

Presidential Recommendations for 2020

A Blueprint for Defending Science and Protecting the Public



Throughout the nation’s history, the safety and health of the public have depended on the government’s commitment to and use of science. This is for good reason: the scientific process remains humanity’s best tool for understanding the natural world. It is our best method for finding cures for illnesses, assessing threats to human health and safety, protecting our air and water, forecasting dangerous weather, and developing solutions to our nation’s most pressing problems.

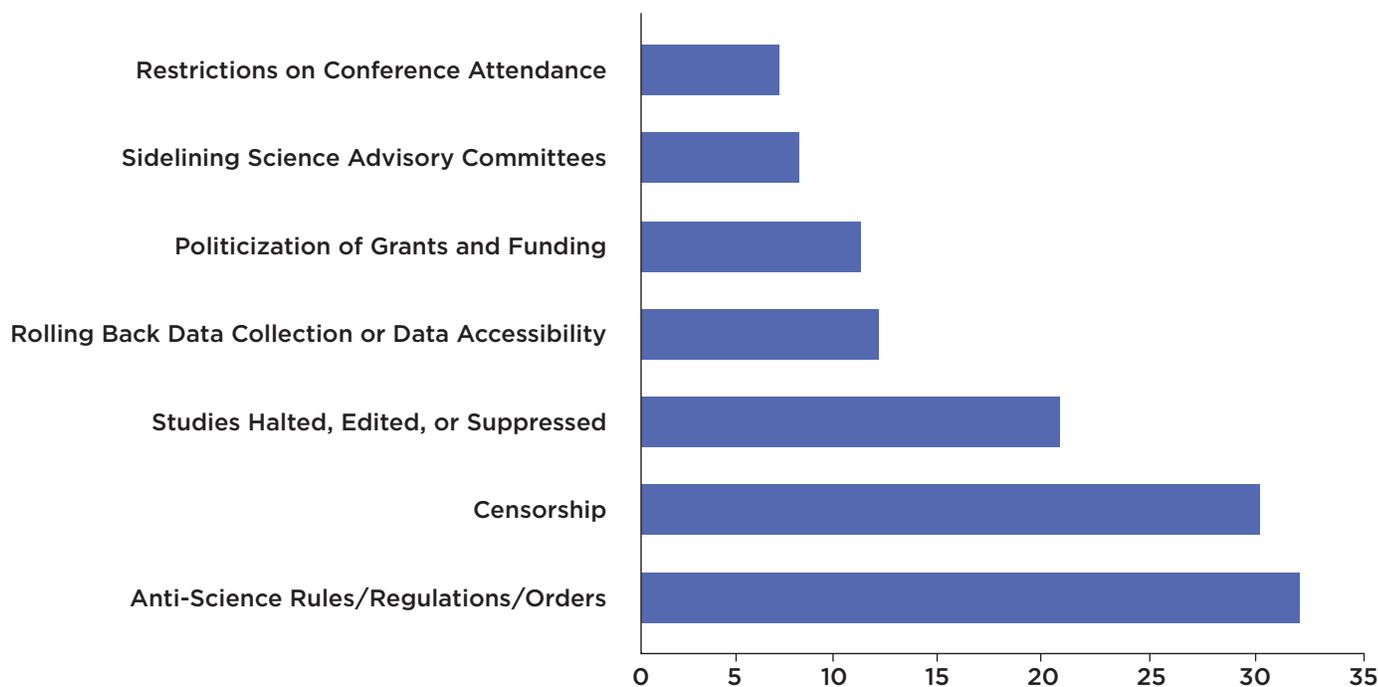
The use of science in and by government is not only crucial but often transformative, and government decisions based on science affect us all. In the last few decades alone, government scientists and government support of science have contributed to many of the nation’s, and the world’s, greatest achievements. They have mapped the human genome, spurred the creation of the World Wide Web, saved imperiled species from extinction, and mitigated dangerous risks to human health with revolutionary vaccine campaigns, lifesaving medical procedures, and other basic and applied science research (FWS 2019; NIH 2019; NHGRI 2019; NIH 2018; Kahn 1994; DOE n.d.). The collective impact of such efforts is incalculable.

The power of science as a tool for informing policy may tempt policymakers to distort or suppress scientific research

and evidence to suit a political agenda. However, the health and safety of the public may be jeopardized when political, ideological, or financial interests supersede scientific evidence in decisionmaking. Hampering research delays our ability to understand and address problems. Suppressing or ignoring evidence of a substance’s toxicity can unknowingly expose people to danger. Minimizing the threat of a natural disaster may mean that communities fail to prepare for it (Brown 2019; Shear and Kanno-Young 2019).

Despite the centrality of science to informed decision-making, attacks on science and the scientific process have occurred under many presidential administrations, regardless of political party (Berman and Carter 2018). When concerns regarding such attacks rose sharply during the George W. Bush administration, thousands of scientists signed a 2004 letter asking the president to restore the process by which science informs policy (UCS 2008). That movement helped shape a definition for “scientific integrity” that nonprofit organizations, media, and members of Congress now use to describe and frame resistance to political interference in science and the government’s science policy processes (Berman and Carter 2018).

FIGURE 1. Attacks on Science in the First Three Years of the Trump Administration



The Union of Concerned Scientists documented 123 attacks on science during the first three years of the Trump administration, including censorship of scientific language; a lack of consideration of science in proposing or rolling back regulations; and the suppression, cancellation, and alteration of scientific studies. See the UCS attacks on science tracker at www.ucsusa.org/resources/attacks-on-science.

Barack Obama, when he became president in 2008, vowed to “restore science to its rightful place” and took steps to protect and advance the role that science plays in government (Harris and Broad 2019). He launched open-government initiatives, reversed federal decisions that had heightened political interference in science, and signed an executive order to address the revolving door between government and regulated industries (Obama 2009a; White House n.d.). In 2009, he issued a directive requiring government agencies to establish scientific integrity policies (Obama 2009b).

Nevertheless, some problems remained throughout the Obama presidency, as did weaknesses in science-protective policy across the federal government; the Trump administration’s unprecedented attacks on science have made these weaknesses starkly visible (Figure 1). The current administration has stunted or stalled scientific research, retaliated against government scientists, weakened and disbanded science advisory committees, left appointed scientific positions vacant, and undermined career staff at many agencies (Figure 2) (Carter et al. 2019; GAO 2019; McCrimmon 2019; Carter, Goldman, and Johnson 2018; Mooney 2017). These actions threaten the nation’s health, safety, and environment, with the most severe impacts affecting those most vulnerable (Desikan et al. 2019).

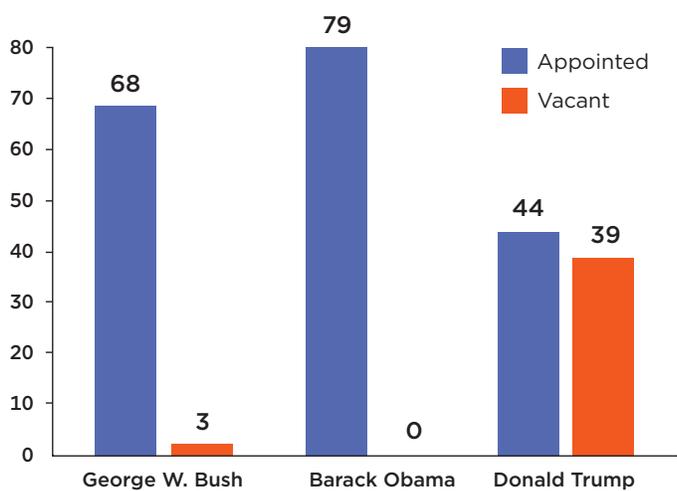
As those attacks indicate, existing safeguards do not suffice. For example, scientific integrity policies are in place in 28 federal agencies, bureaus, and departments, but none are codified in federal law, and they vary widely in scope, strength, and enforcement power (see the table, p. 4) (Tonko 2017). Some agencies protect open communication among scientists, while others do not; some agencies give scientists right-of-last-review for their work, and some do not.

The next president must show leadership and take concrete actions toward restoring and strengthening scientific integrity in government and ensuring that science informs decisions that affect our health, safety, and environment. This report, *Presidential Recommendations for 2020: A Blueprint for Defending Science and Protecting the Public*, recommends what the next president can do to restore, protect, and advance the role of science in government decisionmaking. It focuses on strengthening three major principles underlying science-based decisionmaking: independence, transparency, and free speech.

RESTORING SCIENCE TO SCIENCE-BASED DECISIONS

To protect the health and safety of the public and our environment, the best available science must inform policies, and science and evidence must be at the forefront of decisionmaking. Our federal government must ensure a culture of scientific integrity—a culture that keeps science free from inappropriate political, ideological, financial, or other undue influence.

FIGURE 2. Vacancies in Scientific Leadership Positions during Three Administrations



In the first three years of their administrations, Presidents Barack Obama and George W. Bush filled nearly every scientific leadership position. President Trump failed to appoint anyone to nearly half of these positions before his three-year mark.

Note: Scientific leadership positions are those that require scientific expertise, according to the National Academies of Science, Engineering, and Medicine.

The next president must be a vocal and vigorous champion of our nation’s science-based agencies. These agencies must work toward improving the processes by which science informs their policy decisions—processes that the public has access to and can evaluate easily. For example, federal agencies should summarize—in plain language—the scientific evidence they use to inform each major policy decision.

INDEPENDENT SCIENCE

The use of science to inform decisions affecting the public should be as unbiased as possible—the science should be independent (i.e., free of political, ideological, or financial influence) and should speak for itself. Independent science helps our government make better decisions about protecting the public’s health and safety, and it enhances public trust when decisions are based on valid, credible processes. Independence means that agencies have consistent, transparent peer-review processes, and that agencies both minimize and fully disclose the conflicts of interest of decisionmakers and science advisors.

