

INTERFERENCE AT THE EPA

SCIENCE AND POLITICS AT THE
U.S. ENVIRONMENTAL PROTECTION AGENCY



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

INTERFERENCE AT THE EPA

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U.S. ENVIRONMENTAL PROTECTION AGENCY

The Scientific Integrity Program of the
Union of Concerned Scientists

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The Union of Concerned Scientists is the leading science-based nonprofit working for a healthy environment and a safer world.

The UCS Scientific Integrity Program mobilizes scientists and citizens alike to defend science from political interference and restore scientific integrity to policy making. More information about UCS and the Scientific Integrity Program is available online at www.ucsusa.org/scientific_integrity.

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Contents

Figures, Tables, and Boxes	v
Contributors	vi
Acknowledgments	vii
Executive Summary	1
1. Introduction	9
2. History and Organization of the EPA	11
History	11
Key Environmental Laws	12
The Role of Science in the Policy Process	14
The Organization of the EPA	16
Funding Trends	19
3. Research Methods	20
Creating the Survey Mailing List	20
Defining “Scientist”	21
Survey Questionnaire	21
Survey Demographics	21
The EPA’s Response	22
Interviews and Document Requests	22
4. Political Interference in Scientific Work	23
Survey Results	23
Case Studies	26
Discussion	36
5. Barriers to the Free Communication of Science	38
Survey Results	38
Case Studies	39
Discussion	43

6. Undermining the Role of Science in EPA Decision Making	44
Survey Results	44
Case Studies	45
Discussion	49
7. Challenges to Agency Effectiveness	50
Survey Results	50
Case Studies	52
Discussion	54
8. Recommendations and Conclusions	55
Protecting EPA Scientists	55
Making the EPA More Transparent	56
Reforming the Regulatory Process	58
Ensuring Robust Scientific Input to EPA Decision Making	59
Depoliticizing Funding, Monitoring, and Enforcement	60
Concluding Thoughts	60
References	62
Appendices	68
A. Survey Text and Responses	68
B. Selected Survey Results	75
C. EPA Response to UCS Survey Mailing	85
D. CSSM Methodology Report	86

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Figures, Tables, and Boxes

Figures

1. The EPA's Risk Assessment and Risk Management Paradigm	15
2a. The EPA's 12 Central Offices and 10 Regional Offices	16
2b. The National Laboratories and Centers of the EPA's Office of Research and Development	17
3. Map of the EPA's 10 Regions and 16 Laboratories and Facilities	18
4. EPA Budget 1999–2009	19
5. Basic Demographics of Survey Respondents	22
6. Number of EPA Scientists Reporting Various Forms of Political Interference	24
7. Political Interference across the EPA over the Past Five Years	26
8. Direct and Indirect Interference at EPA Offices and Labs	27
9. Scientists' Perceptions of the EPA's Communications Policies	39
10. Decreased Job Satisfaction and Political Interference	51

Tables

1. Summary of the Survey's Sample Size and Response Rate	21
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Boxes

1. The OMB Overrules EPA Science	28
2. More Examples of Political Interference in EPA Science	35

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Executive Summary

The U.S. Environmental Protection Agency (EPA) has the simple yet profound charge “to protect human health and the environment.” EPA scientists apply their expertise to protect the public from air and water pollution, clean up hazardous waste, and study emerging threats such as global warming. Because each year brings new and potentially toxic chemicals into our homes and workplaces, because air pollution still threatens our public health, and because environmental challenges are becoming more complex and global, a strong and capable EPA is more important than ever.

Yet challenges from industry lobbyists and some political leaders to the agency’s decisions have

too often led to the suppression and distortion of the scientific findings underlying those decisions—to the detriment of both science and the health of our nation. While every regulatory agency must balance scientific findings with other considerations, policy makers need access to the highest-quality scientific information to make fully informed decisions.

Concern over this problem led the Union of Concerned Scientists (UCS) to investigate political interference in science at the EPA. In the summer of 2007, UCS, working with the Center for Survey Statistics and Methodology at Iowa State University, distributed a 44-question survey to nearly 5,500 EPA scientists, asking for information about political interference in their scientific



work, the use of science in EPA decision making, barriers to communication, employee morale, and the agency's effectiveness. UCS identified these scientists through EPA websites, consultations with current and former employees, and targeted Internet searches.

There are still good scientists producing good science at USEPA. The main problem I see is an administration that considers science only if it supports its agenda. As in other areas, science is used only if it furthers preexisting policy; otherwise it is ignored, marginalized or suppressed (e.g. climate change).

A scientist from the EPA regional offices

We received completed surveys from 1,586 scientists, for a response rate of 29 percent. These respondents represented every scientific program office at EPA headquarters, all 10 regional offices, and more than a dozen research laboratories across the country. Most respondents were agency veterans, with more than a decade of experience at the EPA. Beyond specific survey questions, more than 850 scientists also provided written comments in response to an open-ended essay question. To add to this information, UCS interviewed dozens of current and former EPA scientists.

The results of these investigations show an agency under siege from political pressures. On numerous issues—ranging from mercury pollution to groundwater contamination to climate change—political appointees of the George W. Bush administration have edited scientific documents, manipulated scientific assessments, and generally sought to undermine the science behind dozens of EPA regulations.

These findings highlight the need for strong reforms to protect EPA scientists, make agency decision making more transparent, and reduce politicization of the regulatory process.

Political Interference in Scientific Work

Large numbers of EPA scientists reported widespread and inappropriate interference by EPA political appointees, the White House, and other federal agencies in their scientific work:

- 889 scientists (60 percent of respondents) personally experienced at least one incident of political interference during the past five years.
- Among EPA veterans (scientists with more than 10 years of experience at the agency), 409 (43 percent) said interference occurred more often in the past five years than in the previous five-year period.

EPA scientists also reported personally experiencing specific forms of political interference, from the explicit to the subtle:

- 94 scientists (7 percent) had frequently or occasionally been “directed to inappropriately exclude or alter technical information from an EPA scientific document.”
- 191 scientists (16 percent) had personally experienced frequent or occasional “situations in which scientists have actively objected to, resigned from, or removed themselves from a project because of pressure to change scientific findings.”
- 232 scientists (18 percent) had personally experienced frequent or occasional “changes or edits during review that change the meaning of scientific findings.”
- 285 scientists (22 percent) had personally experienced frequent or occasional “selective or incomplete use of data to justify a specific regulatory outcome.”

- 153 scientists (13 percent) had personally experienced frequent or occasional “pressure to ignore impacts of a regulation on sensitive populations.”
- 299 scientists (24 percent) had personally experienced frequent or occasional “disappearance or unusual delay in the release of websites, press releases, reports, or other science-based materials.”
- 394 scientists (31 percent) had personally experienced frequent or occasional “statements by EPA officials that misrepresent scientists’ findings.”

Respondents indicated that political interference arose from both internal and external sources:

- 516 scientists (43 percent) knew of “many or some” cases where EPA political appointees had inappropriately involved themselves in scientific decisions.
- 560 scientists (49 percent) knew of “many or some” cases where political appointees at other federal agencies had inappropriately involved themselves in decisions.
- 507 scientists (42 percent) knew of “many or some” cases where “commercial interests have inappropriately induced the reversal or withdrawal of EPA scientific conclusions or decisions through political intervention.”
- 329 scientists (28 percent) knew of such interference by “nongovernmental or advocacy groups.”

In essay responses, nearly 100 scientists identified the White House Office of Management and Budget (OMB), which oversees the federal budget and coordinates all federal regulations, as the primary source of external interference.

A landfill near the Wasatch Mountains in Utah.

Respondents reported widespread respect for their direct supervisors, but had fewer commendations for the EPA’s senior leaders:

- 1,282 scientists (81 percent) respected the integrity and professionalism of their direct manager or supervisor, while 686 (43 percent) said the same about the EPA’s senior leaders.
- A majority of respondents (906 scientists, or 59 percent) agreed that their direct supervisor stands behind scientific staff who express politically controversial opinions.





Rates of political interference varied widely among offices and divisions within the agency:

- The percentage of scientists reporting interference was highest in the program offices with regulatory duties, and at EPA headquarters. A total of 337 scientists in the program offices (68 percent), and 379 scientists at headquarters (69 percent), reported at least one incident of interference in the past five years.
- The percentage of scientists reporting interference was lower—although still significant—in the Office of Research and Development (ORD), the EPA’s main research arm. The ORD’s National Health and Environmental Effects Research Laboratory was notably freer of interference (39 percent) than any other EPA division, while its National Center for Environmental Assessment had the highest percentage of scientists reporting interference of all EPA divisions (84 percent).
- The percentages of scientists reporting interference in the 10 regional offices varied widely, from 44 percent (region 6) to 73 percent (region 9).

To place these results in context, we cite specific incidents of interference. For example, political appointees at the White House and in top positions at the EPA manipulated scientific findings and analyses regarding mercury pollution and climate change. These incidents involved pressure to change scientific methods and findings, direct editing of scientific documents by non-scientists, and delayed release of scientific reports.

A third case—involving interagency review of the EPA’s assessment of toxic chemicals—illustrates the growing ability of the OMB and other federal agencies to review and second-guess the work of the EPA’s scientific experts.

Barriers to the Free Communication of Science

The free communication of scientific results is a critical part of the scientific process.

Despite statements by EPA leaders asserting that the agency supports scientific openness, many scientists report that it restricts free communication of the results of taxpayer-funded research:

- 783 scientists (51 percent) disagreed or strongly disagreed that EPA policies allow scientists to “speak freely to the news media about their findings.” Another 556 scientists (36 percent) had no opinion or were unsure. Only 197 scientists (13 percent) agreed that the EPA allows scientists to communicate freely with the media.
- 291 scientists (24 percent) disagreed or strongly disagreed that they are “allowed to publish work in peer-reviewed scientific journals regardless of whether it adheres to agency policies or positions.”

Beyond these restrictive policies, hundreds of scientists said they fear retaliation for speaking candidly about the EPA’s work. More scientists feared retaliation for speaking candidly inside the agency than outside it:

- 492 scientists (31 percent) disagreed or strongly disagreed that they could openly express concerns about the EPA’s work *inside* the agency without fear of retaliation.
- 382 scientists (24 percent) disagreed or strongly disagreed that they could openly express concerns about the EPA’s work *outside* the agency without fear of retaliation.

Interviews with current and former EPA scientists revealed new examples of problems in communicating scientific research. In two cases, EPA scientists were barred from presenting research on climate change at scientific conferences.

Other scientists reported difficulties speaking with the media and obtaining EPA clearance to publish their findings in scientific journals.

Political interference in scientific work combined with barriers to the free communication of scientific findings affect the amount and quality of information the U.S. public receives.

EPA needs dynamic, scientific leadership interested in the well being of the environment and public health. EPA should not be the political agency it has become, the right hand of industry and short economic gain.

A scientist from the Office of Solid Waste and Emergency Response

Undermining the Role of Science in EPA Decision Making

Scientific information is the lifeblood of much of the EPA’s work and the credibility of its decisions depends on the quality of its scientific work.

A plurality of EPA scientists reported that the agency’s regulatory policies are consistent with its scientific findings. However, a similar number felt that the EPA could do a better job of using the best judgment of its scientific staff:

- 745 scientists (48 percent) felt that the EPA’s determinations and actions are frequently or always consistent with the scientific findings in agency documents and reports.
- 719 scientists (47 percent) felt that the EPA’s determinations occasionally, seldom, or never make use of the best judgment of its scientific staff.

Hundreds of EPA scientists also felt that the agency only occasionally incorporates expert advice from advisory committees into policy decisions:

- 553 scientists (36 percent) felt that the agency occasionally, seldom, or never heeds advice from independent scientific advisory committees.

Recent changes in the EPA's process for setting the National Ambient Air Quality Standards provide one prominent example of how political considerations have trumped scientific expertise and sidelined the EPA's scientific advisory committees.

Do not trust the Environmental Protection Agency to protect your environment. Ask questions. Be aware of political and economic motives. Become politically active. Elect officials with motives to protect the environment and hold them accountable.

A scientist from an EPA regional office

Challenges to Agency Effectiveness

Beyond political interference in EPA science, several survey questions asked respondents about other factors that could impair their ability to do their jobs, and the ability of the agency as a whole to fulfill its mission.

Large numbers of EPA scientists indicated that a lack of sufficient or appropriate resources was a serious issue in their office or division:

- 969 scientists (62 percent) disagreed or strongly disagreed that the "EPA division where I work has sufficient resources to adequately perform its mission of protecting human health and the environment."
- 555 scientists (36 percent) agreed or strongly agreed that the "recent changes and closures in the EPA library system have impaired my ability to do my job." This opinion was especially prevalent among scientists in

regions 5, 6, and 7, which had their libraries closed (86 of these scientists, or 48 percent, agreed).

- 574 scientists (41 percent) agreed or strongly agreed that "the trend toward contracting out scientific work is harming the effectiveness of my division."

Survey questions also asked scientists about their job satisfaction, and the morale in their division:

- Twice as many respondents reported a decrease in job satisfaction over the past five years as those who reported an increase (670 versus 328 scientists).
- Opinions about workforce morale varied widely. A total of 564 scientists (37 percent) said morale was fair, and 387 (25 percent) said morale was poor or extremely poor. A total of 570 scientists (37 percent) said morale was good or excellent.

Questions about the overall effectiveness of the EPA elicited a range of responses:

- Respondents were more likely to agree than disagree that the EPA was acting effectively to clean up environmental problems. A total of 812 scientists (52 percent) agreed that the EPA acts effectively to "clean up and/or mitigate existing pollution or environmental problems," while 522 (33 percent) disagreed.
- 694 scientists (44 percent) agreed that the EPA acts effectively to "foster practices that prevent environmental degradation or adverse health effects before they occur," while 629 scientists (40 percent) disagreed.
- Twice as many respondents reported a decrease in the effectiveness of their office or division over the past five years (696 scientists, or 45 percent) as those who reported an increase (321 scientists, or 21 percent).



Multiple sources of air and water pollution along a stretch of the Hudson River in Glens Falls, NY.

- Respondents were evenly split on whether the EPA is moving in the right direction. A total of 685 scientists (44 percent) disagreed that the EPA is moving in the right direction, while 624 scientists (40 percent) agreed.

Recommendations

The many forms of political interference in EPA science revealed through our survey, our interviews, and other sources of information require a suite of solutions in five major arenas: protecting EPA scientists, increasing agency transparency, reforming its regulatory process, strengthening its scientific advisory system, and depoliticizing funding, monitoring, and enforcement.

- **Protecting EPA Scientists:** The agency's scientists have a profound responsibility to the U.S. public. To fulfill that responsibility, they need reassurance that standing behind their scientific work will not open them to official or unofficial retaliation. Congress is considering several bills that would strengthen the federal whistle-blower system. Congress should pass the strongest possible protections, and the next EPA administrator should formally incorporate them into the agency's policies.
- **Making the EPA More Transparent:** Decisions made behind closed doors threaten the integrity of EPA science and the agency's ability to protect public health and the environment.

Opening up these decisions to congressional and public scrutiny is an important step in revealing and ending the misuse of science.

The EPA should institute a transparency policy for all meetings with representatives of other federal agencies and outside entities. The agency should also create procedures that ensure the periodic release of scientific documents and prevent them from remaining in draft form indefinitely. The EPA should publish a summary statement discussing the scientific basis for each significant regulatory decision, and document dissenting opinions. The agency should also reform its policies to allow scientists to communicate freely with the media, and to quickly clear their findings for publication in scientific journals, to ensure the free flow of scientific information.

- **Reforming the Regulatory Process:** The EPA was created to implement and enforce the nation's environmental laws, and it has developed the expertise, experience, processes, and policies needed to fulfill that charge. While the White House is responsible for overseeing federal agencies, it must strike a better balance between administration priorities and agency independence. The White House should respect the agency's reservoir of scientific and technical knowledge and restrain the OMB from reviewing the EPA's scientific and technical documents.

To ensure the central role of the environment in high-level decision making, the next president should elevate the EPA to a cabinet-level agency. Congress should also consider how to reform and strengthen our nation's regulatory structure, to meet the pressing environmental challenges of the twenty-first century.

- **Ensuring Robust Scientific Input to the EPA's Decision Making:** The EPA should review and strengthen how it uses the scientific expertise of its staff and external advisory committees to create policies—especially when scientific input is critical or required by law. Specifically, the next EPA administrator should work with the Clean Air Science Advisory Committee to improve the process for setting the National Ambient Air Quality Standards, to ensure that the administrator relies on the “best available science.” The agency should also tighten its conflict-of-interest restrictions.
- **Depoliticizing Funding, Monitoring, and Enforcement:** Problems with funding, monitoring and enforcement also need to be addressed by Congress and the next president to ensure that the EPA is the robust environmental agency that our country needs. Congress should provide the EPA with resources commensurate with its growing responsibilities and should work to ensure that selective internal budget cuts are not used to punish inconvenient programs or offices. The next president should commit to strong and consistent enforcement of the nation's environmental laws.

Concluding Thoughts

The EPA's scientific enterprise is our nation's first line of defense against threats to public health and the environment. These threats are growing more complex and global, with the potential to harm the nation's health and prosperity. Despite

notable successes, air and water pollution remain serious public health problems. Each year brings new and untested chemicals into our homes, schools, and workplaces. Climate change alone is projected to have profound impacts on public health, agriculture, the economy, and even national security.

These problems are not insurmountable. The environmental and public health successes of the past several decades show that the country can rise to the challenge of environmental threats—but only if the EPA has the proper tools. Given the complexity of today's environmental challenges, a credible scientific knowledge base is essential to an effective response. To foster and sustain a healthy scientific enterprise, Congress and the next president should take concrete steps to protect the EPA's scientists, make the agency more transparent, reform the regulatory process, strengthen the scientific advisory system, and depoliticize funding, monitoring, and enforcement.

Science is not the only element of effective policy making. However, because science enjoys widespread respect, appointed officials will always be tempted to manipulate or suppress scientific findings to support predetermined policies. Such manipulation is not only dishonest; it undermines the EPA's credibility and affects the health and safety of Americans.

The Bush administration's direct abuse of science—combined with systemic changes to the regulatory system that threaten the integrity of EPA science—highlight the need for strong action by the next president and Congress to restore scientific integrity to the agency's decision making. Only then can the EPA fully mobilize to serve the public good and ensure the nation's health.

CHAPTER 1

Introduction

Christine Todd Whitman, a former Republican governor of New Jersey who was George W. Bush's first administrator of the U.S. Environmental Protection Agency (EPA), resigned her post in the summer of 2003. In a later interview, she revealed that her departure came as a direct response to the White House's weakening of EPA regulations on air pollution from aging power plants. According to Whitman, Vice President Dick Cheney pushed hard for a rule that "didn't hamper industry," and the final rule was written "at the direction of the White House," over the objections of Whitman and EPA staff. Whitman resigned rather than having to publicly defend the new rule, attesting that, "I just couldn't sign it. The president has a right to have an administrator who could defend it, and I just couldn't" (Becker and Gellman 2007).

EPA decisions have often proved controversial. However, Whitman's experience illustrates how thoroughly the EPA has become politicized under the George W. Bush administration, and how top executive branch officials have overruled the best advice of the agency's experts, at times illegally. Under this administration, political appointees have rewritten scientific documents about climate change, pressured EPA scientists to support pre-determined conclusions about mercury pollution, and sidelined the advice of the EPA's independent advisory committees in setting air pollution standards. In these and other examples, political appointees used tainted science to justify weaker protections of public health and the environment.

In contrast, Russell Train, who served as EPA administrator under Presidents Nixon and Ford, attested that, "In all my time at the EPA, I don't recall any regulatory decision that was driven by political considerations. More to the present



Christine Todd Whitman served as EPA administrator under President George W. Bush until her resignation in 2003 over White House interference in EPA air pollution regulations.

point, never once, to my best recollection, did either the Nixon or Ford White House ever try to tell me how to make a decision" (Train 2003).

Political interference in EPA science threatens the health and safety of Americans. EPA scientists apply their expertise to protect the public from air and water pollution, to clean up hazardous waste, and to study emerging threats such as climate change. Because each year brings new, potentially toxic chemicals into our homes and workplaces, because air pollution still threatens our health, and because environmental challenges are growing more complex and global, a strong and capable EPA is more important than ever. Without access to the best scientific information, policy makers cannot make

fully informed decisions. And without safeguards to ensure the independence of its scientific work, the EPA cannot fulfill its mission.

The past seven years have seen an epidemic of interference in the work of federal science and regulatory agencies (UCS 2008). The science underlying federal decisions has become a favored battlefield for weakening, delaying, and revers-

In all my time at the EPA, I don't recall any regulatory decision that was driven by political considerations. More to the present point, never once, to my best recollection, did either the Nixon or Ford White House ever try to tell me how to make a decision.

Russell Train, EPA administrator under Presidents Nixon and Ford

ing government regulation. To assess the extent of abuses of science and allow federal scientists to tell their own stories, the Union of Concerned Scientists (UCS) has conducted a series of surveys of government scientists. Past surveys have given voice to more than 1,800 scientists working at nine federal agencies.*

To explore politicization of science at the EPA, UCS distributed a 44-question survey to nearly 5,500 EPA scientists in the summer of 2007, asking for information about how the agency uses science in its decision making. More than 1,500 scientists responded.

Their answers show an agency under siege. Hundreds of EPA scientists report political interference in their work, significant barriers to the free communication of scientific results, and concerns about the agency's effectiveness. This report details these findings. It also outlines cases of political interference in the EPA's scientific work that we obtained through interviews with current and former EPA employees, Freedom of Information Act requests, and earlier UCS and media reports.

To provide context for our findings, Chapter 2 briefly summarizes the history of the EPA, outlines the key laws giving the agency its mandate, highlights its scientific program offices, and shows funding trends for the agency. Chapter 3 explains how we conducted our survey and investigation. Chapters 4, 5, 6, and 7 present our findings in four major areas: political interference in EPA science, barriers to free communication of the agency's scientific findings, the undermining of science in agency decision making, and other challenges to the agency's effectiveness. Chapter 8 presents our recommendations for restoring scientific integrity to EPA decision making, and for strengthening the agency's ability to fulfill its mission.

* These surveys have included scientists at the U.S. Fish and Wildlife Service (UCS and PEER 2005a), the National Oceanic and Atmospheric Administration Fisheries Service (UCS and PEER 2005b), the U.S. Food and Drug Administration (UCS and PEER 2006), and climate change scientists working at seven federal agencies and the independent National Center for Atmospheric Research (UCS and GAP 2007). For survey results and essay responses, see www.ucsusa.org/surveys.

CHAPTER 2

History and Organization of the EPA

The U.S. Environmental Protection Agency is charged with a simple yet profound mission: “to protect human health and the environment.” To carry out this mission, the EPA implements and enforces the nation’s environmental laws, monitors major environmental indicators, serves as a clearinghouse for environmental information, and conducts basic and applied research.

History

The EPA was created in 1970, a year that saw a national groundswell of environmental activism. On New Year’s Day 1970, President Richard M. Nixon signed the National Environmental Policy Act. On April 22, the first Earth Day sparked actions and celebrations by millions of Americans across the nation. President Nixon also formed

the Council on Environmental Quality under the leadership of Russell Train, and announced the formation of an independent federal agency to oversee the nation’s environmental policy. Congress approved this plan, and the EPA opened its doors on December 2, 1970, led by Administrator William D. Ruckelshaus.

The EPA achieved many notable successes in its early years, such as a ban on the domestic use of the pesticide DDT, the phaseout of leaded gasoline, and national standards for air and water quality. Groundbreaking legislation passed by Congress in the 1970s and early 1980s made these successes possible. Building on this broad legislative mandate, the EPA has grown in scope and responsibility, with its authority now encompassing air pollution, the safety of our drinking



A bulldozer reveals a toxic waste storage tank near homes in Love Canal, NY. The Love Canal disaster led to the enactment of the Superfund Act.

water, cleanup of our toxic waste legacy, and basic scientific research into emerging environmental issues such as endocrine-disrupting chemicals and global climate change.

The EPA has no natural constituency. It is a job where the administrator antagonizes the oil industry one week, the auto industry the next, the farmers the next. Your hope is you don't antagonize more than one the same week.

William Reilly, EPA administrator for the first President Bush

However, with these successes has come opposition to environmental regulation from sectors of the business community and certain political interests. EPA regulations touch upon almost all aspects of the economy, often bringing the agency into conflict with industries and state and local governments. As William Reilly, EPA administrator for the first President Bush, put it: "The EPA has no natural constituency. It is a job where the administrator antagonizes the oil industry one week, the auto industry the next, the farmers the next. Your hope is you don't antagonize more than one the same week" (Coile 2003).

President Ronald Reagan considered many environmental regulations excessively harmful to the economy, and campaigned on a promise to reduce regulation and the size of the federal government. Reagan's first EPA administrator, Anne Gorsuch, attempted to weaken or reverse many EPA regulations. Gorsuch was later held in contempt of Congress for refusing to release documents relating to mismanagement of the Superfund program, and resigned amid widespread scandal. To right the ship, Reagan brought back the widely respected Ruckelshaus to succeed Gorsuch as interim administrator.

Continued political and industry opposition to environmental regulation has prompted the EPA to pursue other tactics beyond pure regulation to achieve its goals. These tactics have included a greater focus on pollution prevention and voluntary programs, as well as market-based approaches such as systems for trading pollution credits. (For a more detailed look at EPA history, see EPA 2008e.) Despite these efforts, the history of antagonism to environmental regulation from some interests, noted by Administrator Reilly, laid the groundwork for the current Bush administration's political interference in the EPA's scientific work.

Key Environmental Laws

The EPA website lists more than 30 federal laws that provide authorization for the EPA's activities (EPA 2008b; see also Lee 2001, a report from the Congressional Research Service). Congress has amended and updated many of these laws in the intervening years. About a dozen are the most important:

- The **National Environmental Policy Act of 1969** (NEPA) established the Council on Environmental Quality and led to the founding of the EPA. NEPA declares a "national policy to encourage productive and enjoyable harmony between man and his environment," and requires federal agencies to consider the environmental results before undertaking any significant action, through a publicly available environmental impact statement (EIS). The EPA is responsible for reviewing, commenting on, and archiving EISs from other federal agencies.
- The **Clean Air Act** (CAA, 1970) establishes a range of standards and procedures for controlling air pollution. Under the act, the EPA is responsible for setting national standards for six "criteria" air pollutants (those that affect ambient air quality, such as ozone, particulate matter, and lead), 188 specific hazardous air pollutants, and the pollutants that cause acid rain. Although primary responsibility for

compliance lies with the states, the act also establishes a permit system for sources of air pollution such as power plants.

