

Strengthening Federal Science for the Public Good

A Blueprint for the Next Administration



Throughout its history, the United States has benefited greatly from the use of science in public policy making. When President Abraham Lincoln signed into law legislation founding the National Academy of Sciences (NAS) in 1863, he answered a call from scientists for “an institution of science . . . to guide public action in reference to science matters” (NAS 2016).

Since that time, our nation’s challenges have become significantly more scientifically and technologically complex, and today Americans rely on the federal government’s use of science to keep us safe and healthy. Science informs safeguards and standards that protect us from risks associated with issues ranging from infectious disease to environmental pollution, from new drug approvals and consumer products to worker safety.

As science becomes a more powerful tool to inform policy decisions, the temptation to manipulate, suppress, or distort it increases. Political, ideological, and financial interests have undermined the place of science in federal decision making, harming the public good. When President Barack Obama took office, he vowed to “restore science to its rightful place” and took several steps to protect and advance the role that science plays in the federal government (Obama 2009). In addition to launching open-government initiatives, reversing previous federal government actions that enabled political interference in science, and signing an executive order to address the revolving door between government and regulated industries, the president issued a directive that resulted in 23 agencies and departments adopting scientific integrity policies and many agencies installing scientific integrity officials to oversee adherence to the new policies.

Despite these efforts, evidence from recent executive decisions and surveys of federal scientists indicates that problems still persist. In recent cases, politics have derailed what by statute should have been science-based environmental and public health decisions by federal agencies. Some agency scientific integrity policies are weakly written, while some stronger scientific integrity policies have not been fully implemented or have no implementation plans (UCS 2013). Additionally, some government scientists and journalists report

an increase in barriers to the free flow of scientific information (Bailin et al. 2015; Goldman et al. 2015a).

It is imperative that the next president prioritize these issues. In its first 100 days, the new administration should enact several key measures to ensure that its legacy includes an adherence to scientific integrity by the federal government. This document offers concrete actions that the 45th president, agency and department heads, and the US Congress can take to protect and advance the role of science in government decision making.

What Is Scientific Integrity?

Scientific integrity is a practice whereby independent science, free from inappropriate political, ideological, financial, or other undue influence, fully informs policy decisions in a transparent way. Loss of scientific integrity goes beyond scientific misconduct within the scientific community, which includes plagiarism and falsification of data. Rather, scientific integrity here refers to the proper use of science in government decision making and its contribution to public understanding of science as it informs public policy and debate. Science, of course, is not the only input to policy decisions, which are informed by many factors including both values and facts. Principles of scientific integrity include the following (Goldman et al. 2015a; UCS 2008; UCS SIP 2008):

- **Independent science.** It is crucial that public policy decisions be informed by expert science advice that is free from political interference. In order to achieve better policy decisions and public trust in those decisions, independent science is needed to ensure that the scientific evidence that informs policy proposals stems from a valid

and credible scientific process. For example, for science-based decisions in government to be considered independent, election processes and deliberations of federal advisory committees should be public, agencies should have consistent and transparent peer review processes, and decision makers' and science advisors' conflicts of interest should be minimized and fully disclosed.

- **Transparent decision making.** The public should have access to information about how science is used (or not used) in regulatory decision making. The president and agency leadership should facilitate the free flow of scientific information between agency experts and the public and media by putting strong and clear communication policies into effect. It is essential that agencies increase transparency within the regulatory process to facilitate the public's right to know and its participation in policy making, particularly for rules that impact health and safety. Increasing media access to scientists' expertise also greatly enhances public knowledge and, therefore, public faith in the role of science in decision making.

- **Scientific free speech.** Government scientists should have the freedom to flourish professionally and personally. They should have the right to conduct research consistent with their agency's mission and publish their findings in a timely manner. They should be able to communicate those findings freely and have opportunities to ensure that their scientific work is accurately informing agency decision making. Further, federal scientists should have the right to express personal views on science and policy provided that they make clear they are not speaking for the agency. To retain their expertise and credibility, they should be given appropriate time and resources to keep up with advances in their profession by attending conferences and trainings, participating in scientific or professional societies, serving on editorial boards of scientific journals, and publishing in the scientific literature. Federal employees who 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.