TRANSPARENT DECISIONMAKING

Government science is conducted by and for the people. Therefore, it should be transparent: a strong and critical component of policy development is providing access to

how government decisions draw (or fail to draw) on science. The public should have access to the deliberations of federal agencies and the selection processes for federal advisory committees, as well as the ability to comment on agency decisions and processes that affect health and safety.

The president and the leadership of federal agencies can enhance access to information by putting into practice strong, clear communication policies that promote the free flow of scientific information. This would greatly improve the public’s knowledge of important issues affecting our lives

each day and strengthen the public’s faith in the role of science in decisionmaking.

SCIENTIFIC FREE SPEECH

Government scientists should have the right to publish their findings in professional journals and communicate their scientific work to the public in other ways. They should be free to express their personal views on science and science-based policies, provided they make clear when they are speaking on behalf of their agency and when they are not.

Progress on Scientific Integrity Policies at Federal Agencies

	Scientific Integrity (SI) Policy	Procedures for SI Allegations	Public Reporting of SI Cases	Designated SI Official
Executive Agencies and Subagencies				
DOC (Department of Commerce)	Yellow	Red	Yellow	Red
NIST (National Institute of Standards & Technology)	Yellow	Red	Yellow	Yellow
NOAA (National Oceanic & Atmospheric Administration)	Green	Green	Green	Green
DOE (Department of Energy)	Green	Red	Yellow	Yellow
DOI (Department of the Interior)	Green	Green	Green	Green
FWS (Fish & Wildlife Service)	Green	Green	Green	Green
USGS (US Geological Survey)	Green	Green	Green	Green
HHS (Department of Health & Human Services)	Red	Yellow	Yellow	Red
CDC (Centers for Disease Control & Prevention)	Green	Yellow	Yellow	Green
FDA (Food & Drug Administration)	Yellow	Red	Yellow	Green
NIH (National Institutes of Health)	Red	Yellow	Yellow	Yellow
DOL (Department of Labor)	Red	Yellow	Yellow	Yellow
DOT (Department of Transportation)	Red	Red	Yellow	Yellow
USDA (Department of Agriculture)	Green	Green	Yellow	Green
Independent Agencies				
CPSC (Consumer Product Safety Commission)	Yellow	Red	Yellow	Red
EPA (Environmental Protection Agency)	Green	Yellow	Green	Green
NASA (National Aeronautics & Space Administration)	Green	Yellow	Yellow	Red
NSF (National Science Foundation)	Green	Yellow	Yellow	Yellow
NRC (Nuclear Regulatory Commission)	Red	Red	Yellow	Red

Green Strong Yellow Some Progress Red Nonexistent or Poor

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 implemented a clear procedure for filing a scientific integrity complaint. But there is much work to do. As the table shows, many agencies have not fully developed the components of a robust scientific integrity policy. For full references for this table, please see the appendix at www.ucsusa.org/resources/presidential-recommendations-2020.

While some scientific information is classified—often to protect national security—most is not. Public access to the knowledge of scientific experts can help protect health and safety, especially during emergencies. Conversely, policies that restrict the freedom of scientists to communicate with the public can put lives at risk.

Based on those three principles—*independent science, transparent decisionmaking, and scientific free speech*—*Presidential Recommendations for 2020* offers detailed recommendations for action during the presidential term beginning in 2021. Regardless of the outcome of the election, these actions would strengthen the role of science, improve the nation’s capacity for science-based decisionmaking, and help protect and preserve our democracy.

Promoting Science-Based Decisionmaking

Decisions of the US government are strongest when based on science and informed by a diverse array of experts inside and outside federal agencies, including academic scholars, agency scientists, and policy specialists. The participation of these experts not only increases the robustness of policies, but also adds legitimacy to the decisionmaking process, which is crucial to building public trust (Groux, Hoffman, and Ottersen 2018). Moreover, our government has long recognized the value of pooling scientific expertise: beyond the suite of agencies and offices devoted solely or primarily to scientific research, more than 200 advisory committees, comprised of academic, nonprofit, regulatory, and industry experts, produce and analyze research (Bharara et al. 2019).

However, various administrations have taken actions that suppress or undermine science-based decisionmaking (Bharara et al. 2019). These attacks have reached a new high in the Trump administration: in the last three years, the administration has slashed the number of advisory committees, cut science spending, elevated the influence of political appointees, and silenced government scientists (Ledford et al. 2019; UCS 2017a). For example:

- The Trump administration has weakened or completely disbanded a number of federal advisory committees (Green and Beitsch 2019). In June 2019, President Trump issued the Executive Order on Evaluating and Improving the Utility of Federal Advisory Committees, requiring each federal agency to cut the number of its advisory committees by at least one-third (White House 2019). This is an arbitrary, highly damaging attack on independent science and its contribution to sound federal decisionmaking.
- A high proportion of scientific leadership appointments across the federal government are vacant or sat vacant

for months (Carter et al. 2019). For example, it took 19 months for the president to nominate a science advisor; the Senate did not confirm the appointment until January 2019. This lack of leadership has stalled research progress and left federal scientists without a voice in the White House to bring forward and interpret their work.

- The Trump administration has weakened the influence and voices of disadvantaged communities on matters of environmental justice. During the administration’s first two years, the Environmental Protection Agency’s (EPA’s) Office of Environmental Justice reduced the number of community research grants it awarded by 70 percent compared with the prior administration’s first two years (Desikan et al. 2019). Such changes have reduced the ability of disadvantaged communities to develop local solutions and participate in the regulatory process.

RECOMMENDATIONS

To ensure that sound science underpins federal policies designed to keep the public safe and healthy, the next president should restore the voices of scientific experts, independent scholars, and communities in policymaking.

- The president should issue an executive order requiring all science agencies to have chief science officers, as well as to commit to filling open science positions in accordance with the limits set forth by the Federal Vacancies Reform Act.¹
- The president should ensure that each agency, when submitting its budget request to Congress, ask for enough full-time equivalent positions to effectively conduct its scientific work.
- The president should require each agency to report to Congress on the status of vacancies in its scientific programs, including metrics relevant to determining the effectiveness of the agency’s hiring process.
- The White House Office of Science and Technology Policy (OSTP) should direct agencies to develop clear guidance for using peer review in scientific assessments and ensure that agencies apply the guidance consistently. This guidance should:
 - Affirm that scientific peer review is the appropriate standard for ensuring the quality of agency scientific information.
 - Require that scientists involved in peer review of agency documents be technically qualified and that agencies use at least one peer reviewer external to the agency whenever possible.

- Require that peer reviewers’ comments on scientific documents and agency responses to those comments be publicly available, while protecting the anonymity of reviewers.
- Require that everyone involved in peer review—including reviewers, government contractors, and agency staff administering the peer review process—disclose financial ties to institutions potentially affected by the review and that they avoid conflicts to the greatest extent possible.
- The president should rescind the Executive Order on Evaluating and Improving the Utility of Federal Advisory Committees. Decisions on chartering and terminating committees should be at the discretion of agencies to ensure they have necessary expert input on scientific and technical issues and broader policy concerns, as the Federal Advisory Committee Act directs (GSA 2019).
- The president should work with Congress and agencies to reform and strengthen the federal government’s scientific advisory committee system. The president should:
 - Direct the General Services Administration (GSA) to issue guidance to agencies on how to improve the system.
 - Issue an executive order requiring advisory committee reports to be part of the Federal Register for any subsequent rulemaking involving a committee’s work.
- The president should direct agencies to:
 - Grant federal advisory committee members the freedom to communicate with the public on issues in their areas of expertise, so long as they do not violate the deliberative process. Agencies should affirm this right to committee members at the time of their appointment.
 - Announce intentions to form new scientific advisory committees or to select new members for existing committees.
 - Solicit stakeholder input on committee charters.
 - Take concrete steps to ensure that agencies select advisory committee members based solely on experience and technical qualifications in the topic the committees will address, and not based on inappropriate criteria (e.g., party affiliation, political opinions).
 - Publish criteria for nominating and selecting committee members, with a clear prohibition of veto power by current members over candidates.
- After selecting the first round of candidates for membership, make that roster public and request comments regarding candidates’ potential conflicts of interest or other disqualifying information before finalizing appointments.
- Identify and make public the process used for committee formation, including how agencies screen members and assess committees for balance.
- Include statements in appointment letters clarifying whether committee members will speak in their personal capacity as experts or act as representatives of specific stakeholder groups.
- Publish basic information on each committee member on a public online portal (e.g., integrity.gov), including information on qualifications, background, employers, and funding sources for the previous five years, along with any conflict of interest waivers granted.
- Publicly report the votes of each committee member on recommendations when committees do not come to consensus.
- The president should strengthen Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, issued in 1994 (EPA 1994). The president should:
 - Mandate that agencies developing significant rules analyze and consider the justice and equity consequences of agency actions.
 - Require agencies to develop staff guidance on analyzing and considering justice and equity consequences when developing regulatory actions.
 - Direct agencies to reinvigorate and expand consultation with fenceline communities, which border industrial or other sites posing a potential hazards, such as exposure to dangerous chemicals.
 - Direct agencies to commit to engaging consistently with independent scholars who work on environmental justice issues.
 - Work with Congress on legislation that addresses environmental justice issues.
- To address the science, technology, engineering, and mathematics (STEM) skills gap in the federal workforce, the president and the OSTP should reinstate the STEM-specific track for the Presidential Management Fellowship and ensure the continuation of other science policy fellowships (PMFP 2014).

Strengthening Scientific Integrity

The politicization of government science is neither new nor limited to any one party. Since at least the Eisenhower administration, Republicans and Democrats in office have politicized the science policy process, from suppressing politically inconvenient reports to abolishing committees and advisory positions (Berman and Carter 2018). The assaults have spurred congressional and executive efforts to solidify standards for scientific integrity in government; most recently, the House Science Committee approved the Scientific Integrity Act with bipartisan support and sent it to the Senate (Halpern 2019).

