's services or if the need for the individual's services on an advisory committee outweighs the potential for a conflict of interest (OGE 2016). In an effort to improve federal advisory committee ethics, the OMB stated in 2011 that President Obama's revolving door memo also applied to federal advisory panels, to members considered special government employees as well as to industry representatives (OMB 2011).

While President Obama's efforts to reduce special interest influence within the administration were laudable, loopholes and a loss of focus ultimately weakened the effort. The decision to consider only registered lobbyists allowed many individuals to slip through the revolving door because company staff need not register as lobbyists unless official lobbying constitutes more than 20 percent of their time. Further, according to a 2015 analysis in *Politico.com*, the Obama administration has hired more than 70 previously registered lobbyists, and several agency appointees have left to work on the same issue within industry. For example, Daniel Fabricant was hired as the director of the Division of Dietary Supplement Programs at the FDA despite his position as chief executive officer (CEO) of the Natural Products Association, an industry trade organization. After just three years at the FDA, Fabricant returned to the Natural Products Association as its CEO and executive director (Gerstein 2015).

PRIORITIZING INDEPENDENT SCIENCE ADVICE

One of the first achievements of the Obama administration as it attempted to "restore science to its rightful place" was returning the rank of assistant to the president to the science advisor/OSTP director. John Holdren has since become the longest serving science advisor in half a century (White House 2016b).

The science advisor also contributes to science and technology policy through service on the President's Council of Advisors on Science and Technology (PCAST). President Obama reestablished PCAST for his administration in 2010 (via Executive Order 13539) (Obama 2010b). According to the order, presidents should regularly meet with PCAST and charge the council to conduct analyses and issue reports on important scientific issues. During the Obama administration, PCAST issued more than 30 reports on a range of issues, including antibiotic resistance, nanotechnology, cybersecurity, and climate change (PCAST 2016).

While PCAST provided advice on many science issues, it pointedly chose not to weigh in on the administration's scientific integrity efforts. For example, shortly after the HHS secretary overruled the FDA regulatory decision to approve

over-the-counter sale of emergency contraception in 2011 (Box 2, p. 15), UCS, scientists, and representatives from several women's health organizations testified before PCAST, requesting that PCAST press HHS to follow its science-based mission (Grifo 2011). PCAST took no action.

INTERFERENCE IN SCIENCE-BASED RULEMAKING REMAINS

While there have been attempts to restore the scientific underpinning of public health and environmental protections, these attempts have sometimes been undercut by a reliance on cost-benefit analysis during rulemaking. Such analysis has resulted in weakened public protections as well as long and often excessive delays in the rulemaking process, with real-life and sometimes tragic consequences.

The 1980 Paperwork Reduction Act (PRA) created the Office of Information and Regulatory Affairs (OIRA) within the OMB. OIRA serves as a reviewer of proposed agency regulations before they are finalized (GAO 2003). Various executive orders have clarified and expanded the role of OIRA over



President Obama elevated the role of science in his administration by appointing a science advisor that reported directly to the president.

time. President Reagan directed that cost-benefit analysis serve as the framework for the OMB's evaluation of agency rules, which nurtured a culture of interference in independent science-based rulemaking that has persisted through both Democratic and Republican administrations (Reagan 1981). President Clinton attempted to make the OIRA review process more transparent, although OIRA has since failed to follow those requirements (Heinzerling 2014; Clinton 1993). President Bush then gave OIRA expanded review authority over agency guidance documents (Bush 2007). Public interest organizations criticized this move that expanded the OMB's role in the review of regulations' scientific basis—even though OMB staff usually lacked the appropriate scientific expertise—and made more agency products vulnerable to political interference.

The expansion of OMB authority has resulted in inappropriate meddling that often flies in the face of the public good.

Shortly after taking office, President Obama authorized a move back toward science-based rulemaking by revoking the Bush directive, but he later authorized OIRA review of significant regulatory actions, defined as those having an annual effect on the economy of at least \$100 million (Obama 2011a; Goodwin 2009; Obama 2009e). This order also called for retrospective review, which meant the agencies had to look back at already enacted rules to see whether they could be revised or eliminated as a streamlining measure (Obama 2011a). OIRA's increased authority to weigh in on agency rule making allowed undue regulatory delay, and it is often not clear that the OMB has the expertise needed to review scientific findings underlying agency policy decisions. One CDC scientist commented in a UCS survey, "The requirement for OMB [review] for most projects delays them by a year or more, and is unhelpful and duplicative, and a waste of previous resources. OMB review has even now been extended to emergency situations, and to well-established routine communicable disease surveillance" (Goldman et al. 2015b).

And as rules remain in OIRA review, they often change significantly. A 2015 study that looked at the regulations subjected to OIRA review between 2005 and 2011 found that rules often changed significantly after OIRA review. Specifically, when industry lobbied OIRA about a rule, OIRA

was more likely to suggest that an agency make modifications (Haeder and Yackee 2015). A 2011 Center for Progressive Reform analysis found similar results. From 2001 to 2011, 65 percent of the 5,759 individuals who met with OIRA were industry representatives. During the Obama administration, this figure was 62 percent, meaning industry representatives outnumbered public interest groups four to one (Steinzor, Patoka, and Goodwin 2011). Over the years, the expansion of OMB authority to review and alter science-based rules has resulted in inappropriate meddling that often flies in the face of the public good.

The public interest organization Public Citizen analyzed the federal government's Unified Agenda of Regulatory and Deregulatory Actions to determine how long it took for rules to be completed over the past 20 years. Rulemaking has taken longer during the Obama administration, and there have been unprecedented delays. It took an average of 3.4 years to make the economically significant rules completed in 2015. That average is 42 percent longer than the average time it took to make similar rules completed between 1995 and 2015 (Tanglis et al. 2016). However, the highly polarized political environment was a significant hurdle; the Obama administration was dealing with a Congress that was particularly hostile to regulation during this time.

Recommendations for promoting independent science include congressional legislation created to close loopholes in the Federal Advisory Committee Act (FACA) and the issuance of a presidential executive order that reorients OIRA.

Increasing Government Transparency

It is far more difficult for the public to ensure that science informs government policies when the federal decisionmaking process is hidden from or not easily accessible to the press and public. Without public scrutiny of the decisionmaking process, political interference in science can be more easily swept under the rug, leaving the public with policies formed less by fact than by faction.

From its inception, the Obama administration made frequent pledges to run "the most transparent White House in history" (Earnest 2016). The administration did take steps to improve agency communication policies, release more government data, and give the public information about who is meeting with government officials, although some argue that government secrecy and message control actually worsened in the Obama administration.