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

Recommendations for the 45th President

- **The president should move to ensure that all federal officials, including the president, have access to the best scientific advice from the very start of the new administration.**
 - **The president should appoint a widely respected scientist to the position of science advisor to the president and nominate the same person to be director of the White House Office of Science and Technology Policy (OSTP).** Because science and technology issues are so closely intertwined with other national priorities, the science advisor should report directly to the president and have consistent and direct access to the president and cabinet members (UCS SIP 2008).
- **The president should appoint an assistant director within the OSTP to coordinate and oversee policies and procedures for ensuring that federal actions are informed by the best available science without undue political influence.** Because the OSTP is charged with overseeing a broad range of issues, a dedicated assistant director is needed to focus on

scientific integrity in federal decision making. With the assistant director's guidance, the OSTP should do the following:

- Work to bolster a culture of scientific integrity throughout the government to ensure consistent compliance with and improvement of scientific integrity policies.
- Encourage agencies to conduct scientific integrity trainings for all federal employees who use science to any significant degree in their jobs and play a coordinating role across agencies.
- Work to mitigate and correct agency actions that do not follow appropriate processes when addressing allegations of scientific misconduct, censorship, or retaliation.
- Publicly release an annual report on the state of scientific integrity within the federal government.
- Facilitate the regular convening of an interagency scientific integrity council to share resources and strengthen and unify scientific integrity efforts across the government.



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

- **The president should issue a memorandum directing agency heads to bolster their efforts promoting scientific integrity and science-based decision making.**

The memorandum should include the following provisions:

- Agency heads should impress upon employees that scientific integrity is crucial to achieving their missions and ensure access to trainings and information about agency scientific integrity policies.
- Agency heads should appoint or assign an official in charge of scientific integrity who will report to the highest-ranking civil servant at the agency and work with the OSTP on cross-government issues, such as open-data initiatives and implementation of scientific integrity policies. Scientific integrity should be a significant portion of the official's time.
 - ▶ Scientific integrity officials should report out annually and publicly the status of allegations and investigations relating to violations of the agency's scientific integrity policy while keeping confidential the names of those involved where appropriate. These reports should be similar to the closed-case database maintained by the Department of the Interior (DOI) (DOI 2016).

- **The president should veto any legislation that interferes with science-based rulemaking or weakens the ability of agencies to ensure that independent science informs decision making.** Such proposed legislation has in the past included the Secret Science Reform Act of 2015 and the Environmental Protection Agency (EPA) Science Advisory Board Reform Act of 2015.
- **Consistent with the FOIA Improvement Act of 2016, the president should affirm that the default position of the administration in regard to the Freedom of Information Act (FOIA) is the presumption of openness and proactive disclosure.**
- **The president should ensure that the Office of Management and Budget (OMB) does not interfere in the scientific work of agencies.** The OMB plays an important role in coordinating and overseeing the process of crafting regulations. However, the OMB should not seek to replicate or override the scientific expertise of the agencies. OMB should respect the scientific and technical expertise of the regulatory agencies and refrain from participating in purely scientific determinations beyond transparent inter-agency coordination. Specifically, the president should make the OMB more transparent and accountable by

making interagency review comments public during a notice and comment period on federal rulemaking.

- **The administration should issue an executive order that reorients the Office of Information and Regulatory Affairs' (OIRA's) regulatory review process so that agencies' statutory standards, and not an OIRA-defined economic test, are the criteria for review.** The order should affirm that OIRA's review of agency-conducted economic analyses is in line with statutory standards.

