

## HIGHLIGHTS

*The Environmental Protection Agency (EPA) is responsible for preventing pollution and ensuring clean air, water, and land for our nation's people.*

*The Union of Concerned Scientists (UCS) has compiled actions the EPA should take in order to make improvements to the scientific integrity of the agency, including:*

- *Ensuring the EPA has sufficient scientific expertise to carry out its science-based mission.*
- *Ensuring that EPA decisions informed by the best available science protect public health and the environment.*
- *Ensuring that the EPA's written policies guide employees in how to protect science and scientists.*
- *Combating self-censorship and ensuring that scientists at the EPA are explicitly aware of their communication rights.*
- *Ensuring that EPA scientists can conduct and share research in a timely manner and without political interference.*

# Strengthening Scientific Integrity at the Environmental Protection Agency

## *Recommendations for 2021 and Beyond*

The use of science to inform decisions at the Environmental Protection Agency (EPA) has come under intense attack since January 2017. The agency has suppressed its scientists and their work for political reasons, and it has altered competitive grant programs to award funds based on political ideology rather than intellectual merit (UCS 2020a; UCS 2017). Independent experts providing advice on scientific advisory committees have been told their guidance was no longer needed, and some have been blocked from advising the agency at all (UCS 2018a). The agency further sidelined science by banning experts with any EPA grants from serving on advisory committees, and it has advanced a plan to exclude thousands of studies from consideration in scientific assessments and policy decisions (Reilly 2020; Friedman 2019a). Personnel policies have weakened the scientific workforce and undermined the pipeline of scientific talent.

These disturbing examples barely scrape the surface of scientific integrity (SI) concerns at the EPA. In a 2018 survey of federal scientists conducted by the Union of Concerned Scientists (UCS) and Iowa State University, EPA scientists reported high levels of political interference in their work (Goldman et al. 2020). When the EPA inspector general surveyed agency staff about scientific integrity, the same problems were raised (Brym et al. 2020). More than any other agency, respondents to the UCS survey noted that workforce reductions due to early retirements and buyout incentive programs were making it difficult to fulfill the EPA's mission. Respondents also reported extremely low levels of morale and job satisfaction; many reported a decline in the effectiveness of their offices. Among all 16 federal agencies surveyed, the EPA had the worst levels of reported scientific censorship.

Several other cases illustrate the EPA's failure to promote science-based decisionmaking. Among these is the reversal of a prior decision to ban the insecticide chlorpyrifos, which causes neurological damage in developing children (Friedman 2019b). The agency also sidelined scientific evidence when it failed to propose



*The EPA plays a critical role in ensuring the health and safety of our people and our environment, including monitoring air pollution. The agency must invest in science-based decisionmaking to continue these protections.*

particulate matter pollution standards that would have protected those most at risk of sickness and death from air pollution (Eilperin, Grandoni, and Dennis 2020). In a far-reaching move taken in the name of “transparency,” the agency moved forward with a proposed rule that would restrict it from considering scientific studies relying on confidential or proprietary data (Dennis 2019).

These attacks illustrate how far the EPA must go to protect science processes from political interference, empower the agency’s scientists, and rebuild public trust. If the EPA continues to undermine science, its decisions will heighten risks to the health and safety of millions of people, with disproportionate impacts on vulnerable communities. Those risks are likely to multiply as the United States continues to struggle with the novel coronavirus of 2019. To strengthen the EPA’s ability to fulfill its mission of protecting public health and the environment, the agency should adopt the recommendations outlined in this fact sheet.

***When the EPA undermines science, it puts the health and safety of millions of people at risk.***

### **Promoting Science-Based Decisionmaking**

The EPA depends on the work of scientists inside and outside the agency to inform agency decisions by producing and synthesizing scientific evidence. However, political officials have brushed aside or suppressed many scientific studies, and EPA leaders have sidelined the work of their own scientists on many critical decisions (UCS 2020b).