However, the Trump administration's unparalleled efforts to undermine science and scientists have laid bare inherent weaknesses in existing standards, policies, and practices, with more than 120 blatant attacks on science (UCS 2017a). But many agencies are unwilling or unable to address integrity violations. Investigations of violations are time-consuming and costly, and agency inspectors general often have little enforcement authority (NAS 2017; Bharara et al. 2019). This can leave decisions in the hands of politically appointed agency heads who may very well be the subject or otherwise at the center of the issues under scrutiny. This was the case with former Secretary of the Interior Ryan Zinke and former Administrator of the EPA Scott Pruitt (Aton 2018; Halpern 2018).

Current practice has enabled senior leaders to politicize science policymaking with little accountability, and federal scientists experience the consequences. In 2018, more than 4,000 federal scientists, responding to a UCS survey, reported low morale, poor job satisfaction, censorship, and a lack of resources for work deemed politically contentious (Carter 2018). These threats make it difficult for federal workers to fulfill their agencies' science-based missions.

For example:

- Political appointees have concealed scientific evidence from agency decisionmakers. In 2018, Ann Marie Buerkle, acting chair of the Consumer Product Safety Commission, hid from other commissioners the details surrounding a recall investigation for a jogging baby stroller that had seriously injured parents and children (Frankl 2019). The commissioners, in the dark about these reports, decided against recalling the stroller and instead allowed the manufacturer to issue replacement parts. These, too, proved to be defective (Reed 2019a).
- Scientists have been forced to shelve work before completing it or refrain from publicizing it. Since June 2018, EPA political appointees have stalled the release of any scientific assessments by the Integrated Risk Information System (IRIS), an EPA program that carries out important

research on risks that toxic chemicals pose to human health (GAO 2019). This hiatus has applied to a long-awaited IRIS handbook that would clarify standard operating procedures for policies designed to protect the public from harmful chemical exposure (Reed 2019b). The handbook has not been released.

- Some agency leaders have vetted scientific grant proposals based on political convenience instead of scientific merit. For example, in January 2018, the Department of the Interior (DOI) directed political appointees to review discretionary science grants to make sure they aligned with administration priorities. On its face, this may not sound so harmful—unless one considers the administration's actual priorities. The policy appears to target scientists conducting research on climate change, a topic to which the Trump administration has shown deep hostility (Carter et al. 2019).

RECOMMENDATIONS

The executive branch can play a strong leadership role in efforts to strengthen scientific integrity across the government. UCS recommends that the next president act quickly to articulate not only strong principles of scientific integrity, but also the expectation that all federal agencies put those principles into concrete action.

The next president should direct agencies and the OSTP to bolster efforts that promote scientific integrity and science-based decisionmaking.

- The president should direct each agency head to appoint or assign an official to oversee scientific integrity. This official would report to the agency's highest-ranking civil servant and work with the OSTP on cross-government issues, such as open-data initiatives and the implementation of scientific integrity policies. Monitoring and supporting scientific integrity should comprise a significant portion of the official's time.
- The president should direct agency heads to review and, as needed, improve existing scientific integrity policies to ensure they include provisions that:
 - Declare the right of scientists to review content that will be released publicly in their names or that significantly relies on their work.
 - Declare the right of scientists to publicly express personal views on science without seeking permission, provided the scientists make clear when they are speaking in a personal capacity and that they inform their public affairs office.

- Explicitly prohibit retaliation against government employees who raise concerns about scientific integrity or offer scientific opinions that differ from those of the administration or their agency.
 - Provide a clear, detailed policy and procedure for addressing differing scientific opinions within the agency.
 - Provide a clear, detailed policy and procedure for addressing allegations of scientific integrity violations and for publicly reporting their resolution.
 - Declare that employees who leave federal service should not be required to sign nondisclosure agreements regarding government information that is not classified or proprietary, and that does not contain confidential personal information such as personnel records.
 - Declare that agency internal review is not required for scientific work that is done on employees’ personal time and that does not use nonpublic government data or government resources.²
 - List mechanisms for implementing the Scientific Integrity Act, including accountability for senior managers and appointees.³
 - Encourage the agency to conduct trainings on scientific integrity for all federal employees who use science to a significant degree in their jobs.
 - Publicly release an annual report on the state of scientific integrity within the federal government.
 - Facilitate the regular convening of an interagency working group on scientific integrity to share resources and strengthen and unify scientific integrity efforts across the government.
- The president and OSTP should create clearance procedures for scientific publications, presentations, and conference participation that are clear, consistent, and transparent. These procedures should:
 - Specify reasonable time limits for reviewing and clearing scientific publications, presentations, and participation in scientific conferences.
 - For the aforementioned publications, presentations, or conference participation, assume written clearance from the supervisor and other reviewing official, on the condition that specified changes are made no later than 30 days after submission.
 - Provide the right, if the aforementioned 30-day deadline is not met, to submit the article for publication or presentation with an appropriate disclaimer stating that the contents do not represent agency views or policies.

Enforcing Transparency in Decisionmaking

Open government invites the public into the decisionmaking process.⁴ Authentic engagement can cultivate community understanding of and support for policy decisions. It can ensure that research and decisionmaking neither alienate communities nor ignore public interests and priorities (Wolff et al. 2016).

In the United States, the expectation of proactive transparency—the publicizing of information early, often, and before open-records requests for it—has been a gold standard for government leaders since the 1970s (Bharara et al. 2018). Internationally, open government is recognized as a safeguard against corruption and a pathway to public trust, civic freedom, and other positive outcomes (OECD 2017).

Transparency is crucial for the use of science in policymaking. Government science has undergirded some of the nation’s most important policies and protections, and public access to that research serves two important functions. First, it enables watchdog agencies, organizations, and individuals to recognize and prevent the unethical or biased manipulation of science. Second, it enables the public to understand, assess, build on, or challenge the data that shape policy (Bharara et al. 2018).

While no administration has a perfect record in this arena, the Trump administration has shown unprecedented hostility toward the principles of transparency (Sunlight Foundation n.d.). This attitude has permeated government at all levels and undermined public access to federal science, sometimes in surprising ways (see box on p. 10). For example:

- In an analysis spanning eight months in 2017, the Associated Press found that the administration released censored documents, or no documents at all, in response to 78 percent of Freedom of Information Act (FOIA) requests, a record-high rate of censorship (Bridis 2018).
- The Trump administration has deleted extensive scientific information from public-facing agency websites. While some changes to these websites may be normal during a presidential transition, the administration has focused on removing information about science and climate change (UCS 2017b).

- Undercutting the National Environmental Policy Act and its scientific foundation, the Trump administration has reduced the time allowed for staff to conduct environmental assessments to a maximum of two years, and it has limited the scope of the studies by setting and enforcing arbitrary page limits of 150 pages (300 pages for an assessment considered “complex”). Assessments conducted under previous administrations often required years to complete, especially for complicated or controversial projects. While the efficiency of the process could be improved, the arbitrary timeframe the Trump administration has proposed likely would undermine scientific assessments of major policy proposals and decisions (Carter et al 2018).
- The EPA curtailed the ability of the public, especially underserved communities, to comment on a proposed risk management program rule regarding the safety of chemical facilities. During the public comment period, the EPA held only two hearings, neither of which took place in a community that the rule’s provisions would strongly affect (Rosenberg 2018).

RECOMMENDATIONS

The next president and their administration should take steps to ensure the public availability of government research and to improve public access through open-records laws.

- The OSTP should direct agencies to continue implementing Executive Order 13642 on open data by making datasets publicly available in a timely manner and with appropriate context to enhance public accessibility (White House 2013).
- The President’s Council of Advisors on Science and Technology should actively track the administration’s progress on scientific integrity and provide recommendations for improvement.
- Scientific integrity officials should issue annual public reports on the status of allegations and investigations relating to violations of each agency’s scientific integrity policy, while keeping confidential the names of those involved.
- The administration should ensure that scientific information and data on government websites is not politically censored.
- Consistent with the FOIA Improvement Act of 2016, the president should affirm that the default position of the administration regarding FOIA is the presumption of openness and proactive disclosure (US Congress 2016). The president should:
 - Direct agencies to rescind rules that explicitly authorize the involvement of political appointees in the FOIA response process, as such measures invite interference and conflict with the act’s purpose of improving transparency and public trust.
 - Instruct the attorney general to issue a memo on FOIA implementation that affirms the policy of broad disclosure of government records.
 - Require commercial entities requesting FOIA exemptions to explain why scientific information they ask to be withheld qualifies as trade secrets or privileged commercial information, shifting the burden of proof from the federal government to the commercial entity.
- The president should direct agencies to use improved technology to streamline the FOIA process. The president should:
 - Instruct the Office of Management and Budget (OMB) director, in consultation with the attorney general and the OSTP, to ensure the operation of a consolidated online request portal in accordance with the FOIA Improvement Act of 2016.
 - Mandate the availability of online links to the text of FOIA requests and the timely online posting of responses.
 - Mandate that agencies create, for each FOIA request, a list (known as a Vaughn index) of all requested documents being withheld under the FOIA, with specifics on exemptions being applied.
 - Mandate that agencies publish clear information explaining users’ rights under the FOIA and the role of the Office of Government Information Services in facilitating the release of documents.
- The president should make the OMB within the Executive Office of the President more transparent and accountable by making interagency review comments public during a notice-and-comment period for proposed federal rules.
- The president should direct the Chief Technology Officer of the United States to enhance digital archived repositories of scientific information, including, but not limited to, making scientific data, publications, and reports easily accessible to the public.

Addressing Conflicts of Interest

Conflicts of interest occur when a person in a position of trust maintains interests that compete with or bias that individual's professional duties (Hurst and Mauron 2008). Research has

long validated the potentially damaging effects of conflicts of interest in public service. They can undermine public trust, weaken civic participation, erode the credibility of individuals or entire fields of expertise, and ultimately harm people and the environment (RDWG 2005; Bélisle-Pipon et al. 2018).