- The **Federal Insecticide, Fungicide, and Rodenticide Act** (FIFRA, 1972) regulates the sale and use of some 21,000 pesticides now in use in this country. Manufacturers must register a pesticide with the EPA before it is legal for use, and then it may be used only for the specific purpose for which it is labeled. Registration is contingent on the manufacturer's submitting scientific data on toxicity and environmental impact. **The Food Quality Protection Act** (FQPA, 1996) provides a major update of EPA responsibilities under FIFRA, including greater consideration of the risks of pesticide residues to children.
- **The Marine Protection, Research, and Sanctuaries Act** (MPRSA, 1972), also known as the **Ocean Dumping Act**, regulates the discharge of materials into U.S. ocean waters and authorizes related research. The act permits the EPA to phase out all ocean disposal of "harmful" sewage sludge and industrial waste, and to enforce such bans.
- **The Safe Drinking Water Act** (SDWA, 1974) is the primary legislation that ensures the quality and safety of the public water supply. The act establishes quality standards and treatment requirements. It also authorizes the EPA to regulate sources of contamination, and help states finance water quality projects.
- The **Resource Conservation and Recovery Act** (RCRA, 1976) permits the EPA to set standards, prohibit certain practices, and issue permits for facilities that generate or store hazardous or solid waste.
- The **Toxic Substances Control Act** (TSCA, 1976) allows the EPA to screen and regulate chemicals used in commerce. The EPA may require manufacturers to provide scientific information about a chemical's toxicity or



harmful effects. Based on this information, the EPA may decide to impose any of a range of regulatory solutions, including use restrictions and outright bans, although the agency must use the least burdensome option that can reduce risks to a "reasonable level." TSCA, and later amendments, specifically require the EPA to control contamination from polychlorinated biphenyls (PCBs), asbestos, radon, and lead.

- The **Environmental Research, Development and Demonstration Authorization Act** (ERDDA, 1976) provides the EPA with a statutory mandate to conduct basic and applied research on environmental topics, and to develop and demonstrate new technologies for monitoring, controlling, and cleaning up environmental contaminants.
- The **Clean Water Act** (CWA, 1977) sets ambitious goals for the quality of the nation's surface waters. The CWA requires treatment of all wastewater before discharge into waterways, with the goal of creating "swimmable" and "fishable" rivers and lakes. The act sets standards for "best practicable control technology" (BPT) and "best available technology" (BAT) for treating discharges. The act also provides for enforcement, and for assisting states and municipalities responsible for implementing it.

The successful battle to save New York's Storm King Mountain from the construction of a power plant set a legal precedent and opened the way for the National Environmental Policy Act (NEPA), the first of the many laws that govern the EPA.

- The **Comprehensive Environmental Response, Compensation, and Liability Act** (CERCLA, 1980), more commonly known as **Superfund**, authorizes cleanup of the most serious cases of existing hazardous waste pollution. The law creates a National Priority List of leaking hazardous waste dumps, spills, or other releases that can threaten the health of “any organism.” The act establishes a “polluter pays” framework for funding site cleanup. An excise tax on petroleum and other chemicals originally covered the cost of cleaning up sites with no responsible party, but these taxes were not renewed after 1995, and the fund has had a zero balance since 2003.
- The **Emergency Planning and Community Right-to-Know Act** (EPCRA, 1986) was signed into law after the Bhopal disaster in India, where release of toxic gas from an industrial plant resulted in the death of at least 3,000 people. EPCRA mandates annual reporting on the release or use of industrial chemicals

through a database known as the Toxics Release Inventory (TRI), and also provides a national framework to enable local and state authorities to plan emergency responses to chemical accidents.

- The **Pollution Prevention Act** (PPA, 1990) mandates that the EPA establish programs and strategies to prevent pollution and reduce its sources. The act also requires annual reports on pollution prevention and recycling.

Other legislation addresses specific environmental contaminants (such as asbestos, lead-based paint in homes, and indoor radon), or issues for which the EPA does not have primary responsibility (such as the Endangered Species Act and the Occupational Safety and Health Act).

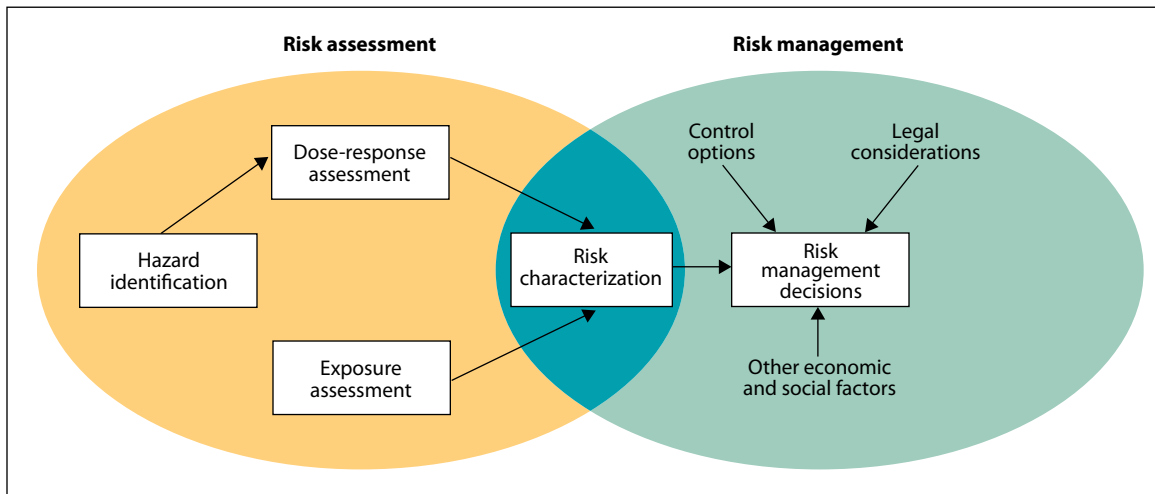
The Role of Science in the Policy Process

The EPA must rely on scientific information and expertise in fulfilling its mission. The most recent EPA strategic plan also lists “best available science” as a crucial strategy for achieving

The Resource Conservation and Recovery Act, enacted in 1976, charges the EPA with regulating solid waste disposal and storage.



FIGURE 1: The EPA's Risk Assessment and Risk Management Paradigm



Source: EPA's Office of Research and Development (EPA 2006a).

the agency's goals (EPA 2006a). Recognizing that the agency needs qualified scientific staff with the support of EPA leaders to fulfill this strategy, Administrator Carol Browner adopted the EPA Principles of Scientific Integrity in March 2000, to provide all employees with general standards for scientific and intellectual conduct (EPA 2000). The quality of EPA science and its role in EPA decision making has also been the subject of numerous studies and reports, both internal (OIG 2002; EPA Expert Panel 1992) and external (for example, NRC 2000; Powell 1999). We found these reports helpful in interpreting the results of our investigations.

The EPA organizes much of its scientific and policy work around the principles of risk assessment and risk management (see Figure 1). This division creates a useful (although not always impermeable) barrier between scientific and policy decisions.

The goal of risk assessment is to gain a scientific understanding of the probability that populations exposed to a given hazard will be harmed, and to what extent. The resulting "risk characterization" draws on scientific knowledge of human exposure to the hazard and the dose-response relationship. While risk assessment is a scientific undertaking, it does involve making what the

National Research Council, in its landmark 1983 study, called "science-policy choices"—that is, those that are not purely scientific, such as which model to use in predicting the effects of low doses of a hazard (NRC 1994; NRC 1983).

Risk management entails creating policies to address risks, and typically draws on many considerations beyond the scientific risk assessment, including legal considerations, stakeholder input, the technological feasibility of reducing risks, and other social and economic concerns. Such decisions are often ultimately based on the judgment of policy makers. However, some laws do provide specific guidance for how decision makers should or should not use science and technology in creating environmental policy. For example:

- **Best Available Science:** The Clean Air Act mandates that the EPA administrator issue National Ambient Air Quality Standards (NAAQS) that "accurately reflect the latest scientific knowledge," and that the EPA review those standards every five years. While the EPA has rarely kept to this schedule, this law has ensured that standards for six "criteria" air pollutants eventually reflect advances in scientific understanding. The Supreme Court has affirmed that the agency may not consider

other factors when setting the NAAQS, such as technological feasibility or cost (*Whitman v. American Trucking Associations, Inc.* 2001). Statutory language of this type also appears in other environmental legislation, notably the Endangered Species Act.

- **Best Available Technology:** In regulating hazardous air contaminants, the CAA does not set absolute national standards, as in the case of the NAAQS, but rather requires polluting facilities to use the most up-to-date (or “maximum achievable”) pollution control technology. Similar language regarding “best practicable” or “best available” technology can be found in the Clean Water Act’s regulation of municipal and industrial discharges into the nation’s waters, and in the Safe Drinking Water Act’s regulations on drinking water contaminants.

- **Cost-Benefit Balancing and Market Failure:** Other environmental laws, notably FIFRA and TSCA, which regulate commercial products rather than “waste,” require policy makers to balance costs and benefits before imposing regulations. President Bush’s recent executive order 13422 further requires federal agencies to prove that regulations address a “market failure” (Bush 2007).

The Organization of the EPA

The EPA’s broad legislative mandate translates into a large and complicated agency. The agency has some 18,000 employees, including 6,000 to 8,000 with scientific duties (OPM 2007). The agency is divided into 12 offices and 10 regions (see Figure 2a), and is headquartered in Washington, DC. Stephen L. Johnson is the EPA’s eleventh and current administrator. The administrator is a member of the president’s cabinet,

FIGURE 2A: **The EPA’s 12 Central Offices and 10 Regional Offices**

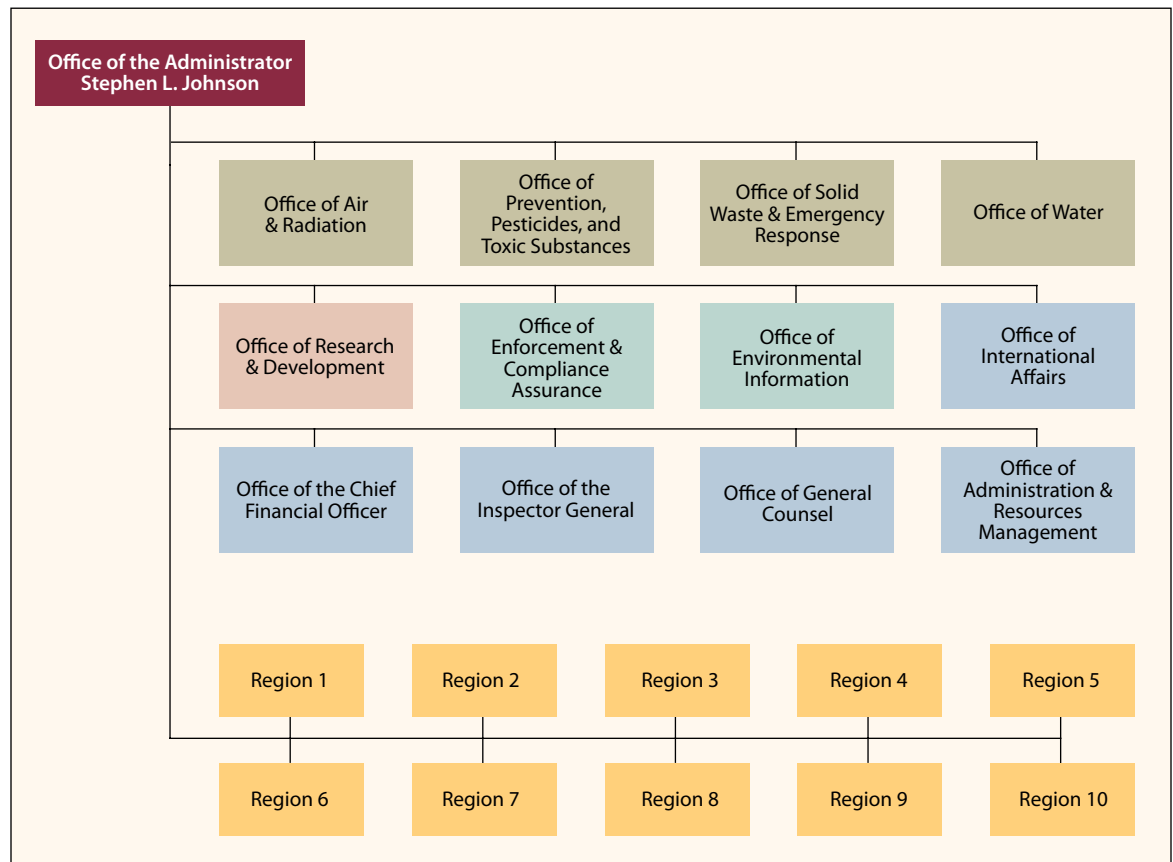
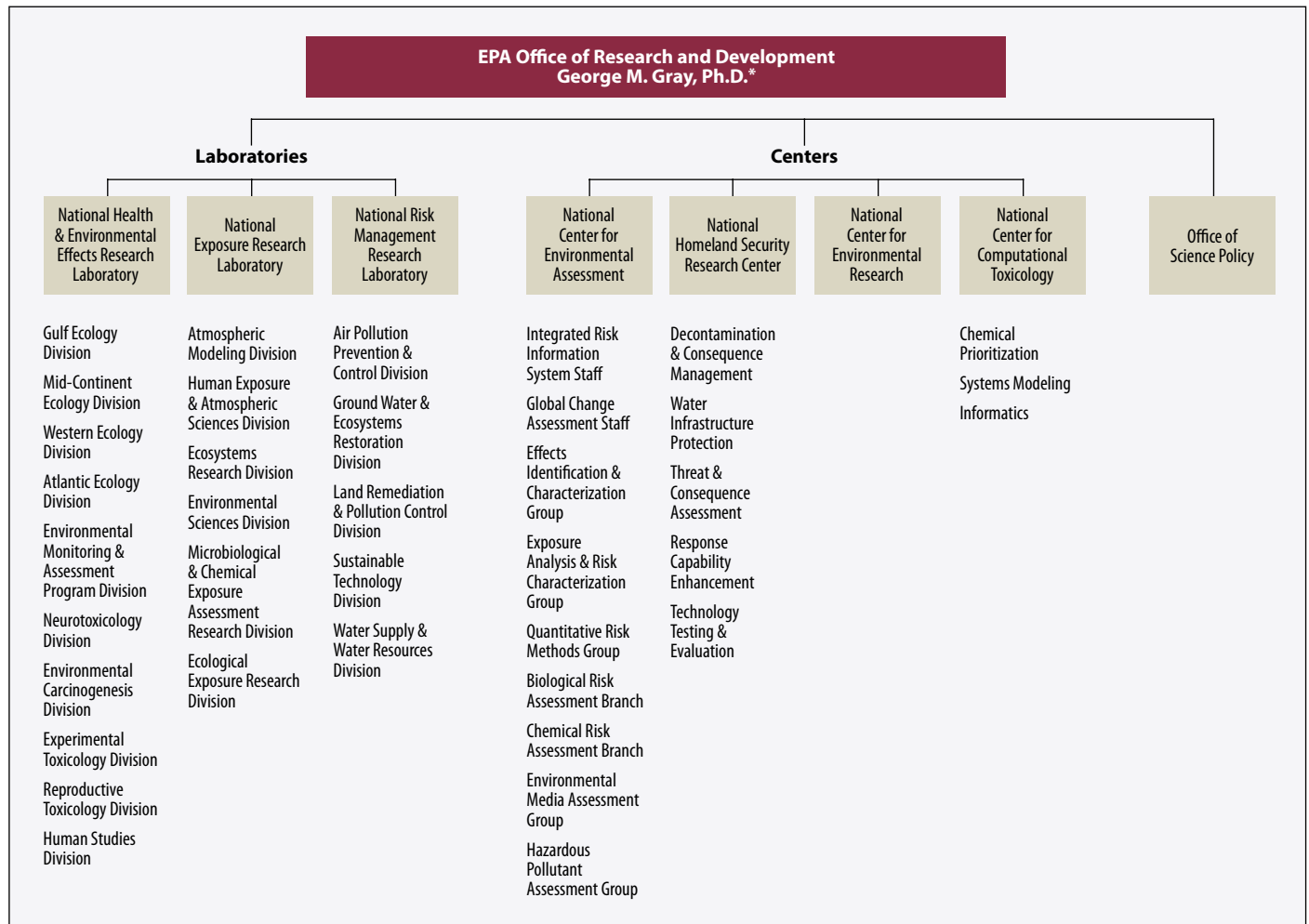


FIGURE 2B: The National Laboratories and Centers of the EPA’s Office of Research and Development



*George M. Gray is also the EPA science advisor.

although the EPA itself is not a cabinet-level agency.

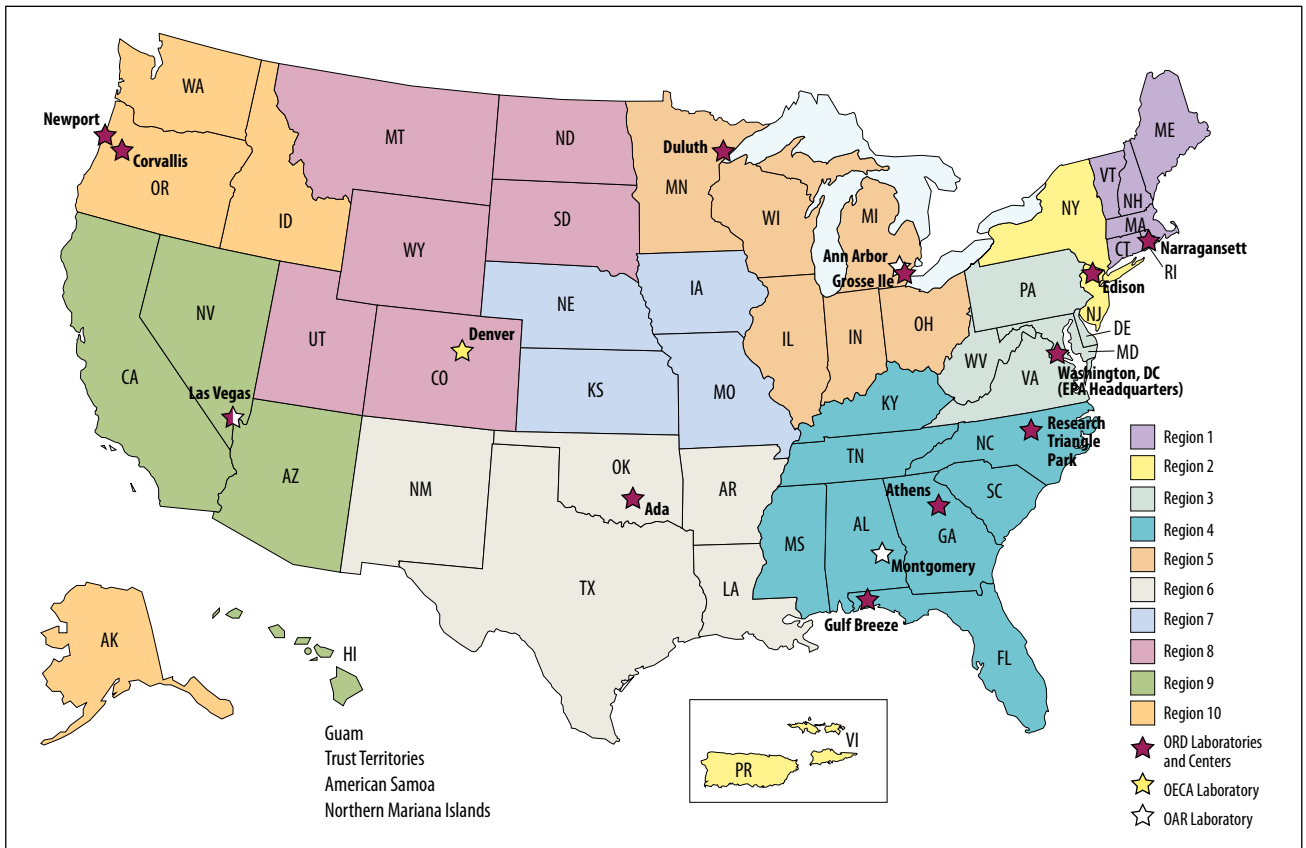
Of the 12 program offices, seven contain the bulk of the agency’s scientific expertise:

- The **Office of Air and Radiation (OAR)** is responsible for setting national air pollution standards in accordance with the CAA, as well as developing programs to address climate change, stratospheric ozone depletion, transportation and air quality, indoor air quality, and radiation exposure. The OAR also operates three research laboratories: the National Vehicle and Fuel Emissions Laboratory, the Radiation and Indoor Environments

National Laboratory, and the National Air and Radiation Environmental Laboratory.

- The **Office of Prevention, Pesticides and Toxic Substances (OPPTS)** regulates and conducts research on pesticides and other toxic chemicals in the environment, as required by FIFRA and TSCA. The OPPTS also manages pollution prevention programs under the Pollution Prevention Act.
- The **Office of Solid Waste and Emergency Response (OSWER)** is responsible for managing the Superfund program and responding to releases of hazardous materials, administering the brownfields program and fostering

FIGURE 3: **Map of the EPA's 10 Regions and 16 Laboratories and Facilities**



redevelopment of contaminated sites, and developing guidelines for and regulating hazardous waste disposal.

- The **Office of Water** (OW) is responsible for ensuring the quality of groundwater and drinking water, overseeing wastewater treatment programs, and protecting watersheds, wetlands, and oceans under the CWA.
- The **Office of Research and Development** (ORD) is the research arm of the EPA, conducting basic and applied scientific research to support its programs. The ORD consists of a network of three national laboratories and four national centers that conduct scientific research, plus the Office of Science Policy (see Figure 2b, p. 17, and Figure 3). The two largest research facilities are in Research Triangle Park, NC, and Cincinnati, OH.

- The **Office of Environmental Information** (OEI) is charged with collecting and managing environmental information, and for ensuring its accuracy and reliability. The OEI also provides tools and resources to ensure public access to environmental information, such as the EPA's library network and its Toxic Release Inventory.
- The **Office of Enforcement and Compliance Assurance** (OECA) is responsible for enforcing the nation's environmental laws and helping the regulated community comply with regulations. The OECA also operates the National Enforcement Investigations Center Laboratory in Denver.

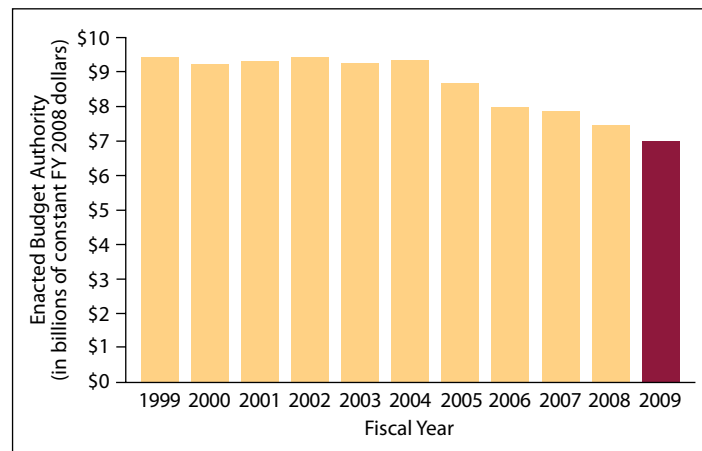
The Office of the Administrator is home to a number of divisions affecting the agency as a whole, including the Office of Children's Health

Protection and the Office of Civil Rights. The remaining five offices have comparatively few scientific responsibilities: the Office of the General Counsel, the Office of the Inspector General, the Office of the Chief Financial Officer, the Office of International Affairs, and the Office of Administration and Resources Management.

The EPA also has 24 official advisory committees, chartered under the Federal Advisory Committee Act, which provide external scientific advice. These committees include the Science Advisory Board, the Board of Scientific Counselors, and the Clean Air Science Advisory Committee (CASAC) (OCEM 2008). Various internal bodies also manage the EPA's generation and use of scientific information, including the ORD's Office of Science Policy, the Science Policy Council, and the Council on Regulatory Environmental Modeling (EPA 2006a).

Each regional office is responsible for implementing the EPA's programs within its geographic area (see Figure 3).

FIGURE 4: EPA Budget 1999–2009



Note: The EPA's discretionary budget, 1999–2009, is in billions of constant FY 2008 dollars. FY 2009 reflects the president's budget request.

Source: President's budget for fiscal year 2009, historical tables.

Funding Trends

The EPA's budget has declined in real terms by about 25 percent since fiscal year 2004—down from a level it had maintained since the 1990s (see Figure 4).

CHAPTER 3

Research Methods

In summer 2007, UCS sent a 44-question survey to almost 5,500 EPA scientists—a large fraction of the agency’s 6,000 to 8,000 scientists (see more on the sample below). The survey asked these scientists about political interference in their work, the use of science in agency decision making, the EPA’s effectiveness, employee morale, and other topics. The 1,586 scientists who responded were largely senior scientists: two-thirds had been with the EPA for 10 years or more, three-fourths had an advanced degree, and more than 80 percent were at General Service level 13 or higher.

UCS contracted with the Center for Survey Statistics and Methodology (CSSM) at Iowa State University to conduct the survey and tabulate and analyze the data. CSSM produced an online questionnaire that used anonymous logins and passwords to track which recipients had completed the survey, and to allow follow-up reminders to those who had not. Survey recipients received an initial email contact containing the login and password, as well as a hard copy mailed to their place of work. To boost the response rate, the researchers sent up to three reminder emails to those who had not responded.

To allow survey respondents to freely express their opinions about the EPA, our highest priorities were ensuring their confidentiality and anonymity. Thus, while UCS provided the sample of scientists that received the survey, we did not have access to any links between a given survey response and personal information, such as a name or email address. CSSM maintained such links solely to send out targeted reminder emails during the data collection period, and destroyed all such links once it closed the survey.

Creating the Survey Mailing List

No centralized directory of EPA scientists is available, so we drew on many sources to create the mailing list for the survey. Some offices and divisions list staff members online, and provide information on their job and project duties. Other divisions provided incomplete or no information about staff members online.

To fill these gaps, UCS asked current and former EPA employees to review staff lists from all remaining scientific offices and divisions, to identify scientists and exclude nonscientists. We also used targeted Internet searches to turn up information about employees’ job titles and duties through lists of conference attendees, authors of peer-reviewed papers, internal memoranda, and newsletters. To allow as many EPA scientists as possible to participate, we erred on the side of including employees who worked at scientific branches and divisions even if their job duties were unclear.

The mailing list was therefore broad but of uneven quality. For example, in divisions that posted names but not job titles, the sample likely included some nonscientists. Conversely, the survey may have improperly excluded some legitimate scientists working in divisions where Internet search was the primary means of obtaining information. This approach also produced a notable bias toward agency veterans, as their names were more likely to appear on a website, at the expense of younger scientists and new hires. To address these shortcomings, we relied on several demographic questions in the survey itself to exclude nonscientists (see below).

