Center for Science and Democracy at the Union of Concerned Scientists

FACT SHEET

ROADMAP FOR SCIENCE IN DECISIONMAKING

The Scientific Integrity Roadmap

Recommendations for 2021 and Beyond for Building Up Science across the Federal Government

HIGHLIGHTS

Independent, impartial science is critical to ensuring that federal policies best protect the nation's health, safety, and environment. The Union of Concerned Scientists has compiled actions that federal agencies should take to ensure a robust scientific integrity infrastructure throughout government, including:

- ***Establishing and empowering scientific integrity officials.***
- ***Educating federal workers on their rights and responsibilities.***
- ***Ensuring open communication through media and social media.***
- ***Enforcing policies for approving and publicly releasing scientific analyses.***
- ***Preventing interference in data collection and research funding.***
- ***Preventing conflicts of interest in government science.***
- ***Providing a safe way for federal employees to report scientific integrity violations.***

Every day, the US government uses science to shape decisions affecting people across the nation. The best of these science-informed policies rely on a basic principle: that science is independent and impartial. However, actors on both sides of the aisle have long attempted to politicize science (Berman and Carter 2018). Such actions threaten the nation's health, safety, and environment, with the most detrimental impacts often being felt by the most vulnerable and marginalized people in our nation (Desikan et al. 2019; Carter et al. 2019).

Until Congress passes and the president signs legislation codifying scientific integrity, federal agencies bear twin responsibilities:

- Creating policies that strengthen protections for federal science and scientists; and
- Ensuring that all federal employees fully implement and adhere to scientific integrity policies (US Congress 2019; Carter, Goldman, and Johnson 2018).

To ensure a robust scientific integrity infrastructure throughout the federal government, the leaders and scientific integrity officials of federal science agencies should establish and strengthen the following key elements.

Establish and Empower Scientific Integrity Officials

Apolitical scientific integrity officials ensure that agencies comply with relevant policies and promote a culture of scientific integrity. Agencies that lack

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EPA staff in Chicago protest job cuts during a rally in March 2017. Political interference hampers federal government scientists from doing their work and informing policies that protect our health, safety, and environment. In 2021, federal agencies should commit to ensuring a robust scientific integrity infrastructure throughout government.

empowered scientific integrity officials tend to manage relevant issues less effectively (Goldman et al. 2017). Scientific integrity officials should:

- Be civil servants, with contact information publicly available on agency websites.
- Have broad power to investigate allegations that scientific integrity policies have been violated and to enforce penalties when violations are found to have occurred.
- When appropriate, work in tandem with inspectors general.
- Participate regularly in interagency and intra-agency working groups on scientific integrity.

Agency Example: The Environmental Protection Agency (EPA) has a clearly identified, full-time scientific integrity officer. The official chairs a scientific integrity committee comprised of representatives from each EPA program office and region (EPA n.d.). This officer is required to produce an annual report (EPA 2012).

Educate Federal Workers on Their Rights and Responsibilities

Many policies, guidelines, and laws protect scientists from political interference, while others clarify related issues, such as how to handle differences of scientific opinion. Survey evidence suggests that federal employees are not always aware of these policies (Goldman et al. 2020). Agencies should:

- Hold periodic trainings on scientific integrity so employees know their rights and responsibilities.
- Regularly communicate with staff on issues related to scientific integrity, using means such as office-wide memos and open office hours with scientific integrity officials.
- Detail clear, internal procedures for addressing differing scientific opinions.

Agency Examples: The National Oceanic and Atmospheric Administration encourages conversations about scientific integrity and conducts regular trainings on it (NOAA n.d.). The Food and Drug Administration provides clear instructions for handling scientific disagreements (FDA 2014).