Transparency and Using the Best Available Science Are Not Mutually Exclusive

In the name of transparency, the Trump administration has proposed to restrict the ability of government scientists to use data critical to protecting public health. In April 2018, the EPA proposed a rule, "Strengthening Transparency in Regulatory Science," that would force agency rulemaking to rely only on studies for which the raw data and models are publicly accessible (EPA 2018). This would prevent the EPA from using public health studies that make use of personally identifying information of participants when that data cannot be made public or even shared outside of researchers. The restriction would raise a significant barrier to the EPA's mission of setting science-based standards to protect public health.

The EPA proposal repeats a 1990s-era tobacco industry proposal to construct explicit procedural hurdles against enacting standards to control second-hand smoke (Baba et al. 2005). Many of the same tobacco industry lobbyists and lawyers are involved in the new EPA effort.

The DOI has followed the EPA's lead. In September 2018, then-Deputy Secretary of the Interior David Bernhardt (now the department's secretary) issued an order, "Promoting Open Science," implementing restrictions similar to those in the EPA proposal (Bernhardt 2018). The order instructs the department to use publicly available data "to the extent possible" and requires DOI agencies to "include an explanation of why such science is the best available information" when using studies with data that cannot be made public.

While the DOI and the EPA have different missions, their "promoting open science" efforts have, or in the case of the EPA could have, damaging effects on the public and the environment. Researchers may object to disclosing scientific data for many legitimate reasons, including the need to protect sensitive health data, confidential business information, or intellectual property, or to address other privacy concerns associated with underlying data. For example, it would be illegal for researchers to release health information on study participants who were told that their data would remain confidential forever. In deciding when to list a species as endangered, DOI scientists would not be able to rely on location data: disclosing such information could endanger the species.

The order could remove protection for species on the brink of extinction. Wildlife often provides society with medical and economic benefits that would be lost as species become extinct (Doyle 2010; NWF 2006).

The so-called "transparency" policies of the EPA and the DOI may appear, on the surface, to share the scientific community's goal of making data transparent and publicly available. Yes, transparency is central to ensuring that government agencies rely on credible science to make policy decisions, but unnecessary requirements like those in the proposed EPA rule and the DOI order would prevent an agency from relying on the best available science.

Scientists already make their data and models publicly available to a great extent, and the National Science Foundation and many other funders require scientists to make their raw data available to others as a condition of receiving financial support (there may be limits in cases where data must remain confidential). These practices provide access to experts in their field or others who may find the data useful. They also enable other researchers to test whether they can reproduce a study's results. Early career scientists often receive training in transparency as a pillar of professional ethics.

Through peer review, experts assess the quality and merit of a study submitted for publication in a scientific journal. Experts in a scientific field vet published studies, but they typically do not need access to raw data. Rather, peer reviewers can judge a study's quality by knowing the data's sources and the methods for using them.

An alleged supplemental notice to the EPA's draft rule, published in *The New York Times*, reveals that the agency wants to use raw data to reanalyze scientific studies that have already undergone peer review (Friedman 2019). Such a requirement would be extremely costly and time consuming, even if it is feasible.

In practice, the new policies on transparency would ultimately force the EPA and the DOI to throw out established science. This could result in poorly informed decisions that put the public's health and safety at risk.

For years, unspoken norms guided the nomination and confirmation process for key government officials. Generally, the Senate was tasked with ensuring that nominees were qualified and had no glaring conflicts of interest (Bharara et al. 2019). While these norms were never perfectly observed, the Trump administration has discarded them almost entirely. President Trump has named more former lobbyists to cabinet-level positions in under three years than Obama or George W. Bush did in eight years. Those officials, including David Bernhardt at the DOI, Andrew Wheeler at the EPA, and Eugene Scalia at the Department of Labor (all of whom gained their current positions in 2019), among others, have paid little heed to conflicts of interest across their respective agencies. For example:

- In October 2017, then-EPA Administrator Scott Pruitt announced a rule barring scientists who had received agency funding from serving on its advisory boards. The rule exempts advisers who have received funding from non-governmental sources, including industry (Halpern 2018).
- Interior Department Secretary David Bernhardt has engaged on issues that had been part of his portfolio as an oil lobbyist (Davenport 2019). For example, beginning in October 2017, Bernhardt worked on policies surrounding an endangered California fish for which he had sought to loosen protections when he was a lobbyist (Snider 2019).
- Anthony Cox, chair of the EPA's Clean Air Science Advisory Committee, has accepted research funding from the American Petroleum Institute, an oil lobby; allowed the institute to review and edit a research article; and has long expressed doubt about the established links between pollution and adverse effects on human health (Waldman 2018).

RECOMMENDATIONS

The next president should support efforts to define and curb conflicts of interest, establish baseline qualifications for nominees, and strengthen requirements for disclosing conflicts of interest.

- The president should ensure that all federal officials, including the office of the president itself, have access to the best scientific advice from the very start of the next administration.
- The president should appoint a widely respected scientist to the position of science advisor to the president and nominate the same person to direct the OSTP.
- The OSTP should direct agencies to develop clear guidance for using peer review in scientific assessments and

ensure that agencies apply the guidance consistently.

This guidance should:

- Affirm that scientific peer review is the appropriate standard for ensuring the quality of agency scientific information.
- Require that everyone involved in peer review—including reviewers, government contractors, and agency staff administering the peer review process—disclose financial ties to institutions potentially affected by the review.
- Require that agencies consider all such disclosures and avoid conflicts to the greatest extent possible.
- Require that scientists involved in a peer review of agency scientific documents be technically qualified and that agencies use at least one peer reviewer external to the agency whenever possible.
- Require that peer reviewers' comments on scientific documents and agencies' responses to those comments be made publicly available, while protecting the anonymity of reviewers.
- The president should instruct the Office of Government Ethics (OGE) to provide clear guidelines about conflicts of interest on federal advisory committees and agency peer reviews. These guidelines should:
 - Define explicitly what constitutes a conflict of interest and establish transparent guidelines about the degree to which a conflict of interest would disqualify a nominee from participating in a committee.
 - Direct agencies to clarify their criteria for appointing advisory committee members as individuals or as organization representatives, and they should ensure that the proper level of scrutiny of conflicts of interest occurs.
 - Ensure that, for committees with a mission solely dedicated to providing objective scientific advice (as opposed to committees designed to gather input from diverse stakeholders), committee members should be appointed as special government employees and vetted for financial conflicts of interest. They should recuse themselves from scientific discussions for which they have a direct conflict of interest.
 - Ensure that scientists who have taken public positions on issues or received government funding for scientific work are not excluded from advisory committees because of concerns about bias. Having a point of view on policy or having received federal

research funding does not preclude an objective assessment of scientific information presented to a committee. Further, a scientist's membership in a scientific association should not be considered evidence of bias, even if that association has a stated policy agenda.

- The administration should work with federal agencies to improve conflict-of-interest policies for political appointees. These policies should:
 - Bar employees with ties to financial interests that would directly benefit from policies on which they work from holding decisionmaking authority, or otherwise having undue influence on policy outcomes. Any conflict-of-interest waiver should stipulate the parameters of permitted participation and be released to the public before major decisions are made.
 - Require federal employees to recuse themselves from policy decisions involving any party that was their employer or client during the previous two years, whether or not they maintain financial ties to that party.
 - Bar political appointees from lobbying their agencies after they leave government service for a minimum of five years.
 - Require that all nominees for political appointments be highly qualified for the specific position and vetted to avoid conflicts of interest.
 - Require that scientific leadership positions are filled by appointing individuals with specialized training or significant experience relevant to the positions for which they are nominated, like the requirements specified for confirming the Department of Agriculture's chief scientist.⁵

Safeguarding Government Scientists

Today's government scientists continue a long record of extraordinary contributions to the public good. Their activities improve weather forecasts, free food from harmful pathogens, keep consumer products safe, and ensure that medicines are safe and effective. It is crucial that these scientists' work environments support their research; encourage open, uncensored scientific exchange; and provide safe routes for reporting integrity violations, without fear of retaliation.

Under the Trump administration, government scientists have reported a broad range of problems that have eroded

their morale and ability to work, including censorship and the conditions that lead to self-censorship, political interference, outsized influence from industry, and reductions in workforce size. In a 2018 UCS survey, 1,100 federal scientists (28 percent of respondents) described morale in their offices as "poor" or "extremely poor" (Carter, Goldman, and Johnson 2018).

The Trump administration has retaliated against scientists for continuing crucial work—or even speaking publicly about it. For example:

- The administration has targeted individual scientists for communicating to the public about their research. After the superintendent of Joshua Tree National Park tweeted scientific information about the effects of climate change on the park, he was ordered to fly to Washington, DC, where he was reprimanded for publicly discussing climate change (Cama 2017).
- Political officials have threatened to fire scientists who correct false, unscientific statements. In September 2018, President Trump suggested that Hurricane Dorian could hit Alabama. He reiterated that baseless claim days later, showcasing a map that had been altered with a sharpie to include the state in the hurricane's projected path. National Weather Service (NWS) meteorologists in Alabama, reacting to a flood of calls from concerned state residents, tweeted that Dorian would not reach the state (Goldman 2019). Secretary of Commerce Wilbur Ross threatened to fire staff at the National Oceanic & Atmospheric Administration, which oversees the NWS, if the agency did not disavow the Alabama meteorologists (Flavell, Friedman, and Baker 2019).
- The administration has moved to limit the participation of federal scientists in professional conferences. For example, in December 2017, the DOI capped the number of US Geological Survey scientists who could attend the annual meeting of the American Geophysical Union, resulting in a 60 percent drop in their attendance (UCS 2018). Scientists value such gatherings as opportunities to stay updated on the latest developments in their fields, present research for peer review, and engage with colleagues outside the public sector (Oester et al. 2017). While reducing travel can save money, the cost in terms of lost learning, professional development, and effectiveness is likely far greater.