Once we identified the names of EPA scientists, obtaining contact information was straightforward, as the online EPA Employee Locator provides telephone numbers, email addresses,

postal addresses, and mail codes (EPA 2008c). We excluded anyone whose name did not appear in the locator from the mailing list.

Defining “Scientist”

We used a broad definition of “scientist” when compiling the mailing list. That is, we included Ph.D. scientists who had been promoted to policy-making positions and who no longer performed bench science, as well as individuals with a bachelor’s degree whose daily work involves running experiments.

To confirm that we were surveying only agency scientists, we asked the recipients of the survey to identify their highest level of education, their major field of training, the percentage of their job duties that related to scientific topics, and what their EPA scientific work involved. We excluded the small number of respondents who indicated that zero percent of their job duties related to science from the sample.

Survey Questionnaire

The survey questionnaire featured 43 multiple-choice questions and one open-ended essay question. Besides posing demographic questions, the survey asked respondents about institutional support for scientists, agency culture and openness, employee morale and job satisfaction, the EPA’s resources and effectiveness, the extent to which the policy-making process relied on science, and specific issues such as contracting and library closures.

The survey also asked respondents about their personal experiences with various forms of political interference in scientific work. And the open-ended essay question asked about how to improve the integrity of science at the EPA. (See Appendix A for the questionnaire and total responses, and Appendix B for further analysis of statistics in this report.)

Survey Demographics

CSSM mailed and emailed letters about the survey to 6,035 EPA employees beginning on

June 25, 2007, and collected data until September 7, 2007. Email messages to 395 individuals bounced back as undeliverable; it is likely that these individuals are no longer EPA employees. CSSM also excluded 221 recipients judged to be nonscientists based on their personal communication or survey responses. Thus the eligible sample totaled 5,419 individuals (see Appendix D for a full methodology report from CSSM).

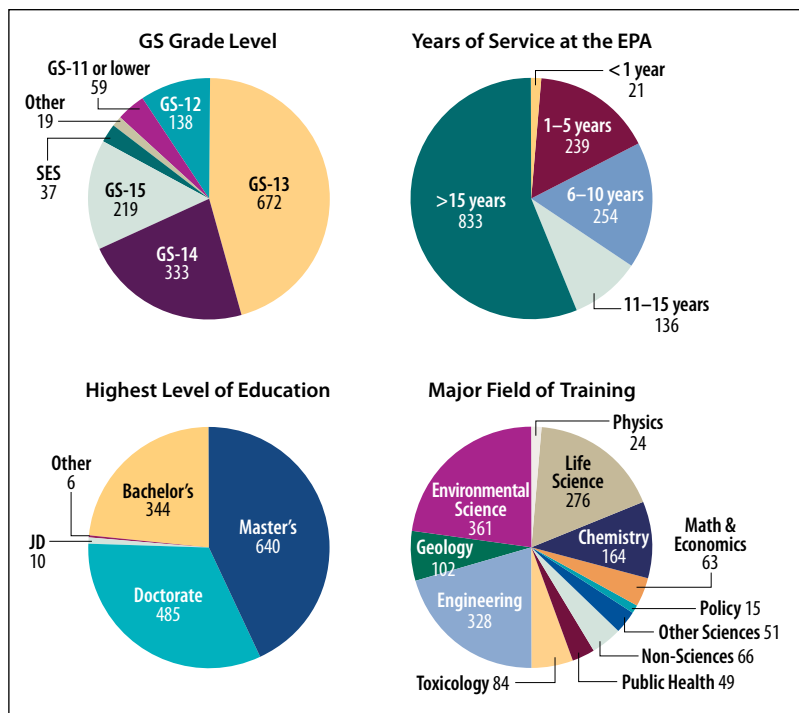
CSSM received completed surveys from 1,586 of these scientists, for a response rate of 29 percent (see Table 1). However, because of the unknown selection effects described above, the true response rate for EPA scientists is uncertain. Of the scientists who did respond, 855 answered the essay question.

The survey was designed to measure raw numbers of scientists who experienced political interference in their scientific work. Because of unknown selection effects in creating the sample, and the self-selection of respondents, it is difficult to extrapolate these raw numbers to a percentage of the EPA’s total scientific workforce. Our analysis of the results includes percentages mainly as a tool for comparing scientists’ responses to different options, and for comparing responses from different EPA offices and divisions.

TABLE 1: **Summary of the Survey’s Sample Size and Response Rate**

	No.	Percent	No.	Percent
Total sample	6,035	100.0		
Ineligible	221	3.7		
No email available	395	6.5		
Total eligible sample	5,419	89.8		
Refusals			73	1.3
Unavailable for study duration			10	0.2
No response			3,750	69.2
Completed surveys			1,586	29.3
Response rate	29.3%			

FIGURE 5: Basic Demographics of Survey Respondents



To prevent anyone from identifying individual respondents from the data, we report results only for offices or divisions where 100 or more scientists received the survey.

Respondents included scientists from a broad range of disciplines (see Figure 5) working in every major office and subdivision of the EPA. Three-quarters (76 percent) held either a master's or doctoral degree, and a large majority (65 percent) spent more than half their time working on scientific topics. Nearly two-thirds (65 percent) were agency veterans with more than 10 years' experience at the EPA, and the vast majority (83 percent) were high-level government employees at General Service levels 13 through 15. Thirty-seven respondents were employees in the Senior Executive Service—scientists who serve in key positions just below the top presidential appointees.

The EPA's Response

In response to our initial email request, some EPA managers instructed their employees not to complete the survey, even though our cover

letter indicated that they could do so on their free time or from a nonwork computer. However, after examining the project's methodology and goals, the deputy ethics officer of the EPA's Office of General Counsel circulated an email stating that the OGC had no legal concerns about the survey. The email affirmed that EPA employees could complete the survey on their personal time, and that doing so on their work computer would fall under the EPA's "limited use" policy. (See Appendix C for the initial emails and the response from the OGC.)

Interviews and Document Requests

To provide context for the survey results, we also interviewed 27 current and former EPA employees on scientific freedom at the EPA, and talked with three non-EPA scientists about their experiences working with EPA colleagues. The interviews focused on the sources' personal experience with political interference in their work, their perceptions of the agency's current and past work environment, and their recommendations for reform. We conducted most interviews via telephone, and most sources asked us not to name them in this report.

We also filed Freedom of Information Act (FOIA) requests for EPA documents on six topics: the closure of the OPPTS Chemical Library; the Toxics Release Inventory (TRI) burden reduction rule; the creation of the Endocrine Disruptor Screening Program (EDSP); the formulation of the Clean Air Mercury Rule; the formulation of the latest National Ambient Air Quality Standards for particulate matter, ozone, and lead; and the ability of climate change scientists to speak to the media and the public. As of press time, we had received complete responses to two of the FOIA requests (on the chemical library and TRI), two incomplete responses (EDSP and NAAQS), and no response to the remaining two requests. Multiple phone calls over six months to both the agency's chief FOIA officer and officials at the Office of Air and Radiation failed to secure timely release of the documents.

CHAPTER 4

Political Interference in Scientific Work

In responding to the survey, EPA scientists reported widespread and inappropriate interference in the agency's science by political appointees at the EPA, the White House, and other federal agencies. Such interference can be explicit—such as direct orders to alter scientific findings—or subtle, such as delays in the release of reports, or statements by EPA leaders that misrepresent scientific findings.

This chapter analyzes those survey findings. To provide context for them, we also summarize two widely reported cases of political interference in mercury regulations and climate change science, and also highlight a recent case involving interagency review of an EPA toxics database.

Survey Results

A series of questions asked respondents how often they had *personally experienced* various forms of inappropriate interference in their scientific work. (Response options included Frequently, Occasionally, Seldom, Never, and Not Applicable.) Large numbers of scientists reported direct and explicit interference:

- 94 scientists (7 percent of respondents) had frequently or occasionally been “directed to inappropriately exclude or alter technical information from an EPA scientific document.” A total of 224 scientists (17 percent) reported that this occurred seldom or more often, indicating at least some experience with this most egregious form of interference.
- 191 scientists (16 percent) had personally experienced frequent or occasional “situations in which scientists have actively objected to, resigned from or removed themselves from a project because of pressure to change scientific findings.” A total of 422 scientists

(34 percent) reported at least some experience with this form of interference.

- 232 scientists (18 percent) had personally experienced frequent or occasional “changes or edits during review that change the meaning of scientific findings.” A total of 482 scientists (38 percent) reported at least some experience with this form of interference.
- 285 scientists (22 percent) had personally experienced frequent or occasional “selective or incomplete use of data to justify a specific

After extensive White House interference, the EPA eased restrictions on hazardous emissions from coal-fired power plants, the primary man-made source of mercury in the United States.

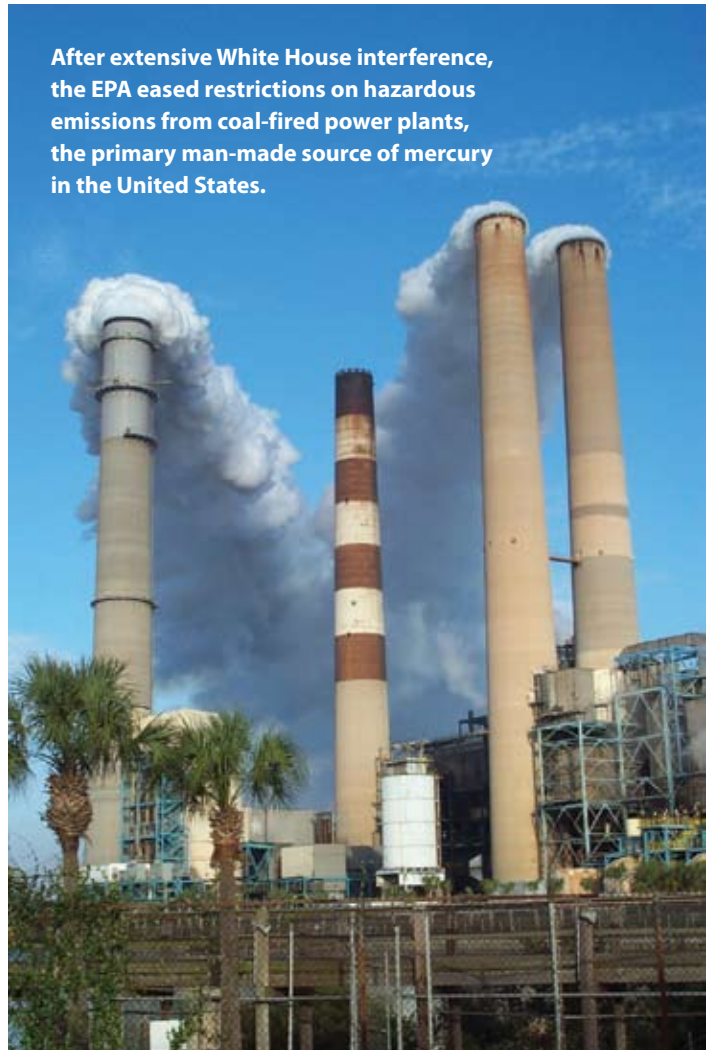
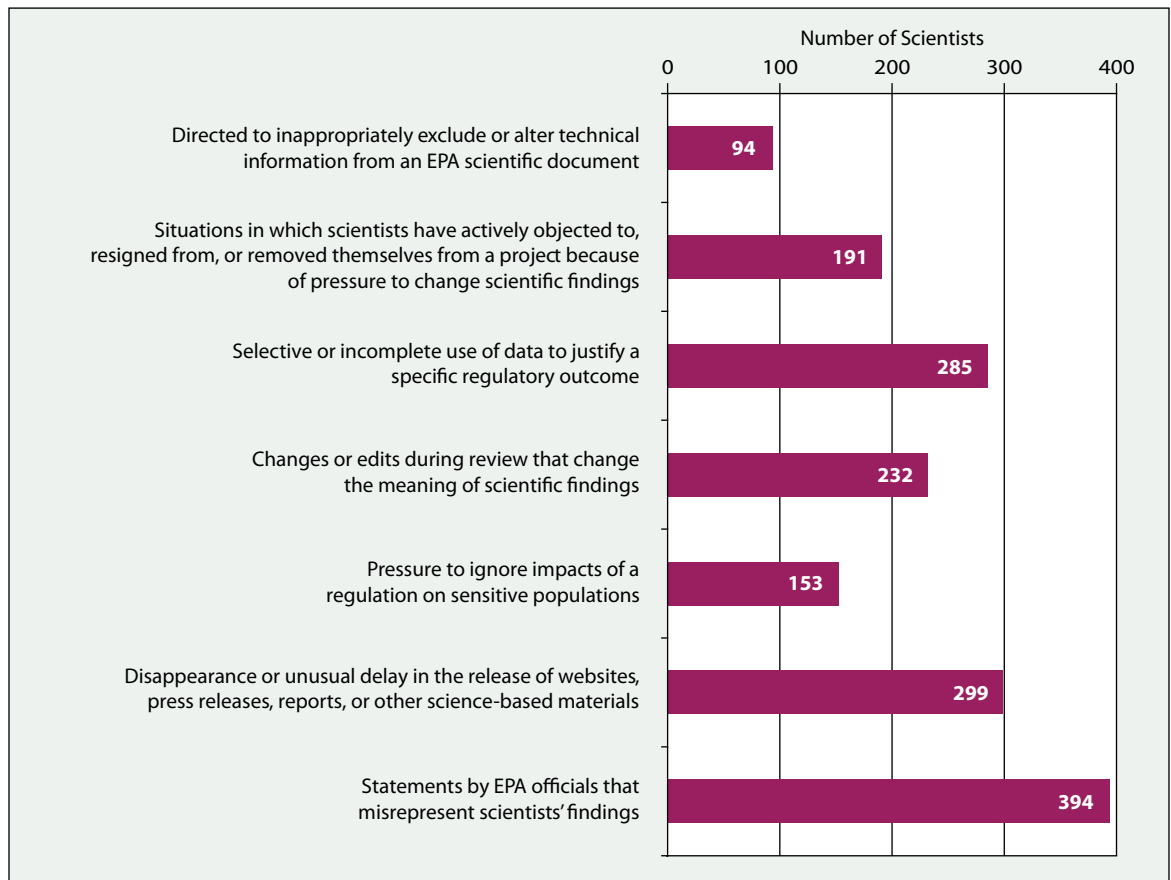


FIGURE 6: Number of EPA Scientists Reporting Various Forms of Political Interference



regulatory outcome.” A total of 532 scientists (42 percent) reported at least some experience with this form of interference.

- 153 scientists (13 percent) had personally experienced frequent or occasional “pressure to ignore impacts of a regulation on sensitive populations.” A total of 311 scientists (26 percent) reported at least some experience with this form of interference.

Other questions asked respondents whether the agency had manipulated, delayed, or misrepresented science in more subtle ways (see Figure 6):

- 299 scientists (24 percent) had personally experienced frequent or occasional “disappearance or unusual delay in the release of websites, press releases, reports, or other science-based materials.”

- 394 scientists (31 percent) had personally experienced frequent or occasional “statements by EPA officials that misrepresent scientists’ findings.”

Survey questions also asked respondents to specify how many incidents of interference they had experienced over the past five years (0, 1–5, 6–10, 11–20, or more than 20). A total of 889 scientists (60 percent) had personally experienced one or more such incidents. If each such incident was a distinct event, this represents at least 2,604 cases of political interference.

Nearly two-thirds of respondents (969 scientists, or 65 percent) have been EPA employees for more than 10 years. These agency veterans are uniquely able to judge whether this level of political interference is business as usual or whether interference has become more widespread. Among this subset, 409 scientists (43

percent) said interference had occurred more often over the past five years than during the previous five years. Only 43 scientists (4 percent) said interference had recently occurred less often. A total of 269 agency veterans (28 percent) said the level of interference had remained the same, while 240 (25 percent) said they didn't know.

Sources of Political Pressure

Other information from the survey provides more insight into how this interference occurs. These results show that (1) EPA scientists are under pressure from both internal and external influences; (2) pressure comes mainly from top political appointees and EPA leaders, not mid-level managers; and (3) percentages of scientists reporting interference vary widely across the agency.

The survey asked respondents about how many cases of various types they had encountered (options included Many, Some, Few, None, and Not Applicable):

- 516 scientists (43 percent) knew of “many or some” cases where political appointees at the EPA had inappropriately involved themselves in scientific decisions.
- 560 scientists (49 percent) knew of “many or some” cases where political appointees at other federal agencies had inappropriately involved themselves in EPA decisions. In their essays, nearly one hundred EPA scientists identified the White House Office of Management and Budget (OMB) as a primary culprit (see Box 1, p. 28).
- 507 scientists (42 percent) knew of “many or some” cases where “commercial interests have inappropriately induced the reversal or withdrawal of EPA scientific conclusions or decisions through political intervention.” A smaller number of scientists (329, or 28 percent) reported such interference by non-governmental or advocacy groups.

Respondents expressed widespread respect for direct managers and supervisors but much less respect for the EPA's senior leaders. A total of 1,282 scientists (81 percent) respected the integrity and professionalism of their direct manager or supervisor, whereas only 686 (43 percent) said the same about senior leaders. A majority of respondents (906, or 59 percent) agreed that

Do not allow political appointees into the process of scientific review. Their job is to make management decisions, not influence the data and information before it is collected and presented.

A scientist from an EPA regional office

their direct supervisor stands behind staff members who take scientifically defensible positions that may be politically controversial.

Regional Variations

Comparing responses from scientists at the agency's headquarters, 10 regional offices, and research laboratories adds another dimension to this analysis.

The percentage of scientists reporting political interference was highest at EPA headquarters in Washington, DC, and at the four program offices with regulatory responsibilities: the Office of Air and Radiation; the Office of Prevention, Pesticides, and Toxic Substances; the Office of Water; and the Office of Solid Waste and Emergency Response. A total of 337 scientists in these program offices (68 percent) and 379 scientists located in Washington, DC, at EPA headquarters (69 percent) reported at least one incident in the past five years (see Figure 7, p. 26).

Scientists reporting interference in the 10 regional offices ranged from 44 percent (region 6) to 73 percent (region 9). Within the Office of Research and Development, the National Health and Environmental Effects Research Laboratory

(NHEERL) was notably freer of interference than other divisions (39 percent), while the National Center for Environmental Assessment (NCEA) ranked among the worst (84 percent).

Figure 8 compares rates of seven types of interference between the program offices, the NCEA, and the NHEERL. Scientists at the NCEA reported high rates of all types of political interference in their work. NHEERL scientists reported far lower rates of the five most direct forms of interference than their colleagues elsewhere, and comparable (although still lower) rates of the two subtler forms of interference.

In their essay responses, more than 200 scientists said political interference was undermining the integrity of the EPA's scientific work.

Case Studies

Two recent cases of political interference—in the EPA's scientific work on mercury pollution and climate change—reveal most of these forms of interference: pressure to change methods and findings, direct editing of scientific documents by nonscientists, and delayed release of scientific reports. A third case illustrates the growing power of the Office of Management and Budget (OMB) and other federal agencies to interfere in the scientific work of EPA experts.

FIGURE 7: Political Interference across the EPA over the Past Five Years

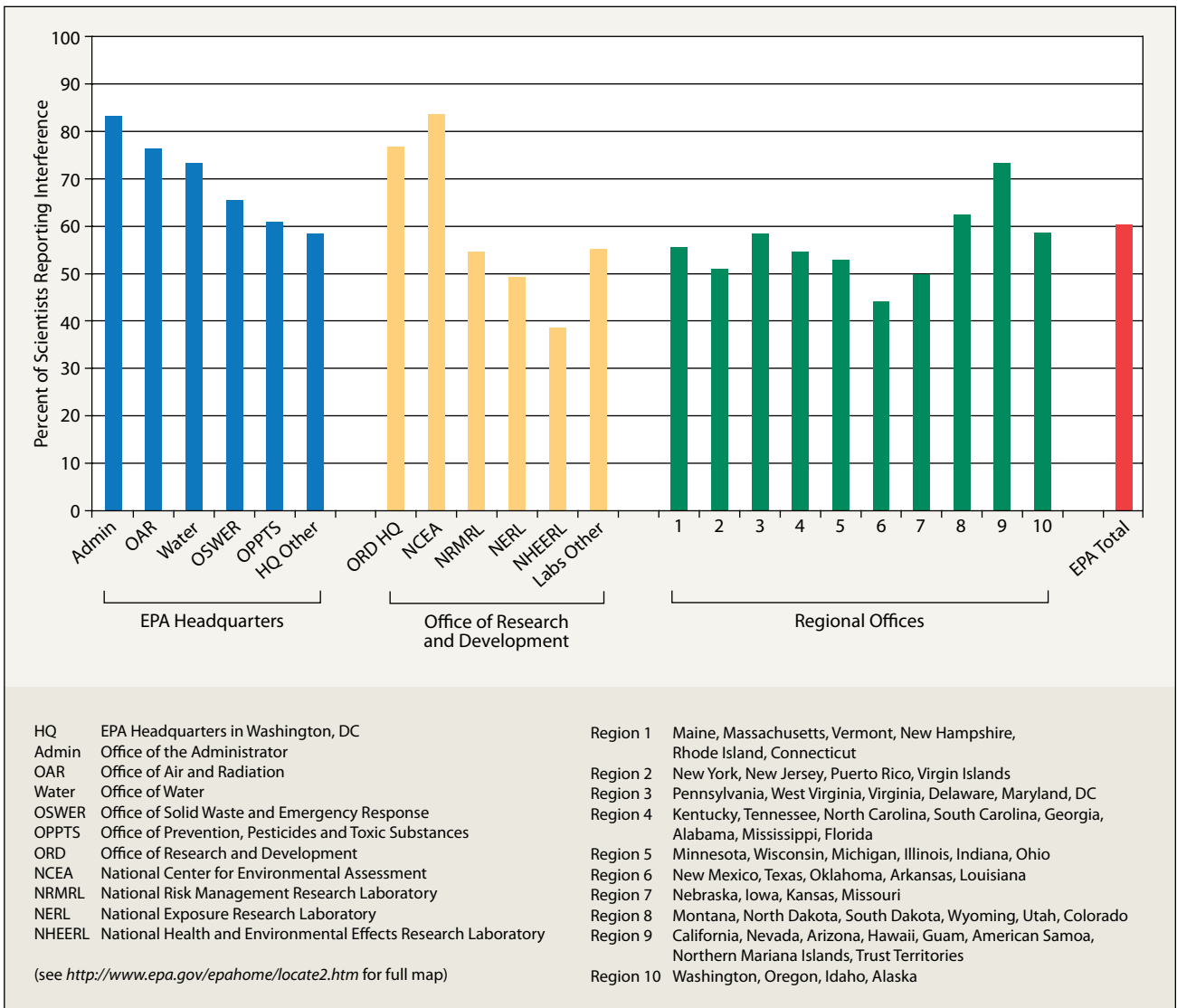
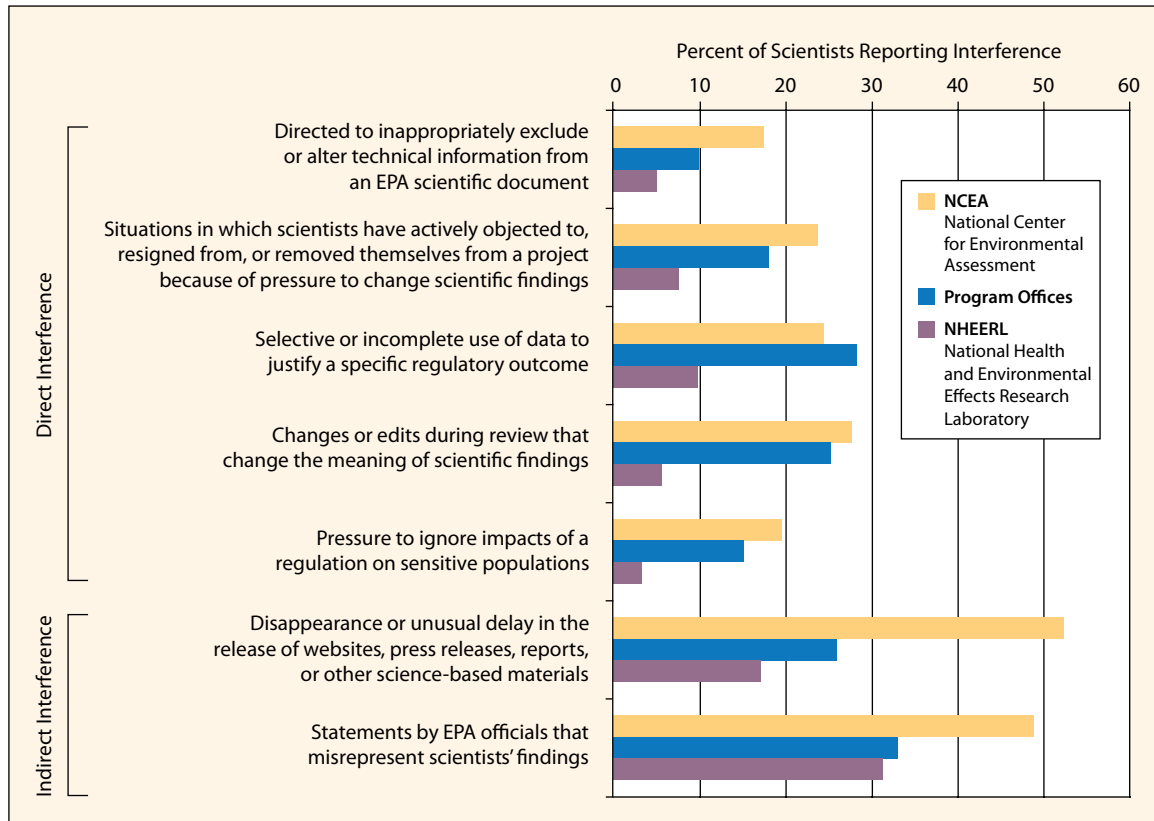


FIGURE 8: Direct and Indirect Interference at EPA Offices and Labs



The NCEA and NHEERL are in the EPA’s Office of Research and Development. Rates of direct interference are consistently lower at the NHEERL than at the NCEA or the EPA’s program offices, while rates of indirect interference are more comparable.

Regulating Mercury Emissions from Power Plants

On March 15, 2005, the EPA issued its final rule regulating mercury emissions from coal-fired power plants. The Clean Air Mercury Rule (CAMR) closely matched President Bush’s Clear Skies proposal—a bill addressing several forms of air pollution that had failed to gain approval from a congressional committee in March 2005. The EPA’s CAMR exempted power plants from standard Clean Air Act rules restricting emissions of hazardous air pollutants such as mercury in favor of a controversial cap-and-trade program.

