

# Recommendations

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The recommendations below address the issues around which scientists expressed the most need for change. Addressing scientists' concerns can improve morale at federal agencies, which will in turn improve scientists' productivity and lead to better government. These recommendations are often restatements of suggestions made by multiple scientists about how to ensure that their work proceeds efficiently and can be translated quickly into public benefits. Each recommendation section includes an overarching principle as well as specific recommendations to address the issues raised.

While the majority of the recommendations apply to agencies, White House offices and OPM also have a role to play in ensuring that the recommended policies are adopted. This leads to the first overarching recommendation pertaining to all other recommendations in this report.

## **OVERARCHING RECOMMENDATION: ENSURING POLICY CONSISTENCY AND CLEAR COMMUNICATION**

The White House OSTP and OMB should ensure that agencies adopt the policies described in this report's recommendations, and that the policies are generally consistent across agencies and appropriate within each agency's mission and scope. These policies should be clearly and actively communicated to agency leadership, scientific managers, and the federal scientific workforce.

When OPM policies (for instance, those regarding hiring and promotion) conflict with the recommendations in this report, OPM should revise its policies to allow agencies to follow the recommendations.

## **Management**

Managers of scientists play a key role in the production and dissemination of science from federal agencies. They must be able to communicate effectively between scientists who carry out research and the upper management and lawmakers

who shape and fund research priorities. When lawmakers or interest groups attempt to exert inappropriate influence on scientific work, managers must buffer scientists from these attempts and defend scientists' adherence to scientific principles.

In interviews, several scientists voiced criticisms about managers who have insufficient scientific training to understand scientists' work or empathize with them—or, on the other end of the spectrum, scientists who have been promoted to management positions despite lacking managerial skills. Agencies should choose managers who have sufficient skills and knowledge to work productively with scientists, and provide sufficient training so they can carry out their responsibilities effectively.

**PRINCIPLE:** Agencies should hire and promote managers who have the training and skills necessary to facilitate scientists' ability to conduct and disseminate scientific work.

**Recommendation:** Agencies should recruit and train managers who will buffer scientists against undue influence and ensure that the agency pursues its scientific mission.

**Recommendation:** Agencies should hire managers who have enough scientific training to translate between scientists and upper management and policymakers.

**Recommendation:** Agencies should provide management training to those who will be managing scientists.

**Recommendation:** Agencies should not require scientists to become managers in order to advance in their professional careers.

**Recommendation:** Agencies should evaluate and address perceived and real inconsistencies in the treatment of scientists on different career pathways (e.g., PHS vs. civil servants).

**Recommendation:** Agencies should minimize administrative duties that detract from scientists' ability to conduct their work.

## Feedback

The scientists interviewed for this study voiced many insights and suggestions about how their agencies could improve, but few shared these thoughts with their agencies. Although a few scientists noted instances in which agencies solicited and considered suggestions from scientists, many felt that formal avenues for feedback were either nonexistent or useless. Several scientists suggested that anyone providing feedback on agency actions or policies would risk retaliation, and that employees would only feel comfortable providing feedback if it could be given anonymously.

**PRINCIPLE:** Agencies should encourage honest feedback from scientists, and use it to inform decisions about policies and practices.

**Recommendation:** Provide a formal and anonymous means by which scientists can provide feedback to relevant colleagues, including upper management, without fear of retaliation.

**Recommendation:** Provide regular and follow-up training to ensure that all managers and supervisors are properly trained to understand employees' rights and to comply with the procedures that protect whistleblowers.

## Approving Proposed Research

Many of the scientists interviewed felt that the time and effort required to obtain agency approval for research projects is excessive—and these resources could be better spent on conducting the research, rather than writing lengthy research proposals. Scientists from NIOSH were particularly concerned about long proposals required for relatively small amounts of research funding. Although agencies have a duty to use taxpayer dollars wisely and support only the most worthwhile research, they must balance this requirement against the toll that extensive application processes take on scientists.

Scientists whose research involves surveys must also have their information collection approved by the OMB. Although OMB has made some improvements to the process by which it evaluates requests to collect information,

some scientists still considered the process to be excessively burdensome.

**PRINCIPLE:** Agencies should limit the time and effort required by scientists proposing research to what is necessary to ensure that the agency is supporting high-quality research.