RECOMMENDATIONS

The next president must work to restore protections for government scientists, solidify safeguards for

whistleblowers, and ensure that work environments across federal agencies support and celebrate scientists' critical efforts.

- The president should support congressional efforts to expand the Whistleblower Protection Enhancement Act (WPEA) (GAP 2018). The expansions should strengthen protection for federal employees against retaliatory investigations and grant access to district court and jury trials for whistleblowers who report scientific integrity violations in the civil service system.
- The president should direct agency heads to communicate to all agency staff their commitment to supporting scientific integrity and protecting whistleblowers, encourage employees to report losses of scientific integrity, and provide information about anti-censorship and anti-retaliation rights under federal laws.
- The science advisor should encourage agencies to complete the Office of Special Counsel 2302(c) Certification Program to ensure compliance with the WPEA (OSC n.d.).
- The president should ensure that the OMB does not interfere in the scientific work of agencies and should support congressional efforts to codify this in legislation.
- The administration should explore the value of creating an independent agency to enforce scientific integrity by directing a study on the issue and forming a taskforce.

Fostering Public Participation in Decisionmaking

Federal law requires government agencies to publicize proposed rules, allow time for public comment, and respond to the substance of those comments (US Congress 1946). This distinguishes agencies' rulemaking processes—which have been called “refreshingly democratic,” at least in theory—from those of Congress (Asimov 1994). Online access has the potential to invite the public into the rulemaking process more deeply (Moxley 2016).

Yet there are ongoing threats to public participation in government decisionmaking. Most problematically, agencies tend to solidify the content of rules before comment periods—before the rules are “publicly observable” (Potter 2017). Most of the work, then, occurs in the “black box” of setting rulemaking agendas and developing rules (Sant’Ambrogio and Staszewski 2018). This enables interest groups to wield great influence over rulemaking before the public is aware of what is happening, and agency decisionmakers have enormous discretion over who they choose to listen to. For example:

- In his first two months as acting EPA chief, Andrew Wheeler, a former lobbyist for the fossil fuel industry, held almost 20 times as many meetings with industry representatives as with conservationists (Valdmanis 2019).
- Secretary of the Interior David Bernhardt, formerly an oil and gas lobbyist, met with an executive from an oil and gas company he was recused from dealing with. Between February 2017 and October 2018, top DOI political appointees met with more than 70 lobbyists representing companies from which Bernhardt was recused based on his extensive ties with those firms (Coleman 2019).

The Trump administration, like its predecessors, rarely takes advantage of potential solutions to these issues. For example, an agency can issue an Advance Notice of Proposed Rulemaking to encourage pre-rule engagement by the public, but agencies do so for less than 5 percent of rules (Balla 2019).

The Office of Information and Regulatory Affairs (OIRA), which reviews agency regulations at various stages in the rulemaking process, ostensibly provides another opportunity for public input. OIRA meets with anyone who seeks to discuss a rule. Yet this equitable-sounding practice has had inequitable results. By an overwhelming margin, industry takes advantage of this policy, meeting with OIRA five times as often as do public interest groups (Steinzor, Patoka, and Goodwin 2011). These meetings, which profoundly affect policy, are closed to the public and often occur before the release of proposals for comment (Potter 2018; Steinzor, Patoka, and Goodwin 2011).

Not all relevant or affected parties can, or do, submit comments on proposed rules—not least because opportunities for comment are rarely preemptively publicized to affected communities, and they are usually written in a technical manner, intended for highly educated audiences. This may help explain why business commenters shape final rules to a greater extent than do nonbusiness commenters. Unlike almost all of the general public, business interests often employ in-house technical experts, attorneys, and lobbyists to help make their case in public comments (Yackee and Yackee 2006).

RECOMMENDATIONS

The next president should encourage diverse, widespread, and fair participation in the rulemaking process.

- The president should encourage research into effective strategies for public engagement. They should:
 - Direct the OSTP, the OMB, and the US Digital Service (USDS) to investigate such strategies in collaboration with independent research bodies and to deploy strategies shown to be most effective.

- Direct agencies to investigate strategies for evaluating and responding to public comments to ensure that stakeholder concerns are heard and understood in an equitable, efficient way (Small 2018).
- The president should direct agencies to enhance digital accessibility in the rulemaking process:
 - Direct executive agencies and urge independent agencies to ensure the availability—in clear, plain language—of proposed rules at all stages of the rulemaking process, including instruction for and explanations of the public’s various venues of participation, as well as suggestions for how commenters can share experiences, offer value statements, and learn more about an issue (Sant’Ambrogio and Staszewski 2018).
 - Direct the OMB to deploy the USDS to improve the user friendliness and search functionality of www.regulations.gov, making it a more effective portal for engaging the public in rulemaking.
 - Direct agencies to work with the USDS and groups like the GSA’s 18F team, which provides information technology services to federal agencies, to investigate strategies for improving digital communication to and from the public. Agencies should coordinate with one another on these efforts and provide updates on www.regulations.gov.
 - Direct agencies to ensure that their internet homepages provide a one-stop point of access for all proposed rules open for comment, including embedded links to important external sites, like the *Federal Register* and www.regulations.gov (Coglianese 2011).
- The president should promote efforts to increase transparency and equity in rulemaking. They should:
 - Issue an executive order directing federal agencies to request that members of the public who comment on proposed rules disclose the funding sources and sponsoring organizations of research mentioned in their comments.
 - Direct OIRA to abide by strict procedural deadlines to avoid politically motivated delays in rulemaking (Steinzor, Patoka, and Goodwin 2011).
 - Direct executive agencies to make publicly available all research, sources, and correspondence—including meetings, telephone calls, and emails—used by an agency to inform the rule-drafting phase. These records should be available before publication of a rule proposal in the *Federal Register*.
- Direct agencies to solicit public input in the rule-making process as early and as effectively as possible.
- Direct agencies to alert the public and solicit comments early in the rulemaking process—before making actual regulatory proposals—by publishing Requests for Information or Advance Notices of Proposed Rulemaking in the *Federal Register*.
- Direct agencies to plan and execute targeted outreach efforts to encourage participation from parties affected by rulemaking but unlikely or unable to comment because of language barriers, internet inaccessibility, or financial constraints, among other factors. These efforts should identify and engage communities and individuals, working deliberately to overcome barriers to participation before rules are solidified.
- To improve public participation, direct agencies to hold informational webinars, public information meetings, and town hall–style sessions outside regular working hours, especially for rules that significantly affect communities of concern.

Protecting Democratic Processes

At its core, democracy is a system of government empowered by and beholden to its people. This vision of self-governance, championed by the nation’s founders, requires accountability, equity, and the public’s political participation. Science and democracy are partners in this vision: together, they lead to government decisions that serve the public interest, making our communities safer, healthier, and fairer.

Today our democracy is more imperiled than it has been in decades. Since the 2010 Supreme Court decision *Citizens United v. Federal Election Commission*, political spending has been unfettered. Compared to the 2008 election cycle, independent expenditures in the 2016 election cycle grew by nearly 900 percent (Center for Responsive Politics n.d.). The influence of wealthy individuals and corporations is especially outsized. In the 2016 federal elections, 35 percent of the \$6.5 billion spent came from 0.01 percent of adults; donors giving \$100,000 or more spent more than all 8 million small donors combined (Weiser and Bannon 2018). Millions of campaign dollars represent “dark money” from groups that do not disclose donors, exploiting loopholes left in the wake of *Citizens United* (Weiser and Bannon 2018).

Moreover, the federal agencies tasked with enforcing campaign finance laws lack teeth. Most important, no more than three individuals from one political party can serve on

the six-member Federal Elections Commission, which oversees enforcement. In practice, this leads to partisan deadlock, as 3:3 vote ties prevent decisions on high-impact cases (Weiner 2019). Worse still, the Federal Election Commission (FEC) has had three vacant seats since August 2019, leaving it without quorum and creating both a growing backlog of cases and an open invitation to violate campaign finance laws (Naylor 2019). The FEC's ineffectiveness in recent years has also shaped the penalties it levies: between 2002 and 2007, the FEC issued a median of \$4.6 million in fines annually; for the last five years, the annual median dropped to just \$825,000 (Ratliff 2019).

Voting rights and fair voter representation have also declined due to restrictive practices and state gerrymandering of congressional districts. Recent analyses by UCS have clearly connected barriers to voting and recent gerrymandering to declining public health outcomes (Latner 2019).

Congressional efforts to address both money in politics and protection of voting rights have been codified in H.R. 1 and H.R. 4 but have not progressed far in the Senate. Support from the president in the next administration will be crucial.

RECOMMENDATIONS

The next president should safeguard the fundamental processes of a healthy democracy, free of outsized moneyed influence.

- The president should support congressional efforts to pass, and should sign into law, H.R. 1: For the People Act of 2019.⁶ H.R. 1, introduced in the House on January 3, 2019, represents a sweeping set of proposals to strengthen voting rights and democratic processes. The bill's provisions would reform not only political campaign spending, but other crucial areas of democratic integrity as well, including voting access, election security, and government ethics requirements.⁷
- The president should support congressional efforts to pass, and should sign into law, H.R. 4: The Voting Rights Advancement Act of 2019.⁸ H.R. 4, introduced in the House on February 26, 2019, establishes new criteria for determining which states and political subdivisions must obtain preclearance before changes to voting practices in these areas may take effect. It would help ensure that minority voters can participate equally in elections.
- The president should support congressional efforts to pass, and should sign into law, H.R. 4000: The Fair Representation Act of 2019. H.R. 4000, introduced in the House on June 25, 2019, establishes the use of ranked choice voting in elections for Representatives in Congress, requires each state with more than one

Representative to establish multi-member congressional districts, and requires states to conduct congressional redistricting through independent commissions. It would effectively curtail racial and partisan gerrymandering, and bring congressional elections closer to the Constitution's guarantee of equal treatment for all voters.