For example, in March 2020 it was reported that political officials had instructed EPA scientists to refrain from submitting public comments on the science related to the “Waters of the United States” proposed rule (UCS 2020c). By redefining the types of waterways that federal law will protect, the rule could increase pollution and other threats to wetlands and streams that do not flow year-round. This issue led 44 former and current federal scientists and lawyers, consisting mostly of EPA employees but also employees of the Army Corps of Engineers and the Fish and Wildlife Service, to co-sign a complaint (Jacobs 2020). These federal staff members, who collectively represented “hundreds of years of experience in aquatic and wetland science and law,” called on the EPA’s inspector general and SI officer to launch investigations. The signatories noted that the rulemaking process ignored science

and that the rule will have “potentially long-term negative effects on human health and the environment.”

The EPA should consider the following actions to promote science-based decisionmaking in several key areas.

#### **To ensure the EPA has sufficient scientific expertise to carry out its science-based mission, the agency should strengthen the agency’s scientific capacity:**

- Lift hiring freezes on career-level scientific positions and work with the Office of Personnel Management as well as Human Resources to fast-track the hiring process for scientific new hires.
- Increase the number of EPA fellowship positions in science, technology, engineering, and mathematics.
- Scope programs that would allow students near graduation to work with federal scientists, thereby encouraging young scientists to enter policy-related careers in science.
- Prevent the transfer of qualified scientists into positions that do not fit their expertise.
- Evaluate qualifications criteria for scientific positions to ensure that new hires are qualified. The agency should provide a certificate of qualification for HR staff who demonstrate they understand the elements of a qualified person applying for an EPA scientific position.
- Require that managers overseeing scientists receive science-literacy training to ensure an understanding of the role and methods of scientists at the agency and the importance of scientific integrity.

#### **To ensure that EPA decisions, informed by the best available science, protect public health and the environment, the agency should take these steps:**

- Rescind the EPA’s proposed rule “Strengthening Transparency in Regulatory Science” (85 FR 15396) (EPA 2020a). This proposed rule would restrict many scientific studies from informing the agency’s decisions.
- Rescind the EPA’s final petition denial order to revoke all tolerances and cancel all registrations for the insecticide chlorpyrifos (84 FR 35555) (EPA 2020b). This petition denial failed to consider the best available science, which shows the likelihood of permanent neurological damage in children who are exposed to the insecticide.
- Rescind the proposed rule “Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act” (84 FR 36304) (EPA 2020c). The proposed rule sidelines scientific evidence that such a reinterpretation of this law can lead to an increase in cancer-causing toxic air pollutants.

- Rescind the rule “Restrictions on Discontinued Uses of Asbestos” (84 FR 17345) (EPA 2019). The rule did not consider multiple memos from EPA scientists, relied on outdated scientific methodologies, and failed to consider multiple health risks and pathways of contact when considering the effects of asbestos on human health.
- Rescind the “The Navigable Waters Protection Rule: Definition of ‘Waters of the United States’” (85 FR 22250) (EPA 2020d). Besides failing to consider the best available science on the health of streams and waterways, EPA officials suppressed scientists from publicly commenting on the rule’s lack of scientific underpinning.
- Release the EPA’s Integrated Risk Information System (IRIS) program’s formaldehyde assessment. The scientific report has been under agency review for over three years; a review process typically takes 60 to 90 days (UCS 2018b). Inside influence from industry likely has played a role in the delay. The report’s findings may have been perceived as costly to industry, and the American Chemistry Council has been sowing doubts about formaldehyde’s health effects for years (UCS 2015a). Inhaling formaldehyde, which is found in many household products, can cause respiratory illness and cancer.
- Renew funding for research conducted by the National Institute for Environmental Health Science’s (NIEHS) children’s centers (Hiltzik 2019). The centers’ research has revealed important associations between environmental exposures early in life and health problems later in life.
- Promulgate new National Ambient Air Quality Standards for Particulate Matter, Ozone, and related Photochemical Oxidants, as well as standards for other criteria pollutants based on robust reviews of the science (Goffman and Bloomer 2019).
- Abandon the proposed rule “Increasing Consistency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process” (EPA 2020e). As written, the rule would hamper agency rulemaking from considering evidence-based assessments of the benefits and co-benefits of reducing air pollution. If the rule is finalized, the EPA should take steps to undo its effects.
- Ensure that science informs decisions in accordance with the intent of the Frank R. Lautenberg Chemical Safety for the 21st Century Act (Fenner-Crisp 2019). This would help protect the public from the dangers of toxic chemicals in consumer products.
- Issue a directive requiring the agency to review and award grants based solely on intellectual and scientific merit (Eilperin 2017). The directive should stipulate that

experts, not political appointees, serve as reviewers for grant proposals.