Bruce Buckheit, who retired in December 2003 as director of the EPA’s Air Enforcement Division, attested that “the new mercury rules were hatched at the White House; the Environmental Protection Agency’s experts were simply not consulted at all” (Buckheit 2004). Widespread evidence supports that claim:

- In 2002 a draft EPA report on children’s health and the environment found that 8 percent of women of childbearing age had blood levels of mercury high enough to increase health risks to their children (EPA 2003). The *Wall Street Journal* reported in February 2003 that the report had been subject to an “unusual level of scrutiny by a half-dozen other federal agencies” (Fialka 2003). According to Dr. Tracey Woodruff, a former EPA scientist who worked on the report, EPA staff “spent an extended amount of time addressing questions and comments from the OMB and CEQ,” and White House officials asked the agency to delete or modify specific text and topics (Woodruff 2008). After holding the report for nine months, the EPA released it in response to the *Journal* article.

continued on page 31

BOX 1: **The OMB Overrules EPA Science**

The White House Office of Management and Budget—especially its Office of Information and Regulatory Affairs (OIRA)—has played an increasingly powerful role in the creation, review, and approval of EPA decisions. Since the Reagan administration, the OMB has had the power to review and approve all government regulations, and to perform cost-benefit analyses. The OMB has used this power to force the EPA to modify or withdraw many rules and policies. For example, in 2002 the OMB thwarted an EPA plan to declare a public health emergency over asbestos found in the insulation of millions of homes across America (Schneider 2002).

The OMB has recently stepped beyond its role in reviewing the EPA's policies to review and manage the actual science underlying them. For example, under former director John Graham, OIRA sought to create overly restrictive guidelines for how federal agencies should conduct scientific assessments, such as risk analysis and peer review of research.

The National Academies sharply criticized these guidelines as harmful to the mission of federal science and regulatory agencies, yet the OMB implemented them in modified form

(UCS 2008). OIRA also recently hired a handful of scientists to create in-house scientific expertise in an office traditionally dominated by economists (OMB Watch 2003). The agency then began, for the first time, to review and criticize the scientific basis for EPA decisions.

In 2007, OMB analysts manipulated scientific knowledge about mortality arising from exposure to ground-level ozone, in the EPA's regulatory impact assessment on changing the ambient air quality standard for ozone (OMB Watch 2007; Patton 2007). The OMB has also interfered in the scientific basis for EPA policies on a 2004 rule regulating formaldehyde pollution from plywood plants (Miller and Hamburger 2004), and a 2006 decision not to tighten the ambient air quality standard for fine particulate matter (see Chapter 6). While the OMB's in-house expertise is undoubtedly helpful in interpreting scientific documents, it is inappropriate for the White House to second-guess the consensus of EPA specialists with decades of experience, and of advisory committees composed of internationally respected experts.

In the Scientists' Own Words

In their essays, nearly 100 EPA scientists explicitly identified the OMB's meddling in EPA decision making as a major hindrance to the agency's scientific integrity. Here is a small sample of responses to the question: "How could the integrity of scientific work produced by the EPA best be improved?"

Reviewing EPA Science

- "The unprecedented and unwarranted influence of the EPA's scientific work and findings by the White House and OMB must end."
- "OMB should stop interfering in EPA Science."



The White House Office of Management and Budget is headquartered in the Old Executive Office Building in Washington, DC.

- “Get the White House, industry, and OMB out of what is supposed to be science-based decision making.”
- “Also, for your next survey look at OMB. That is a true source of frustration. They truly interfere and want to stamp the White House Agenda over every document that is sent to them for review. Truly few realize the impact that they have. They have hired their own scientists and play the ‘my scientist is better than yours’ game. EPA has to accept a lot of **** from them to get any documents out.”
- “OMB is increasingly interfering in earlier stages of projects (as opposed to review of draft documents and conclusions), sometimes insisting on methodologies that are less credible than those selected by EPA scientists.”
- “Restrain [the] Office of Management and Budget. This Administration has not only watered down important rules protecting public health (I’ve see this happen firsthand with the PM 2.5 implementation rule), they have also altered internal procedures so that scientific findings are accorded less weight. For example, the staff paper used previously in setting the NAAQS review has been eliminated.”
- “Get the OMB out of the business of reviewing science—they do not have adequate staff or adequately skilled staff to provide a scientific review of everything EPA does.”
- “The role of OMB in terms of policy review and coordination is a problem. Economists, or whatever they are, ‘playing’ scientist and/or engineer is troublesome and a real annoyance. They lack the basic credentials to make scientific or engineering judgments.”
- “Eliminate OMB and CEQ interference in EPA science, prevent political appointees from inserting themselves into controversial science issues.”
- “Get OMB and their inexperienced staff out of the review and decision-making process. They create time delays and have inappropriately stopped agency work that has been in progress for years due to their lack of scientific understanding.”
- “When I was first at EPA (1988), we did good work but it was sometimes ignored. That was frustrating, but at least the work was there. Now it seems like they want the scientific work to match the preordained conclusions. In case you are wondering, I think peer review is a good thing—I’ve seen people too invested in their beliefs to see what their data are really saying. But OMB, with John Graham at the helm, seemed intent on rendering EPA and every other regulatory agency (Food and Drug Administration, Occupational Safety and Health Administration, Mine Safety, Consumer Product Safety Commission...) utterly powerless with its ‘information quality guidelines.’ And although the administration chose Steve Johnson (a career scientist) as EPA administrator, it sent Graham henchman Marcus Peacock over to keep a close eye on EPA as deputy administrator.”

[The White House Office of Management and Budget] and the White House have, in some cases, compromised the integrity of EPA rules and policies; their influence, largely hidden from the public and driven by industry lobbying, has decreased the stringency of proposed regulations for non-scientific, political reasons. Because the real reasons can’t be stated, the regulations contain a scientific rationale with little or no merit.

A scientist from an EPA regional office

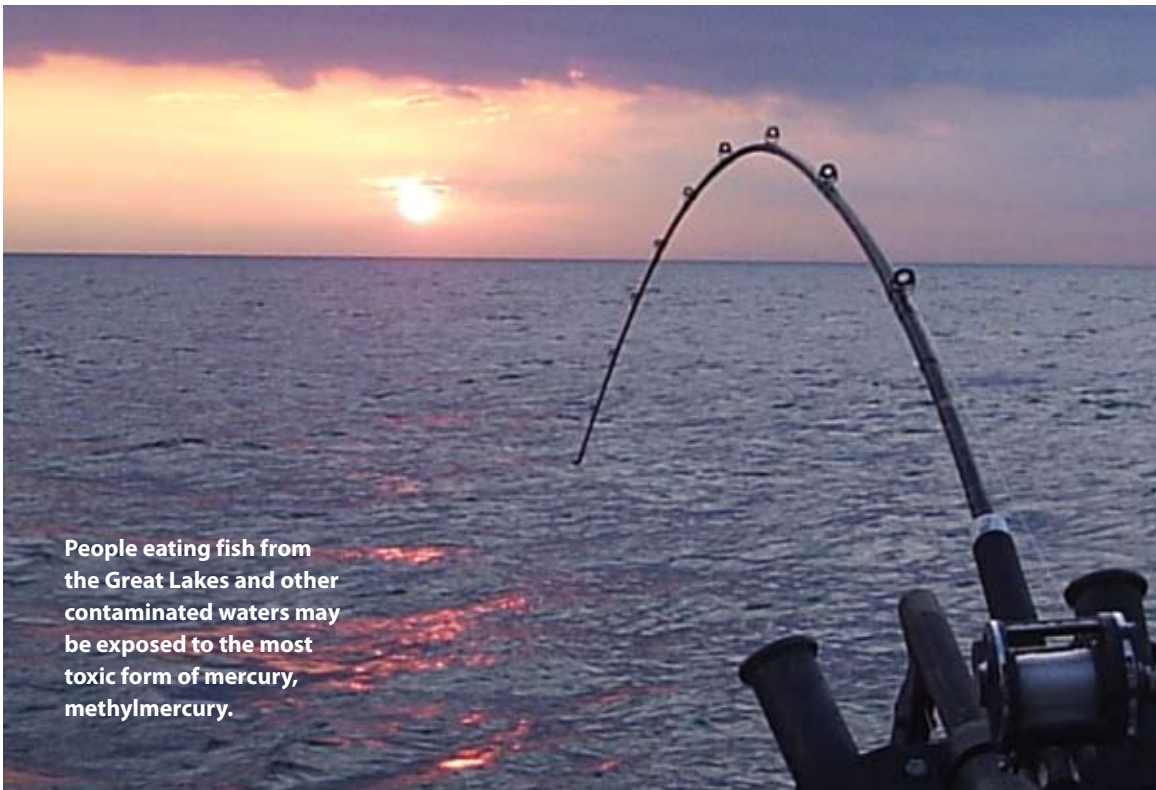
- “OMB and the White House have, in some cases, compromised the integrity of EPA rules and policies; their influence, largely hidden from the public and driven by industry lobbying, has decreased the stringency of proposed regulations for nonscientific, political reasons. Because the real reasons can’t be stated, the regulations contain a scientific rationale with little or no merit.”
- “Get OMB out of the risk assessment business. They aren’t qualified and do their best to compromise EPA’s process and drag out actions based on EPA’s determinations. Demanding that things be referred to [the National Academies], which inevitably slides any decision out 3–4 years, is one of OMB’s favorites.”

Lessening EPA Independence

- “Currently, OMB is allowed to force or make changes as they want, and rules are held hostage until this happens. OMB’s power needs to be checked as time after time they weaken rulemakings and policy decisions to favor industry.”
- “Stop allowing political employees and OMB to ‘regulate’ what EPA scientists do. Just let EPA scientists do their job; we are well qualified and can be trusted.”
- “In this administration, self-censorship is almost as powerful as political censorship. Options that OMB or the White House wouldn’t like aren’t even put forward.”
- “The current administrator is a puppet operated by CEQ and OMB.”

Transparency

- “Reduce the power of OMB over EPA scientific products. All communications between EPA and OMB during the development of agency technical products and actions should be preserved for the public record. Stakeholders should demand an end to ‘paralysis by analysis’ strategies to prevent EPA from doing its job. In particular, implementation of OMB’s risk assessment guidelines would be disastrous.”
- “Require more transparency regarding involvement of OMB, CEQ, and other federal agencies when they comment [or] pressure EPA to make revisions in proposed and final actions.”
- “Over the last few years it has come to pass that OMB typically provides nonsensical political edits to every technical guidance coming out. (Not just the ones we hear about in the news, but ALL of them.) This is often done behind closed doors—after the document leaves the control of technical staff, OMB/ White House request EPA management to make their requested political changes as EPA technical edits, before officially submitting to OMB for review.”
- “Integrity of scientific work is high. OMB has been ‘granted’ authority beyond what I understand has been traditional to impact final decisions. It is not clear who, how, or what initiated this change or increase in power, but it is absurd. A nonscientific body that does not have legal deference is forcing final decisions that may not be palatable to staff, and even political officials at EPA. Watch out for this on the upcoming ozone NAAQS decision. Solution: OMB must not step beyond its authority, and return to traditional review of regulations.”
- “Reduce influence of White House and OMB in decision making. Recognize [that] costs of new regulations are easy to estimate, while costs of improvements in health and the environment are much more difficult.”
- “Limit OMB review of, and influence on, content of scientific/engineering data and information (e.g., in rulemaking and guidance development). 2.) Require more transparency in OMB review process. 3.) If we are going to have to justify all environmental policy/regulations/guidance through cost-benefit, allow us to develop methodologies to quantify nonuse and ecological benefits.”
- “Control the power of OMB to a reasonable level—OMB does more to waste time and taxpayer dollars than any other organization in the government.”



People eating fish from the Great Lakes and other contaminated waters may be exposed to the most toxic form of mercury, methylmercury.

continued from page 27

- As an alternative to Clear Skies, Senators Thomas Carper (D-DE), Judd Gregg (R-NH), Lamar Alexander (R-TN), and Lincoln Chafee (R-RI) proposed a measure to control carbon dioxide, sulfur dioxide, and nitrogen oxides in addition to mercury. The EPA evaluated this proposal, but withheld its analysis from the senators. Several months before the EPA finally released its evaluation, an internal agency briefing was leaked to the *Washington Post* (Gugliotta and Pianin 2003). In the briefing, the EPA concluded that the Senate proposal would cut the three pollutants earlier and more deeply than the Clear Skies Act, result in 17,800 fewer expected deaths by 2020, and reduce carbon dioxide emissions at “negligible” cost to industry. EPA staff members recounted that at a May 2003 meeting on the unreleased report, Jeffrey Holmstead, then administrator of the agency’s Office of Air and Radiation (OAR), asked, “How can we justify Clear Skies if this gets out?” Holmstead has since stated that he did not “recall making any specific remarks” (Lee 2003).
- Five career EPA employees told the *Los Angeles Times* that they had been instructed not to conduct the required scientific and economic studies comparing the new Clear Skies proposal with other regulatory options, despite requests from a federal advisory committee. William Wehrum, a senior OAR advisor, told staffers that such comparative studies would be “postponed indefinitely,” and two staffers said Holmstead told them in early 2003 that “the studies would not be conducted partly because of ‘White House concern’” (Hamburger and Miller 2004).
- Instead of input from the EPA’s scientific staff, the initial CAMR proposal included significant input from power companies and utilities affected by the rule. The proposal lifted several paragraphs verbatim from memos prepared by Latham & Watkins, a law firm representing the utility industry, and the previous employer of both Holmstead and Wehrum (Pianin 2004). Language setting the standard for estimating power plant emissions came

from West Associates, an advocacy group representing 20 power and transmission companies (see Appendix G of Jeffords et al. 2004.) EPA officials claimed the language was inserted during the “interagency process.”

- EPA Inspector General Nikki Tinsley confirmed in February 2005 that EPA scientists were pressured to change their analyses and findings to support a predetermined value for a national cap on mercury emissions (OIG 2005). The Government Accountability Office

Currently, [the White House Office of Management and Budget] is allowed to force or make changes as they want, and [EPA actions] are held hostage until this happens. OMB’s power needs to be checked as time after time they weaken rulemakings and policy decisions to favor industry.

A scientist from the Office of Air and Radiation

also found that the EPA’s rulemaking process did not include adequate studies comparing different proposals, and did not “estimate the value of the health benefits directly related to decreased mercury emissions” in conducting its cost-benefit analysis (GAO 2005). The EPA also excluded a Harvard study—funded by the EPA and coauthored by an EPA scientist—that found health benefits 100 times larger from adopting stricter mercury regulations (Vedantam 2005).

The EPA’s own Children’s Health Protection Advisory Committee found the proposed mercury rule inadequate, stating that it does “not go as far as is feasible to reduce mercury emissions from power plants, and thereby does not sufficiently protect our nation’s children” (CHPAC 2004). In February 2008, a federal appeals court ruled that the CAMR violated the Clean Air Act by exempting power plants from stricter

regulations governing hazardous air pollutants (Pasternak 2008).

Editing the Science of Climate Change

The Bush White House, through political appointees at the OMB and the CEQ, has a long track record of tampering with the EPA’s scientific documents on climate change. A few examples of this high-level interference:

- The 2002 U.S. Climate Action Report, prepared by the EPA to fulfill the United Nations Framework Convention on Climate Change, was unusual for the administration in that it explicitly called human activity the cause of climate change, and described specific problems that global warming would bring to the United States (Revkin 2002). The report recommended adapting to these problems rather than attempting to lower emissions. Although all relevant agencies approved the report, the administration issued no announcement when sending it to the United Nations. When journalists asked President Bush about it, he dismissed it as “a report put out by the bureaucracy” (Seelye 2002).
- In September 2002, the White House removed a section on climate change from the EPA’s annual report on air pollution (EPA 2002), even though the five previous reports had addressed the topic. An investigation by Rep. Henry Waxman (D-CA) uncovered emails from CEQ chief of staff Philip Cooney showing that CEQ had “vetoed” the entire climate change section (Waxman 2007).
- In June 2003, the *New York Times* reported that the White House had tried to substantially alter the section on climate change in the EPA’s draft Report on the Environment (EPA 2003; Revkin and Seelye 2003). Administration officials, including Cooney, demanded that the EPA remove reference to a temperature record covering 1,000 years, statements referencing numerous scientific studies showing that human activity is contributing signifi-

cantly to climate change, and a summary statement that “climate change has global consequences for human health and the environment.”

Cooney also inserted references to a study by Willie Soon and Sallie Baliunas, funded by the American Petroleum Institute, disputing the scientific consensus on climate change. In an April 21, 2003, memo to Kevin O’Donovan in the Office of the Vice President, Cooney noted that, “CEQ just inserted a reference to [Soon and Baliunas] in the final draft chapter on global climate change contained in EPA’s first ‘State of the Environment’ report. . . . With both the National Academy and IPCC (Intergovernmental Panel on Climate Change) holding that the 20th Century is the warmest of the past thousand years (see below), this recent study begins to provide a counterbalance on the point to those two authorities” (Waxman 2007).

According to an internal EPA memo, White House officials demanded that the report include so many qualifying words—such as “potentially” and “may”—that it would have implied “uncertainty . . . where there is essentially none.” Jerry Mahlman, a former official of the National Oceanic and Atmospheric Administration who served as a reviewer for the EPA report, noted in an interview with UCS, “It was obvious that senior EPA officials felt compelled to water down the conclusions” (Mahlman 2006). In the end, the report released for public comment lacked the entire section on climate change. According to internal EPA documents and UCS interviews, agency staff members chose this path rather than compromise their credibility by misrepresenting the scientific consensus (Anonymous EPA staff members 2004; EPA internal memo 2003).

- The EPA’s climate change website remained virtually unchanged from 2002 to 2006 (Piltz 2006a). The agency finally posted a new web-



White House officials watered down a section on climate change in the EPA’s Draft Report on the Environment.

site on October 19, 2006 (EPA 2008d). The new site includes accurate scientific information on climate change, but it lacks references to important reports such as the National Assessment of Climate Change Impacts and the U.S. Climate Action Report (Piltz 2006b). As of April 2008, the site also prominently features a discussion of uncertainty in climate change science.

- In July 2002, CEQ official Sam Thernstrom edited an op-ed by EPA Administrator Christine Todd Whitman scheduled to appear in *Time* magazine. Thernstrom inserted the claim that signing the Kyoto Protocol would put 5 million Americans out of work. EPA Associate Administrator Tom Gibson objected that the figure assumed unrealistic implementation of the protocol, and that “it is also the high end of the numbers that were expressed as a range.” Thernstrom consulted with CEQ chief of staff Cooney and CEQ head James Connaughton, and quickly replied that “the figure is taken directly from the President’s 2-14 speech, and Jim Connaughton’s Senate testimony last week. Using merely an abstract

dollar figure may not be as compelling” (Waxman 2007).

Administrator Whitman removed the offending statistic later that day, but the CEQ apparently overruled her. Published in *Time* on August 26, 2002, the op-ed claimed that “Kyoto would put millions of Americans out of work.” According to the Waxman report, CEQ officials were still making such inflated claims as late as 2005.

My opinion of EPA has changed since being here. Specifically, I had believed EPA was more scientific in its approach. Now I realize that EPA has politically driven agendas that sometimes, not always, affects decisions of scientific nature.

A scientist from an EPA regional office

Interagency Review of the IRIS Database

Today the Department of Defense (DOD) and other federal agencies are seeking greater control of the scientific information in the EPA’s Integrated Risk Information System (IRIS), which includes toxicology profiles on more than 500 chemicals. A new framework would allow the OMB, the National Aeronautics and Space Administration (NASA), the Department of Energy, and the DOD to declare certain chemicals “mission critical,” and to require additional or modified studies (Inside EPA 2007a). This additional analysis could add years of delay to the release or updating of information on chemicals posing a significant threat to public health. Because federal agencies are often part of the regulated community, such a review would also institutionalize second-guessing of EPA science by conflicted third parties.

For example, information from IRIS on the toxicity of perchlorate could mean that the DOD and

its contractors are liable for potentially billions of dollars in cleanup costs. The DOD has long sought to weaken any scientific standard that would mandate cleanup of perchlorate contamination (Sass 2004). After the EPA’s initial 2002 perchlorate assessment, the DOD criticized the EPA’s science, and lobbied to have the National Academies review the subject. Air Force Col. Daniel Rogers linked the outcome of scientific deliberations to national security, claiming before the resulting National Academies panel that “every additional layer of science-policy precaution embedded into this risk assessment comes at the expense of the [Defense] Department’s ability to acquire and test propulsion and weapons systems” (Hogue 2003).

The National Academies panel eventually proposed a perchlorate standard weaker than the EPA’s initial risk assessment. The EPA has not yet finalized a drinking water standard for perchlorate.

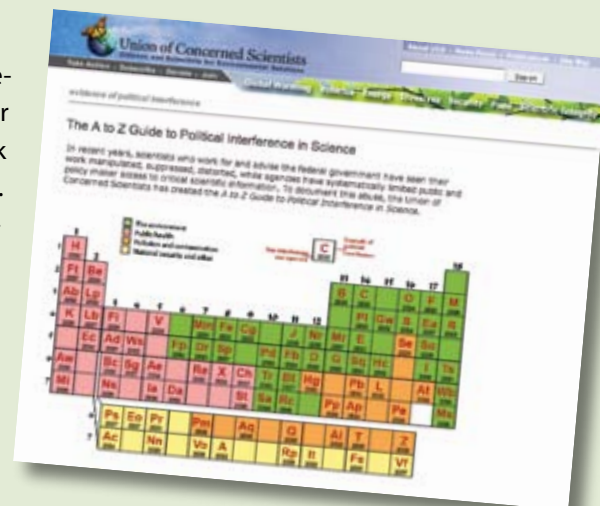
The EPA has also recently proposed that it no longer include numerical assessments of toxicity in its draft reports on IRIS chemicals. This would be a major blow to the public and other regulatory agencies, which often rely on draft reports for information on these chemicals while waiting for the final reports—which can take several years (Inside EPA 2007b).

Finally, the OMB reviews the “charge” to scientific panels that provide peer review of IRIS risk assessments. The charge determines the questions a panel will answer during its investigation. An independent scientist (name withheld by request) reported that the OMB modified the charge to one such panel by removing questions asking whether the risk assessment adequately addressed public health risks, and adding questions asking if the EPA had gone too far in its risk assessment. The scientist stated that OMB’s substitution “served to downplay the risk posed by the chemical in question” (Anonymous scientist 2008).

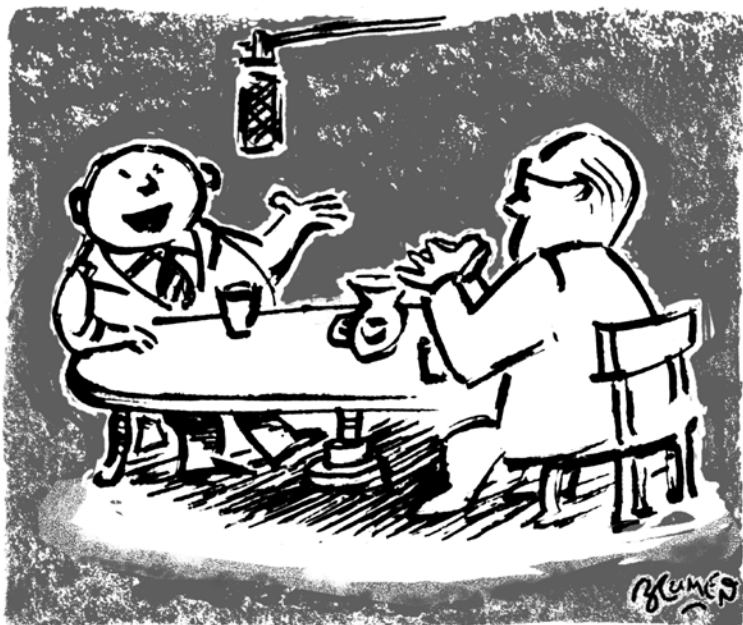
BOX 2: **More Examples of Political Interference in EPA Science**

The examples of political interference described here represent only a small portion of the problems UCS has documented at the EPA. Our online *A-to-Z Guide to Political Interference in Science* fully describes several other incidents of politicization of EPA science, with references and links to primary documents.* These additional incidents include:

- **Air Pollution Monitoring:** The EPA allowed North Dakota to alter the way it measured air quality in 2004, thus bringing Theodore Roosevelt National Park into compliance with air quality standards without actually reducing pollution.
- **Atrazine:** Despite compiling hundreds of pages of evidence documenting the harmful effects of atrazine, a common weed killer, the EPA refused to regulate the herbicide. Challenges from industry groups to scientific studies documenting atrazine's harmful effects, as well as closed-door meetings with industry representatives, led to the controversial decision.
- **Fuel Efficiency:** In 2005 the EPA made a last-minute decision to delay the release of its annual report on automotive fuel efficiency until after a final vote in Congress on a bill addressing fuel efficiency standards.
- **Pesticides:** Unions representing 9,000 EPA employees charged the EPA with relying too heavily on industry studies and opinions in reviewing thousands of pesticides under the Food Quality Protection Act.
- **Plywood Plant Pollution:** The OMB distorted scientific information on the risks of formaldehyde exposure to support a weakening of the EPA's regulation of harmful emissions from plants that manufacture plywood.
- **Selenium Contamination:** In 2004 the EPA misrepresented research on the toxic effects of selenium on fish populations in setting a selenium standard that many scientists felt could be devastating to stream ecosystems.
- **Ground Zero Air Quality:** In a series of public statements issued after the terrorist attacks of September 11, 2001, the EPA assured the people of New York that the air around ground zero was safe to breathe. However, the agency lacked authoritative information on which to base this reassuring public posture—and even ignored internal data conflicting with it.



* See <http://www.ucsusa.org/AtoZ>.



“Well, Jim, I got into politics to raise standards. Mercury standards, air pollution standards...you name it!”

Discussion

In 1992 the EPA report *Safeguarding the Future: Credible Science, Credible Decisions* identified the problem of political interference in the agency’s work succinctly: “Science should never be adjusted to fit policy. Yet a perception exists that EPA lacks adequate safeguards to prevent this from occurring” (EPA Expert Panel 1992). Our findings show that the problem persists more than 15 years later.

Hundreds of scientists across the agency report personal experience with many forms of interference, from explicit directives to change scientific findings to excessive delay in the release of such information. These numbers should be zero. The survey results indicate that the EPA, like so many other federal agencies, is weathering a storm of interference in its scientific work.

While the EPA has never been entirely free of politicization, agency veterans attest that such interference has worsened in the past five years. This finding is supported by a recent decision by the coalition of unions representing 10,000 EPA employees to withdraw from a 1998 cooperative agreement with EPA management. In a

letter to Administrator Johnson, union leaders cited numerous recent examples of political interference in the work of EPA employees, and the agency’s refusal to recognize its own Principles of Scientific Integrity as a basis for employee grievances (EPA Labor Union Coalition 2008; EPA 2000).