CHANGE IN THE ATMOSPHERE FROM BUSH TO OBAMA

The George W. Bush administration severely compromised public access to government science and scientific experts and made

Federal Advisory Committees and Integrity in Government Scientific Advice

At least 1,000 independent scientific advisory panels provide federal agencies with objective technical advice. It is crucial that the advisors on these committees are balanced in terms of membership and stakeholder interests and that committee members' conflicts of interest are articulated and minimized (with the exception of committees whose membership is explicitly intended to reflect the views of relevant industries).

All federal advisory panels are governed by the Federal Advisory Committee Act (FACA) (GSA n.d.). Although following FACA requirements is mandatory for all agencies, the implementation of the act's requirements is left to the agencies. For example, FACA requires measures to ensure transparency in the formation and management of committees, but the degree of transparency practiced by individual committees varies from agency to agency (GAO 2008).

While FACA requires public participation opportunities and transparency measures, the Government Accountability Office (GAO) called for greater transparency in the member selection process and improved vetting for conflicts of interest in 2004 and again in 2008 (GAO 2008; GAO 2004a). Many of these concerns have still not been addressed. For example, while many agencies post advisory committee charters and membership on the Web, there is little information about the process through which agencies decide committee appointments after the public nomination process. Some agencies collect committee nominations on the publicly available Regulations.gov docket (OSHA 2016a; EPA 2015b). Others have private nomination forms on their own websites (EPA n.d.a; FDA n.d.a). And some vary according to advisory committee. Even the transparency of committee meeting records varies across agencies. For example, FDA advisory committees post full videos of committee meetings (FDA 2016; FDA 2015); other advisory committees post only meeting summaries or meeting minutes (NRC 2016; USGS 2016; OSHA n.d.a).

It is crucial that the committee member appointment process be transparent because it has been abused in the past. During the George W. Bush administration, officials subjected scientific advisory committee nominees to political litmus tests to gauge whether they would provide advice that was preferred politically, even if it was not scientifically justified (Grifo et al. 2008). Such overt political tests have no place in the federal advisory committee selection process. When it comes to scientific advice, technical credentials, not someone's preferred political candidate or policy preference, must be the prime consideration.

Worse yet, the Bush administration made some overtly politicized appointments that undermined the intended purpose of particular scientific advisory committees. In an especially egregious example, in the summer of 2002, as the Advisory Committee on Childhood Lead Poisoning Prevention at the CDC was preparing to consider a revision to the federal standard for lead poisoning, Bush administration officials intervened to reject the nominees to the committee selected by CDC staff scientists. They replaced them with five new members and forced the resignation of at least one existing committee member. All five new appointees were on record as opposing a stricter federal lead poisoning standard. A congressional review soon uncovered that at least two of the new appointees had financial ties to the lead-paint industry and thus a direct conflict of interest. It further came to light that these appointees had first been contacted about serving on the committee not by the administration but by representatives of the lead-paint industry (Shulman 2006). The blatant intrusion of industry marked a clear conflict of interest, especially for a scientific panel tasked with advising the federal government about how to protect children's health most effectively.

During the Obama administration, the OGE was tasked with responsibility for ensuring that committee members, as special government employees, are in compliance with statutory conflict of interest provisions (GAO 2004a). While the OGE requires that all such special government employees participate in ethics training and submit a conflict of interest form, only certain agencies, including the FDA and the EPA, have copies of these forms available on the Web (EPA n.d.b; FDA n.d.b). And the US Geological Survey (USGS) is the only agency to have made slides from its ethics training available online (Baumbartner 2013). Most agencies do not make conflict of interest waivers publicly available, but the FDA has shown that it can be done. Notably, the FDA is required, by statute, to disclose on its website the type, nature, and magnitude of the financial interests of each advisory committee member who has received a waiver and the reasons for granting the waiver (FDA 2014).

A recent attempt to pass legislation aimed at addressing remaining loopholes within FACA was unsuccessful as of this writing (US Congress 2016). The Trump administration should prioritize improving federal advisory committee integrity in order to preserve the essential function of these committees: to provide robust and independent scientific input to the federal government.

BOX 4.

Delays on Silica Rule Permitted Thousands of Worker Fatalities

The US regulatory process is characterized by a bureaucratic order of operations that offers multiple opportunities for politics to waylay important science-based public health protections. A classic case of this type of harmful political interference in science is the attempt to protect workers from exposure to toxic silica dust—a process that took 42 years.

Silica is a compound widely used, particularly in the construction, food, and pharmaceutical industries (Martin 2007). Cutting, grinding, drilling, or mining silica-containing materials creates a fine dust that, when inhaled, may result in silicosis, an aggressive and irreversible lung disease (OSHA n.d.b). Silica dust exposure is also linked to kidney disease, lung cancer, and other respiratory diseases (NIOSH 2002; OSHA n.d.b). Evidence for these adverse health effects has been known and mounting since the 1930s, when hundreds of workers died of silicosis in the Hawk's Nest tunnel disaster in West Virginia. A congressional investigation in 1936 found that the deaths could have been avoided if the operating company had used a “wet drilling” technique that would have minimized dust, and workers at the site allege that the company used this technique only when state inspectors showed up (Seichen 1986).

In 1971, decades after the Hawk's Nest disaster, the Department of Labor's Occupational Safety and Health Administration (OSHA)—which is tasked with ensuring workplace safety—set the first limits on silica dust an employee may be exposed to during a work shift (OSHA 2013a). These limits did not adequately protect workers, however, and three years later the National Institute for Occupational Safety and Health (NIOSH)—the worker health and safety research agency in the CDC—issued a report recommending the exposure limit be cut in half (NIOSH 1974).

For the next twenty years, however, the government deprioritized bringing the standard in line with the best available science. The Carter, Reagan, and George H.W. Bush administrations all missed opportunities to act on silica, with President George H.W. Bush eventually abandoning President Reagan's midnight regulation on silica exposure level methodology (Levine 2016). Finally, in the 1990s, President Clinton put silica on the regulatory agenda for his second term. Despite holding meetings with industry representatives addressing a potential silica rule, President Clinton instead prioritized efforts for an ergonomics rule and ran out of time for silica (Levine 2016). During the George W. Bush administration, the head of OSHA sent a draft silica standard forward



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Breathing in the fine dust created when cutting, grinding, drilling, or mining materials containing silica can cause silicosis, making construction workers especially vulnerable to this respiratory disease. And yet, it's taken over 40 years to enact regulations that adequately protect workers, thanks to industry interference with science-based policy.

for a legally mandated small business panel review, but progress stalled over measurement of the rule's economic feasibility (Levine 2016).