- Prioritize restoring the capacity and resources of the EPA’s Office of Environmental Justice as a necessary step toward ensuring that the agency’s science-based decisions consider their ramifications on communities most affected by environmental pollution (Outka and Warner 2019).

The EPA has a strong, written, SI policy, and an SI official oversees and implements it. While many SI challenges fall outside the scope of SI policies, some elements of the policy itself could be strengthened.

**To ensure that the EPA’s written policies guide employees in how to protect science and scientists, the agency should update its SI policy:**

- Include a policy on differing scientific opinions that details a conflict-resolution process.
  - The policy should encourage individuals to voice their professional opinions on science issues, decisions, and policies relevant to their work, even when their opinions differ from those of other staff, disagree with management, or diverge from proposed or established practices and positions. However, the application of a formal policy on differing opinions should be reserved for individuals who are or have been substantively engaged in the scientific or technical work that informs the specific agency decision, action, or policy with which the individual disagrees.
  - Outline clear steps for individuals to formally voice differing scientific opinions regarding issues, decisions, or policies on which they have been substantively engaged. The steps should include guidance on when such actions are necessary, when and how employees can take such actions, and to whom employees should submit differing scientific opinions.
  - Stipulate that the EPA administrator direct the agency’s inspector general to coordinate with the SI office to resolve SI complaints, particularly when allegations involve personnel at the political level.
  - Specify that the SI official report directly to the highest-ranking civil servant in the EPA’s Office of the Administrator.

**Ensuring Unimpeded Communication of Science**

Explicit in the EPA’s SI policy is the right of scientists to communicate scientific information to the public. In recent

years, political officials at the EPA have censored or altered the work of scientists in many cases. For example, the EPA barred scientists from presenting their work at a 2017 conference on how climate change might impact the Narragansett Bay ecosystem (Friedman 2017a). Then EPA administrator Scott Pruitt publicly apologized for the scientific integrity violation (Friedman 2017b). However, his response has not stopped political officials from censoring scientists in connection with children's health, chemical safety, and air pollution.

The EPA should take the following actions to protect the ability of scientists to communicate their work with the public and media effectively.

### **To combat self-censorship and ensure that EPA scientists are explicitly aware of their communication rights:**

- Political officials should reaffirm, in their public communications with department scientists (e.g., in memos and talks) the importance of the communications provisions in the SI policy and explicitly reinforce that public affairs employees:
  - Will not alter the substance of scientific, scholarly or technical information.
  - Provide news releases for review by subject-matter experts before issuing them.
  - Never ask or direct federal scientists to alter their scientific findings.
- The EPA SI official should reinforce, in public communications with department scientists and political officials, the importance of the agency's SI policy and the right of EPA scientists to speak to the news media and the public about their official work on behalf of the EPA.
  - The SI official should continue to implement training for scientists and public affairs staff about their rights and responsibilities regarding scientific communications.
  - The SI official should increase training for political officials at the agency.
  - The SI official should continue to check in consistently with scientific staff to answer any questions and ensure they understand their rights of communication.
  - The SI official should reinforce that scientists are responsible for informing and notifying their supervisors and public affairs personnel regarding significant actions that could generate public interest or media attention, and that they are encouraged but not required to do so.

- The SI official should, in public communications with agency staff, reaffirm that the agency's SI policy does not permit political or other officials to suppress, or otherwise impede, the timely release of scientific findings or conclusions.
- Provide employees with guidance on how to discuss on social media, both in a personal and professional context, any scientific matters related to agency work. This provision should maintain the right of employees to identify their employer when expressing personal opinions in social media posts provided disclaimers make clear that the employees are not speaking in a professional capacity for the EPA.