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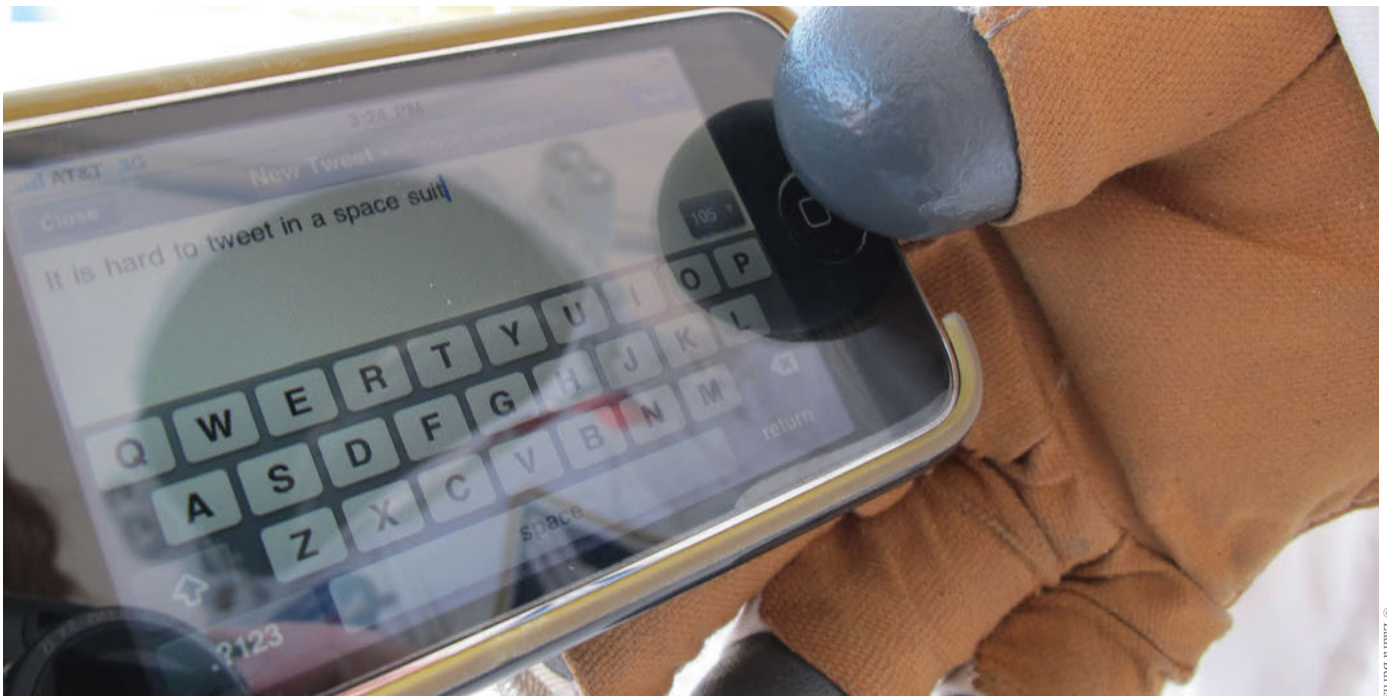
- **The president should work with Congress and agencies to reform and strengthen the federal scientific advisory committee system by taking the following actions:**
 - Directing agencies to enact policy that grants federal advisory committee members the freedom to communicate to the public regarding issues in their area 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.
 - Directing the General Services Administration (GSA) to issue guidance to agencies on how to make advisory committee membership and the process for selecting members more transparent.
- **The president should instruct the Office of Government Ethics (OGE) to provide clear guidelines for conflicts of interest on federal advisory committees.**
 - The OGE should work with agencies to define explicitly the type and magnitude of financial ties that constitute a conflict of interest and establish transparent guidelines about the degree to which a conflict of interest would disqualify nominees from participating in a committee.
 - Scientists who have taken public positions on issues or received government funding for scientific work

should not be excluded from advisory committees because of concerns about bias. Having a point of view on policy or having received federal funding does not preclude an objective assessment of the 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 the user-friendliness of rulemaking dockets to encourage increased public participation.**
 - The OMB should deploy the US Digital Service (USDS) to enhance *www.regulations.gov* in order to make it a consumer-oriented and user-friendly portal for information about proposed, pending, and final regulations. Improving the site's search and browsing functionality will help it reach its full potential.
 - Following the lead taken by the Occupational Safety and Health Administration in its silica rulemaking public comment period (OSHA 2013), 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 any funding

source and/or sponsoring organization of the research.