It took the agency until 2011—37 years after NIOSH published its recommended standard—to issue a draft proposed rule in line with the 1974 recommendation. In 2013, OSHA's rule went to the OMB for what should have been a 120-day review period but ended up lasting nearly three years (CPWR n.d.).

Industry pushed back strongly against the OSHA proposal. The American Chemistry Council (ACC) opposed the proposed rule because it could increase the chemical industry's costs, and it attempted to spread doubt about the scientific justification for new standards (Iafolla 2014). Several industry representatives were also upset by an OSHA request that individuals commenting on the proposal reveal any financial conflicts of interest.

BOX 4. (CONTINUED)

Industry had allies in Congress. After the proposed rule was announced, 16 senators signed a letter to OSHA requesting an extension of the hearing process and review by a Small Business Advocacy Review Panel (Alexander et al. 2013). In this letter, the senators also complained about the financial disclosure measure. Just three months prior to the letter's submission, the ACC and several other groups had contributed a total of \$151,266 to these senators (Costa 2014).

Senator John Hoeven of North Dakota took a special interest in the silica rule because of the state's hydraulic fracturing boom (this oil extraction technique creates silica dust). He attempted to insert a provision in must-pass funding legislation preventing OSHA from moving forward with its proposed standard (Halpern 2015).

OSHA finally released an updated silica dust rule in 2016 (OSHA 2016b). According to OSHA, the new rule will prevent the loss of 600 lives per year and provide a net economic benefit of \$7.7 billion annually (OSHA 2016b; OSHA 2016c).

Although the science behind limiting exposure to silica dust had been clear for more than 40 years, regulatory hurdles, congressional attacks, and industry interference prevented OSHA from putting its rule in place in a timely manner. OSHA's inability to lower the standard despite clear scientific evidence of harm resulted in thousands of worker deaths that could have been avoided.

Chronic underfunding is an additional problem in this and other cases. A common mechanism to prevent science-based regulation is to starve agencies of the ability to conduct analysis and implement rules (Grifo et al. 2008). While the EPA has a budget of around \$8.1 billion, OSHA's budget barely passes \$550 million, despite its statutory mandate to assure safe and healthful working conditions for the country's workforce. The lack of funding at least partly accounts for the fact that the average time required to issue an OSHA rule is nearly eight years (Levine 2016; GAO 2012).

it much more challenging to understand the scientific basis of policy decisions. The administration repeatedly prevented federal scientists from publicly sharing their expertise, rewrote scientific reports to support predetermined policy decisions, and delayed the release of inconvenient scientific findings (Grifo et al. 2008). In early 2002, the Bush administration withdrew more than 6,000 technical documents from public view and considered a proposal to eliminate the experimental detail sections of articles to prevent other laboratories from replicating the results,

an idea one scientist said “takes apart the whole foundation of science” (Broad 2002).

Changes to the interpretation of the Freedom of Information Act (FOIA) affirmed the Bush administration's position that government information should be kept from public view by default. In October 2001, Attorney General John Ashcroft reversed President Clinton's 1993 guidance applying a “presumption of disclosure” under FOIA, declaring that “the Department of Justice will defend . . . decisions” to withhold documents unless it was not legally possible (Ashcroft 2001; Reno 1993).

President Bush's Chief of Staff Andrew Card followed up five months later with another memorandum, directing agencies to take “necessary and appropriate actions to safeguard sensitive but unclassified information” (Card 2002). As a result of these various actions, the volume of federal agency documents declassified from 2002 to 2006 was less than one-fifth of the volume declassified from 1995 to 2001 (Kaplan 2009).

President Obama publicly encouraged an atmosphere of openness and disclosure. On his first full day in office, Obama issued a memorandum instructing a “clear presumption” under FOIA that “in the face of doubt, openness prevails” (Obama 2009f). Attorney General Eric Holder followed up two months later with a memorandum expanding upon President Obama's ideas for open government and formally rescinding Ashcroft's October 2001 memo (Holder 2009). Legislative improvements to close loopholes in FOIA proved elusive, however. It was not until 2016 that President Obama codified these changes by signing the FOIA Improvement Act of 2016.

The George W. Bush administration severely compromised public access to government science and scientific experts.

Upon taking office, President Obama also immediately directed executive departments and agencies to use innovative technology and public feedback to improve transparency, participation, and collaboration (Obama 2009g). The administration followed up in December 2009 with its Open Government Directive, which detailed a list of steps toward transparency that departments and agencies would be required to take and set deadlines for such action (Orszag 2009). Over the past five years, the Obama administration has additionally published

Politics Influence Ambient Ozone Standards

Ground-level ozone pollution—a key component of smog—is linked to a range of adverse health effects, including premature death; worsened bronchitis, asthma, and emphysema; and throat irritation (EPA n.d.c). Both the George W. Bush and Obama administrations hampered EPA efforts to set science-based ozone pollution limits as required by the Clean Air Act. The Bush administration deliberately undermined the science-based requirement in order to allow its EPA administrator to set an ozone level not supported by science; the Obama administration halted EPA efforts to reset the standard earlier than legally required.

Ground-level ozone is created by the interaction between sunlight and emissions produced primarily by automobiles, power plants, and industrial processes (EPA n.d.c). The law requires the EPA to update the National Ambient Air Quality Standards (NAAQS) for six air pollutants, including ozone, every five years. NAAQS are explicitly science-based standards, and a 2001 Supreme Court case affirmed that the Clean Air Act prohibited the EPA from considering costs when setting the pollution limits (*Whitman v. American Trucking Associations, Inc.* 2001). Costs can be considered during implementation, but not when determining exposure levels that are safe for humans.

In 2000, the EPA began collecting and analyzing data for its revisit of the 1997 ozone standards. Seven years later, the relevant EPA office released a 609-page scientific assessment, which contained new ozone limit recommendations as well as a review of its work by the Clean Air Scientific Advisory Committee (CASAC), a congressionally mandated external panel of experts.

CASAC and EPA scientists found that the 1997 limit of 80 parts per billion (ppb) was no longer scientifically defensible and recommended a limit of 60 to 70 ppb.