Survey results from NHEERL scientists indicate that a high level of interference in scientific work is not an inevitable consequence of scientific work or ordinary workplace conflicts. A comparison between the EPA’s basic science offices and its program offices shows that interference arises much more often during the process of crafting regulations. Regulations have political and economic impacts, and powerful interests are invested in the outcome of agency decisions. Indeed, large numbers of survey respondents identified political appointees and industry groups as responsible for this interference.

Over the past few years, the OMB and the CEQ have moved beyond reviewing EPA policies and regulations to reviewing and second-guessing the underlying scientific determinations—a fact that more than 100 respondents explicitly noted in their essays. Philip Cooney’s edits are only the most well-known breach of the wall between science and policy (see Boxes 1 and 2). For example, the president’s recent executive order 13422 extends OMB review to a larger swath of scientific documents, including risk assessments, and gives political appointees in each agency the power to halt proposed regulations before they are announced publicly (Bush 2007). This shift is part of a broader centralization of decision making under the Bush White House that has far-reaching consequences for scientific integrity.

Interagency review of the EPA’s IRIS database highlights the extent to which science has become the preferred battleground for tough policy questions. Exempting the DOD and other agencies from the cleanup of environmental pollution may sometimes be in the nation’s best

interest, but such an exemption should be an explicit policy decision. Manipulating scientific data to support such a decision is unacceptable. IRIS is a scientific database that serves as a source of objective information for protecting public health and the environment, including developing regulations, enforcing environmental laws, and assessing environmental cleanup efforts. Sullyng this database through political interference does a serious disservice to the scientists working with the IRIS data and to the public.

To prevent such political review from becoming more widespread, the EPA needs to be empowered to be the lead environmental agency. A 2002 GAO report found merit in the idea of elevating the EPA to a cabinet-level agency. The report urged policy makers to consider that:

“(1) environmental policy be given appropriate weight as it cuts across the domestic and foreign policies that other Cabinet departments implement and enforce and (2) the head of the agency is able to deal as an equal with his or her counterparts within the federal government and within the international community as well. Providing Cabinet status would also clarify the organization’s direct access to the President on environmental matters” (GAO 2002).

Of course, science is not the only element underpinning good policy making. However, without strong institutional safeguards, decision makers will always be tempted to shore up a given policy by manipulating the underlying science. The EPA must maintain a firewall between science and policy. And no matter what the ultimate outcome, the decision-making process must be transparent: the agency must publicly release *all* relevant scientific findings.

Given the complexity of today’s environmental challenges, from toxics to climate change, a strong and credible EPA is critical. Political interference in the agency’s scientific work damages

Political considerations should not trump environmental stewardship, and the EPA should not be forced to be silent on the environmental consequences of policy shifts.

A scientist from an EPA regional office

its credibility, makes government less accountable to its citizens, and has serious effects on the health, safety, and security of the American public.



CHAPTER 5

Barriers to the Free Communication of Science

Free communication of the results of scientific research is a critical element of the scientific process—as George Gray, the EPA’s science adviser and the assistant administrator of its Office of Research and Development (ORD), acknowledged at a recent scientific meeting. Gray stated that the ORD has “absolutely no policies that prohibit in any way someone’s ability to publish their research or to talk to the media” (Gray 2008).

The scientists who responded to our survey had a less positive view of EPA policies on public communication of research. A majority felt they could not speak freely to the news media. And a smaller but significant number reported barriers to publishing in peer-reviewed journals.

Survey Results

Large numbers of EPA scientists report that the EPA’s policies restrict the free communication of scientific information. These scientists report problems with both the communication of scientific results to the media and publication in peer-reviewed journals (see Figure 9):

- 783 scientists (51 percent) disagreed or strongly disagreed that EPA policies allow scientists to “speak freely to the news media about their findings.” Another 556 scientists had no opinion or were unsure (36 percent). Only 197 scientists (13 percent) agreed that the EPA allows scientists to communicate freely with the media.

Respondents from the ORD (267 scientists, or 67 percent)—especially its National Center for Environmental Assessment (NCEA) (39 scientists, or 78 percent within that center)—were more likely than scientists in other EPA divisions to report restrictions.

- 291 scientists (24 percent) disagreed or strongly disagreed that they are “allowed to publish work in peer-reviewed scientific journals regardless of whether it adheres to agency policies or positions.” Agency veterans with more than 10 years of experience at the EPA were slightly more likely (26 percent) than other scientists to disagree with the statement.



This rate was slightly higher for the ORD (101 scientists, or 26 percent), and nearly half of NCEA respondents disagreed with the statement (24 scientists, or 47 percent). As with political interference in scientific work, the contrast with the ORD's National Health and Environmental Effects Research Laboratory was striking: only 18 of 128 scientists (14 percent) from the NHEERL disagreed with the statement.

Beyond restrictive policies, hundreds of scientists also fear retaliation for speaking candidly about the EPA's work:

- 382 scientists (24 percent) disagreed or strongly disagreed that they could openly express concerns about the EPA's work *outside* the agency without fear of retaliation.
- 492 scientists (31 percent) disagreed or strongly disagreed that they could openly express concerns about the EPA's work *inside* the agency without fear of retaliation.

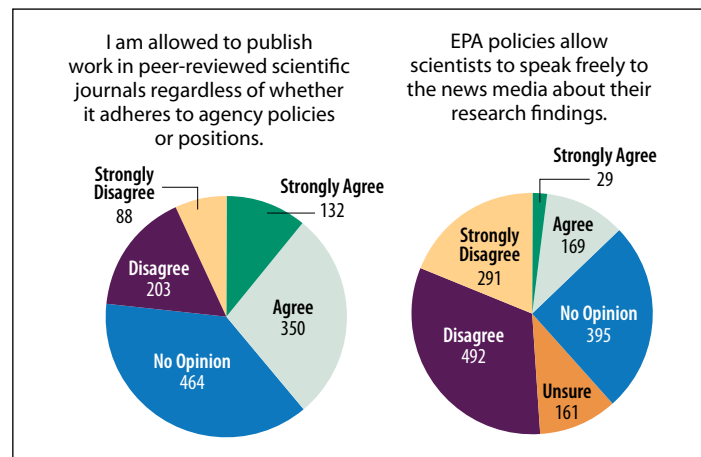
The combination of political interference in science (explored in Chapter 4) and barriers to the free communication of scientific findings affects the amount and quality of information that the EPA provides to the U.S. public:

- 88 scientists (7 percent) had frequently or occasionally been directed to "provide incomplete, inaccurate, or misleading information to the public, media, or elected officials," while 123 (9 percent) had frequently or occasionally felt an implicit expectation to do so.
- While nearly half of respondents agreed or strongly agreed that the EPA "routinely provides complete and accurate information to the public," 357 scientists (23 percent) did not.

Case Studies

Interviews with current and former EPA scientists provide some explanation for the gulf between Dr. Gray's statements and the perceptions of

FIGURE 9: **Scientists' Perceptions of the EPA's Communications Policies**



many rank-and-file scientists. These interviews show that although the EPA's policies may reflect a rhetorical commitment to openness on peer-reviewed publications, presentations at scientific conferences, and media interviews, these policies do not reflect actual practice. As one former EPA scientist (name withheld by request) put it, "I was never told not to speak to the press, but conventional understanding in the agency was that it is not a good idea to do so, and that it could harm your career if you did" (Anonymous former EPA scientist 2008).

The same scientist reported that agency employees are "typically required to route media requests through the press office." This scientist described one interaction with the media after a public talk:

"A reporter called to follow up and I was asked to refer her to the press office. The press office didn't know what her line of questioning would be and they were nervous about what she would ask. This ended up delaying the interview. The reporter was persistent and the time delay made her suspicious the EPA was hiding something, so it ended up backfiring. Eventually I did the interview with two public affairs officers on the phone" (Anonymous former EPA scientist 2008).

A 2002 survey of the EPA's 10 regional offices by the Society of Environmental Journalists found a wide range of official and unofficial policies on scientists' contact with the media (Cooper 2002). Some regions required employees to route all media requests through the Office of Public Affairs, while other regions simply asked employees to inform the OPA about interviews that had occurred. Some regions had written policies, while others operated informally.



More recent evidence indicates that some regions and divisions do not allow scientists to speak freely to the media. A 2004 memo from acting region 5 Administrator Bharat Mathur stated:

“If you receive any request for information or an interview from a member of the media, you should refer the caller to OPA. . . . Please refrain from answering such inquires [sic] directly. OPA will determine the appropriate response and who should respond after consultation with program staff, and if necessary, after elevating issues for senior-level attention” (Mathur 2004).

The ORD sent a similar directive requiring employees to route media interviews through the OPA to all staff in 2006 (Brown 2006).

Communicating the Science of Climate Change

Atmosphere of Pressure, a 2007 report by UCS and the Government Accountability Project (GAP), found widespread interference in the ability of federal scientists studying climate change to communicate their research findings. Muzzling of climate scientists was found to be especially intense at the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration, but similar problems were reported at five other federal agencies, including the EPA (UCS and GAP 2007).

Recent examples of problems with the free communication of climate change research at the EPA include the following:

- In the fall of 2006, EPA managers barred an agency scientist from giving an invited talk at a conference on soil science, because the topic involved the politically sensitive subject of climate change. The EPA eventually allowed the talk to proceed after protests and intervention by the session organizers.

A colleague of the scientist in question, who does not work for the EPA and asked to remain anonymous, described the events leading to the talk. Session organizers invited the EPA scientist—an acknowledged leader in the field—to give the talk, and he accepted. Several months later the scientist notified the organizers that he would have to withdraw because he received word from his supervisor that the EPA would not approve travel for scientists in his division to make presentations related to climate change or atmospheric ozone (Anonymous non-EPA scientist 2007).

Concerned that this was inappropriate and possibly a miscommunication, session organizers contacted a higher-level manager at EPA headquarters. The organizers warned that if the agency did not approve the talk, they would announce that fact to conference

attendees, and observe “20 minutes of silence” when the scientist had been scheduled to speak. The EPA then approved the talk.

- Another EPA scientist, also on condition of anonymity, reported being unable to present research results related to climate change at two scientific conferences in the past few years (Anonymous EPA scientist 2007).
- Other EPA climate scientists have encountered restrictions on media contact even when they do give interviews. In June 2006, Cornelia Dean of the *New York Times* reported that Dr. James Titus, EPA project manager for sea level rise, could no longer publicly discuss issues such as beach erosion, and that he had to route all such questions through the EPA’s press office. The office referred Dean’s requests for on-the-record information to William Wehrum, then acting assistant administrator for the EPA’s Office of Air and Radiation (Dean 2006).

In September 2006, the agency allowed Titus to do an interview on the radio show *Earthbeat*, but with significant restrictions (Maassarani 2007). During the interview, host Mike Tidwell told Titus that the show’s producer, Aries Keck, had described arranging the interview as a “challenging and bizarre experience.” Public affairs officials at the EPA had told Keck that the station could not contact Titus ahead of time, and it had been unclear whether he would be available until the day before the interview.

When asked about these hurdles on the show, Titus responded, “To be honest I don’t know anything about it. I just heard about the interview and here I am.” As to whether he could discuss regulating carbon dioxide, Titus replied, “I’m not allowed . . . I can’t talk about what we should do as regards regulations because it’s sort of a different aspect . . . Since I’m here as an EPA employee I gotta basically stick to my lane which is rising sea levels” (Titus 2006).

The Right to Publish

In the early 1990s, the EPA began to assess its requirements for internal and external peer review of its scientific work (NRC 2000; EPA Expert Panel 1992). This effort culminated in the

Remove the political screening step in science at the Agency. For example, we are not allowed to talk to the press when they call but must refer them to a person in the front office. Often this results in the press not getting the true facts but only those that don’t make the Agency look bad.

A scientist from the Office of Prevention, Pesticides and Toxic Substances

agency’s 1998 *Peer Review Handbook* (SPC 2006), an attempt to ensure quality control over the EPA’s products. However, this handbook does not provide much guidance on how EPA scientists can get clearance to publish in scientific journals, and some divisions have instituted policies that unduly restrict the expression of scientific opinion:

- In a law review journal, Todd Stedeford, a former EPA scientist, described the clearance process at the NCEA as “a policy of prior restraint that has escalated to censorship on publishing.” He notes that the policy “appears to violate the First Amendment rights of government scientists who wish to contribute articles written outside of their official duty hours” (Stedeford 2007).

According to Stedeford, the NCEA’s clearance process is far more extensive than that outlined in the *Peer Review Handbook*. A scientific article with “policy implications” can require up to four levels of internal review before the author can submit it to a scientific journal, which would then subject it to its own peer-review process. Manuscripts submitted

from the EPA's Integrated Risk Information System (IRIS) require up to seven levels of internal review (NCEA 2003). In Stedeford's experience, the agency may hold up a manuscript at any stage based on the "prejudices



and whims of each reviewing official," and he reports that there is no consistency between various stages of review:

"The author has first-hand experience of the inefficiency and disorganization of this system. A manuscript that he co-authored and submitted for clearance in February of 2006 (intended for a peer-reviewed scientific journal) was still in clearance as of July 19, 2006. Several sections were required to be removed during the first-round of clearance review that were later identified as necessary elements by subsequent reviewers. After repeated complaints by the authors about the management's timely review, the management stated on July 20, 2006, that the paper had policy implications. Since this time, two of the EPA co-authors requested that their names be removed from the manuscript. Further, the corresponding author of that manuscript, Dr. Ching-Hung Hsu, has since left the

Agency because of the draconian restrictions placed on publishing" (Stedeford 2007).

More disturbingly, Stedeford says he was required to submit articles written on personal time for EPA clearance:

"The author was told that if he wanted to submit a manuscript to a law review that included a brief biographical sketch, including past and present employment, education, etc., he was required to send the article through clearance. Alternatively, he was told that he could submit the article to a law review if he removed any mention of EPA, despite the fact that a prominent disclaimer was to be placed on the cover page and that the manuscript was written outside of his duty hours" (Stedeford 2007).

Dr. Stedeford left the EPA shortly after the publication of the law review article.

- In an interview with UCS, another EPA scientist (who asked to remain anonymous) also described problems with getting clearance to publish in scientific journals (Anonymous EPA scientist 2008a).
- In another interview, Ami Zota, a non-EPA research scientist working on environmental health, related her experience collaborating with ORD scientists on a research project and a subsequent paper. In early 2008, Zota's EPA coauthors sent the paper through the agency's internal peer review process, which Zota said was timely, and the EPA reviewer provided helpful technical comments. However, EPA policies also required the signature of the coauthors' supervisor before clearance could be granted, and at that stage the review became nontechnical and "political" in nature.

The paper included standard disclaimers that the findings represented the opinion of the

authors and not EPA policy. The supervisor nevertheless told Zota that a handful of sentences in the discussion section were “probable red flags,” and that the authors would have to send the manuscript to EPA headquarters, which could delay publication by several months. The supervisor suggested that Zota delete all references to children and children’s health—topics that were not the paper’s primary focus, but that follow-up investigations would address.

Zota accepted some of the supervisor’s suggestions, but she felt it was her scientific prerogative to frame those topics and future research in the way she saw fit. After a few conference calls, the supervisor granted clearance without further upstream review. However, Zota called the experience “intimidating,” and noted that “I now understand how nuanced efforts to censor science might occur at the EPA” (Zota 2008).

Discussion

The free exchange of ideas is a pillar of the scientific enterprise. For a robust scientific enterprise to flourish at the EPA, it must allow scientists to participate fully in the scientific community. Democratic governance also depends on ensuring that citizens have comprehensive and reliable information on their government’s activities (apart from some cases involving national security). For both reasons, the EPA must allow its scientists to communicate their findings in scientific publications, at scientific conferences, and to the media and the public.

Scientists do not relinquish their First Amendment rights when they become federal employees. They have a right to speak on any topic—including policy-related matters and those outside their direct field of expertise—so long as they clarify that they do so as private citizens, not as representatives of the agency or the government as a whole. Scientists should also have

the right of final review of any agency product that draws on their work, to ensure that scientific information remains accurate after review, editing, and clearance.

Internal peer review of scientific publications can greatly improve the quality of EPA science. Indeed, because government agencies have a responsibility to provide high-quality scientific information to the public, we can expect a greater level of review at the EPA than in academia or the private sector. The EPA also has a legitimate interest in speaking with one voice on official policy. However, political review of scientific publications for the merest hint of a policy implication can cross the line into censorship of legitimate scientific opinion. Excessive, protracted, and confusing clearance policies both undermine the quality of agency science and harm the EPA’s scientific reputation.

Caveats might apply to these principles that might not apply at a nonregulatory agency, such as restrictions on topics under litigation. However, the EPA has stated its desire to foster a strong scientific workforce, and it produces a significant body of scientific work. Thus the agency also has a responsibility to the U.S. public and its scientific workforce to ensure the free communication of science above and beyond basic principles.

Our survey results reveal a gap between official EPA rhetoric on scientific openness and the reality for career scientists trying to communicate their research findings. To bridge this gap, EPA leaders should clarify and strengthen the agency’s openness policies, to bring them into line with basic scientific freedoms. Congress and the next president should also empower EPA scientists—perhaps through whistle-blower protections—to voice dissenting scientific opinions both internally and in the media.

CHAPTER 6

Undermining the Role of Science in EPA Decision Making

Scientific information is the lifeblood of much of the EPA's work, and the credibility of its decisions depends on the quality of its scientific work. While science is often not the only ingredient in policy making, many EPA scientists feel the agency could more effectively and consistently use both internal and external scientific expertise.

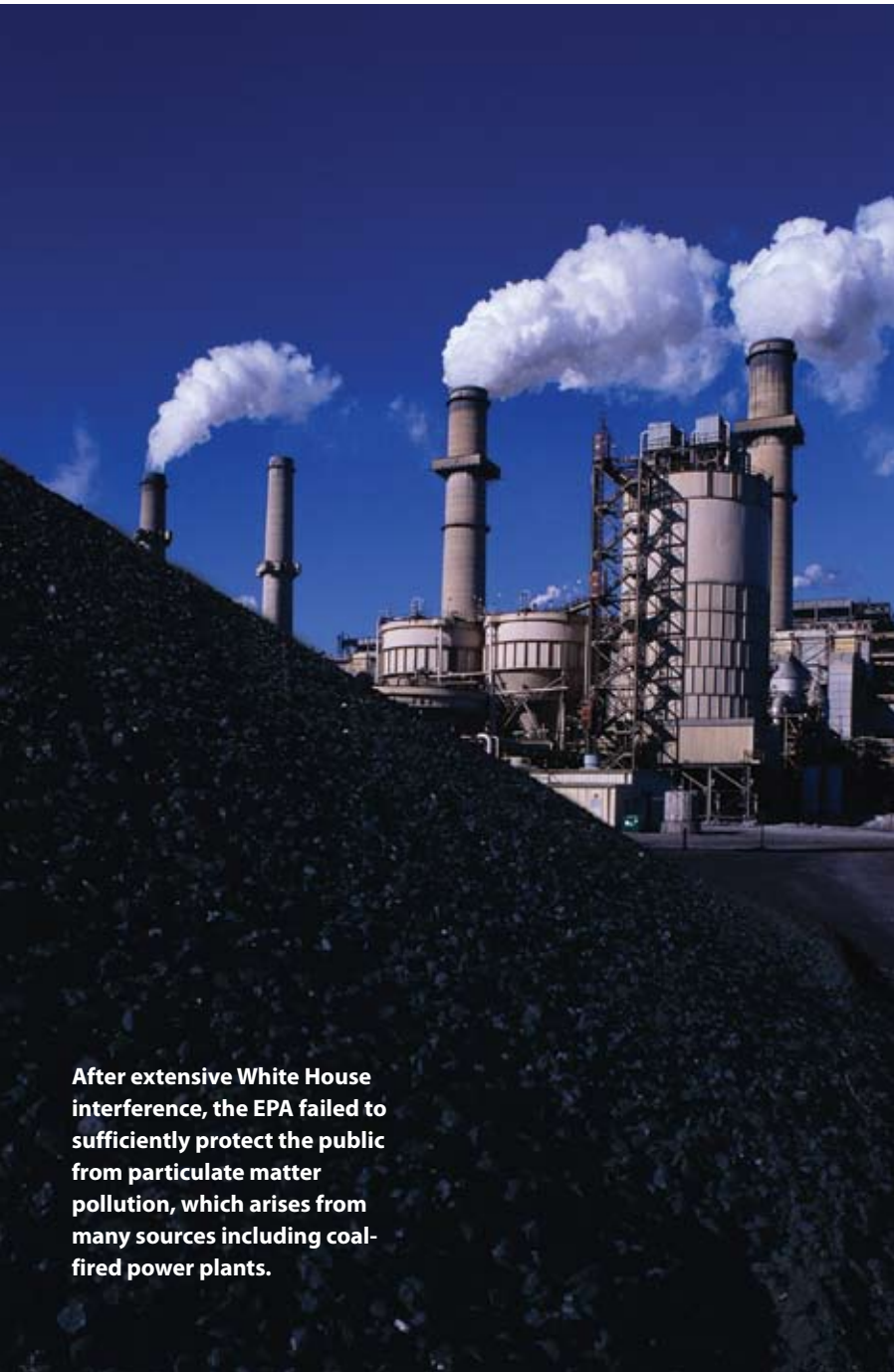
Furthermore, the process for setting air pollution standards has become heavily politicized despite a clear legislative mandate that science be the sole criterion for setting those standards. The EPA has also attempted to institutionalize policies that marginalize scientific assessments of the health effects of air pollutants in setting future air quality standards. And the EPA has allowed members of scientific advisory committees with conflicts of interest to influence proposed regulation of contaminated groundwater.

Survey Results

Our survey asked respondents about the relationship between the EPA's scientific determinations and its policy decisions. While a plurality of EPA scientists reported that EPA policies are often consistent with the agency's scientific findings, a similar number felt that the EPA could do a better job of relying on the best judgment of its scientific staff:

- 640 scientists (42 percent) felt that the EPA's determinations frequently or always make use of the best judgment of its scientific staff. However, 719 scientists (47 percent) felt that the agency's determinations occasionally, seldom, or never do so. A total of 182 scientists (12 percent) did not know.
- 745 scientists (48 percent) felt that EPA determinations are frequently or always consistent with the scientific findings in agency documents. However, 565 scientists (37 percent) felt that this was occasionally, seldom, or never true, while 229 (15 percent) did not know.

Hundreds of EPA scientists also felt that the agency only occasionally incorporates expert advice from advisory committees into its policy decisions:



After extensive White House interference, the EPA failed to sufficiently protect the public from particulate matter pollution, which arises from many sources including coal-fired power plants.

- 615 scientists (40 percent) felt that the agency frequently or always incorporates expert advice from independent scientific advisory committees into regulatory decisions. However, 553 scientists (36 percent) felt that the agency occasionally, seldom, or never heeds such advice.
- The results were markedly worse among scientists at the Office of Air Quality Planning and Standards, which works closely with the external Clean Air Scientific Advisory Committee to set the National Ambient Air Quality Standards (see below). Half of these respondents (29 scientists, or 50 percent) felt that the agency heeded the advice of advisory committees occasionally or less often.
- Fine particulate matter (or PM_{2.5}) consists of particles less than 2.5 micrometers in diameter. More than 2,000 peer-reviewed studies link PM_{2.5} pollution to strokes, heart disease, respiratory ailments, and premature death (American Lung Association 2005).

Science and technical information needs to be given more weight in decision-making rather than just seen as background information.

A scientist from an EPA regional office

A 2005 EPA risk assessment found that PM_{2.5} pollution causes more than 4,700 premature deaths each year in just nine cities (EPA 2005), while other studies have estimated that tens of thousands of people die nationwide each year from PM_{2.5} exposure (Abt 2000). Based on its review of the scientific evidence, CASAC recommended tightening the yearly average standard for PM_{2.5} from 15 micrograms per cubic meter to 13–14 micrograms per cubic meter. Yet Administrator Johnson issued a final rule in September 2006 that left the standard unchanged.

No EPA administrator had disregarded CASAC's advice in its nearly 30-year history. Yet Johnson claimed that CASAC's nearly unanimous 22 to 2 vote was evidence of disagreement on the science. Shortly after the EPA announced the final rule, CASAC members voiced their objections in a letter to Johnson, emphasizing that, "There is clear and convincing scientific evidence that significant adverse human-health effects occur" at the new PM_{2.5} standard, and that it "does not provide an 'adequate margin of safety . . . requisite to protect the public health' (as required by the Clean Air Act)" (CASAC 2006a).

CASAC members also alleged that the EPA had "twisted" or "misrepresented" the panel's recommendations on a number of issues

Case Studies

Politicizing Air Quality

As Chapter 2 noted, the Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for six "criteria" air pollutants (ozone, fine and coarse particulate matter, lead, nitrogen dioxide, sulfur oxides, and carbon monoxide), and to review each standard every five years. These standards have been a pillar of widespread improvements in air quality and public health.

Under the act, the EPA must base the NAAQS on the "best available science." In 2001 the Supreme Court confirmed that the agency cannot consider costs and other factors in setting the NAAQS (*Whitman v. American Trucking Associations, Inc.* 2001). However, Administrator Johnson has recently overruled the consensus view of EPA scientific staff and the recommendations of the Clean Air Science Advisory Committee (CASAC) by setting or proposing standards for fine particulate matter, lead, and ozone not based on the best science, and not sufficiently protective of public health. Even more troubling, the EPA has attempted to cut science out of the standard-setting process:

related to the proposed standards. Bart Ostro, chief air pollution epidemiologist at the California EPA, charged that “the EPA had incorporated ‘last-minute opinions and edits’ by the White House Office of Management and Budget that ‘circumvented the entire peer review process.’” Ostro also pointed out that the White House’s changes were “very close to some of the letters written by some of the trade associations” (Wilson 2006).

- The White House also directly intervened in the EPA’s recent decision regarding the primary and secondary NAAQS for ozone. Ground-level ozone—a component of smog—is created by chemical reactions between oxides of nitrogen and volatile organic compounds in the presence of sunlight. Multiple studies have shown that exposure to ozone pollution can cause and exacerbate a variety of respiratory health problems, and can even lead to premature death (Shprentz 2007).

Managers need to learn to trust the expertise of the technical staff.

A scientist from the Office of Water

CASAC unanimously recommended tightening the ozone standard from 80 parts per billion (ppb) to a level as strict as 60 ppb, and in no case higher than 70 ppb. To support that standard, the committee cited recent controlled clinical studies documenting “statistically-significant decrements in lung function” at concentrations of 80 ppb, and “adverse lung function effects” in some individuals at 60 ppb (CASAC 2006b).