- **The administration should implement changes to encourage diverse, widespread, and fair participation in the rulemaking process.** The president should ask the OSTP, OMB, and the USDS to investigate ways to make the rulemaking process more accessible to the public and public interest groups via technology. Individual agencies should work with 18F, a GSA team that provides information technology services to federal agencies, to innovate better methods for communicating information to the public and receiving feedback on proposed regulations. These updates should be coordinated with each other and with ongoing changes to *www.regulations.gov*.
- **The president should strengthen the environmental justice executive order (EO 12898) in two ways: (1) by issuing guidance stating that scientific analysis of justice and equity consequences of agency actions are mandatory for agencies developing significant rules, and (2) by requiring agencies to develop guidance on the consideration of justice and equity consequences during the development of regulatory actions.** Such guidance could be similar to the EPA's Technical Guidance for Assessing Environmental Justice in Regulatory Analysis (EPA 2016).



Government scientists must be guaranteed the freedom to not only conduct and publish research in accordance with their agency's mission, but also voice their personal opinions on science and policy.

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Recommendations for New Federal Agency Heads

- **Agency heads should take steps to create a culture of scientific integrity within their agencies.**

- Agency heads should impress upon employees that scientific integrity is crucial to achieving their missions and ensure access to trainings and information about agency scientific integrity policies.
- Agency heads should ensure all agency employees who use science to any significant degree in their jobs have received training on scientific integrity.
- Agency heads should appoint or assign an official in charge of scientific integrity who will report to the highest-ranking civil servant at the agency and work with the OSTP on cross-government issues, such as open-data initiatives and implementation of scientific integrity policies. Scientific integrity should be a significant portion of the official's time.
 - ▶ Scientific integrity officials should report out annually and publicly the status of allegations and investigations relating to violations of the agency's scientific integrity policy while keeping confidential the names of those involved where appropriate.

- **Agency heads should review and, as needed, strengthen their existing agency scientific integrity policies to ensure they include the following key provisions:**

- A declaration of scientists' right to review content to be released publicly in their names or that significantly relies on their work.
- A declaration of scientists' right to publicly express personal views without seeking permission, provided they make clear they are speaking in a personal capacity.
- A provision explicitly prohibiting retaliation for those who raise scientific integrity concerns.
- A clear and detailed policy and procedure for addressing differing scientific opinions within the agency.
- A clear and detailed policy and procedure for addressing scientific integrity violation allegations and publicly reporting their resolution.

- A declaration that employees who leave federal service should not be required to sign non-disclosure agreements that restrict disclosure of government information that is neither classified nor proprietary nor contains confidential personal matters.
- A declaration 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. 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.
- The establishment of reasonable time limits for review and clearance of scientific publications, presentations, and participation in scientific conferences. The supervisor and other reviewing official should provide to the author written clearance, on the condition of specified changes being made, no later than 30 days after submission. If this deadline is not met, the author is allowed to submit the article for publication or presentation with an appropriate disclaimer stating that the article does not represent agency views or policies.

The public should have access to information about how science is used (or not used) in decision making.

- **Agency heads should demonstrate a strong commitment to whistle-blower protections by:**

- communicating to all agency employees
 - ▶ a personal commitment to scientific integrity and the protection of whistle-blowers
 - ▶ encouragement to report losses of scientific integrity
 - ▶ information about anticensorship and antiretaliation rights under federal laws
- completing the Office of Special Counsel 2302(c) Certification Program to ensure compliance with the Whistleblower Protection Enhancement Act (WPEA).