- The president should support congressional efforts to pass, and should sign into law, S. 949: For the People Act of 2019. This legislation would make the ballot box more accessible to all Americans and reduce the influence of big money in elections.
- The president should support efforts to amplify small-donor campaign financing (Weiser and Bannon 2018). They should:
 - Support legislation that would establish a system of public financing for small-donor campaign contributions, including “democracy voucher” programs such as that implemented by the city of Seattle, passed by South Dakota, and included as a pilot program in H.R. 1.
 - Support the reinstatement of federal tax credits or rebates for small campaign contributions, a system that millions of Americans took advantage of between 1972 and 1986. Those credits encouraged small donors to participate in election financing.
- The president should support efforts to crack down on dark money and enforce existing campaign finance laws. They should:
 - Support legislation requiring any group that spends substantially in elections to disclose its donors, regardless of group type. The legislation should empower the FEC to impose effective penalties on violators.
 - Support legislation cracking down on coordination between super PACs and candidates, as well as between officeholders and dark money nonprofits (Weiser and Bannon 2018).
- The president should empower the FEC to reign in violations of campaign finance laws and strengthen the integrity of elections to federal offices. They should:
 - Support congressional efforts to reduce the number of FEC members to five or increase it to seven, with one seat reserved for an independent member who could break partisan ties. This would remedy the gridlock that stunts the commission's efficacy (Ravel 2017). FEC commissioners wield the sole power to vote on and close investigations of suspected

violations of campaign finance laws. Even when agency staff can advance casework, they cannot complete investigations without the commissioners' votes (Leventhal 2019).

- Nominate a chairperson to head the FEC for a specific period of time. The FEC's leadership rotates, which makes it difficult to hold the commission accountable for its actions and inaction (Weiner 2019).
- Support congressional legislation that appropriates enough funding for the FEC to function effectively. This should include enough funding to expand the FEC's enforcement capacity and maintain a full staff. Over the past 16 years, one-fifth of FEC staffers have left without being replaced (Ratliff 2019).
- The president should issue an executive order requiring companies with government contracts to disclose their political contributions (Kennedy and Skaggs 2011). Because government contractors stand to benefit directly from public spending, taxpayers have a right to know who and what they are supporting.
- The president should direct the FEC to reform its digital regulatory regime and revamp its enforcement mechanisms.
 - The FEC must develop and enforce baseline disclosure requirements for political ads on digital platforms (Fischer 2018). Digital advertising, on Facebook, Twitter, and elsewhere, is notoriously unregulated, yet its use increased 260 percent from the 2014 to the 2018 elections (Thompson 2019). Political advertising on television and radio is subject to disclaimer requirements; the regulatory framework has not kept up with the digital transformation.
 - The FEC should establish an independent, internal enforcement bureau with a director appointed by a bipartisan majority of the commission. The director would make an initial determination on all investigations and, with the commission's approval, litigate cases as needed. This would insulate the FEC's enforcement mechanisms from the commission at large and streamline the investigation process (Weiner 2019).
- The president should direct the Internal Revenue Service (IRS) to initiate reforms that prevent "dark money" groups from bypassing rules on disclosing campaign contributions.
 - Much of the dark money channeled into political campaigns comes from 501(c)(4) groups (also known as "social welfare" organizations).¹¹ Special interests

regularly co-opt this tax status that exempts groups from disclosing the identities of campaign donors. To combat this, the IRS must establish a clear, specific limit on the campaign activity a group can engage in and remain eligible for 501(c)(4) tax status, such as limiting campaign-related donations and expenses to no more than 10 percent of group expenditures (Wertheimer 2014). The IRS rule must clearly define the campaign activities to be included in its limits for 501(c)(4) groups, including the kinds of issue advertising that currently skirt oversight.

- The IRS should amend the tax code to classify a 527 organization as any group, including any 501(c), that spends more than a certain portion of its expenditures on campaigns and political advertising.¹² Because 527 groups must disclose donors, this will help protect the public interest (DeMot 2015).
- The president should direct the Securities and Exchange Commission (SEC) to strengthen its regulatory oversight of political expenditures.
 - The SEC should require corporations to report all political expenditures to their shareholders. This would help ensure that political expenditures align with company and shareholder interests. Just as important, it would enhance transparency in campaign spending (DeMot 2015).
 - The SEC should require publicly traded companies to disclose their direct and indirect political activities. In 2011, a group of 10 high-profile law professors filed a petition with the SEC asking for such a rule. By December 2013, the petition had gained more than 640,000 signatures, the most that the commission has ever received on a rule (Goldman 2014).

Conclusion

The Trump administration's unprecedented attacks on science highlight an urgent need for the next president to restore integrity in science-based decisionmaking. This administration has sidelined scientific guidance from experts inside and outside of agencies, directly censored scientists, suppressed federal scientific reports, and created a chilling environment that has demoralized federal scientists and led to self-censorship of their work.

The consequences of sidelining science for the past four years will only intensify if future leaders do not restore the role of independent science and expertise in decisionmaking. Failing to do so risks increased pollution in our communities;

less preparation for and response to national emergencies and disasters; unsafe conditions and exposures in our workplaces; dangerous products in our homes; and lives that will be impaired, shortened or lost. Our next leader must take swift action to make science a centerpiece of our health, safety, and security protections.

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ENDNOTES

- 1 *Federal Vacancies Reform Act*, 5 U.S.C. § 3345 (2006). www.govinfo.gov/app/details/USCODE-2006-title5/USCODE-2006-title5-partIII-subpartB-chap33-subchapIII-sec3345.
- 2 This policy should hold even if employees identify their employer for professional identification purposes, provided the work includes a disclaimer that it represents personal views.
- 3 *Scientific Integrity Act*, H.R. 1709, 116th Cong. (2019). www.congress.gov/bill/116th-congress/house-bill/1709.
- 4 The Organization for Economic Co-operation and Development has defined open government as a “culture of governance” that champions integrity, transparency, and accountability.
- 5 *Under Secretary of Agriculture for Research, Education, and Economics*, 5 U.S.C. § 6971 (2008). <https://www.govinfo.gov/content/pkg/USCODE-2008-title7/html/USCODE-2008-title7-chap98-subchapVI-sec6971.htm>.
- 6 *For the People Act*, H.R. 1, 116th Cong. (2019). www.congress.gov/bill/116th-congress/house-bill/1.
- 7 See *Latner 2019* for further information on voting access reform.
- 8 *The Voting Rights Advancement Act of 2019*, H.R. 4, 116th Cong. (2019). www.congress.gov/bill/116th-congress/house-bill/4/text.
- 9 *The Fair Representation Act of 2019*, H.R. 4000, 116th Cong. (2019). www.congress.gov/bill/116th-congress/house-bill/4000/all-info.
- 10 *Voting Rights Act: Hearings on evidence of continued need, before the Subcommittee on the Constitution of the Committee on the Judiciary, House of Representatives, 109th Cong.* <https://catalog.hathitrust.org/Record/005272938>.
- 11 In the tax code, a 501(c)(4) is a social welfare organization such as a civic organization or a neighborhood association.
- 12 The tax code permits 527 organizations, such as political action committees, to seek to influence elections without directly advocating for a particular candidate.

REFERENCES

- Asimov, M. 1994. On pressing McNollgast to the limits: The problem of regulatory costs. *Law and Contemporary Problems* 57(1):127–37. www.jstor.org/stable/1191989.
- Aton, A., 2018. Interior’s handling of science gives climate advocates a sense of déjà vu. *E&E News*, May 15. www.scientificamerican.com/article/interiors-handling-of-science-gives-climate-advocates-a-sense-of-deja-vu.
- Baba, A., D.M. Cook, T.O. McGarity, and L.A. Bero. 2005. Legislating “sound science”: The role of the tobacco industry. *American Journal of Public Health* 95(S1). <https://ajph.aphapublications.org/doi/10.2105/AJPH.2004.050963>.
- Balla, J. 2019. Early but not often: A look into the use of ANPRMs in rulemaking. *Regulatory Studies Center at George Washington University*, May 3. <https://regulatorystudies.columbian.gwu.edu/early-not-often-look-use-anprms-rulemaking>.
- Bélisle-Pipon, J., L. Ringuette, A. Cloutier, V. Doudenkova, and B. William-Jones. 2018. Conflicts of interest and the (in)dependence of experts advising government on immunization policies. *Vaccine* 36(49):7439–7444. doi: 10.1016/j.vaccine.2018.10.058.
- Berman, E., and J. Carter. 2018. Policy analysis: Scientific integrity in federal policymaking under past and present administrations. *Journal of Science Policy and Governance* (13)1. www.sciencepolicyjournal.org/uploads/5/4/3/4/5434385/berman_emily_carter_jacob.pdf.
- Bernhardt, D. 2018. Order no. 3369. Subject: Promoting open science. Washington, DC: Office of the Secretary of the Interior. www.doi.gov/sites/doi.gov/files/elips/documents/so_3369_promoting_open_science.pdf.
- Bharara, P., C.T. Whitman, M. Castle, C. Edley, Jr., C. Hagel, D. Iglesias, A.C. Rick, and D.B. Verrilli, Jr. 2019. Proposals for reform, Volume II: National Task Force on Rule of Law and Democracy. New York, NY: Brennan Center for Justice. www.brennancenter.org/our-work/policy-solutions/proposals-reform-volume-ii-national-task-force-rule-law-democracy.
- Bharara, P., C.T. Whitman, M. Castle, C. Edley, Jr., C. Hagel, D. Iglesias, A.C. Rick, and D.B. Verrilli, Jr. 2018. Proposals for Reform: National Task Force on Rule of Law and Democracy. New York, NY: Brennan Center for Justice. <https://www.brennancenter.org/our-work/policy-solutions/proposals-reform-national-task-force-rule-law-democracy>.
- Bridis, T. 2018. US sets new record for censoring, withholding gov’t files. *Associated Press*, March 12. <https://apnews.com/714791d91d7944e49a284a51fab65b85/US-sets-new-record-for-censoring-withholding-gov%27t-files>.
- Brown, M. 2019. Court rules Trump EPA unlawfully ignored dangerous chemicals. *AP News*, November 14. <https://apnews.com/ea3d87fb8ef741c3bc255f1921892c9d>.
- Cama, T. 2017. Zinke reprimanded park head after climate tweets. *The Hill*, December 15. <https://thehill.com/policy/energy-environment/364994-zinke-reprimanded-park-head-after-climate-tweets>.
- Carter, J. 2018. The good, the bad, and the ugly: The results of our 2018 Federal Scientists Survey. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, August 14. <https://blog.ucsusa.org/jacob-carter/the-good-the-bad-and-the-ugly-the-results-of-our-2018-federal-scientists-survey>.