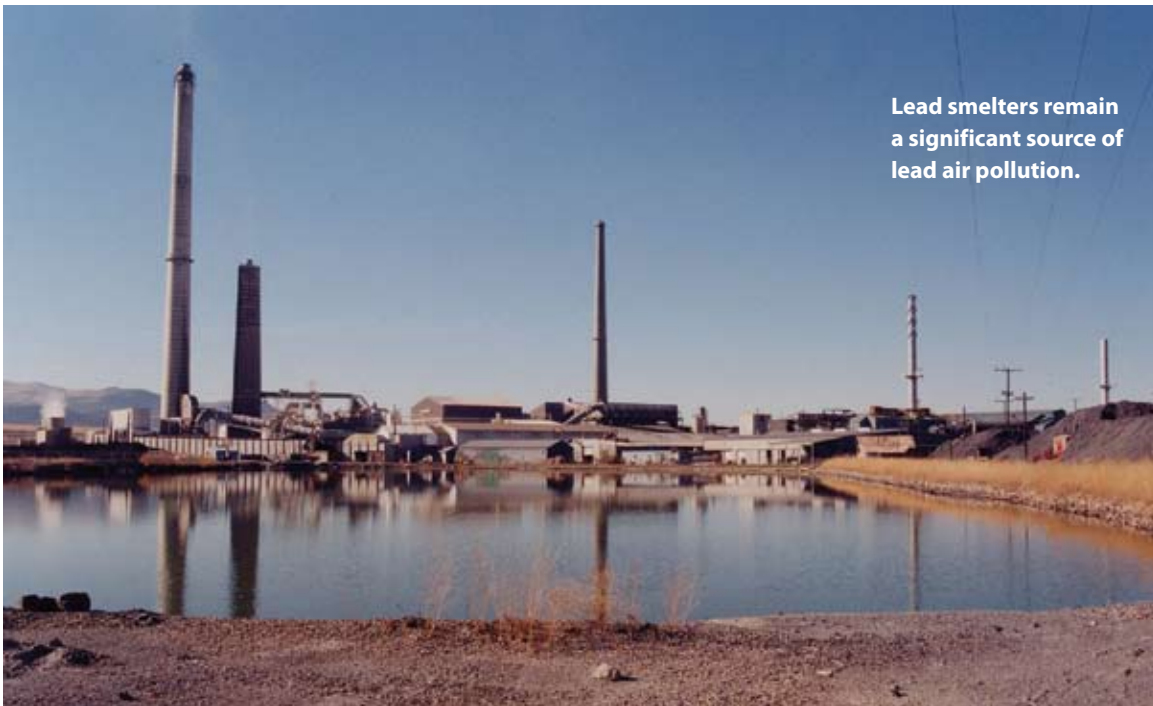
Industry groups and local governments actively lobbied both the White House and the EPA to maintain the 80 ppb standard (Boyle 2008). The OMB also manipulated the EPA’s regulatory impact assessment to cast doubt on the health benefits of a lower

standard (see Box 1, p. 28) (OMB Watch 2007; Patton 2007).

On March 12, 2008, Administrator Johnson again overruled CASAC to set the primary NAAQS for ozone at 75 ppb—a level unsupported by the best available science (EPA 2008). Johnson also called for changing the Clean Air Act to allow the EPA to consider the costs of complying with the standards when setting the NAAQS—a move that drew immediate condemnation from Congress (Eilperin 2008).

President Bush also personally intervened to prevent the EPA from adopting a stronger secondary standard for ozone. The Clean Air Act allows the EPA to set secondary standards to protect the “public welfare”—a broad term that includes lower visibility, ecological damage, and other concerns—beyond the primary standards designed to protect public health. The EPA often sets secondary NAAQS that are identical to the primary standards. However, the agency proposed a more stringent seasonal standard for ozone, to protect crops and other plant life during times of intense exposure.

A March 6, 2008, memorandum from OIRA head Susan Dudley to Administrator Johnson questioned the EPA’s scientific basis for the secondary standard, and called on the agency to consider “economic values, personal comfort and well-being” (Dudley 2008). EPA Deputy Administrator Marcus Peacock replied that the EPA was barred by law from considering economic costs, and that the EPA was unaware of “any information indicating beneficial effects of ozone on public welfare” (Peacock 2008). Confidential talking points prepared for Administrator Johnson’s March 11 meeting with President Bush also emphasized strong scientific support for the EPA’s proposal (Johnson 2008).



Lead smelters remain a significant source of lead air pollution.

Despite this pushback from the EPA, a last-minute intervention by President Bush overruled the agency's proposal and established a secondary standard identical to the primary one. The *Washington Post* reported that EPA Solicitor General Paul Clement warned that Bush's decision contradicted the agency's past submissions to the Supreme Court defending against industry challenges, and touched off a "scramble" to create new legal justifications for the weakened secondary standard (Eilperin 2008b).

- In December 2006, after the controversy surrounding the $PM_{2.5}$ decision, Deputy Administrator Peacock announced a new streamlined policy for setting the NAAQS that removes independent assessments by scientific experts and injects political determinations much earlier in the decision-making process (Peacock 2006).

For decades, the foundation of the NAAQS process was the staff paper, a comprehensive overview of the health effects of the air pollutant in question by EPA scientists. Staff scientists also worked with CASAC to review the

latest studies and recommend appropriate standards. Only after this scientific review was complete would the administrator create a draft standard.

The new rules for setting the NAAQS eliminate this critical independent scientific assessment. High-level political appointees are involved right from the start, working with staff scientists to create a document containing "policy-relevant science" that "reflects the agency's views." CASAC is cut out of the process until after the EPA has announced its proposed standard, when the advisory group can comment just like any other member of the public. The new rules closely follow recent recommendations from the American Petroleum Institute (Boxer et al. 2006).

- The first criteria pollutant to be reviewed under these new rules is lead, a powerful neurotoxin that accumulates in human and animal tissue. Even low levels of lead can cause osteoporosis, high blood pressure, heart disease, anemia, memory problems, and seizures in adults. Children are at the greatest risk: even low levels of lead can

lower IQ levels and cause learning deficits (AAP 2005; Lanphear et al. 2005). Regulation of lead under the Clean Air Act has dramatically reduced levels in the air and people's blood—one of the crowning public health achievements of the past 30 years.

The severing of independent scientific assessment from the policy-making process is evident in the recent Advanced Notice of Proposed Rulemaking (ANPRM) for lead. Despite scientific consensus on the value of a strong lead standard, the ANPRM seeks input on policy options that would result in a weaker lead standard and even considers removing lead from the criteria pollutant list entirely—options that CASAC explicitly rejected (EPA 2007).

CASAC members strongly criticized the ANPRM for lead at a December 2007 meeting. According to one member, "This comes across as an attempt to mystify the process so EPA can come up with whatever [standard] it wants." Another asserted that the process "questions the legitimacy of CASAC's mission." The advisory group plans to propose significant changes to the process by which the EPA sets the NAAQS (Inside EPA 2007c). A final decision on the lead NAAQS is expected sometime in 2008.

Conflicts of Interest and Oil Extraction

Another example of the EPA's misuse of scientific expertise relates to domestic oil extraction, and the exposure—by an EPA whistle-blower—of conflicts of interest among the agency's independent advisory committees.

Hydraulic fracturing is a controversial technique, developed by Halliburton, that increases the amount of oil extracted from a well by pumping water or another fluid into rock under such high pressure that it creates new cracks around an oil reservoir. Critics contend that hydraulic fracturing should be regulated because toxic fluids pumped into the ground during fractur-

ing may seep into groundwater. The oil industry has steadily maintained that the practice is safe (Hamburger and Miller 2004b).

The EPA launched a study in response to a 1994 petition from Alabama residents claiming that the process had contaminated their drinking water, and to a 1997 court ruling that hydraulic fracturing should be regulated under the Safe Drinking Water Act. However, a 2001 report from Vice President Cheney's energy task force touted the benefits of hydraulic fracturing while ignoring its potential consequences, despite repeated requests from EPA scientists that the report mention environmental concerns (Hamburger and Miller 2004b).

In 2004 the EPA released a report concluding that hydraulic fracturing posed little threat to underground drinking water supplies, and thus did not merit further study or regulation (EPA 2004). The agency claimed that the report had passed peer review by an independent panel of experts. However, shortly after release of the study, Weston Wilson, an environmental engineer and 30-year EPA veteran, spoke out. In an 18-page technical analysis sent to the agency's inspector general and congressional leaders, Wilson, who sought whistle-blower protection, wrote:

"EPA's conclusions are unsupported. EPA has conducted limited research reaching the unsupported conclusion that this industry practice needs no further study at this time. EPA decisions were supported by a Peer Review Panel; however five of the seven members of this panel appear to have conflicts-of-interest and may benefit from EPA's decision not to conduct further investigation or impose regulatory conditions" (Wilson 2004).

"I think the agency's acted egregiously," Wilson said in a later interview. "It's not fulfilling its responsibility to protect public health" (Hartman 2005).



An EPA advisory committee, some of whose members had significant conflicts of interest, allowed the continued use of an oil extraction technique that could pollute groundwater supplies.

Discussion

Our survey responses indicate serious systemic problems in how the EPA uses the expert advice of its staff scientists and independent advisory committees. Politicization of scientific advice—such as in the manipulation of the NAAQS process—endangers public health and also undermines the EPA's scientific reputation, just as severely as the overt political interference documented in Chapter 4.

The Clean Air Act requires the agency to base the NAAQS on the best available science to protect human health. These health-based standards have been extraordinarily successful in encouraging the use of innovative technology to control pollution, and air pollution has steadily declined across the country as a result. Recent EPA decisions on particulate matter and ozone clearly do not incorporate the best available science, and the consequences can be measured in growing numbers of hospital visits and premature deaths (Shprentz 2007; American Lung Association 2005).

Beyond cases where the EPA must rely on the best science to set standards, the agency's

administrator has publicly and dramatically overruled the consensus advice of scientific and legal staff in several high-profile decisions. For example, in late December 2007, Administrator Johnson denied California the right to regulate global warming pollution under the Clean Air Act, despite the consensus opinion of EPA staff that his decision was scientifically and legally indefensible (Eilperin 2007). In a similar recent decision, lobbying by agricultural interests led the EPA to exempt farms and other agricultural facilities from reporting toxic emissions—again despite findings by staff scientists that such emissions could harm nearby residents (Williamson 2008).

The EPA administrator sometimes has the latitude to create policies that ignore scientific consensus. However, the agency should at least acknowledge its science, and provide a transparent rationale for its decisions. The perception that the agency is putting political and industrial interests ahead of public health and the consensus of its scientific staff severely damages its reputation for scientific objectivity and the morale of its experts.

CHAPTER 7

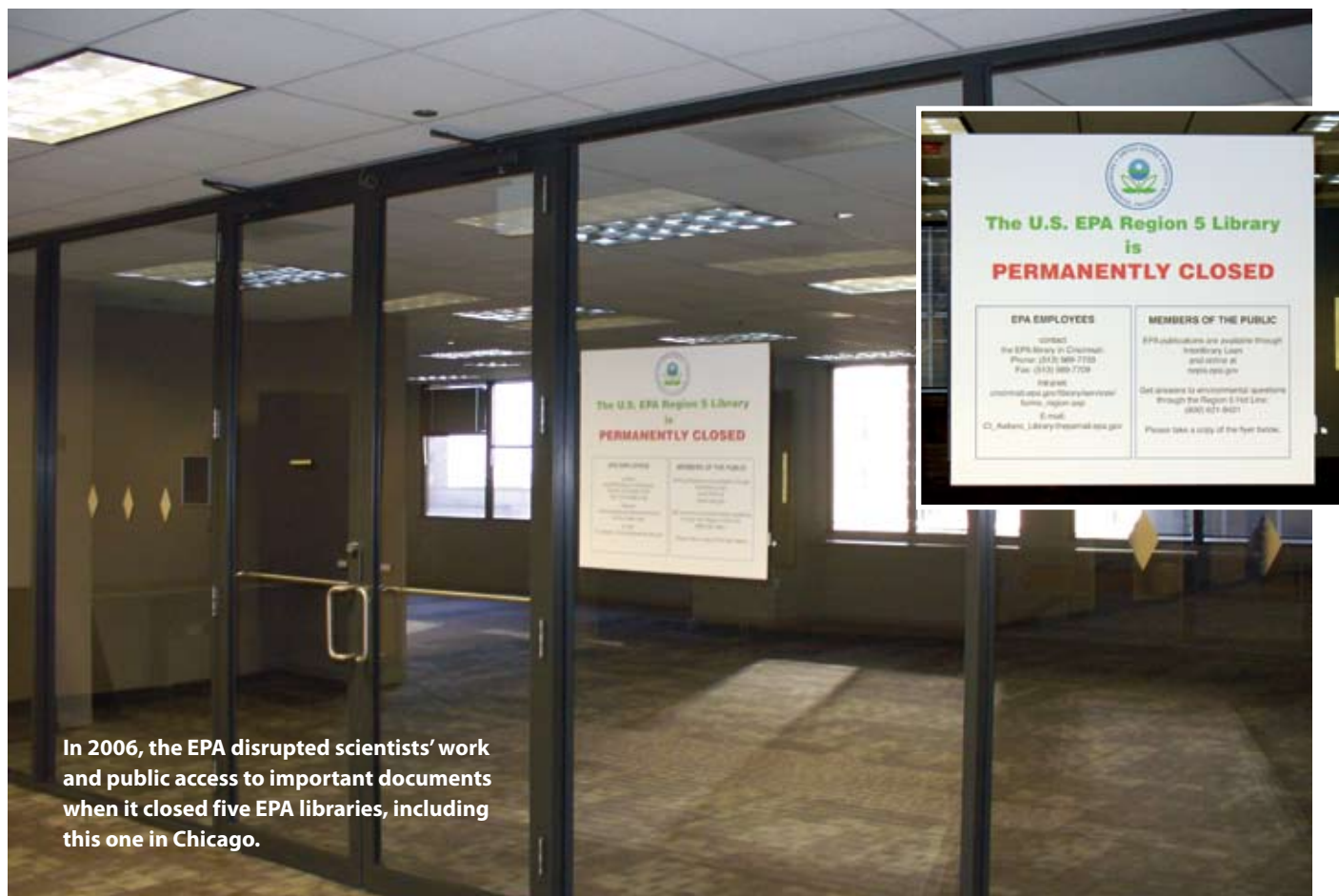
Challenges to Agency Effectiveness

A strong EPA is essential to the health and safety of Americans. For the agency and its scientific enterprise to function effectively—that is, to ensure that it can collect the information and conduct the analyses it needs to pursue robust enforcement of environmental statutes—it must have the ability to attract and retain high-quality scientists. Several survey questions asked EPA scientists about factors beyond political interference that affect their ability to do their job, and the ability of the EPA as a whole to fulfill its mission. These factors included resources, morale, and agency effectiveness. We also examined the EPA’s funding, enforcement, and monitoring.

Survey Results**Resources**

Many EPA scientists indicated that a lack of sufficient or appropriate resources was a serious problem in their office or division:

- 969 scientists (62 percent) disagreed or strongly disagreed that the “EPA division where I work has sufficient resources to adequately perform its mission of protecting human health and the environment.” Nearly 200 scientists also addressed this issue in their essays.
- 555 scientists (36 percent) agreed or strongly agreed that the “recent changes and closures



In 2006, the EPA disrupted scientists’ work and public access to important documents when it closed five EPA libraries, including this one in Chicago.

in the EPA library system have impaired my ability to do my job.” This opinion was especially prevalent among scientists in regions 5, 6 and 7, which had their libraries closed (86 of those scientists, or 48 percent, agreed). However, the impact of the closures was felt across the entire EPA.

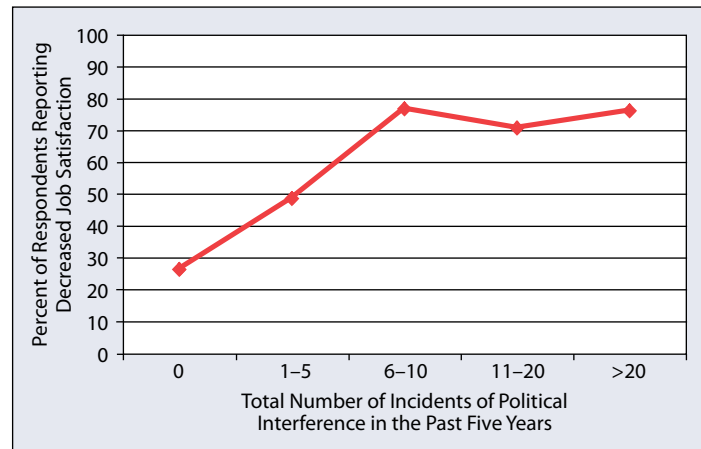
- 574 scientists (41 percent) agreed or strongly agreed that “the trend toward contracting out scientific work is harming the effectiveness of my division.” This sentiment was especially strong among scientists working in the Office of Research and Development (ORD) (198 scientists, or 52 percent).
- A clear majority of respondents (984 scientists, or 62 percent) reported that they are “provided with the appropriate time and resources to keep up with advances in my profession, including attending conferences and participation in scientific or professional societies.” However, 466 scientists (29 percent) disagreed or strongly disagreed.

Morale and Job Satisfaction

The survey also asked scientists about their job satisfaction and the overall morale in their division:

- Twice as many respondents reported a drop in job satisfaction (670 scientists, or 44 percent) over the past five years as those who reported an increase (328 scientists, or 21 percent). Those with personal experience with political interference had a higher likelihood of declining job satisfaction (see Figure 10).
- Opinions about workforce morale varied widely. A total of 564 scientists (37 percent) said morale was fair, while another 387 scientists (25 percent) said morale was poor or extremely poor. A total of 570 scientists (37 percent) said morale was good or excellent.

FIGURE 10: Decreased Job Satisfaction and Political Interference



Scientists who had experienced political interference were more likely to report decreased job satisfaction.

Agency Effectiveness

Several questions addressed the overall effectiveness of the EPA. Respondents were more likely to praise the agency’s accomplishments on some measures of effectiveness, while they were more evenly split on other measures:

- Respondents were more likely to agree than disagree that the EPA was acting effectively to clean up environmental problems. A total of 812 scientists (52 percent) agreed that the EPA acts effectively to “clean up and/or mitigate existing pollution or environmental problems,” while 522 scientists (33 percent) disagreed.
- The gap was narrower for preventing environmental degradation. A total of 694 scientists (44 percent) agreed that the EPA acts effectively to “foster practices that prevent environmental degradation or adverse health effects before they occur,” but 629 scientists (40 percent) disagreed.
- 657 scientists (50 percent) personally experienced frequent or occasional “new or unusual administrative requirements or procedures that impair my scientific work.”

- 696 scientists (45 percent) reported that the effectiveness of their division or office had declined compared with five years ago, while only 321 scientists (21 percent) said effectiveness had increased. Scientists in parts of the ORD, including the National Health and Environmental Effects Research Laboratory (NHEERL), were the most likely to report decreases in effectiveness.

I have never seen morale at a lower point than we currently have in EPA. Good scientists are leaving because they can no longer put up with all the micro-management that is heaped on them in lieu of effective administrative leadership.

A scientist from the Office of Research and Development

- Respondents are evenly split on whether the EPA is moving in the right direction: 685 scientists (44 percent) disagreed that the EPA is moving in the right direction, while 624 (40 percent) agreed.

Case Studies

The EPA's funding has declined in real dollars over the past several years. Specific changes have also occurred that could degrade the agency's ability to conduct cutting-edge scientific research and adequately enforce the nation's environmental laws.

Library Closures

In the summer of 2006, the EPA closed large parts of its network of 27 libraries, potentially putting decades' worth of valuable information beyond the reach of government scientists, independent researchers, and the public (OEI 2006). Despite a 2004 report that found that the agency's libraries saved more than 214,000 hours a year in staff time, worth \$7.5 million (OEI 2004), the Bush administration cut \$2 million out of the 2007 \$2.5 million library services budget, leading to the closures.

Five EPA libraries closed—the headquarters library, the chemical library of the Office of Prevention, Pesticides and Toxic Substances, and libraries in regions 5, 6, and 7—while those at several other branches reduced their hours and services. Hundreds of survey respondents noted that these closings have made it more difficult for EPA employees to do their jobs.

EPA officials claim that all materials will eventually be available online as part of a planned library modernization effort. However, many essential library holdings—from copyrighted reference books to older volumes of scientific journals—cannot be reproduced online. And the agency closed the libraries before beginning the time-consuming process of digitization, making many resources and materials unavailable indefinitely.

The closings have drawn widespread criticism from scientists, historians, the American Library Association, the EPA's employee unions, and others. Members of both the House and Senate called on Administrator Johnson to cease and desist with the closures (Boxer et al. 2006; Gordon et al. 2006). And a GAO report faulted the EPA for not adequately consulting library users or performing a thorough assessment of essential library services (GAO 2008). The agency has responded by promising to reopen the libraries before the end of the 2008 fiscal year (O'Neill 2008).

Enforcement and Monitoring

Weak or inconsistent enforcement can undercut even the wisest government policies. In the first five years of the Bush administration, the EPA opened fewer criminal investigations, filed fewer lawsuits, and levied smaller fines against polluters than in the final five years of the Clinton administration. The result of this drop in enforcement is that it "now costs less to pollute" (Environmental Integrity Project 2007).

The number of criminal investigators employed by the EPA has also fallen below the minimum

set by Congress (Beamish 2007). And the Bush administration has undermined EPA lawsuits already under way by weakening regulations to allow aging power plants to emit more pollution (the policy that prompted Administrator Whitman's resignation as related in Chapter 1; see Eilperin 2005).

What's more, monitoring is a crucial component of effective enforcement, and the EPA is simply not collecting essential data in many critical areas. For example, the network of sites for monitoring lead air pollution shrank from more than 900 in 1980 to little more than 200 in 2005. Today only two of the 27 worst sources of such pollution are within one mile of a monitoring site (EPA 2007). Other monitoring and reporting programs weakened under the Bush administration include the Toxics Release Inventory and the requirements for reporting agricultural emissions (see Chapter 6).

Toxics Release Inventory

The EPA's Toxics Release Inventory (TRI) requires manufacturers to provide annual reports on

their use and release of more than 600 toxic chemicals. The TRI is widely credited with enhancing public knowledge and triggering significant voluntary reductions in emissions of many pollutants. Each year brings dozens of new examples of communities that have relied on the TRI to win protection from dangerous chemicals such as lead, mercury, and chromium (UCS 2006). For example, after the *Chicago Tribune* published TRI data from a local brass foundry, a citizen activist group formed and successfully negotiated protection for residents from extremely high lead levels (Hawthorne 2006).

Yet in early 2007 the EPA finalized a plan—known as the TRI burden reduction rule—to scale back reporting requirements by raising the threshold below which facilities are allowed to submit only minimal information (EPA 2006b). The rule also weakened reporting requirements for the production of persistent toxins that accumulate in plants and animals, such as mercury, lead, and PCBs. The new rule drew widespread criticism for reducing the amount of useful information that the TRI made available to the public.

Residents of Port Arthur, Texas pass out leaflets in their community to educate people about the dangers of emissions from local refineries and chemical plants.



A 2007 GAO investigation found that the rule disproportionately affected low-income and minority communities, and that the EPA did not conduct the required environmental justice assessment. The GAO also found that the OMB had pressured the EPA to pursue specific policy options that EPA experts had previously discarded, and set an unrealistic deadline, leading to a rushed analysis of the options. The GAO stated that the estimated savings from the rule are “likely overstated,” and that the EPA’s analysis “masked” the large impact the rule would have on communities across the country (GAO 2007).

MORE FUNDING! We do NOT have the resources to meet our mission. My division has seen its resources—in purchasing power—cut over 50% since 10 years ago.

A scientist from the Office of Research and Development

Discussion

Nearly half of EPA scientists who responded to our survey say their job satisfaction has declined over the past five years. Our survey cannot shed definitive light on the reasons for this decreasing job satisfaction and low morale. However, the correlation we found between political interference and lower levels of job satisfaction suggests that disrespect for the work of scientists affects their workplace environment.

Funding for the EPA’s critical work has declined in real dollars since 2004. This decline in EPA resources is not itself a form of political interference as there are many national priorities that compete for scarce budget dollars. Yet funding decisions within the EPA can reflect politicization of agency priorities. These cuts, coupled with growing agency responsibilities as well as the politicization of enforcement priorities (exemplified by Administrator Whitman’s resignation), can hurt staff morale even as they undermine the agency’s effectiveness.

These problems make it more difficult for the EPA to attract and retain the best and brightest scientists, who are drawn by the opportunity to advance the public interest. And the strength and commitment of the agency’s scientific workforce, in turn, affects its effectiveness in protecting human health and the environment.

In an interview with UCS, an anonymous EPA scientist described the consequences of political interference for staff morale and retention of top scientists, stating, “The problem is a lack of vision among the leadership. They don’t look beyond the political landscape to remember the mission of the agency. This makes it hard to keep younger scientists. Your idea of what is possible diminishes, and then you leave” (Anonymous EPA scientist 2008b).

CHAPTER 8

Recommendations and Conclusions

The results of our survey and interviews with EPA scientists show widespread problems at the agency. Hundreds of scientists report direct and indirect interference with their scientific work by political appointees at the EPA and the White House. Despite claims to the contrary from EPA leaders, scientists also report institutional barriers to freely communicating their findings through both the media and scientific publications. EPA scientists are not confident that environmental decision makers respect their expertise. And the agency's effectiveness needs to improve on several fronts.

Wide-ranging political interference in EPA science requires a suite of reforms in five major areas: protecting EPA scientists, improving the agency's transparency, reforming its regulatory framework, strengthening its system of scien-

tific advice, and depoliticizing funding, monitoring, and enforcement. These efforts to revitalize the EPA, allowing it to fulfill its mission of protecting human health and the environment, will require strong leadership from Congress, the next president, and the next EPA administrator, joined by EPA scientists and the broader scientific community.

Protecting EPA Scientists

To fulfill their profound responsibility to the public, EPA scientists need assurance that standing behind their scientific work will not open them to either official or unofficial retaliation. Congress is now considering several bills that would strengthen the federal whistleblower system:

- Both houses of Congress have passed legislation that would enhance protections





for whistle-blowers under the Whistleblower Protection Act of 1989, and members are now working to reconcile the two versions. The House version includes specific protections for scientists. It also defines abuse of authority to include actions that distort science, disseminate false or misleading information, and restrict scientists from publishing or speaking at conferences.

- Members of the House and Senate have introduced bills to reauthorize the Office of Special Council and the Merit Systems Protection Board—federal entities that investigate claims of reprisal against federal whistle-blowers and adjudicate whistle-blower claims, respectively. Although the legislation includes many important reforms, the Senate has taken no action, and the House bill is still in committee.
- The House has recently passed legislation to grant inspectors general (IGs) greater autonomy and immunity from coercion by the agencies they police. The Senate has reported such legislation out of committee. Both versions contain an important requirement that IG websites enable employees to anonymously report waste, fraud, and abuse. Government scientists could use this mecha-

nism to confidentially challenge scientific misconduct. Both versions of such legislation also give IGs subpoena power.