### **Safeguarding the Production and Release of Scientific Information**

The EPA's SI policy explicitly protects science and scientists from political interference in the production and release of scientific materials. However, gaps have been documented in the policy provisions, as has interference in data collection and suppression and manipulation of release materials for scientific results.

Although the policy prohibits employees from suppressing results, it does not commit the agency to releasing scientific results in a timely manner. Political officials have suppressed reports with scientific information critical to protecting public health. For example, officials delayed the publication of a report on the health effects of per- and polyfluoroalkyl substances (a group of chemicals collectively known as PFAS) (Halpern 2018). These chemicals are widespread in US drinking-water supplies and products that people use every day. The report, when finally released, showed that current standards are not scientifically defensible.

Political interference in the ability of scientists to collect data has also hindered science at the EPA. Early in 2017, political officials reversed a request to the oil and natural gas industry for data on methane emissions (Lavelle 2017). Methane is a much more potent greenhouse gas than carbon dioxide. Without access to emissions data from industrial facilities, it is impossible to conduct research and produce meaningful results to inform policy.

***The EPA has disbanded scientific advisory committees designed to safeguard the public.***

To ensure that EPA scientists can conduct and share research in a timely manner and without political interference, the EPA should guarantee that financial interests do not inappropriately influence data collection.

**The EPA Office of Science Advisor, Policy and Engagement should issue a directive that includes the following:**

- Require proactive disclosures for data requests, including the date the process was started and the date the request was fulfilled.
- Set criteria to be met should the agency rescind a data request or archive an EPA-maintained dataset. For example, the criteria should include affirming with agency scientific experts that a data metric is outdated and should be archived.
- Commit the EPA to making data publicly available in accessible formats whenever possible, with a priority on data relevant to environmental justice.
- Provide data requested by agency scientists in a timely manner provided that the data requested do not violate any existing regulations (e.g., the Paperwork Reduction Act).<sup>1</sup>
- Require librarians and other agency officials to train incoming scientists on the availability and use of data repositories and other resources.
- Provide adequate funding and resources to agency libraries and their staff.

## Strengthening Science Advisory Committees

To ensure that EPA decisions are based on science and accountable to the public, the agency has long relied on external scientists serving on federal advisory committees. However, the federal government, and especially the EPA, has put aside or disbanded many science advisory committees. In 2017, the agency announced that scientists with current EPA grants could not serve on any EPA advisory committees (a policy that was successfully challenged in court) (Reed et al. 2018; Reilly 2020).

In 2018, the EPA disbanded a panel of more than 20 scientific experts set to advise a decision on how to protect public health and welfare from particulate matter air pollution (Friedman 2018). President Trump then ordered agencies to reduce all federal advisory committees by one-third, which resulted in the removal of two EPA advisory committees, including the Environmental Laboratory Advisory Board (White House 2019). No credible scientific organization has supported this ban, and court cases have sided against the agency on several Trump administration actions on advisory committees.

Nevertheless, the implementation of such policies has hindered the EPA's ability to obtain independent science advice and fulfill its mission to protect public health using the best available science.

**To strengthen the EPA's ability to obtain needed expertise on decisions, EPA leaders and Science Advisory Board staff should:**

- Rescind the administrator memorandum, "Science Advisory Board Engagement Process for Review of Regulatory Actions," which restricts the voices of board members in suggesting which proposed EPA rules require the board's guidance and cuts out public input (Wheeler 2020). The EPA should return to its process, mandated under the 1978 Environmental Research, Development, and Demonstration Authorization Act, requiring the agency to notify its science advisory board of upcoming rulemakings at the interagency review stage, before they are officially proposed.<sup>2</sup> This would allow for adequate and meaningful review earlier in the development of rules with a scientific or technical basis.
- Ensure that science advisory committees are fairly balanced and composed of scientists with qualified expertise relevant for the committees' charges.
- Announce and enforce relevant conflicts and recusals at every advisory committee meeting.
- Follow the EPA's established process for appointing advisory committee members, detailed in the agency's *Federal Advisory Committee Handbook* (EPA 2003). Specifically, the EPA administrator should direct EPA officials responsible for appointing committee members to follow a key step in its appointment process: developing and including draft membership grids in appointment packets, with staff rationales for proposed members.
- The EPA's designated ethics official should direct the EPA's Ethics Office, as part of its periodic review of the EPA's ethics program, to evaluate the quality of financial disclosure reviews for special government employees appointed to EPA advisory committees.