- **Agencies should improve conflict of interest policies for government employees.**
 - Agencies should not allow employees with ties to financial interests that would directly benefit from policies on which they work to hold decision-making authority or to otherwise influence policy outcomes, though they may still contribute to related projects. Any conflict of interest waivers granted should stipulate the parameters of permitted participation and be publicly released 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.
- **Agencies should facilitate the Office of Government Information Service's (OGIS's) ability to work with them on FOIA compliance.**
 - Agencies should update their system of records notices to include routine use that allows OGIS enough access to records to carry out its mediation services and agency assessment effectively. Agencies can refer to the model routine use that OGIS developed with the Justice Department (NARA 2013).
 - Agencies should change their regulations to clarify that they "shall" work with OGIS on FOIA compliance.
- **Agencies should implement changes to encourage diverse, widespread, and fair participation in the rulemaking process by incorporating the following reforms:**
 - Agencies should always provide an email address for submitting public comments during the notice and comment period for all proposed rules as an avenue for public participation additional to Web form submission on www.regulations.gov.
 - Agencies should provide a one-stop location on their homepages for all rulemaking open for comment (Coglianese 2011). Agencies should follow the example of the Fish and Wildlife Service, which embeds links on its homepage to the Federal Register and www.regulations.gov.
 - Agencies should harness the power of new media to solicit a greater number and diversity of perspectives in public comments on rulemaking, particularly from members of the public who might not otherwise know about rulemakings of interest (Farina et al. 2011).
 - Agencies should encourage participation in the rulemaking process by holding informational webinars and public information meetings outside regular working hours, especially for rules that significantly impact communities of concern.

It is essential that agencies increase transparency within the regulatory process.

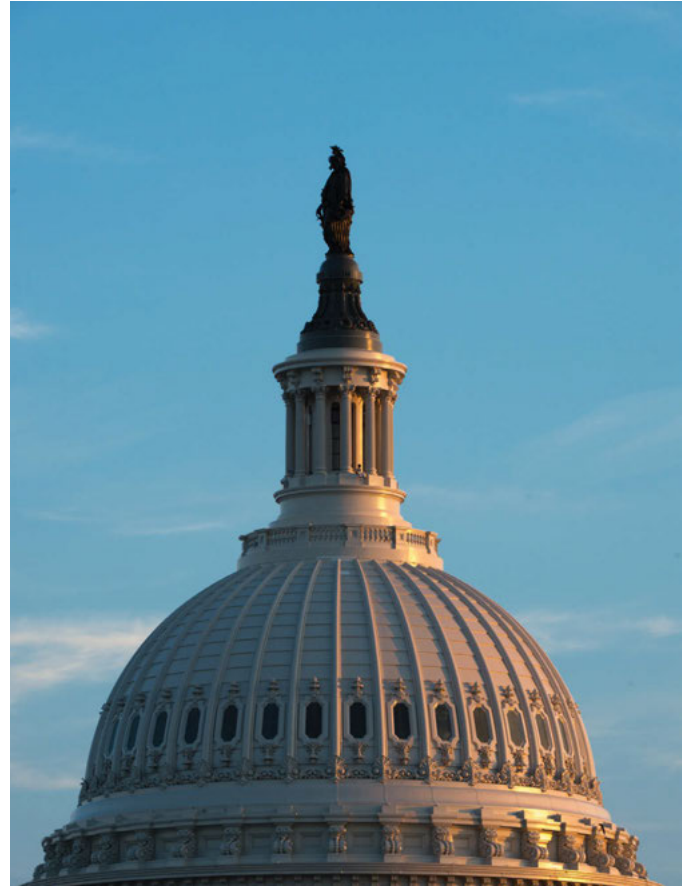
- **Agencies should track the work of their scientific advisory committees and respond to their findings and recommendations.** Agencies should clearly state what product they require of each advisory committee and set a timeline and work plan for creating that product. Further, agencies should establish and enforce clear policies for how to incorporate committee findings and recommendations into agency decision making. And agencies should publicly document any decision to overrule the recommendations of a scientific advisory committee and provide an explanation of the decision.
- **Agencies should enact policy granting federal advisory committee members the freedom to communicate to the public regarding issues in their area 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.
- **Agencies should establish safeguards to protect against overclassification and overly broad use of FOIA exemptions.** Safeguards should include independent oversight and declassification advisory boards, regular auditing of classification decisions, and a transparent appeals process.