Congress should pass the strongest possible whistle-blower protections, and the president should sign them into law. The next EPA administrator should also work with the coalition of EPA unions to integrate the agency's Principles of Scientific Integrity (EPA 1999) into the official employee grievance procedure.

Making the EPA More Transparent

Some aspects of EPA decision making are open to public scrutiny, but many "predecisional" meetings and discussions are not. The integrity of EPA science is threatened in no small part by decisions made behind closed doors. Opening up these processes to congressional and public scrutiny is an important way to reveal and end abuses of science. The EPA should also better explain how it arrives at decisions that affect health and the environment.

The agency should institute a transparency policy for all meetings attended by non-EPA personnel. Such a policy need not be burdensome to EPA employees: outside participants could enter the required information directly into a database before any meeting, or within a specified time period after a meeting.

- This policy should require the EPA to post all meetings with outside entities on its website, including those with for-profit and not-for-profit organizations, and representatives of other agencies.
- The database should include the names and affiliations of attendees as well as the date, time, location, and subject of each meeting, with an exception granted for cases of national security.

Official EPA reports and documents in draft form are exempt from release under the Freedom of Information Act. Abuse of this

exemption—wherein documents remain in draft form indefinitely—does occur.

- To prevent abuse of the “predecisional” exemption, the next EPA administrator should adopt procedures that allow the periodic release of documents that have remained in draft form for a given length of time.

The EPA should also publish a summary statement discussing the scientific basis for any significant policy, guidance, or regulation informed by science. This statement should be available in a timely fashion, and should include:

- The scientific rationale for a decision, and all scientific documents and data used to make it (including reasonable release of information from industry).
- A minority report voicing any significant dissenting scientific evidence or opinions.
- An explanation of how the agency resolved such differences of opinion.
- Identification by name of each official and employee who participated in the decision.

The Food and Drug Administration Amendments Act of 2007 already incorporates such transparency requirements, and the EPA could adapt them.

Reforming Media Policy

Both science and democracy thrive in an open environment. The EPA should clarify its policies on the interaction between scientists and the media to ensure that the public has access to taxpayer-funded information that affects their health and safety, and to ensure that scientists and other employees can exercise their rights to free speech:

- Any EPA media policy must respect at least two fundamental rights: (1) scientists have the right to speak freely about any topic

(including EPA policy) if they clarify that they are speaking as private citizens, not as agency representatives; and (2) scientists should have the right to review and correct any official document (such as a press release or report) that cites or references their scientific work, to ensure that accuracy has been maintained after the clearance and editing process.

- Congress or the EPA may need to impose narrow restrictions on these basic rights in certain instances, such as in cases under litigation. Officials should clearly define these situations.

Strong, independent oversight and protection of “whistleblowers” (real protection—not what is there now) could stem the most damaging practices.

A scientist from the Office of Research and Development

- However, because the EPA is also a scientific agency, it should also supplement these basic rights by creating a public affairs system that actively disseminates agency research and codifies the positive rights of EPA scientists.
- The next EPA administrator should review the written policies of all offices and regions on the interaction between agency scientists and the media. Policies that do not explicitly protect scientists’ fundamental right to freely communicate their scientific findings should be rewritten, and offices and regions without explicit policies should create them.
- The EPA should hold training sessions to clearly explain employees’ rights in communicating their research to the media and the public, and the resources available to them to do so.

Reforming Publication Policy

Peer review is a pillar of the scientific method; political review is not. The EPA's process for clearing information for outside publication sometimes becomes a de facto policy review, and delays publication of controversial papers despite disclaimers that the views are personal.

- The next EPA administrator should review the agency's clearance policies, and work with the agency's offices and divisions to streamline excessive review.

The premise should be that all documents (except enforcement related stuff) start out as public documents unless EPA has jumped through a lot of legal hoops to be able [to] retain them.

A scientist from an EPA regional office

- A disclaimer on a published paper that it is not official agency policy should exempt it from a full policy review.
- The clearance process should set reasonable yet strict time limits on how long the agency can delay publication of a paper. If officials do not reach a decision within that time frame, the paper should automatically proceed to publication with a written disclaimer. If officials deny clearance, they should provide a written explanation to the authors.
- The process for reviewing and clearing papers for outside publication must be transparent, and thus posted on the website of each EPA office and division.

Reforming the Regulatory Process

While the White House oversees federal agencies, it must strike a balance between administration priorities and agency independence. The EPA was created to implement and enforce the nation's environmental laws, and it has developed the expertise, experience, processes, and

policies to fulfill those critical duties. The regulatory process should respect the agency's reservoir of scientific and technical knowledge. Congress should also consider ways to strengthen our nation's environmental regulatory system, to fortify the EPA's scientific mission and meet the pressing challenges of the twenty-first century.

Ensuring Agency Independence

The EPA is the nation's first line of defense against threats to public health and the environment. As such, the EPA should be empowered to take the lead on environmental concerns and to push back against interference in its science and decisions by the OMB and other federal agencies. To accomplish this:

- The next president should elevate the EPA to a cabinet-level agency, or establish a Department of the Environment.
 - The next president should reverse executive order 13422, removing the power of presidential appointees (who are unaccountable to Congress) to commence rulemaking, and returning that power to the EPA and its administrator.
- The OMB and its Office of Information and Regulatory Affairs play important roles in coordinating and overseeing the regulatory process. However, those roles should not include second-guessing or editing the science underlying EPA decisions:
- The next president should establish a regulatory process that respects the scientific and technical expertise of the EPA, and that excludes the OMB from interfering in the EPA's scientific and technical determinations.

- The next president should repeal the OMB's one-size-fits-all directives on peer review and risk assessment. The EPA should have the flexibility to choose the form of peer review best suited to its needs.

- In particular, EPA experts should prepare risk assessments and the scientific component of regulatory impact assessments without interference from the OMB.

Enacting Legislative Reforms

The dozen or so environmental laws noted in Chapter 2 have led to dramatic improvements in public health and environmental quality. Yet the challenges the nation faces today are very different from those of 30 years ago. Congress should assess the adequacy of our current environmental regulatory structure, and consider reforms to close loopholes and strengthen the EPA's ability to address pressing threats to human health and the environment. (See CPR 2007 for possible recommendations.)

To support the quality of the EPA's scientific work, these reforms should focus on ensuring that the agency has the regulatory tools it needs to collect critical environmental data. Such tools could include stronger scientific testing requirements for pesticides and chemicals used in commerce, expanded TRI reporting requirements, and the authority to broaden environmental monitoring networks where necessary.

Congress should also consider new legislation that gives the EPA a framework to address emerging challenges such as climate change, nanotechnology, and endocrine-disrupting chemicals. Environmental justice should be a guiding principle in these efforts, to ensure that the costs of pollution and the benefits of environmental protection are shared equitably among all parts of society.

Ensuring Robust Scientific Input to EPA Decision Making

The EPA should review and strengthen the ways it uses the scientific expertise of its staff and advisory committees, especially in cases where scientific input is critical or the law requires it. The agency should also tighten its conflict-of-interest restrictions.

Disclosing and Mitigating Conflicts of Interest

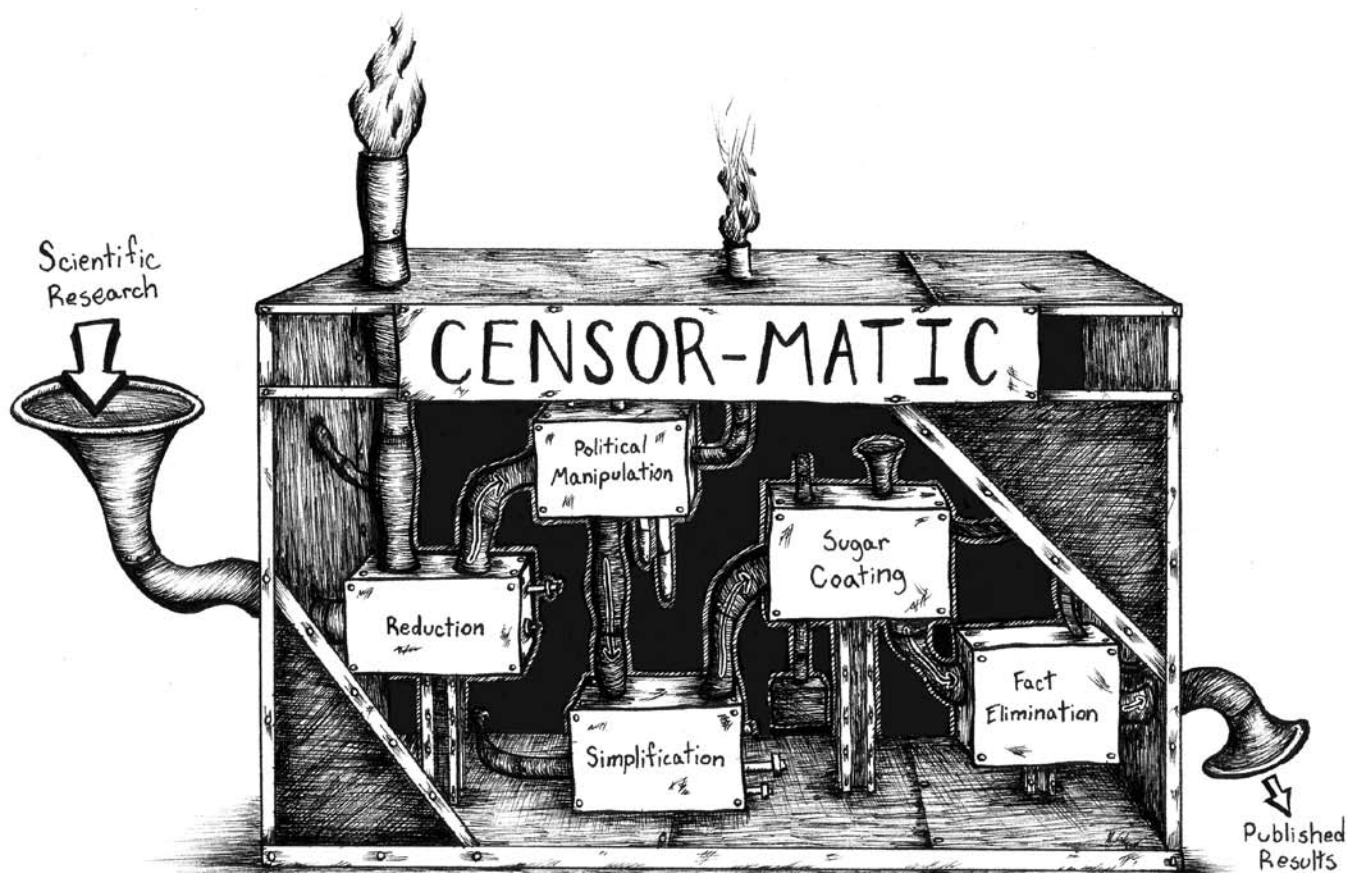
The next EPA administrator should work with employees, industry, and the scientific community to develop comprehensive conflict-of-interest policies for both staff and members of advisory committees:

- Government employees and members of advisory committees who are involved in regulation should disclose all conflicts of interest and special interests that might affect their ability to do their job in an unbiased manner.
- Individuals with a significant conflict of interest may still contribute to a project as invited experts, but the EPA should restrict them from decision making and otherwise influencing policy outcomes.

Conflict-of-interest policies should also prohibit the revolving-door practice of appointing individuals from industry as senior EPA officials responsible for regulating those industries:

- The next administration should provide clear guidelines for minimizing the appointment of senior officials with conflicts of interest.





At a minimum, federal employees should be required to recuse themselves from decisions involving former employers (RDWG 2005).

Reforming Advisory Committees

The EPA should pursue reforms to make better use of its independent advisory committees. Specifically, the next EPA administrator should work with the Clean Air Scientific Advisory Committee to improve the process for setting the National Ambient Air Quality Standards, to ensure that decision makers have access to the “best available science.”

Depoliticizing Funding, Monitoring, and Enforcement

These actions are essential to restore the scientific integrity of EPA decision making. But, in addition, problems with funding, monitoring, and enforcement—which relate to the EPA’s scientific integrity—also need to be addressed by Congress and the next president to ensure that the EPA is the robust environmental agency that our country needs. In particular, Congress

should provide the EPA with resources commensurate with its growing responsibilities and should work to ensure that selective internal budget cuts are not used to punish inconvenient programs or offices. The next president should commit to strong and consistent enforcement of the nation’s environmental laws.

Concluding Thoughts

The EPA’s scientific enterprise is our nation’s first line of defense against threats to public health and the environment. These threats are growing more complex and global, with the potential to harm the nation’s health and prosperity. Despite notable successes, air and water pollution remain serious public health problems. Each year brings new and untested chemicals into our homes, schools, and workplaces. Climate change alone is projected to have profound impacts on public health, agriculture, the economy, and even national security.

These problems are not insurmountable. The environmental and public health successes of

the past several decades show that the country can rise to the challenge of environmental threats—but only if the EPA has the proper tools. Given the complexity of today’s environmental challenges, a credible scientific knowledge base is essential to an effective response. To foster and sustain a healthy scientific enterprise, Congress and the next president should take concrete steps to protect EPA scientists, make the agency more transparent, reform the regulatory process, strengthen the scientific advisory system, and depoliticize funding, monitoring, and enforcement.

Science is not the only element of effective policy making. However, because science enjoys widespread respect, appointed officials will always be tempted to manipulate or suppress scientific findings to support predetermined policies. Such manipulation is not only dishonest; it also undermines the EPA’s credibility and affects the health and safety of Americans.

The science and risks and benefits need to be honestly and fairly considered. The decisions that are made should be justified and be transparent as to why a decision was made, and the risks and benefits [should] be clearly and honestly presented.

A scientist from the Office of Prevention, Pesticides, and Toxic Substances

The Bush administration’s direct abuse of science—combined with systemic changes to the regulatory system that threaten the integrity of EPA science—highlight the need for strong action by the next president and Congress to restore scientific integrity to the agency’s decision making. Only then can the EPA fully mobilize to serve the public good and ensure the nation’s health.



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APPENDIX A

Survey Text and Responses

This appendix provides the text of the survey UCS mailed to nearly 5,500 scientists working at the U.S. Environmental Protection Agency (EPA), along with responses from the 1,586 scientists who completed and returned the surveys. The information includes two numbers for each response option: the *number* of scientists who selected that response, and the *percentage* of scientists answering the question who selected that response (in parentheses). (For a detailed analysis of select survey questions, see Appendix B.)

The total number of responses to many questions is less than 1,586 because not all respondents answered every question. For question 3, the total number of responses is greater than 1,586 because scientists could choose more than one response.

It is important to note that we calculated the percentages given here (and in the report text) based on the number of scientists answering the question, not the total number of returned surveys. Percentages for a given question may not total 100 because of rounding or multiple responses.

Respondents could include explanatory text when selecting “other” for questions 1 (major field of training), 3 (type of scientific work at the EPA), 41 (current General Schedule level), and 43 (highest level of education completed). For questions 1, 41, and 43, we used this text to reassign some of these responses to other categories. In the case of question 1, we created two new categories (“policy” and “math and economics”) that did not appear as response options on the original survey.

Questions 5, 15, and 25–38 offered “not applicable” as a possible response, and we included those responses when tabulating the results here. However, we did not include those responses when analyzing results for the main text. That means that the percentages given here for those questions differ slightly from those in the main text.

We excluded respondents who reported that 0 percent of their job duties related to scientific topics (question 2).

UCS SURVEY OF EPA SCIENTISTS

Please select the best answer option for each of the following statements.

RESEARCH & TRAINING

1. My major field of training is:

Chemistry 164 (10.4%)	Life Sciences 276 (17.4%)	Physics 24 (1.5%)	Environmental Science 361 (22.8%)	Geology 102 (6.4%)
Engineering 328 (20.7%)	Toxicology 84 (5.3%)	Public Health 49 (3.1%)	Non-Science 66 (4.2%)	Other: _____ 51 (3.2%)
Policy 15 (0.9%)	Math & Economics 63 (4.0%)			

2. The percentage of my job duties related to scientific topics is approximately:

None 0 (0.0%)	1-25% 248 (15.7%)	26-50% 306 (19.4%)	51-75% 436 (27.7%)	76-100% 585 (37.1%)
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3. My scientific work at the EPA primarily involves: (select up to two options)

Laboratory Testing 168 (10.6%)	Modeling 237 (14.9%)	Basic Science 314 (19.8%)	Field Work 202 (12.7%)
Enforcement 147 (9.3%)	Compliance 184 (11.6%)	Permit Writing 54 (3.4%)	Risk Assessment 371 (23.4%)
Oversight 307 (19.4%)	Community Outreach 116 (7.3%)	Program Evaluation 254 (16.0%)	Grant Review 106 (6.7%)
Quality Assurance 160 (10.1%)	No scientific work at the EPA 4 (0.3%)	Other: _____ 345 (21.8%)	

PROFESSIONAL DEVELOPMENT

4. I am provided with the appropriate time and resources to keep up with advances in my profession, including attending conferences and participation in scientific or professional societies.

Strongly Agree 245 (15.5%)	Agree 739 (46.7%)	No Opinion 131 (8.3%)	Disagree 364 (23.0%)	Strongly Disagree 102 (6.5%)
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5. I am allowed to publish work in peer-reviewed scientific journals regardless of whether it adheres to agency policies or positions.

Strongly Agree 132 (8.4%)	Agree 350 (22.2%)	No Opinion 464 (29.4%)	Disagree 203 (12.9%)	Strongly Disagree 88 (5.6%)	Not Applicable 341 (21.6%)
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WORK ENVIRONMENT**6. I respect the integrity and professionalism of my direct manager or supervisor.**

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
620 (39.2%)	662 (41.8%)	108 (6.8%)	125 (7.9%)	67 (4.2%)

7. I respect the integrity and professionalism of the EPA's senior leadership.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
128 (8.1%)	558 (35.4%)	302 (19.1%)	385 (24.4%)	205 (13.0%)

8. Within the EPA I can openly express my concerns about the agency's mission-driven work without fear of retaliation.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
187 (11.9%)	658 (41.7%)	240 (15.2%)	381 (24.2%)	111 (7.0%)

9. Outside of the EPA I can openly express my concerns about the agency's mission-driven work without fear of retaliation.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
224 (14.2%)	637 (40.4%)	332 (21.1%)	288 (18.3%)	94 (6.0%)

AGENCY EFFECTIVENESS**10. The EPA is acting effectively to clean-up and/or mitigate existing pollution or environmental problems.**

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
126 (8.1%)	686 (44.0%)	226 (14.5%)	422 (27.1%)	100 (6.4%)

11. The EPA is acting effectively to foster practices that prevent environmental degradation or adverse health effects before they occur.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
106 (6.8%)	588 (37.7%)	237 (15.2%)	498 (31.9%)	131 (8.4%)

12. In my opinion, the EPA is moving in the right direction.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
97 (6.2%)	527 (33.8%)	252 (16.1%)	512 (32.8%)	173 (11.1%)

13. Compared to five years ago, the effectiveness of my division or office has:

Increased	Stayed the Same	Decreased	No Opinion
321 (20.6%)	389 (24.9%)	696 (44.6%)	155 (9.9%)

RESOURCES AND FUNDING**14. The EPA division where I work has sufficient resources to adequately perform its mission of protecting human health and the environment.**

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
61 (3.9%)	403 (25.9%)	125 (8.0%)	675 (43.3%)	294 (18.9%)

15. The trend toward contracting out scientific work is harming the effectiveness of my division.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Not Applicable
203 (13.1%)	371 (23.9%)	389 (25.0%)	385 (24.8%)	66 (4.2%)	141 (9.1%)

16. The recent changes and closures in the EPA library system have impaired my ability to do my job.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
154 (9.9%)	401 (25.8%)	439 (28.2%)	462 (29.7%)	101 (6.5%)

ROLE OF SCIENCE IN AGENCY DECISIONS

17. My direct supervisor consistently stands behind scientific staff or supervisors who put forth scientifically defensible positions that may be politically controversial.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
274 (17.8%)	632 (41.0%)	358 (23.2%)	209 (13.6%)	68 (4.4%)

18. EPA determinations and actions are consistent with the scientific findings contained in agency documents and reports.

Always	Frequently	Occasionally	Seldom	Never	Don't Know
58 (3.8%)	687 (44.6%)	488 (31.7%)	71 (4.6%)	6 (0.4%)	229 (14.9%)

19. Expert advice from independent scientific advisory committees is heeded and incorporated into regulatory decisions.

Always	Frequently	Occasionally	Seldom	Never	Don't Know
55 (3.6%)	560 (36.5%)	439 (28.6%)	105 (6.8%)	9 (0.6%)	368 (24.0%)

20. The EPA's determinations make use of the best judgment of its scientific staff.

Always	Frequently	Occasionally	Seldom	Never	Don't Know
77 (5.0%)	563 (36.5%)	552 (35.8%)	149 (9.7%)	18 (1.2%)	182 (11.8%)

JOB SATISFACTION

21. Over the past few years my personal job satisfaction at the EPA has:

Increased	Decreased	Stayed the Same	No Opinion
328 (21.3%)	670 (43.5%)	501 (32.6%)	40 (2.6%)

22. Morale within my division or office at the EPA is:

Excellent	Good	Fair	Poor	Extremely Poor	No Opinion
95 (6.2%)	475 (30.9%)	564 (36.7%)	259 (16.9%)	128 (8.3%)	16 (1.0%)

COMMUNICATIONS POLICIES

23. The EPA routinely provides complete and accurate information to the public.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
112 (7.3%)	651 (42.5%)	413 (26.9%)	294 (19.2%)	63 (4.1%)

24. EPA policies allow scientists to speak freely to the news media about their research findings.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree	Unsure
29 (1.9%)	168 (10.9%)	395 (25.7%)	492 (32.0%)	291 (18.9%)	161 (10.5%)

POLITICAL INTERFERENCE

How many cases do you know of where the following situations have occurred?

25. Cases where EPA political appointees have inappropriately involved themselves in scientific decisions.

Many	Some	Few	None	Not Applicable
150 (9.9%)	366 (24.3%)	343 (22.7%)	347 (23.0%)	302 (20.0%)

26. Cases where political appointees from other federal departments or agencies (for example, OMB, CEQ, USDA, DOD) have inappropriately involved themselves in decisions.

Many	Some	Few	None	Not Applicable
201 (13.3%)	359 (23.8%)	229 (15.2%)	356 (23.6%)	361 (24.0%)

27. Cases where commercial interests have inappropriately induced the reversal or withdrawal of EPA scientific conclusions or decisions through political intervention.

Many	Some	Few	None	Not Applicable
139 (9.3%)	368 (24.6%)	307 (20.5%)	384 (25.7%)	296 (19.8%)

28. Cases where non-governmental or advocacy groups have inappropriately induced the reversal or withdrawal of EPA scientific conclusions or decisions through political intervention.

Many	Some	Few	None	Not Applicable
57 (3.8%)	272 (18.1%)	337 (22.5%)	504 (33.6%)	329 (21.9%)

How often have you personally experienced the following situations?

29. I have been directed by EPA decision makers to provide incomplete, inaccurate, or misleading information to the public, media or elected officials.

Frequently	Occasionally	Seldom	Never	Not Applicable
15 (1.0%)	73 (4.8%)	136 (9.0%)	1117 (74.0%)	168 (11.1%)

30. EPA decision makers implicitly expect me to provide incomplete, inaccurate, or misleading information to the public, media or elected officials.

Frequently	Occasionally	Seldom	Never	Not Applicable
33 (2.2%)	90 (6.0%)	161 (10.7%)	1031 (68.4%)	193 (12.8%)

31. I have been directed to inappropriately exclude or alter technical information from an EPA scientific document.

Frequently	Occasionally	Seldom	Never	Not Applicable
23 (1.5%)	71 (4.7%)	130 (8.6%)	1119 (74.2%)	166 (11.0%)

32. Selective or incomplete use of data to justify a specific regulatory outcome.

Frequently	Occasionally	Seldom	Never	Not Applicable
71 (4.7%)	214 (14.3%)	247 (16.5%)	736 (49.1%)	232 (15.5%)

33. Pressure to ignore impacts of a regulation on sensitive populations.

Frequently	Occasionally	Seldom	Never	Not Applicable
33 (2.2%)	120 (8.0%)	158 (10.5%)	904 (60.3%)	285 (19.0%)

34. Changes or edits during review that change the meaning of scientific findings.

Frequently	Occasionally	Seldom	Never	Not Applicable
53 (3.5%)	179 (12.0%)	250 (16.7%)	787 (52.6%)	228 (15.2%)

35. Disappearance/unusual delay in the release of websites, press releases, reports or other science-based materials.

Frequently	Occasionally	Seldom	Never	Not Applicable
84 (5.6%)	215 (14.4%)	221 (14.8%)	709 (47.4%)	267 (17.8%)

36. New or unusual administrative requirements or procedures that impair my scientific work.

Frequently	Occasionally	Seldom	Never	Not Applicable
265 (17.7%)	392 (26.2%)	303 (20.3%)	361 (24.1%)	174 (11.6%)

37. Statements by EPA officials that misrepresent scientists' findings.

Frequently	Occasionally	Seldom	Never	Not Applicable
92 (6.2%)	302 (20.3%)	346 (23.2%)	511 (34.3%)	240 (16.1%)

38. Situations in which scientists have actively objected to, resigned from or removed themselves from a project because of pressure to change scientific findings.

Frequently	Occasionally	Seldom	Never	Not Applicable
29 (1.9%)	162 (10.9%)	231 (15.5%)	807 (54.2%)	259 (17.4%)

Several forms of political interference in the workplace are listed below. Most of these were addressed in the questions you have just completed (items 24–38). Please refer to the list below when answering the following two questions.