When new pollution standards are proposed, industry lobbyists often attack the science and claim that compliance is either impossible or ruinous (claims usually proved to be false). The situation with ozone was no different, and industry found a sympathetic ear in the Bush administration. The OMB and OIRA intervened in the process, manipulating the science to support a softened position by changing the language in both the EPA risk assessment and the proposed rule in order to stress uncertainties in the science and justify maintaining the 80 ppb standard (Grifo 2008). President Bush's EPA administrator, Steven Johnson, eventually overruled CASAC and set the ozone standard at 75 ppb, a level unsupported by the best



Ground-level ozone pollution, resulting from vehicle and industrial emissions, can lead to serious health problems, including worsening asthma and premature death. Both the George W. Bush and Obama administrations hampered EPA efforts to improve ozone pollution standards, with President Bush ignoring the science and President Obama initially failing to correct the situation.

available science (Grifo 2008). While Johnson defended his decision by pointing out the “uncertainties” of the health effects of ozone, he did not allow for the uncertainties in the science that might support a stronger standard, even though the law directs the administrator to set a stronger standard when faced with scientific uncertainty (Grifo 2008). CASAC Chair Rogene Henderson later testified, “In this case, policymakers wandered into scientific issues and they did not do it well. Willful ignorance triumphed over sound science” (Henderson 2008).

During President Obama's first year in office, EPA Administrator Lisa Jackson announced that the EPA would revisit the 2008 standards, acknowledging that the ozone standard was flawed (Walke 2011). In early 2010, the EPA asked for comment on a proposal to set the standard within the 60 to 70 ppb range previously recommended by CASAC (EPA 2010). After delaying the publication of a final rule in August and again in October, Jackson delayed the rule for a third time in December 2010, pushing the date back to July 2011. Finally, on July 11, 2011, the EPA submitted a draft final rule to the White House. But in September, OIRA Administrator Cass Sunstein returned the rule to Jackson, writing that President Obama “has made it

BOX 5. (CONTINUED)

clear that he does not support finalizing the rule at this time” and would wait until 2013, when the rule would legally be due for an update (Sunstein 2011).

The Administration was facing pressure from industry groups. The president of the Business Roundtable—one of the groups lobbying Jackson and President Obama not to change the standards—suggested publicly that there could be direct political consequences for the president should he allow the new rule to move forward at that time (Bravender 2011). President Obama announced that, despite his support for the EPA’s actions, he would reject the new standards for the time being: “I have continued to underscore the importance of reducing regulatory burdens and regulatory uncertainty, particularly as our economy recovers” (Obama 2011b).

As a result, the Bush administration’s inadequate standard stayed in place for another four years. In 2015, the EPA finalized a new rule setting the standard at 70 ppb. By this time, however, the best available science had been updated; while CASAC still recommended 60 to 70 ppb, they noted the potential for harm at the upper end of that range. In a letter to the new EPA administrator, Gina McCarthy, CASAC wrote, “Although a level of 70 ppb is more protective of public health than the current standard, it may not meet the statutory requirement to protect public health with an adequate margin of safety . . . [T]hus, our policy advice is to set the level of the standard lower than 70 ppb” (Frey 2014).

The lengthy effort to enact an ozone standard sufficiently protective of public health is another example of how politics can interfere in the rulemaking process when industry perceives a high cost of compliance, even when statutes require those rules to be based on science.

three Open Government National Action Plans as part of an international initiative, the Open Government Partnership (White House 2016c).

President Obama’s public embrace of transparency remains important, even though there has been a gap between transparency policy on paper and policy in practice. As Alex Howard of the Sunlight Foundation wrote, “It would be an error to dismiss the ideas themselves or the investments in time, money, and technology as meaningless or divorced from an important aspect of American democracy that this presidency has deepened” (Howard 2016a).

IMPLEMENTING IDEALS

The Obama administration’s record on government transparency failed to match its ambitious rhetoric. With respect to the Open Government Directive, one assessment in September 2016 found that 8 of 15 cabinet agencies had failed to comply (Howard 2016b). The directive required that “each agency’s plan shall be updated every two years,” but multiple departments—including the DOI and the Treasury Department—had not yet posted new plans (Howard 2016b; Orszag 2009). While the OMB skirted this recent criticism by releasing a new plan for 2016, it had previously created concern among open government organizations by failing to do so in 2012 and 2014, a “particularly troubling” deficiency given OMB’s role in issuing the directive and its related responsibility for overseeing its implementation (OTG et al. 2015).

President Obama’s record on government transparency failed to match his ambitious rhetoric.

In addition to codifying the “presumption” of openness, the FOIA Improvement Act of 2016 also bolsters the authority of the Office of Government Information Services (OGIS), whose role is FOIA ombudsman, and pushes for the creation of a single website through which to submit FOIA requests, thereby easing the process of requesting documents (Kothari 2016). But in practice, agencies may continue to overuse the exemptions that allow them to keep documents secret, as the new FOIA law leaves almost unchanged the nine statutory exemptions through which agencies can withhold information (Bailen and Romoser 2016). Implementation of the new law should be watched to ensure that its important provisions are fully realized.

Additionally, the Obama administration made history as the first administration to publish its visitor logs online, but the execution of this initiative has been met with challenges. That the administration voluntarily releases the logs at all is a major step forward for government transparency, as a 2013 federal appeals court ruled that the administration could legally keep these records confidential (Gerstein 2013). To date, the administration has released more than 5.99 million records to the public, and watchdog organizations have been able to use these records to discover official lobbyist access to the White House (Kampis 2016; White House 2016d). But there are also critical gaps in the published files—including missing names and missing event



USGS/John Clemens

Many journalists report that unfettered access to agency scientists is a thing of the past, and feel that the obstacles they encounter prohibit the public from getting the information it needs.

descriptions—and the administration has released few files from its first eight months in office (Schulte 2011). The administration also has broad discretion to label meetings “particularly sensitive” and then keep those entries private (Baker 2009). In addition, anecdotal evidence shows that some meetings happen off-site to avoid disclosure (Frates 2011). Just as critically, agency heads have also failed to follow in the White House’s footsteps to release visitor information, greatly limiting transparency and public understanding of how agencies function. Many agencies maintain visitor information in electronic format, making it easy for those agencies to take the next step to post the logs online, but nearly all agencies have failed to do so (OTG 2012).