Recommendations for the 115th Congress

OVERSIGHT

- **Members of Congress should use their position to protect and advance the role of science in decision making at federal agencies in the following ways:**
 - Request a Government Accountability Office (GAO) report on the effectiveness of agency scientific integrity policies, to include recommendations for enhancement or strengthening.
 - Ask the NAS to conduct a study on scientific integrity in government decision making across federal agencies, to include agency-specific recommendations for its advancement.
 - 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 OIRA and OMB administrator nominees.
 - Explore—for example, through hearings or a request for a GAO report—the impact of government employee travel restrictions. In order to do their best work, government scientists need the opportunity to participate in the scientific community, but recent budget restrictions have limited travel opportunities for many government scientists. Qualitative evidence from scientist surveys suggests that such restrictions may have had unintended adverse effects on the ability of government scientists to do their best work and to stay up to date in their fields (Goldman et al. 2015b).
- **Congress should request a GAO report assessing how resource constraints and reduced or eliminated funding for monitoring and enforcement within agencies—which face an increased number of mandates—undermine science-based decision making.** The report should address agency reliance on states and private sector entities for data and other resources and capacity constraints that limit enforcement of agency mandates and rules.

Members of Congress can advance the role of science in federal decision making.



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Congress can oversee federal agencies' use of science in decision making and bolster the quality of the science advice it receives through hearings and existing structures such as the Congressional Research Service and the GAO.

- **Congress should explore ways to bolster the scientific information it receives and how this information can play a strong role in promoting science-based decision making.**
 - Congress should explore ways to strengthen the use and quality of independent scientific advice it receives through existing structures such as the Congressional Research Service and the GAO.
 - Congress should monitor executive orders and signing statements, which are issued upon signing a bill, that explain the president's interpretation of the law.

LEGISLATIVE

- **Congress should enact legislation to close loopholes in the Federal Advisory Committee Act (FACA).** The legislation should extend FACA rules to advisory committees organized by federal contractors, not just

committees convened directly by an agency. Representatives and nonvoting members who regularly attend meetings should be asked to provide information on affiliation and any conflicts of interest.

- **Congress should expand the WPEA in order to maintain a commitment to protecting whistle-blowers and preventing retaliation for making allegations related to agency scientific integrity policies.** Such legislation should include:
 - adding protection for federal employees against retaliatory investigations;
 - granting whistle-blowers access to district court with jury trials for those who report scientific integrity violations in the civil service system;
 - suspending sensitive job classifications until due process rights are restored for employees in such positions to curb the chilling effect on whistle-blowers resulting from the sweeping use of such designations (Devine 2013); and

- expanding the coverage of protections in section 110 of the WPEA to scientists in the intelligence community, military service, and government contractor workforces (Devine 2016; McCullough 2016).

- **Congress should amend the Paperwork Reduction Act (PRA).** Reforms to the PRA should eliminate mandated yearly reductions in paperwork “burden,” which have reduced the ability of agencies to conduct surveys and collect data; should increase transparency in the information collection approval process; and should return more authority to federal agencies so that they may collect information needed to evaluate programs, identify regulatory gaps, and otherwise pursue their missions.

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The next administration has the opportunity to make part of its legacy protecting federal scientists and advancing the role that science plays in decision making throughout the federal government.

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