## Addressing Conflicts of Interests

The use of science to inform EPA decisions should be as unbiased as possible: the science informing the agency should be independent, free from political, ideological, and financial influences. When those forces interfere with EPA decisions, policy outcomes are less likely to be in the public interest, and they could increase risks to the health of people and the environment.

However, advisors and decisionmakers with conflicts of interests have seeped into the EPA's policymaking fabric. Nearly half of President Trump's EPA appointees have had strong ties to the very industries the agency regulates, and about one-third of EPA political appointees previously worked as lobbyists or lawyers for such industries (Anapol 2018; Biesecker, Linderman, and Lardner 2018). Moreover, as administrations end, there is risk of political appointees "burrowing" into the agency: by securing career staff positions, they could continue serving a previous administration rather than as independent public servants (Yoder 2018). This may be problematic if officials with conflicts of interest continue sidelining science at the behest of the industries they represent. In a 2015 survey, scientists noted that Bush administration officials were politicizing science well into the Obama administration (UCS 2015b).

**To ensure that EPA decisions can rely on independent science, EPA leaders should consider the following recommendations:**

- Issue a directive requiring that scientific leadership positions be filled by individuals with specialized training or significant experience relevant to the positions for which they are nominated, such as the requirements specified in US Code Title 7 for confirming the Department of Agriculture's chief scientist.<sup>3</sup> The agency should codify the directive to ensure that qualified experts fill scientific leadership positions.
- Require the inspector general to enforce decisionmakers to recuse themselves from scientific discussions for which they have a direct conflict of interest.
- Publicly disclose conflicts of interests and recusal statements of all political officials in a timely manner and in accordance with the agency's conflict of interest policy.
- Clarify criteria for appointing advisory committee members as individuals or as organization representatives and ensure the proper level of scrutiny of conflicts of interest.

**To ensure that the agency has an effective, independent system of peer review, the Office of Science Advisor, Policy and Engagement should incorporate the following provisions in the EPA's Peer Review Handbook (EPA 2015):**

- 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 scientists involved in peer reviews of EPA scientific documents be technically qualified and that the agency use at least one external peer reviewer whenever possible.

- Make publicly available all peer reviewers' comments on scientific documents and agencies' responses to those comments, while protecting the anonymity of reviewers.

**Conclusion**

In the half century since its creation in 1970, the EPA has implemented science-based policies that have saved countless lives. The 1970 Clean Air Act alone has saved an estimated 230,000 lives, prevented over two million illnesses, and saved the US public over a trillion dollars (EPA n.d.a). To cite just two examples of the many benefits that the EPA has provided, the decision to phase out lead from gasoline has resulted in a 75 percent drop in blood lead levels in the public (Brown 1994). And the agency has overseen the successful clean-up of half of the more than 1,700 Superfund sites, benefitting some 49 million people living near these highly contaminated and toxic areas (EPA n.d.b).

To ensure that the EPA can continue providing important and lifesaving work long into the future, it is crucial that the agency uphold scientific integrity and address the challenges identified here. The proposed recommendations will help protect the EPA's production and communication of science as well as the agency's vital public safeguards.

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**ENDNOTES**

- 1 Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 et seq. <https://digital.gov/resources/paperwork-reduction-act-44-u-s-c-3501-et-seq>
- 2 Environmental Research, Development, and Demonstration Authorization Act of 1978. Public Law 95-477. <https://www.congress.gov/bill/95th-congress/house-bill/11302>
- 3 7 U.S. Code Title 7— AGRICULTURE. <https://www.law.cornell.edu/uscode/text/7>

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