The Obama administration has also opened up the release of government data. In 2009, the administration launched

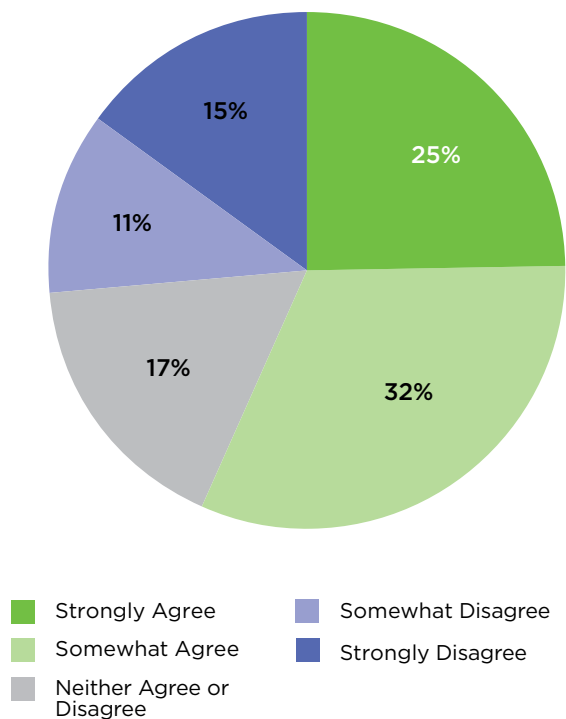
Data.gov, a searchable database for government data sets, whose archive has grown to more than 180,000 data sets. President Obama built upon the Data.gov initiative in May 2013 with an executive order declaring that “the default state of new and modernized government information resources shall be open and machine readable” (Obama 2013). The Data.gov website has improved over the years both in the quality of the data provided and through its addition of new customer service platforms (Howard 2016a; Ashlock 2015). But criticism of the site—particularly among journalists—remains that the most sensitive and policy-relevant datasets have been left out, and some in the technology sector have suggested that the site could be improved by prioritizing the acquisition of high-value data sets (Benton 2015; Lagace 2010).

While the Obama administration improved transparency by releasing visitor logs and launching Data.gov, neither initiative is comprehensive.

JOURNALIST ACCESS

An equally important test of government transparency—and a means to enhance scientific integrity in federal policymaking—is to promote and maintain unfettered media access to governmental scientific information and experts who can interpret that information. Some journalists have criticized the Obama administration’s transparency record on press access and FOIA requests, calling this administration the “most secretive” of recent years (Sullivan 2016; Wemple 2016). But the evidence is actually mixed. A 2011 survey of journalists by the Columbia Journalism Review found that President Obama performed slightly better than his immediate predecessor, President Bush, with regard to transparency and accessibility (Brainard 2011). A UCS survey of journalists found that some agencies improved with regard to ease of access between scientists and the media (Bailin et al. 2015). One journalist commented,

FIGURE 5. Barriers to Journalist Access at Federal Agencies



More than half of journalists responding to a 2015 UCS survey agreed or strongly agreed with the statement “The public is not getting all the information it needs because of barriers agencies are imposing on journalists’ reporting practices.”

SOURCE: BAILIN ET AL. 2015.

“Nowadays, I can directly contact scientists at NASA and ask them questions. About a decade ago, this was not the case” (Bailin et al. 2015). And one NOAA scientist commented that “We are encouraged to contact our public affairs officer but are free to respond [to the media] without doing so” (Goldman et al. 2015a).

Yet remaining barriers hamper journalistic access to government scientists and scientific information, including issues surrounding direct contact. In July 2014, the Society of Professional Journalists sent an open letter signed by 38 groups of journalists and citizens advocating for good government to President Obama expressing concern that “public agencies have increasingly prohibited staff from communication with journalists unless they go through public affairs offices or through political appointees” (SPJ 2014).

Federal agencies and departments still have a way to go in policy as well as practice. In 2015, UCS found that just 8 of 17 scored agencies received full points for not requiring preapproval for media contacts (Goldman et al. 2015a). Meanwhile, the UCS journalist survey found that more than half of the 163 journalists who responded to the statement “I am required to obtain approval from the public information office before interviewing employees” somewhat or strongly agreed (Bailin et al. 2015). More than half of respondents somewhat or strongly agreed with the statement “The public is not getting all the information it needs because of barriers agencies are imposing on journalists’ reporting practices,” with 25 percent agreeing strongly (Bailin et al. 2015) (Figure 5).

Changes in the economic model of journalism have drastically reduced the number of science-related reporters at major outlets and increased the number of general assignment reporters and freelancers, greatly increasing the need for quick access to expertise. Yet some agency public affairs officers get in the way of rapid information exchange between agency scientists and reporters. And some freelance reporters report discrimination by public information officers who give preference to established, mainstream media reporters, thus reducing public access to scientific content (Bailin et al. 2015).

There is also the critical issue of the close-hold embargo, a problematic practice in which agencies allow early access to select members of the media on two conditions: that they hold their information until a certain time and date (regular practice for embargoed scientific stories) and that they not seek outside comment (not regular practice). Although the FDA’s updated media policy expressly forbids close-hold embargoes, the agency appears to have engaged in this problematic practice multiple times since the policy update (Seife 2016).

It is important to recognize that the transparent dissemination of government information is in everyone’s best interest. The next administration should work with Congress and

journalists to ensure that agencies and executive departments improve journalist access to scientists as well as eliminate the gap between what is written and what is done.

Enhancing Public Participation

Public participation is integral to the democratic process by which government makes rules to protect public health and the environment. Industry interests currently dominate the rulemaking process; participation by the general public lags far behind. An inclusive, more balanced rulemaking process is needed to help ensure that outcomes adequately protect all members of the public while they also allow responsible industrial development.

The Obama administration has taken several steps to enhance public participation in federal decisionmaking through expanded use of technology, new initiatives and priorities, and several procedural changes at federal agencies. It is critical that citizens, scientists, and the government continue to work together to increase participation and ensure that our policies advance the public interest and are informed by the best available science.

EARLY ENCOURAGEMENT

Studies indicate that industry disproportionately influences the regulatory process at federal agencies. For example, one prominent study found that during the notice and comment period of the rulemaking process—when the public, industry, and other interested parties can comment on an agency’s proposed rule—there is a correlation between the proportion of commenters representing business and the influence of business interests on the proposed rule (Yackee and Yackee 2006). Additionally, in the part of the rulemaking process outside agency control, the Center for Progressive Reform found that between 2001 and 2011, during the periods in which OIRA held hearings on rules, 65 percent of the participants represented industry interests while just 12 percent represented public interest groups (Steinzor, Patoka, and Goodwin 2011). Because industry has far more resources and opportunities to influence the decision-making process, the government has an additional responsibility to ensure that all voices are heard.

President Obama noted that “public engagement enhances the government’s effectiveness and improves the quality of its decisions” in his transparency memorandum issued on his first full day in office (Obama 2009g). President Obama’s Executive Order 13563, issued in January 2011, articulated that “regulations shall be adopted through a process that involves public participation” (Obama 2011a). All three of the Obama administration’s Open Government National Action Plans—issued in September

The Obama administration took concrete steps toward improving public participation by updating Regulations.gov.

2011, December 2013, and October 2015—including sections on furthering public participation (White House 2016c).