**Recommendation:** Agencies should streamline intramural proposal processes to the extent possible.

**Recommendation:** Agencies should make the time and effort required to propose research commensurate with the amount of funding being sought.

**Recommendation:** OMB should streamline the process for approving information collections subject to its oversight, and facilitate the process for the scientists involved.

## Disseminating Scientific Work

Although the process for clearing research results for publication varies across agencies, information products must often be reviewed by multiple individuals before being submitted to a journal or otherwise disseminated. Agencies must ensure that the information products they disseminate are accurate and of high quality, but they must also avoid procedures that interfere with the timely communication of scientific information or discourage scientists from pursuing future publications.

Some scientists suggested that their agencies have used the clearance process to delay or even prevent the publication of findings that could ignite controversy. Congress addressed this issue at one agency with a provision in the Food and Drug Administration Amendments Act of 2007: It requires an FDA policy that gives reviewing officials 30 days to provide written clearance; if the deadline is not met, authors can submit the article for publication with a disclaimer stating that it does not represent the agency's viewpoint.

Scientists also expressed concerns about unclear and inconsistently applied agency policies on dissemination; reviewers lacking expertise in the relevant subject matter; and extensive time required to respond to all reviewer

comments, although not all comments were necessarily useful or relevant.

The issue of scientific publications produced on scientists' personal time also arose in some interviews. Even though such publications usually include a disclaimer stating that the work represents only the view of the author and not that of the agency where the author is employed, some agencies still require scientists to submit these publications for agency clearance.

**PRINCIPLE:** Agencies should disseminate scientific work in a timely fashion, and the clearance process should not be a tool for slowing down the dissemination of scientific information that may be deemed unfavorable.

**Recommendation:** All agencies should have clear policies on review and clearance, and apply them consistently and in a timely fashion.

**Recommendation:** Agencies assigning reviewers to review the content of scientific output should ensure that the reviewers have expertise in a relevant field.

**Recommendation:** Agencies should encourage expeditious and focused reviews.

**Recommendation:** Agencies should have processes for expedited clearance of time-sensitive materials.

**Recommendation:** Agencies should allow scientific work conducted on agency time but not approved by the agency within a reasonable timeframe to be published with a disclaimer that it represents only the views of the author(s) rather than the agency.

**Recommendation:** Agencies should allow scientists to disseminate scientific work done on their own time, provided they attach any necessary disclaimers, without receiving agency approval. Scientists should not face retribution if they exercise this right.

## Communicating with the Public

**A**gency policies governing scientists' interactions with the media tend to require, or strongly encourage, employees to seek prior approval before being interviewed. Some agencies require that all media

inquiries be routed through the media office, and some specify that someone from the media office must be present (in person or on the phone) during conversations between reporters and scientists.

Although some scientists appreciate the involvement of the media office, several of those interviewed raised concerns. In some cases, political appointees or members of upper management are the ones chosen to respond to media inquiries, even though they know less about the subject at hand than the scientists who research it. When scientists do speak to members of the media, the involvement of media-office personnel may have a chilling effect on what scientists say. These situations not only frustrate scientists, but may lead to the public missing important information.

The National Institutes of Health has a policy that appears to strike a balance: It allows scientists to respond to oral questions without preapproval, so long as they are limited to the speaker's field of expertise and policy statements present only official agency policy positions. However, a survey by the Union of Concerned Scientists found that NIH scientists think that media contacts must be pre-approved, which suggests that the implementation of this policy is uneven.

In 2008, the OSTP instructed agencies to develop and update media policies to ensure that "employees may freely and openly discuss with the public, subject to classification restrictions and consistent with existing laws and regulations, scientific and technical ideas, approaches, findings, and conclusions based on their official work."<sup>22</sup> Agencies do not appear to have developed such policies yet.

**PRINCIPLE:** As directed by the OSTP principles, agencies should develop policies that "provide for the widest practicable and appropriate dissemination of factual information concerning agency scientific activities and their results" and ensure free and open discussion.

**Recommendation:** Agencies should have clear policies on scientists' communication with the media and the public, and ensure that they are understood and consistently enforced.

**Recommendation:** Agencies' default policy should be to allow scientists to handle media inquiries directly and interact with reporters without the presence of media office representatives; under certain circumstances (e.g., when the topic is a policy rather than technical issue) it may be necessary for the media office to play a more central role.