> ***Many policies, guidelines, and laws protect federal scientists from political interference in their work.***

Ensure Open Communication through Media and Social Media

Scientists must be able to speak freely about their work and areas of expertise. Censorship can prevent lifesaving information from reaching decisionmakers and the public (Goldman et al. 2015; Desikan, MacKinney, and Goldman 2020). Agencies should give scientists the explicit right to:

- Speak to the media without prior approval from public affairs officers.
- Publicly express personal views without prior permission.
- Publicly identify their employer on social media and other venues, provided they use appropriate disclaimers.
- Serve as final reviewers of content released in their names or that relies heavily on their work.

Agency Examples: The Department of Energy's scientific integrity policy has a personal-views exception that allows scientists to communicate freely provided they make clear they are speaking in their personal capacity. It also acknowledges scientists' right to review communications that use their research (DOE 2017). The social media policy of the US Geological Survey (USGS) clearly distinguishes between personal and official uses of social media, and it provides extensive guidance on disclaimers (USGS n.d.).

Enforce Approval Policies that Protect Scientific Independence

Scientific analyses should be publicly released and within reasonable timeframes. Yet political appointees sometimes attempt to suppress or silence scientific research and reports that undermine these officials' political objectives (Reed et al. 2018). To protect scientists, agencies should:

- Specify reasonable time limits for clearing official scientific publications and presentations.
- Create peer review policies that commit to transparent and independent review procedures.
- Declare that no review is required for scientific work done on personal time and that does not use nonpublic government data or government resources.

Agency Example: The Fish and Wildlife Service (FWS) exempts from review reports written on personal time that do not relate to the employee's FWS projects. For official work, employees must provide the supervisor with copies of publications, but that official's approval is not required for releasing the publications (FWS 2010).

Prevent Interference in Data Collection and Research Funding

Data collection provides crucial information for decisionmakers, researchers, and the general public, and federal funding for scientific research ensures scientific advancement in important fields. However, political influence in these areas has impeded scientific processes (Carter et al. 2019). Agencies should:

- Declare that only qualified career staff may determine the scientific merit of grant proposals.
- Ensure that federally collected data are made public in a timely and accessible manner, excepting data with personally identifying information and other sensitive data that must be protected.
- Clarify that a federal grant for scientific research does not preclude the recipient from participating on federal advisory boards, committees, and panels.

Agency Example: The USGS commits to existing Office of Science and Technology (OSTP) policy by affirming that the agency will provide timely public access to its data at no cost (Holdren 2013; USGS 2017). The agency details the responsibilities of each party involved in the release of data (USGS 2017).

Prevent Conflicts of Interest in Government Science

The use of science to inform decisionmaking should be free of political, ideological, and financial influence. However, conflicts of interest have undermined science-based laws, regulations, policies, and committees (Goldman et al. 2017). To ensure that decisions rely on unbiased, independent science, agencies should:

- Define conflicts of interest, enforce ethics laws, and establish guidelines about conflicts that disqualify individuals from decisionmaking authority or participating in committees or peer reviews.
- Publicly disclose the conflicts of interests and recusal statements of all political officials and committee members in a timely manner, in accordance with specific disclosure deadlines.
- Require that people with relevant training or experience and without real or perceived conflicts of interest fill all scientific leadership positions.

Agency Example: The scientific integrity policy of the US Department of Agriculture (USDA) follows the OSTP's guidance on federal advisory committees (USDA 2016). Conflict of interest waivers granted to committee members must be made public except when prohibited by law (Holdren 2010).

Provide Safe Procedures to Report and Investigate Violations

Federal employees must be free to report allegations of scientific integrity violations without fear of retaliation, and investigations must progress in a clear manner. Survey results suggest that federal scientists do not always have faith in existing systems (Goldman et al. 2020). Agencies should:

- Provide detailed instructions for federal employees on how and when to submit an allegation.
- Clearly describe the investigative process and list specific timelines and milestones.
- Track and periodically release descriptions of these investigations and their results.

Agency Example: The *Scientific Integrity Procedures Handbook* of the Department of Interior (DOI) details how to report an allegation and how the department will handle its investigation (DOI 2014). The DOI also maintains an exemplary database of closed cases, summarizing completed investigations (DOI n.d.).

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The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's most pressing problems. Joining with people across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

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