The Obama administration took concrete steps toward improving public participation by updating Regulations.gov, a Web portal that allows users to comment on open rules and serves as a collection point for all documents relating to proposed, open, and final rules. Launched in 2003, Regulations.gov was still lacking in user-friendliness by 2008 (Coglianese, Kilmartin, and Mendelson 2008). In 2012, the Obama administration overhauled the site, adding new search functions, better comment submission pages, and enhanced document collection summaries, among other changes (Regulations.gov 2016; Sunstein 2012). With access to these better features, the public has a cleaner, more understandable way to participate in the notice and comment period of rulemaking and can thereby contribute to a better balance between public comments and industry comments.



The Obama administration improved public participation in rulemaking by overhauling Regulations.gov, making it easier to search for rules and submit comments.

BOX 6.

The EPA's Draft Fracking Water Quality Report Failed to Communicate Science Accurately

Federal agencies must accurately communicate scientific information to the public in order for communities and policymakers to make well-informed decisions. Though the misstep was corrected in the final report, a recent case at the EPA generated concern about the agency's communication related to hydraulic fracturing risks in a report draft.

Oil and natural gas extraction by way of hydraulic fracturing, or "fracking," has expanded rapidly in the United States, hand in hand with community concerns about its safety—including concerns about water and air contamination, seismic activity associated with wastewater disposal, and socioeconomic impacts (Rosenberg et al. 2014). After a congressional mandate and years of delay, the EPA launched a study of hydraulic fracturing's drinking water impacts (Banerjee 2015; Eilperin 2010; US Congress 2009).

In June 2015, the EPA released a draft report including findings that the extraction method has adversely affected drinking water sources in several cases and that several pathways present risk for future contamination of drinking water (EPA 2015c). Yet the agency's press release and the draft report's executive summary suggested there were not "widespread, systemic impacts" due to fracking, even though the agency had not been asked to assess whether impacts were widespread (EPA 2015d; EPA 2015e). The oil and gas industry has used the executive summary to suggest that fracking activities are inherently safe, despite the fact that the draft report itself and the initial draft of external scientific opinion found evidence of drinking water contamination (EPA SAB 2016a; Drajem and Snyder 2015; EPA 2015c).

The inconsistency of the press release and executive summary with the draft report's conclusions raised questions about oil and gas industry pressure on the EPA. This concern was exacerbated by previous EPA decisions not to conduct fracking-related water quality investigations in Dimock, Pennsylvania; Pavillion, Wyoming; and Parker County, Texas, following industry pushback (Goldman et al. 2013).

Shortly after the draft report was released, the EPA's Scientific Advisory Board (SAB) was charged with deliberating the agency's findings and reviewing public comments (EPA 2015). (Congress established the SAB in 1978 to ensure that the EPA's reports stand up to scientific scrutiny [Dlouhy 2016].) The SAB found discrepancies between the scope of the problem documented in the full report and the minimization of the drinking water issues in the executive summary. In a draft report to EPA Administrator Gina McCarthy, the SAB



Shantanu/Creative Commons (Flickr)

Political interference within agencies can result in inconsistent reporting of scientific information. In 2015, the EPA released a draft report on the impact of fracking on drinking water in the United States, and while their research revealed several direct impacts (including in the town of Dimock, Pennsylvania), the agency's press release and executive summary did not match the findings. After an EPA Scientific Advisory Board advised the agency to correct the discrepancies, the final version of the report was more accurate and based on science.

raised concerns and asked for more clarity about the major findings, because the "major findings as presented in the Executive Summary are ambiguous and appear inconsistent with the observations, data, and levels of uncertainty presented and discussed in the body" of the report (EPA SAB 2016a). In a 2015 meeting, one SAB member, Thomas Young of the University of California, suggested revising the top-line conclusion, critiquing the report for attempting to "draw a global and permanent conclusion about the safety or impacts of hydraulic fracturing at the national level" given the "uncertainties and data limitations described in the report." Many other panelists supported his recommendation (Dlouhy 2016; EPA SAB 2015). In August 2016, the SAB issued its final report, which stated that the EPA did not provide quantitative evidence to support its sweeping claim (EPA SAB 2016b).

During the SAB's review of the EPA's draft report, more evidence of the impact of fracking on water quality had come to light. A federal jury found Cabot Oil & Gas Corporation responsible for contaminating the well water of two Dimock, Pennsylvania, families in May 2016. This decision came at about the same time that a federal investigation of water from

BOX 6. (CONTINUED)

18 residential wells in Dimock found that Cabot had been responsible for significant methane contamination in all but one (ATSDR 2016; Rubinkam 2016).

Documents obtained by Marketplace and APM revealed that the sentence absolving fracking from “widespread, systemic impacts” was added to the executive summary only after EPA officials met with key White House advisors, which helped to explain the disconnect between the executive summary and the findings in the body of the report. The EPA had also scrapped the original press release headline citing “potential vulnerabilities” in drinking water supplies, replacing it with a weaker final version citing “potential impacts” (Tong and Scheck 2016; EPA 2015d). Ultimately, the EPA listened to its own scientists and those on the SAB panel and removed mention of the lack of fracking-related “widespread, systemic impacts” on drinking water, acknowledging that the sentence was not “quantitatively supported” and “did not clearly communicate the findings of the report” (EPA 2016a; EPA 2016b).

Additionally, the Obama administration created the online US Public Participation Playbook, which launched in 2015. The Playbook—which will be constantly updated as the creators receive suggestions from the public—provides checklists, case studies, metrics, and resources to help government and civic partners improve public participation (US Public Participation Playbook 2016).

Following the difficult rollout of Healthcare.gov, the Obama administration created two tech initiatives, the United States Digital Service (USDS) and 18F. While 18F (within the GSA) focuses on providing information technology (IT) aid to agencies, USDS (under the OMB) works to improve public-facing federal IT services (Powner 2016). Both digital service teams have completed projects that improve public access to government

information, and they recently collaborated on a project to simplify and standardize government websites (Powner 2016; Ruskin et al. 2015). Both teams have the potential to carry out further projects that improve public participation in the rulemaking process.

CHALLENGES TO ENHANCING PUBLIC PARTICIPATION

Additional work can further improve public participation and correct the imbalance in the regulatory process. Even with its 2012 overhaul and continual updates, Regulations.gov could benefit from an improved home page, better search functionality, and a cleaner overall design such as that featured by its peer, the Federal Register. Additionally, the site should increase access to the full set of submitted comments to allow the public both to comprehend and to compare arguments made by different stakeholders and to see how these positions have or have not changed over time (Halpern 2014).