- Carter, J., E. Berman, A. Desikan, C. Johnson, and G. Goldman. 2019. *The state of science in the Trump era: Damage done, lessons learned, and a path to progress*. Cambridge, MA: Union of Concerned Scientists. www.ucsusa.org/sites/default/files/attach/2019/01/ucs-trump-2yrs-report.pdf.
- Carter, J., G. Goldman, and C. Johnson. 2018. *Science under President Trump: Voices of scientists across 16 federal agencies*. Cambridge, MA: Union of Concerned Scientists. www.ucsusa.org/sites/default/files/attach/2018/08/science-under-trump-report.pdf.
- Carter, J., A. Markham, J. Clement, M. Heid, and P. Worth. 2018. *Science under siege at the Department of Interior: America's Health, Parks, and Wildlife at Risk*. Cambridge, MA: Union of Concerned Scientists. <https://www.ucsusa.org/sites/default/files/attach/2018/12/science-under-siege-at-department-of-interior-full-report.pdf>.
- Center for Responsive Politics. No date. "Total outside spending by election cycle, excluding party committees." www.opensecrets.org/outsidespending/cycle_tots.php.
- Coglianesi, C. 2011. Federal agency use of electronic media in rulemaking process. *Public Law Research Paper No. 11-32*. Philadelphia, PA: University of Pennsylvania Law School. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1911546.
- Coleman, J. 2019. David Bernhardt's ex-lobbying clients met 70 times with Interior Department appointees. *Documented*, March 27. <https://documented.net/2019/03/david-bernhards-ex-lobbying-clients-met-70-times-with-interior-department-appointees>.
- Davenport, C. 2019. Interior chief's lobbying past has challenged the agency's ethics referees. *The New York Times*, November 9. www.nytimes.com/2019/11/09/climate/interior-secretary-ethics.html.
- DeMot, A. 2015. *Addressing the influence of money in politics through executive action*. Washington, DC: Center for American Progress. www.americanprogress.org/issues/general/reports/2015/01/16/104761/addressing-the-influence-of-money-in-politics-through-executive-action.
- Department of Energy (DOE). No date. "75 breakthroughs by America's national laboratories." www.energy.gov/downloads/75-breakthroughs-americas-national-laboratories.
- Desikan, A., J. Carter, S. Kinsler, and G. Goldman. 2019. *Abandoned science, broken promises: How the Trump administration's neglect of science is leaving marginalized communities further behind*. Cambridge, MA: Union of Concerned Scientists, Center for Science and Democracy. www.ucsusa.org/sites/default/files/2019-10/abandoned-science-broken-promises-web-final.pdf.
- Doyle, A. 2010. Saving endangered species: It's the economy. Reuters, February 2. www.reuters.com/article/us-biodiversity/saving-endangered-species-its-the-economy-idUSTRE61201U20100203.
- Environmental Protection Agency (EPA). 2018. Strengthening transparency in regulatory science: A proposed rule by the Environmental Protection Agency on 04/30/2018. www.epa.gov/osa/strengthening-transparency-regulatory-science.
- Environmental Protection Agency (EPA). 1994. Summary of Executive Order 12898—Federal actions to address environmental justice in minority populations and low-income populations. 59 FR 7629; February 16. www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice.
- Fischer, B. 2018. Re: Comments on Notice 2018-16: Internet communication disclaimers and definition of "public communication." FEC public communications, July 18. <https://campaignlegal.org/sites/default/files/2018-11/CLC%20Comments.pdf>.
- Fish and Wildlife Service (FWS). 2019. History of bald eagle decline, protection and recovery. Bloomington, MN: U.S. Fish and Wildlife Service Midwest Region. www.fws.gov/midwest/eagle/History/index.html.
- Flavell, C., L. Friedman, and P. Baker. 2019. Commerce chief threatened firings at NOAA after Trump's Dorian tweets, sources say. *The New York Times*, September 10. www.nytimes.com/2019/09/09/climate/hurricane-dorian-trump-tweet.html.
- Frankl, T. 2019. After hundreds of crashes, this Britax jogging stroller faced recall. Then Trump appointees stepped in. *Washington Post*, April 2. www.washingtonpost.com/business/economy/after-hundreds-of-crashes-this-britax-jogging-stroller-faced-recall-then-trump-appointees-stepped-in/2019/04/02/faf23c20-4c06-11e9-b79a-961983b7e0cd_story.html.
- Friedman, L. 2019. E.P.A. to limit science used to write public health rules. *The New York Times*, November 11. www.nytimes.com/2019/11/11/climate/epa-science-trump.html.
- General Services Administration (GSA). 2019. The Federal Advisory Committee Act. www.gsa.gov/policy-regulations/policy/federal-advisory-committee-management/legislation-and-regulations/the-federal-advisory-committee-act.
- Goldman, G. 2019. NOAA leadership trades scientific integrity for political appeasement. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, September 7. <https://blog.ucsusa.org/gretchen-goldman/noaa-leadership-trades-scientific-integrity-for-political-appeasement>.
- Goldman, G. 2014. Companies, trade groups, and climate change: Why we need an SEC rule on corporate political disclosure. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, January 21. <https://blog.ucsusa.org/gretchen-goldman/companies-trade-groups-and-climate-change-why-we-need-an-sec-rule-on-corporate-political-disclosure-380>.
- Government Accountability Office (GAO). 2019. *GAO-19-270: A report to the ranking member, Committee on Environment and Public Works, U.S. Senate: Chemical assessments: Status of EPA's efforts to produce assessments and implement the Toxic Substances Control Act*. www.gao.gov/assets/700/697212.pdf.
- Government Accountability Project (GAP). 2018. Whistleblower Protection Enhancement Act (WPEA). Washington, DC. www.whistleblower.org/uncategorized/whistleblower-protection-enhancement-act-wpea.
- Green, M., and R. Beitsch. 2019. Trump directs agencies to cut advisory boards by "at least" one-third. *The Hill*, June 14. <https://thehill.com/regulation/energy-environment/448678-trump-directs-agencies-to-cut-advisory-boards-by-at-least-one>.
- Groux, G.M.N., S.J. Hoffman, T. Ottersen. 2018. A typology of scientific advisory committees. *Global Challenges* 2(9):1800004. www.ncbi.nlm.nih.gov/pmc/articles/PMC6175068/#gch220180004-bib-0009.
- Halpern, M. 2019. Scientific Integrity Act passes out of committee with unprecedented bipartisan support. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, October 17. <https://blog.ucsusa.org/michael-halpern/scientific-integrity-act-passes-out-of-committee-with-unprecedented-bipartisan-support>.
- Halpern, M. 2018. The EPA disbanded its office of science advisor. Here's why that matters. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, October 2. <https://blog.ucsusa.org/michael-halpern/the-epa-disbanded-its-office-of-science-advisor-heres-why-that-matters>.