**Recommendation:** Agencies should not require scientists to speak with the media; those who wish to do so should be offered media training or be allowed to shift inquiries to the media office.

## Inter-agency Data Sharing and Communication

**D**uring interviews, some scientists raised concerns about the difficulty of sharing data or other information with colleagues at other federal agencies. Incompatible data systems and restrictive Memoranda of Understanding between agencies were two of the problems raised, but a few scientists also stated that they were discouraged from contacting colleagues at other agencies directly about topics of common interest.

While agencies do have a responsibility to ensure that confidential and sensitive data are protected, they should be able to fulfill this responsibility while allowing for communication and data sharing between agencies.

**PRINCIPLE:** Scientists should be able to communicate and share data freely and efficiently across federal agencies.

**Recommendation:** Agencies should develop and communicate clear policies on data sharing.

**Recommendation:** Agencies should end explicit or perceived prohibitions on inter-agency communications.

**Recommendation:** Agencies should examine the need for establishing MOUs with other agencies before data sharing occurs; when MOUs are deemed necessary, they should be developed quickly and in a straightforward manner.

**Recommendation:** Agencies should identify ease of data sharing as a priority when making decisions about data systems.

## Professional Development

**T**he scientists interviewed agreed on the importance of agency scientists engaging with colleagues within their fields of study. Many scientists emphasized that attending professional meetings and conferences was an important component of professional development. Nonetheless, scientists often find it difficult to secure agency support for attending such meetings.

Agencies have limited travel budgets and must ensure that sending scientists to meetings will help advance agency goals. It is appropriate to require a certain level of meeting participation by scientists (such as presenting a poster or talk), but some agencies take the requirement too far. As an example, NIOSH scientists indicated that conference participation is not supported until a scientist is ready to submit a full manuscript to a journal. It is reasonable to require that scientists be delivering a presentation, but not to require that they have a manuscript ready for submission to a scientific journal. Agencies must recognize the importance of professional engagement for their scientists and make every effort to secure and award adequate funds for meeting attendance.

Scientists also expressed frustration about arbitrary limits placed on the number of agency employees who could attend a single conference, and about what some of them saw as preferential treatment of more-senior scientists seeking to attend meetings.

**PRINCIPLE:** Scientists should be encouraged to maintain their professional standing and pursue professional development through engagement with their scientific colleagues, to the extent possible given their agencies' resources.

**Recommendation:** Agencies should ensure that requirements determining which scientists are eligible for support to attend professional meetings and conferences are flexible, appropriate, and applied consistently.

**Recommendation:** Agencies should allow all scientists for whom attendance at a particular meeting is appropriate to attend without imposing arbitrary limits on the total number of employee attendees.

## Influence

Scientists described influences on their work from members of Congress, appointed agency leadership, the OMB, and the public and private sectors. They distinguished between what they considered to be appropriate influences, such as an organization requesting that an agency study a particular topic, and attempts to influence science inappropriately, such as a member of Congress pressuring an agency to slant or suppress findings that might displease a constituent group.

Scientists also noted that some forms of influence, such as requirements imposed by Congress, might be appropriate but could still cause the agency to direct its energies away from work scientists considered crucial to their agencies' missions. Likewise, while scientists recognized newly appointed agency directors' right to redirect scientific resources, they often felt frustrated when they were told to halt work on research they had been conducting for several years.

In general, scientists saw influence from the private sector as being more problematic than influence from the public sector—although some scientists stated that they did not see inappropriate private-sector influence

operating at their agencies. In some cases, scientists reported that senior agency personnel's ties to certain industries caused them to suppress or ignore findings that could have negatively affected those industries' reputations or profitability.

Allowing for appropriate influence from stakeholders while protecting the integrity of science from inappropriate pressures requires vigilance and sound judgment. Agencies should ensure their leadership and management are equipped to make these judgments and protect scientists from inappropriate influence that could compromise the integrity of their work.

**PRINCIPLE:** Agencies should protect scientific work from inappropriate influence.

**Recommendation:** Agencies should adopt policies and training programs for both managers and scientists that affirm agency commitment to scientific integrity and help employees distinguish between appropriate and inappropriate influence on scientific work.

**Recommendation:** Agencies should have policies in place to ensure transparency regarding input from political actors as well as private- and public-sector stakeholders.