To facilitate participation in rulemaking, agencies could link to open comment periods in Regulations.gov from their home page. The FWS embeds the Federal Register’s list of recent FWS rule updates to its home page along with links to Regulations.gov. But most agencies fail to do so. Some agencies provide no information at all about how to comment online. Without agencies providing a clear Web path to rules that are open for comment, users must decode for themselves at Regulations.gov which rules are open for comment and when these comment periods close.

There also remains room for federal agencies to use social media to disseminate information and evidence and to generate public participation (ACUS 2013). With “participatory politics” on the rise—and with notable levels of political participation by historically marginalized groups taking place through social media—future administrations have the opportunity to engage a new generation (Luttig and Cohen 2016). Advanced analytics can help make less formal comments useful to the rulemaking process. By directing political social media participation into avenues where online chatter can be translated into useful input, the government can allow a more diverse set of stakeholders to participate on a more level playing field.

Recommendations for Advancing Scientific Integrity in the Trump Administration

Advancing scientific integrity in federal policymaking is good governance. The goal of basing our nation’s policy decisions on the best, most up-to-date, and reliable scientific information, derived independently and unfettered by political interference, deserves overwhelming bipartisan support. As lessons from the past two administrations illustrate, suppressing and distorting scientific findings to manipulate the policy process leads not only to untoward and even dangerous outcomes, but also to an erosion of our democratic traditions and public trust in government. Given the myriad problems we face, we cannot afford to backslide on this complex set of issues. The American public deserves the best independent, impartial scientific information the government can provide, even—or perhaps especially—when that information indicates the need for politically unpopular or inconvenient action. The American people benefit when science is used to inform policymaking. Our topline recommendations follow; a full list of more detailed recommendations for Congress, the president, and agency heads is found in Appendix A, online at www.ucsusa.org/PreservingScientificIntegrity.

1. Create a Culture of Scientific Integrity

It is hard to overstate the importance of promoting and maintaining a culture of scientific integrity within the federal government. While scientific information is not the only input into decisionmaking at federal agencies, the government should always strive to make decisions that are fully informed by the best available science. To fulfill their responsibility to the US public, federal scientists and researchers need reliable protections to do their jobs unfettered by political interference. A strong culture of scientific integrity within federal

agencies requires not only the creation of strong scientific integrity policies across agencies, but also an express commitment within agencies to implement these policies consistently and to report out results of their efforts publicly. This takes leadership within federal agencies and at the top of the administration.

President Trump has so far been indirect in his comments about science and scientific integrity. During the campaign, in response to a multicandidate question on scientific integrity, President Trump stated, “Science is science and facts are facts. My administration will ensure that there will be total transparency and accountability without political bias. The American people deserve this and I will make sure this is the culture of my administration” (Science Debate 2016). It is imperative that President Trump deliver on his promise to instill a strong culture of evidence-based decisionmaking and total transparency throughout his administration. He can demonstrate the seriousness of his commitment to making scientific integrity a high priority for his administration by quickly issuing a memorandum directing agency heads to bolster their efforts to promote scientific integrity and science-based decisionmaking. President Trump should affirm that scientists who report abuses of scientific integrity will be protected from retaliation. And he should appoint an assistant director within the White House OSTP specifically tasked with coordinating and overseeing policies and procedures for ensuring that federal actions are informed by the best available science without undue political influence. Those who are confirmed to lead federal departments and agencies—especially those with ties to regulated industries—should also make public commitments to support scientific integrity in government and in their agencies, specifically.



It is imperative that the Trump administration take swift action within its first 100 days to protect and advance the role of science in the federal government.

For its part, Congress should also rise in a bipartisan fashion to protect and advance the vital role of science in decisionmaking at federal agencies by commissioning a GAO report on the effectiveness of agency scientific integrity policies, including recommendations to strengthen them. Congress should request a National Academy of Sciences study on scientific integrity in government decisionmaking across federal agencies, including agency-specific recommendations for its advancement. Congress should also use confirmation and budget hearings as opportunities to obtain commitments to strong scientific integrity and transparency standards from nominees and political appointees to federal agencies, including the nominees to lead the OMB and OIRA.

2. Promote Independent Science

Reliance on scientific information is critical to creating the best possible government policies. Yet nearly all routes by which science informs policy have been vulnerable to politicization and interference. Reforms are needed to ensure that the best scientific information is readily available to federal agencies, Congress, and the president and that science-based policies remain free from undue influence throughout the regulatory and policymaking process. While public policies change shape as they make their way through the checks and balances of federal decisionmaking, the science informing those decisions must never be altered for political purposes.

President Trump's plan for his first hundred days could potentially roll back critical public health protections in spite of their basis in science. He has said that he will "formulate a rule which says that for every one new regulation, two old regulations must be eliminated" (Wallace 2016). This simplistic formulation could place important public protections and safeguards at risk, endangering Americans in the process, whether through elimination of worker safeguards in factories; measures that ensure clean and safe air, water, and food for our nation's families; quality assurance requirements for pharmaceuticals and consumer products; or other policies that were enacted to protect public health and welfare.

To set the expectation that independent science will be a cornerstone in the new administration, President Trump should follow through on his pledge to "drain the swamp" of former lobbyists in federal government. This would help to ensure that science and the public interest, not industry profit, is at the core of agency policy (Arnsdorf 2016; Trump 2016). Likewise, President Trump's political appointees should be held to strict ethics standards similar to those included in an ethics pledge signed by his transition team members, which required termination of current lobbying contracts and banned officials from lobbying for five years after leaving government (Arnsdorf and Vogel 2016).

The president should move swiftly to appoint a widely respected scientist to the position of science advisor to the

president and nominate the same person to be director of the OSTP. Filling this position should be a top priority, and the administration should work with the Senate to confirm the science advisor quickly (NAS 2008). The president should explicitly direct the OMB not to interfere in the scientific work of agencies. And he should work with Congress and agencies to reform and strengthen the federal scientific advisory committee system by instructing the OGE to provide clear guidelines for conflicts of interest on federal advisory committees, including concrete steps to ensure that inappropriate criteria such as party affiliation and political opinions are never part of the process for selecting members of scientific advisory committees.

President Trump’s plan for his first hundred days could potentially roll back critical public health protections in spite of their basis in science.

President Trump has also indicated a high degree of interest in international trade agreements. It is important that the country’s international policies also adhere to the highest standards of scientific integrity, recognizing the United States’ strong science-based health and safety standards. Otherwise, safeguards—such as those governing food safety and commercial chemical policies—could be undermined by international agreements. Trade deals should include substantive, enforceable provisions that preserve science-based standards and the authority of the United States to develop strong science-based policies even in the absence of international consensus.