- Harris, G., and W. Broad. 2019. Scientists welcome Obama's words. *The New York Times*, January 21. www.nytimes.com/2009/01/22/us/politics/22science.html.
- Hurst, S., and A. Mauron. 2008. A question of method: The ethics of managing conflicts of interest. *EMBO Reports* 9(1):119–123. www.embopress.org/doi/10.1038/sj.embor.2008.4.
- Kahn, R.E. 1994. *The role of government in the evolution of the Internet*. Washington, DC: National Academies Press. www.genome.gov/human-genome-project.
- Kennedy, E., and A. Skaggs. 2011. *The people's business: Disclosure of political spending by government contractors*. New York, NY: Brennan Center for Justice. www.brennancenter.org/our-work/research-reports/peoples-business-disclosure-political-spending-government-contractors.
- Latner, M. 2019. *Our unhealthy democracy: How voting restrictions harm public health—and what we can do about it. The Equation*. Cambridge, MA: Union of Concerned Scientists. www.ucsusa.org/sites/default/files/2019-10/our-unhealthy-democracy-white-paper-2019.pdf.
- Ledford, H., S. Reardon, E.R. Mega, J. Tollefson, and A. Witze. 2019. Trump seeks big cuts to science funding—again. *Nature*, March 11. www.nature.com/articles/d41586-019-00719-4.
- Levinthal, D. 2019. Halloween's over. The FEC? Still a zombie. Washington, DC: Center for Public Integrity. <https://publicintegrity.org/federal-politics/fec-quorum-congress-trump-elections>.
- McCrimmon, R. 2019. Economists flee Agriculture Dept. after feeling punished under Trump. *Politico*, May 7. www.politico.com/story/2019/05/07/agriculture-economists-leave-trump-1307146?cid=apn.
- Mooney, C. 2017. 85 percent of the top science jobs in Trump's government don't even have a nominee. *Washington Post*, June 6. www.washingtonpost.com/news/energy-environment/wp/2017/06/06/trump-has-filled-just-15-percent-of-the-governments-top-science-jobs.
- Moxley, L. 2016. E-rulemaking and democracy. *Administrative Law Review* 68(4):661–699. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2902892.
- National Academies of Sciences, Engineering, and Medicine (NASEM). 2018. *Securing the Vote: Protecting American Democracy*. Washington, DC: The National Academies Press. doi: 10.17226/25120.
- National Academies of Sciences, Engineering, and Medicine; Policy and Global Affairs; Committee on Science, Engineering, Medicine, and Public Policy; Committee on Responsible Science (NAS). 2017. *Fostering integrity in research. Chapter 7: Addressing research misconduct and detrimental research practices: Current knowledge and issues*. Washington, DC: National Academies Press. www.ncbi.nlm.nih.gov/books/NBK475962.
- National Human Genome Research Institute (NHGRI). 2019. "The Human Genome Project." National Institutes of Health. www.genome.gov/human-genome-project.
- National Institutes of Health (NIH). 2019. "Research at the NIH Clinical Center: Medical milestones—Clinical center firsts." US Department of Health and Human Services. www.genome.gov/human-genome-project.
- National Institutes of Health (NIH). 2018. "Impact of NIH research: Our health." Washington, DC: US Department of Health and Human Services. www.nih.gov/sites/default/files/about-nih/impact/impact-our-health.pdf.
- National Wildlife Federation (NWF). 2006. Why care? The urgency of saving endangered species. www.nwf.org/~media/PDFs/Wildlife/medicinalbenefits9-06.ashxSpecies.
- Naylor, B. 2019. As FEC nears shutdown, priorities such as stopping election interference on hold. *NPR*, August 30. www.npr.org/2019/08/30/755523088/as-fec-nears-shutdown-priorities-such-as-stopping-election-interference-on-hold.
- Obama, B. 2019a. Freedom of Information Act: Memorandum for the heads of departments and agencies. Memo, January 21. *Federal Register*. www.ims.gov/sites/default/files/presidentmemorandum620.pdf.
- Obama, B. 2019b. Memorandum for the heads of departments and agencies: Subject: Scientific integrity. Memo, March 9. <https://obamawhitehouse.archives.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09>.
- Oester, S., J.A. Cigliano, E.J. Hind-Ozan, and E.C.M. Parsons. 2017. Why conferences matter—An illustration from the International Marine Conservation Congress. *Frontiers in Marine Science*, August 9. <https://doi.org/10.3389/fmars.2017.00257>.
- Office of Special Counsel (OSC). No date. "2302(c) certification program." <https://osc.gov/Services/Pages/Outreach-2302Cert.aspx>.
- Organisation for Economic Co-operation and Development (OECD). 2017. Recommendation of the Council on Open Government. *OECD Legal Instruments*, December 13. <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0438>.
- Potter, R.A. 2017. Slow-rolling, fast-tracking, and the pace of bureaucratic decisions in rulemaking. *Journal of Politics* 79(3):841–55. www.journals-uchicago.edu.ezproxy2.library.colostate.edu/doi/pdfplus/10.1111%2Fj.1468-2508.2006.00375.x.
- Presidential Management Fellowship Program (PMFP). 2014. A new Presidential Management Fellow track for science, technology, engineering, and math. Washington, DC: US Office of Personnel Management. www.pmf.gov/media/84835/pmf_stem_2014.pdf.
- Ratliff, A. 2019. *Busted and broke: Why the Federal Election Commission doesn't work*. Washington, DC: Issue One. www.issueone.org/wp-content/uploads/2019/04/FEC-REPORT-2019.pdf.
- Ravel, A.M. 2017. Dysfunction and deadlock at the Federal Election Commission. *The New York Times*, February 20, www.nytimes.com/2017/02/20/opinion/dysfunction-and-deadlock-at-the-federal-election-commission.html2017.
- Reed, G. 2019a. A stroller debacle at CPSC politicizes child safety and I have no chill. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, May 16. <https://blog.ucsusa.org/genna-reed/a-stroller-debacle-at-cpsc-politicizes-child-safety-and-i-have-no-chill>.
- Reed, G. 2019b. Administrator Wheeler is hiding the truth about formaldehyde. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, April 19. <https://blog.ucsusa.org/genna-reed/wheeler-hiding-truth-about-formaldehyde>.
- Revolving Door Working Group (RDWG). 2005. *A matter of trust: How the revolving door undermines public confidence in government—and what to do about it*. Washington, DC: Project on Government Oversight. <http://pogoarchives.org/m/gc/a-matter-of-trust-20051001.pdf>.
- Rosenberg, A. 2018. Five things you should know about EPA's proposed giant step backward on the safety of chemical facilities. *The Equation*. Cambridge, MA: Union of Concerned Scientists. Blog, May 17. <https://blog.ucsusa.org/andrew-rosenberg/five-things-you-should-know-about-epas-proposed-giant-step-backward-on-the-safety-of-chemical-facilities>.

- Sant'Ambrogio, M. and G. Staszewski. 2018. *Public engagement with agency rulemaking. Final report for the Administrative Conference of the United States*. Washington, DC: Administrative Conference of the United States. www.acus.gov/sites/default/files/documents/PublicEngagementinRulemakingFinalReport.pdf.
- Shear, M., and Z. Kanno-Young. 2019. Trump insists he was right about Hurricane Dorian heading for Alabama. *The New York Times*, September 4. www.nytimes.com/2019/09/04/us/politics/trump-hurricane-alabama-sharpie.html.
- Small, D. 2018. Public participation in rulemaking in the age of mass comments. Washington, DC: Administrative Conference of the United States. Blog, July 19. www.acus.gov/newsroom/administrative-fix-blog/public-participation-rulemaking-age-mass-comments.
- Snider, A. 2019. Interior's Bernhardt worked closely on matters he promised to avoid. *Politico*, April 21. www.politico.com/story/2019/04/21/david-bernhardt-water-law-interior-department-1370107.
- Steinzor, R., M. Patoka, and J. Goodwin. 2011. *Behind closed doors at the White House*. Washington, DC: Center for Progressive Reform. www.progressivereform.org/articles/OIRA_Meetings_1111.pdf.
- Sunlight Foundation. No date. Tracking Trump's attacks on transparency. <https://sunlightfoundation.com/tracking-trumps-attacks-on-transparency>.
- Thompson, D. 2019. The long wait for updated FEC rules for Internet ad disclaimers. Washington, DC: Campaign Legal Center. <https://campaignlegal.org/update/long-wait-updated-fec-rules-internet-ad-disclaimers>.
- Tonko, P.D. 2017. Time to codify scientific integrity. Letter, June 23. *Science* 356(6344):1241-1242. doi: 10.1126/science.aan6163.
- Union of Concerned Scientists (UCS). 2018. "DOI restricts scientists from attending scientific conferences." Reports & multimedia: Attacks on science, July 10. www.ucsusa.org/resources/attacks-on-science/doi-restricts-scientists-attending-scientific-conferences.
- Union of Concerned Scientists (UCS). 2017a. "Attacks on science." Reports & multimedia: Feature, January 20. www.ucsusa.org/resources/attacks-on-science.
- Union of Concerned Scientists (UCS). 2017b. "Federal agency websites altered." Reports & multimedia: Attacks on science, January 24. www.ucsusa.org/resources/attacks-on-science/federal-agency-websites-altered.
- Union of Concerned Scientists (UCS). 2008. "2004 scientist statement on restoring scientific integrity to federal policy making." Cambridge, MA: Union of Concerned Scientists. www.ucsusa.org/resources/2004-scientist-statement-scientific-integrity#.Wfx1S4prxYc.
- US Congress. 2016. *FOIA Improvement Act of 2016*. Public Law No: 114-185, 114th Congress. www.congress.gov/bill/114th-congress/senate-bill/337.
- US Congress. 1946. *FOIA Administrative Procedure Act*. Public Law No: 404, 79th Congress. www.justice.gov/sites/default/files/jmd/legacy/2014/05/01/act-pl79-404.pdf.
- Valdmanis, R. 2019. Like predecessor, Trump's new EPA pick favors meetings with industry. *Reuters*, February 1. www.reuters.com/article/us-usa-epa-wheeler-meetings/like-predecessor-trumps-new-epa-pick-packs-schedule-with-industry-meetings-idUSKCN1PQ5SR.
- Waldman, S. 2018. Science advisor allowed oil group to edit research. *E&E News*, December 10. www.eenews.net/climatewire/2018/12/10/stories/1060109129.
- Weiner, D. 2019. *Fixing the FEC: An agenda for reform*. New York, NY: Brennan Center for Justice. www.brennancenter.org/sites/default/files/publications/2019_04_FECV_Final.pdf.
- Weiser, W., and A. Bannon, eds. 2018. "Democracy: An election agenda for candidates, activists, and legislators." New York, NY: Brennan Center for Justice. www.brennancenter.org/our-work/policy-solutions/democracy-election-agenda-candidates-activists-and-legislators.
- Wertheimer, F. 2014. IRS can end "dark money" in federal elections. *Huffington Post*, November 2. www.huffpost.com/entry/irs-can-end-dark-money-in_b_5753024.
- White House. 2019. Executive order on evaluating and improving the utility of federal advisory committees. Issued June 14. www.whitehouse.gov/presidential-actions/executive-order-evaluating-improving-utility-federal-advisory-committees.
- White House. 2013. Executive order: Making open and machine readable the new default for government information. Press release, May 9. <https://obamawhitehouse.archives.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine-readable-new-default-government>.
- White House. No date. "Campaign to cut waste." <https://obamawhitehouse.archives.gov/21stcenturygov/actions/revolving-door>.
- Wolf, S.H., E. Zimmerman, A. Haley, and A.H. Krist. 2016. Authentic engagement of patients and communities can transform research, practice, and policy. *Health Affairs* 35(4):590-594. www.healthaffairs.org/doi/pdf/10.1377%2Fhlthaff.2015.1512.
- Yackee, J.W., and S.W. Yackee. 2006. A bias toward business? Assessing interest group influence on the U.S. bureaucracy. *Journal of Politics* 68(1):128-139. www-journals-uchicago-edu.ezproxy2.library.colostate.edu/doi/pdfplus/10.1111%2Fj.1468-2508.2006.00375.x.