For its part, Congress should enact legislation with broad bipartisan support to close loopholes in FACA. Representatives and nonvoting members of committees who regularly attend meetings should be asked to provide information on affiliation and any conflicts of interest. The legislation should also extend FACA rules to advisory committees organized by federal contractors, not just committees convened directly by an agency. In addition, to promote science-based decisionmaking, Congress should explore ways to bolster the scientific information it receives, for example by increasing its use of independent scientific advice via existing purveyors such as the Congressional Research Service and the GAO.

3. Increase Government Transparency

Public faith in government decisions and the ability of science to inform federal government decisionmaking are threatened when decisions are made behind closed doors. Opening up federal decisionmaking to public scrutiny is an effective and inexpensive means of fostering public trust and exposing and eliminating political interference in science and in how science informs policy decisions. An open government is the best safeguard against corruption and abuse of power, and new information technologies make possible far greater public access to federal science than ever before.

While President Trump has promised generally to end corruption in the federal government, during the campaign, journalists assessed that he was “the least transparent major nominee in modern history” (Johnson and Jordan 2016; Trump 2016). During the campaign, President Trump revoked the press credentials of more than a dozen news organizations, including the Washington Post; refused to release his tax returns; and toyed with the idea of forcing any future federal employees to sign nondisclosure agreements (Farhi 2016; Johnson and Jordan 2016; Woodward and Costa 2016). Since the election, he has threatened punishment for some members of the public exercising their right to free speech, continued his adversarial relationship with the press, and remained vague about the conflicts of interest his business holdings pose moving forward (Collinson 2016; Nelson 2016; Shear and Lipton 2016). To fulfill his promises to end corruption in Washington, President Trump should embrace transparency as a key principle of his government. An open government with proper public scrutiny of decisionmaking processes allows for policies that better safeguard the health and well-being of all Americans, while also enhancing public trust and confidence in government.

A key lesson from the past two administrations is the need for the incoming administration to work with federal agencies to improve conflict of interest policies for government employees. Agencies should not allow employees to hold decisionmaking authority or to otherwise influence policy outcomes when they have personal ties to financial interests that could directly benefit from policies on which they work. Any conflict of interest waivers granted should stipulate the parameters of permitted participation and be released publicly before major decisions are made. Federal employees should recuse themselves from policy decisions involving any party that was their employer or client during the previous two years, whether or not they have current financial ties to that party.

Greater transparency should also guide the process used for appointing members to scientific advisory committees, including publication online of basic information about all

committee members. This information—describing each member’s qualifications and background, past employers and funding sources for the previous five years, and any conflict of interest waivers granted—should be made available on a public online portal, such as Integrity.gov.

The Trump administration should champion efforts to make government information accessible to the public. It can start by affirming the policy of broad disclosure of government records requested under FOIA consistent with the FOIA Improvement Act of 2016 and by continuing to implement the Obama administration’s directive to make government datasets publicly available in a timely manner and with appropriate context to enhance public accessibility. The Trump administration should also facilitate the free flow of information between government scientists and the media by pledging openness and allowing journalists to interview the relevant experts who are best able to answer their questions, rather than directing them to other employees.

4. Enhance Public Participation

The United States was founded on the conviction that an informed citizenry, armed with evidence and reason, can make wise decisions that promote public health, safety, and well-being. Throughout our history, science has helped our nation deliver on that promise. Yet today, outdated information collection methods and unnecessary institutional barriers exclude many citizens from the democratic process. In keeping with President Trump’s pledges to reform Washington, his administration should leverage technology and innovation to make federal processes for gathering public input more diverse, inclusive, and participatory. In this increasingly noisy information landscape, it is now more important than ever for governments, scientists, and citizens to engage together in our democratic processes to ensure that our policies are informed by the best available science and not dominated by industry or special interests.

While President Trump has made his antiregulatory sentiments and preferences known—proposing the aforementioned two-for-one rule, in addition to discussing a moratorium on new federal regulations, eliminating 70 percent of federal regulations, and gutting the EPA—a more thoughtful approach moving forward would be to ensure that the public is better involved in the policymaking process (Johnson 2016; Kaufman 2016). Regulations are meant to safeguard Americans’ health and well-being—not to kill jobs—and improved public participation in the rule-making process can create more efficient rules that better address the needs and concerns of all Americans, especially vulnerable populations. In particular, the administration should work with federal agencies to make their rulemaking dockets and websites more accessible. Agencies should work with 18F to innovate better methods for communicating information to the public and receiving feedback on proposed regulations. The new administration should additionally deploy services such as the USDS to help upgrade the governmental website Regulations.gov to make it a more consumer-oriented and user-friendly portal for information about proposed, pending, and final regulations.

Care should be taken across all agencies to maximize public participation and to fully disclose potential conflicts of interest. For example, following the lead taken by OSHA in their silica rulemaking public comment period (OSHA 2013b), the president should issue an executive order directing federal agencies to request that public commenters who provide scientific or technical research in their comments during rulemaking disclose the funding sources and/or sponsoring organization of their research. And finally, the administration should implement changes aimed at leveling the playing field among stakeholders regarding influence in the rulemaking process by requiring agencies to post visitor logs online, thus disclosing the engagement of all stakeholders on rules in development, both before and after the issuance of a proposed rule.

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[APPENDICES]

The following appendices can be found online at www.ucsuca.org/PreservingScientificIntegrity:

Appendix A: Specific Recommendations Steps for Advancing Scientific Integrity in Federal Decisionmaking in the Trump Administration

Appendix B: Federal Agency Scientific Integrity-related Policy Reference

Preserving Scientific Integrity in Federal Policymaking

*Lessons from the Past Two Administrations and
What's at Stake under the Trump Administration*

The government's unwavering commitment to the role of science in policymaking is crucial to its ability to respond effectively to complex issues ranging from public health to national security.

As science becomes a more powerful tool to inform policy decisions amidst the complex challenges facing our nation, the temptation to manipulate, suppress, or distort it increases. Political, ideological, and financial interests have undermined the place of science in federal decisionmaking, harming the public good. In recent cases, politics have derailed what by statute should have been science-based environmental and public health decisions by federal agencies. It is imperative that the next president prioritize

these issues. In its first 100 days, the Trump administration should enact several key measures to ensure that its legacy includes an adherence to scientific integrity by the federal government. This document offers a concrete framework for assessing the actions of the 45th president, agency and department heads, and the US Congress regarding the protection and advancement of the role of science in government decisionmaking.

**Union of
Concerned Scientists**

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