- Inappropriate influence of EPA or other agency political appointees in scientific decisions
- Inappropriate influence by commercial, non-governmental, or advocacy interests
- Directed to provide incomplete, inaccurate or misleading information to public
- Directed to exclude or alter technical information in EPA scientific document
- Selective or incomplete use of data to justify a specific regulatory outcome
- Pressure to ignore impacts of a regulation on sensitive populations
- Changes or edits during review that change the meaning of scientific findings
- Disappearance/unusual delay in the release of scientific information
- New or unusual administrative requirements that impair scientific work
- Statements by EPA officials that misrepresent scientists' findings
- Requests to consider data or use methods that are not scientifically credible
- Situations in which scientists have actively objected to pressure to change findings

39. How many activities or situations like those listed above have you personally experienced during the past 5 years?

0	1-5	6-10	11-20	more than 20
581 (39.5%)	655 (44.6%)	175 (11.9%)	34 (2.3%)	25 (1.7%)

40. If you compare the past 5 years to the 5-year period prior to it (from 5 to 10 years ago), would you say activities or situations like those listed above are occurring:

More Often than before	About the Same as before	Less Often than before	Don't Know
508 (34.4%)	330 (22.4%)	65 (4.4%)	572 (38.8%)

MY BACKGROUND

41. My current grade level is:

GS-9 or lower	GS-10	GS-11	GS-12	GS-13	GS-14
16 (1.1%)	6 (0.4%)	37 (2.5%)	138 (9.3%)	672 (45.5%)	333 (22.5%)
GS-15	SES	Other: _____			
219 (14.8%)	37 (2.5%)	19 (1.3%)			

42. I have been working at the EPA for:

Less than 1 year	1-5 years	6-10 years	11-15 years	more than 15 years
21 (1.4%)	239 (16.1%)	254 (17.1%)	136 (9.2%)	833 (56.2%)

43. Highest level of education completed:

Bachelor's	Master's	PhD	JD	Other: _____
344 (23.2%)	640 (43.1%)	485 (32.7%)	10 (0.7%)	6 (0.4%)

44. How could the integrity of scientific work produced by the EPA best be improved?

855 (53.9%) respondents provided written comments in response to this question.

The full text of these essay responses is available at <http://www.ucsusa.org/surveys>.

APPENDIX B

Selected Survey Results

The tables below provide detailed data on responses to survey questions referenced in the main text. The first set of tables shows the total number of responses to the questions, broken down by offices or locations within the EPA. The second set of tables provides cross-comparisons between two survey questions. Additional survey data and analyses are available online at <http://www.ucsusa.org/surveys>.

Selected Responses by Office and Location

These tables break down survey questions based on respondents' office or location within the EPA. The leftmost column lists the response options for the given question. The column labeled "EPA total" lists the total number of respondents who chose each available option. The row labeled "total" lists the number of respondents answering the question, and the total respondents from each office or location.

The breakdown into individual offices and locations for each question is not complete because of the large number of EPA offices and locations. For simplicity, we analyze only the results for offices or locations specifically mentioned in the main text. The values in the right-hand columns therefore do not add up to the value in the "EPA total" column. The one exception is the breakdown for question 39, which includes all responses to that question.

The percentages in each table are based on the total number of scientists from each office or location who answered each question.

Cross-Comparisons of Selected Responses

These tables compare responses to two survey questions. The two columns on the left side list the first survey question, the available responses,

and the total number of scientists who chose each option. The columns on the right side list the second survey question, the available responses, and the total number of respondents who chose each option. The row labeled "total" provides the total number of respondents on the first question, and the total number of respondents for each option on the second question. The totals for the first question will not always equal the sum of respondents for the second question because a given respondent may not have answered both questions.

Acronyms

NCEA	National Center for Environmental Assessment
NRMRL	National Risk Management Research Laboratory
NERL	National Exposure Research Laboratory
NHEERL	National Health and Environmental Effects Research Laboratory
ORD	Office of Research and Development
OAR	Office of Air and Radiation
Water	Office of Water
OSWER	Office of Solid Waste and Emergency Response
OPPTS	Office of Prevention, Pesticides and Toxic Substances
OAQPS	Office of Air Quality Planning and Standards (OAR)
Program Offices	Combined responses from OAR, Water, OSWER and OPPTS
Admin	Office of the Administrator
HQ	EPA Headquarters in Washington, DC
RTP	EPA facilities at Research Triangle Park, North Carolina
Cincinnati	EPA facilities at Cincinnati, Ohio

QUESTION 5: I am allowed to publish work in peer-reviewed scientific journals regardless of whether it adheres to agency policies or positions.

	EPA Total	ORD Labs & Centers				ORD Total	Program Offices	HQ Total	Regions Total
		NCEA	NRMRL	NERL	NHEERL				
Strongly Agree	132 8.4%	2 3.9%	10 12.3%	12 14.3%	33 24.3%	62 14.9%	34 6.3%	43 7.2%	28 5.1%
Agree	350 22.2%	18 35.3%	35 43.2%	27 32.1%	52 38.2%	148 35.5%	101 18.8%	120 20.0%	83 15.0%
No Opinion	464 29.4%	7 13.7%	16 19.8%	21 25.0%	25 18.4%	84 20.1%	172 32.0%	185 30.8%	191 34.5%
Disagree	203 12.9%	22 43.1%	12 14.8%	17 20.2%	13 9.6%	79 18.9%	65 12.1%	80 13.3%	52 9.4%
Strongly Disagree	88 5.6%	2 3.9%	6 7.4%	4 4.8%	5 3.7%	22 5.3%	39 7.3%	40 6.7%	24 4.3%
Not Applicable	341 21.6%	0 0.0%	2 2.5%	3 3.6%	8 5.9%	22 5.3%	126 23.5%	133 22.1%	176 31.8%
Total	1578	51	81	84	136	417	537	601	554

QUESTION 13: Compared to five years ago, the effectiveness of my division or office has:

	EPA Total	ORD Labs & Centers				Program Offices				Regions Total
		NCEA	NRMRL	NERL	NHEERL	OAR	Water	OSWER	OPPTS	
Increased	321 20.6%	9 18.0%	15 18.5%	19 22.9%	17 12.8%	32 21.8%	6 6.5%	9 13.4%	79 35.6%	108 19.6%
Stayed the Same	389 24.9%	8 16.0%	13 16.1%	15 18.1%	27 20.3%	44 29.9%	23 24.7%	18 26.9%	60 27.0%	148 26.8%
Decreased	696 44.6%	27 54.0%	47 58.0%	33 39.8%	77 57.9%	56 38.1%	41 44.1%	33 49.3%	64 28.8%	262 47.5%
No Opinion	155 9.9%	6 12.0%	6 7.4%	16 19.3%	12 9.0%	15 10.2%	23 24.7%	7 10.4%	19 8.6%	34 6.2%
Total	1561	50	81	83	133	147	93	67	222	552

QUESTION 14: The EPA division where I work has sufficient resources to adequately perform its mission of protecting human health and the environment.

	EPA Total	ORD Labs & Centers				Program Offices				Regions Total
		NCEA	NRML	NERL	NHEERL	OAR	Water	OSWER	OPPTS	
Strongly Agree	61 3.9%	2 4.0%	2 2.5%	5 6.0%	3 2.3%	8 5.5%	1 1.1%	0 0.0%	11 5.0%	16 2.9%
Agree	403 25.9%	25 50.0%	15 18.8%	19 22.9%	26 19.7%	33 22.6%	33 35.1%	10 14.9%	83 37.6%	122 22.1%
No Opinion	125 8.0%	5 10.0%	2 2.5%	9 10.8%	9 6.8%	17 11.6%	6 6.4%	6 9.0%	16 7.2%	42 7.6%
Disagree	675 43.3%	12 24.0%	34 42.5%	40 48.2%	66 50.0%	66 45.2%	40 42.6%	32 47.8%	76 34.4%	260 47.0%
Strongly Disagree	294 18.9%	6 12.0%	27 33.8%	10 12.1%	28 21.2%	22 15.1%	14 14.9%	19 28.4%	35 15.8%	113 20.4%
Total	1558	50	80	83	132	146	94	67	221	553

QUESTION 15: The trend toward contracting out scientific work is harming the effectiveness of my division.

	EPA Total	ORD Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
			NCEA	NRML	NERL	NHEERL			
Strongly Agree	203 13.1%	75 18.3%	5 10.0%	24 29.6%	14 16.9%	25 18.9%	63 11.9%	61 10.4%	61 11.1%
Agree	371 23.9%	123 30.1%	15 30.0%	24 29.6%	27 32.5%	46 34.8%	104 19.7%	111 18.8%	131 23.9%
No Opinion	389 25.0%	69 16.9%	8 16.0%	13 16.1%	18 21.7%	22 16.7%	127 24.1%	146 24.8%	170 31.0%
Disagree	385 24.8%	92 22.5%	17 34.0%	13 16.1%	14 16.9%	26 19.7%	170 32.2%	184 31.2%	106 19.3%
Strongly Disagree	66 4.2%	21 5.1%	4 8.0%	5 6.2%	4 4.8%	3 2.3%	28 5.3%	34 5.8%	16 2.9%
Not Applicable	141 9.1%	29 7.1%	1 2.0%	2 2.5%	6 7.2%	10 7.6%	36 6.8%	53 9.0%	65 11.8%
Total	1555	409	50	81	83	132	528	589	549

QUESTION 16: **The recent changes and closures in the EPA library system have impaired my ability to do my job.**

	EPA Total	Regions 5, 6 & 7	All Other Regions	HQ OPPTS	HQ Total	ORD Total	Program Offices	RTP Total	Cinn. Total
Strongly Agree	154 9.9%	19 10.6%	34 9.1%	24 10.9%	63 10.7%	46 11.2%	44 8.3%	5 2.9%	23 22.1%
Agree	401 25.8%	67 37.4%	111 29.8%	46 20.9%	139 23.6%	93 22.7%	112 21.3%	30 17.1%	23 22.1%
No Opinion	439 28.2%	34 19.0%	113 30.3%	67 30.5%	176 29.9%	102 24.9%	170 32.3%	50 28.6%	20 19.2%
Disagree	462 29.7%	49 27.4%	99 26.5%	63 28.6%	163 27.7%	143 35.0%	157 29.8%	77 44.0%	31 29.8%
Strongly Disagree	101 6.5%	10 5.6%	16 4.3%	20 9.1%	47 8.0%	25 6.1%	44 8.3%	13 7.4%	7 6.7%
Total	1557	179	373	220	588	409	527	175	104

QUESTION 19: **Expert advice from independent scientific advisory committees is heeded and incorporated into regulatory decisions.**

	EPA Total	ORD Total	RTP OAQPS	Program Offices	HQ Total	Regions Total
Always	55 3.6%	12 3.0%	0 0.0%	30 5.8%	35 6.0%	11 2.0%
Frequently	560 36.5%	144 35.9%	20 34.5%	229 44.0%	250 43.0%	163 29.9%
Occasionally	439 28.6%	112 27.9%	25 43.1%	129 24.8%	151 25.9%	174 31.9%
Seldom	105 6.8%	25 6.2%	4 6.9%	30 5.8%	34 5.8%	43 7.9%
Never	9 0.6%	2 0.5%	0 0.0%	5 1.0%	5 0.9%	2 0.4%
Don't Know	368 24.0%	106 26.4%	9 15.5%	98 18.8%	107 18.4%	152 27.9%
Total	1536	401	58	521	582	545

QUESTION 24: **EPA policies allow scientists to speak freely to the news media about their research findings.**

	EPA Total	ORD Labs & Centers				ORD Total	Program Offices	HQ Total	Regions Total
		NCEA	NRML	NERL	NHEERL				
Strongly Agree	29 1.9%	0 0.0%	0 0.0%	0 0.0%	2 1.6%	8 2.0%	9 1.7%	10 1.7%	11 2.0%
Agree	168 10.9%	2 4.0%	6 7.7%	7 8.6%	14 10.9%	40 10.0%	48 9.2%	55 9.5%	75 13.8%
No Opinion	395 25.7%	7 14.0%	13 16.7%	13 16.1%	17 13.2%	60 15.0%	146 28.0%	155 26.6%	169 31.0%
Disagree	492 32.0%	22 44.0%	34 43.6%	31 38.3%	55 42.6%	160 39.9%	154 29.6%	181 31.1%	155 28.4%
Strongly Disagree	291 18.9%	17 34.0%	23 29.5%	25 30.9%	29 22.5%	107 26.7%	101 19.4%	111 19.1%	74 13.6%
Unsure	161 10.5%	2 4.0%	2 2.6%	5 6.2%	12 9.3%	26 6.5%	63 12.1%	70 12.0%	61 11.2%
Total	1536	50	78	81	129	401	521	582	545

QUESTION 31: **I have been directed to inappropriately exclude or alter technical information from an EPA scientific document.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRML	NERL	NHEERL			
Frequently	23 1.5%	3 6.0%	1 1.3%	0 0.0%	0 0.0%	16 3.1%	16 2.8%	2 0.4%
Occasionally	71 4.7%	5 10.0%	3 3.9%	4 5.1%	6 4.6%	29 5.7%	35 6.2%	18 3.4%
Seldom	130 8.6%	9 18.0%	8 10.4%	1 1.3%	6 4.6%	60 11.8%	63 11.1%	36 6.7%
Never	1119 74.2%	29 58.0%	57 74.0%	64 81.0%	106 81.5%	351 68.8%	392 68.9%	419 78.5%
Not Applicable	166 11.0%	4 8.0%	8 10.4%	10 12.7%	12 9.2%	54 10.6%	63 11.1%	59 11.0%
Total	1509	50	77	79	130	510	569	534

QUESTION 32: **Selective or incomplete use of data to justify a specific regulatory outcome.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRMRL	NERL	NHEERL			
Frequently	71 4.7%	2 4.0%	0 0.0%	3 3.8%	0 0.0%	40 7.9%	41 7.3%	19 3.6%
Occasionally	214 14.3%	8 16.0%	5 6.6%	9 11.5%	9 7.0%	86 17.0%	100 17.7%	66 12.4%
Seldom	247 16.5%	14 28.0%	10 13.2%	3 3.8%	8 6.2%	108 21.3%	110 19.5%	84 15.8%
Never	736 49.1%	17 34.0%	46 60.5%	44 56.4%	75 58.1%	213 42.0%	243 43.1%	287 53.9%
Not Applicable	232 15.5%	9 18.0%	15 19.7%	19 24.4%	37 28.7%	60 11.8%	70 12.4%	76 14.3%
Total	1500	50	76	78	129	507	564	532

QUESTION 33: **Pressure to ignore impacts of a regulation on sensitive populations.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRMRL	NERL	NHEERL			
Frequently	33 2.2%	3 6.0%	0 0.0%	2 2.6%	1 0.8%	14 2.8%	17 3.0%	10 1.9%
Occasionally	120 8.0%	5 10.0%	2 2.6%	2 2.6%	2 1.6%	49 9.6%	62 11.0%	44 8.3%
Seldom	158 10.5%	3 6.0%	4 5.3%	5 6.4%	3 2.3%	80 15.7%	74 13.1%	54 10.2%
Never	904 60.3%	30 60.0%	54 71.1%	47 60.3%	84 65.6%	277 54.4%	319 56.4%	334 62.9%
Not Applicable	285 19.0%	9 18.0%	16 21.1%	22 28.2%	38 29.7%	89 17.5%	94 16.6%	89 16.8%
Total	1500	50	76	78	128	509	566	531

QUESTION 34: **Changes or edits during review that change the meaning of scientific findings.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRML	NERL	NHEERL			
Frequently	53 3.5%	7 14.3%	1 1.3%	2 2.6%	0 0.0%	27 5.3%	37 6.6%	8 1.5%
Occasionally	179 12.0%	6 12.2%	5 6.6%	4 5.1%	6 4.7%	87 17.2%	93 16.5%	52 9.8%
Seldom	250 16.7%	12 24.5%	12 15.8%	14 17.9%	13 10.1%	109 21.5%	114 20.2%	70 13.2%
Never	787 52.6%	22 44.9%	48 63.2%	45 57.7%	86 66.7%	229 45.3%	260 46.1%	296 55.8%
Not Applicable	228 15.2%	2 4.1%	10 13.2%	13 16.7%	24 18.6%	54 10.7%	60 10.6%	104 19.6%
Total	1497	49	76	78	129	506	564	530

QUESTION 35: **Disappearance/unusual delay in the release of websites, press releases, reports or other science-based materials.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRML	NERL	NHEERL			
Frequently	84 5.6%	15 30.0%	2 2.6%	8 10.3%	4 3.1%	36 7.1%	45 8.0%	14 2.6%
Occasionally	215 14.4%	8 16.0%	11 14.5%	12 15.4%	13 10.2%	73 14.4%	85 15.1%	74 14.0%
Seldom	221 14.8%	7 14.0%	14 18.4%	5 6.4%	8 6.3%	94 18.6%	97 17.2%	78 14.7%
Never	709 47.4%	14 28.0%	40 52.6%	36 46.2%	74 57.8%	215 42.5%	240 42.6%	270 50.9%
Not Applicable	267 17.8%	6 12.0%	9 11.8%	17 21.8%	29 22.7%	88 17.4%	96 17.1%	94 17.7%
Total	1496	50	76	78	128	506	563	530

QUESTION 37: **Statements by EPA officials that misrepresent scientists' findings.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRMRL	NERL	NHEERL			
Frequently	92 6.2%	4 8.0%	4 5.2%	7 9.0%	7 5.5%	35 7.0%	38 6.8%	28 5.3%
Occasionally	302 20.3%	18 36.0%	14 18.2%	11 14.1%	23 18.0%	109 21.7%	128 22.8%	100 19.0%
Seldom	346 23.2%	15 30.0%	17 22.1%	16 20.5%	20 15.6%	115 22.9%	137 24.4%	125 23.7%
Never	511 34.3%	8 16.0%	33 42.9%	33 42.3%	46 35.9%	178 35.4%	183 32.6%	179 34.0%
Not Applicable	240 16.1%	5 10.0%	9 11.7%	11 14.1%	32 25.0%	66 13.1%	76 13.5%	95 18.0%
Total	1491	50	77	78	128	503	562	527

QUESTION 38: **Situations in which scientists have actively objected to, resigned from or removed themselves from a project because of pressure to change scientific findings.**

	EPA Total	ORD Labs & Centers				Program Offices	HQ Total	Regions Total
		NCEA	NRMRL	NERL	NHEERL			
Frequently	29 1.9%	5 10.0%	1 1.3%	2 2.6%	1 0.8%	10 2.0%	15 2.7%	7 1.3%
Occasionally	162 10.9%	5 10.0%	8 10.5%	5 6.4%	7 5.5%	67 13.3%	75 13.3%	56 10.6%
Seldom	231 15.5%	14 28.0%	7 9.2%	7 9.0%	7 5.5%	86 17.1%	94 16.7%	96 18.3%
Never	807 54.2%	18 36.0%	51 67.1%	50 64.1%	91 71.7%	259 51.5%	287 51.1%	266 50.6%
Not Applicable	259 17.4%	8 16.0%	9 11.8%	14 17.9%	21 16.5%	81 16.1%	91 16.2%	101 19.2%
Total	1488	50	76	78	127	503	562	526

QUESTION 39: How many activities or situations like those listed above have you personally experienced during the past 5 years?

	EPA Total	Headquarters					Office of Research & Development					
		OAR	Water	OSWER	OPPTS	Other	HQ	NCEA	NRML	NERL	NHEERL	Other
0	581 39.5%	32 23.5%	24 26.7%	22 34.4%	80 39.0%	21 32.3%	7 23.3%	8 16.3%	34 45.3%	39 50.6%	78 61.4%	13 44.8%
1-5	655 44.6%	83 61.0%	45 50.0%	32 50.0%	90 43.9%	29 44.6%	16 53.3%	29 59.2%	31 41.3%	26 33.8%	41 32.3%	14 48.3%
6-10	175 11.9%	14 10.3%	17 18.9%	5 7.8%	26 12.7%	14 21.5%	4 13.3%	5 10.2%	9 12.0%	9 11.7%	5 3.9%	1 3.4%
11-20	34 2.3%	4 2.9%	2 2.2%	4 6.3%	6 2.9%	1 1.5%	2 6.7%	2 4.1%	0 0.0%	1 1.3%	2 1.6%	0 0.0%
More Than 20	25 1.7%	3 2.2%	2 2.2%	1 1.6%	3 1.5%	0 0.0%	1 3.3%	5 10.2%	1 1.3%	2 2.6%	1 0.8%	1 3.4%
Total	1470	136	90	64	205	65	30	49	75	77	127	29

	Regional Offices									
	1	2	3	4	5	6	7	8	9	10
0	12 44.4%	23 48.9%	15 41.7%	19 45.2%	50 47.2%	19 55.9%	16 50.0%	15 37.5%	21 26.6%	33 41.2%
1-5	11 40.7%	22 46.8%	13 36.1%	19 45.2%	45 42.5%	9 26.5%	11 34.4%	17 42.5%	33 41.8%	39 48.8%
6-10	4 14.8%	2 4.3%	6 16.7%	3 7.1%	10 9.4%	6 17.6%	3 9.4%	5 12.5%	19 24.1%	8 10.0%
11-20	0 0.0%	0 0.0%	2 5.6%	0 0.0%	0 0.0%	0 0.0%	1 3.1%	2 5.0%	5 6.3%	0 0.0%
More Than 20	0 0.0%	0 0.0%	0 0.0%	1 2.4%	1 0.9%	0 0.0%	1 3.1%	1 2.5%	1 1.3%	0 0.0%
Total	27	47	36	42	106	34	32	40	79	80

Note: OAR includes OAQPS and NVFEL respondents, who are not located at EPA headquarters.

Breakdown of Question 40 Responses According to Respondents' Length of Time Working at the EPA (Question 42)

Question 40: If you compare the past 5 years to the 5-year period prior to it (from 5 to 10 years ago), would you say activities or situations like those listed above are occurring:		Question 42: I have been working at the EPA for:				
	Question 40 Total	Less Than One Year	1–5 Years	6–10 Years	11–15 Years	More Than 15 Years
More Often than Before	508 34.4%	0 0.0%	16 6.9%	78 31.3%	54 40.3%	355 42.9%
About the Same as Before	330 22.4%	1 4.8%	11 4.7%	46 18.5%	28 20.9%	241 29.1%
Less Often than Before	65 4.4%	0 0.0%	6 2.6%	16 6.4%	9 6.7%	34 4.1%
Don't Know	572 38.8%	20 95.2%	200 85.8%	109 43.8%	43 32.1%	197 23.8%
Total Respondents	1464	21	233	249	134	827

Breakdown of Question 5 Responses According to Respondents' Length of Time Working at the EPA (Question 42)

Question 5: I am allowed to publish work in peer-reviewed scientific journals regardless of whether it adheres to agency policies or positions.		Question 42: I have been working at the EPA for:				
	Question 40 Total	Less Than One Year	1–5 Years	6–10 Years	11–15 Years	More Than 15 Years
Strongly Agree	132 8.4%	4 19.1%	27 11.3%	24 9.5%	7 5.1%	60 7.2%
Agree	350 22.2%	5 23.8%	58 24.4%	57 22.5%	38 27.9%	178 21.4%
No Opinion	464 29.4%	7 33.3%	74 31.1%	69 27.3%	33 24.3%	242 29.2%
Disagree	203 12.9%	1 4.8%	21 8.8%	38 15.0%	25 18.4%	109 13.1%
Strongly Disagree	88 5.6%	0 0.0%	13 5.5%	13 5.1%	6 4.4%	52 6.3%
Not Applicable	341 21.6%	4 19.1%	45 18.9%	52 20.6%	27 19.9%	189 22.8%
Total Respondents	1578	21	238	253	136	830

Breakdown of Question 21 Responses According to the Number of Incidents of Political Interference Experienced during the Past Five Years (Question 39)

Question 21: Over the past few years my personal job satisfaction at the EPA has:		Question 39: How many activities or situations like those listed above have you personally experienced during the past 5 years?				
	Question 21 Total	0	1–5	6–10	11–20	More Than 20
Increased	328 21.3%	175 30.1%	114 17.4%	19 10.9%	4 11.8%	2 8.0%
Decreased	670 43.5%	152 26.2%	317 48.5%	134 76.6%	24 70.6%	19 76.0%
Stayed the Same	501 32.6%	233 40.1%	210 32.1%	22 12.6%	6 17.6%	2 8.0%
No Opinion	40 2.6%	21 3.6%	13 2.0%	0 0.0%	0 0.0%	2 8.0%
Total Respondents	1539	581	654	175	34	25

APPENDIX C

EPA Response to UCS Survey Mailing

In response to the initial survey mailing from UCS and the Center for Survey Statistics and Methodology at Iowa State, managers at several EPA offices and locations sent emails urging their employees not to fill out the survey. Both the EPA Office of General Counsel and the Computer Security Office later reviewed the survey website, questions, and procedures, and

concluded that there were no ethical, legal, or security reasons why EPA employees could not complete the survey.

The following email message was sent from Peggy Love to the EPA's OGC National Ethics Officials on June 28, 2007, and was forwarded to numerous EPA employees:

I have learned that there are no legal reasons to prevent EPA employees from completing the attached research study of EPA Scientists. From an ethics perspective, the survey recommends that folks complete it on their personal time and that would fall under EPA's limited use policy.

This is not a government sponsored survey. The Union of Concerned Scientists is funded by large organizations which are listed in their annual report. The e-mail addresses of EPA employees were obtained from public sources including the locator and old EPA phone books which are available on Amazon.com. The results of the survey will be compiled by the Center for Survey Statistics & Methodology (CSSM) at Iowa State University and presented to the Union of Concerned Scientists. A meeting will be requested with the Administrator to share the results of the survey and the results will be posted on their website.

Please advise your folks that if they received this survey and would like to complete it, they may do so.

Thank you.
Peggy Love
Attorney (Ethics)
Deputy Ethics Official (DEO)
Office of General Counsel
7439 AR-N
(202) 564-1784

APPENDIX D

CSSM Methodology Report

This appendix provides the Final Methodology and Response Report, completed by the Center for Survey Statistics and Methodology at Iowa State University after the close of the survey. The CSSM report offers additional detail on the survey design, implementation, data collection, and analysis. This appendix also includes the

text that appeared on the first and last screens of the Web-based survey, as well as the initial email and letter sent to survey recipients.

The UCS report specifies a different total response rate than the CSSM report because UCS excluded 395 individuals whose email address returned as undeliverable.

**A Survey of Scientists
Employed by the Environmental Protection Agency**

**Final Methodology and Response Report
January 30, 2008**

Prepared for the
Union of Concerned Scientists

Prepared by
JM Larson and SM Nusser
Survey Research Services
Center for Survey Statistics and Methodology
Iowa State University

I. SURVEY DESIGN AND ADMINISTRATION

Background.

The Union of Concerned Scientists (UCS) is a nonprofit organization based in Washington, DC to promote the production and application of scientific research within U.S. federal agencies. During the past several years, the Scientific Integrity Unit of the UCS has conducted mail surveys of scientists employed by the Food and Drug Administration and the U.S. Fish and Wildlife Service, as well as a survey of climate scientists employed by a variety of agencies. In 2007, the UCS contracted with Iowa State University's Center for Survey Statistics and Methodology (CSSM) to collaborate with them on a survey of scientists employed by the Environmental Protection Agency (EPA). CSSM's responsibilities were to consult in project development, to implement the data collection process as a neutral third party, and to assist in data analysis. This report describes the project staff, the procedures followed for project development and data collection, and the final survey outcomes.

Project Staff.

The primary UCS representatives involved in this project are Francesca Grifo, Director of the UCS Scientific Integrity Program, and Tim Donaghy, Analyst with the UCS Scientific Integrity Program. CSSM staff members involved in the Survey of EPA Scientists are listed in the table below.

Table 1. Iowa State University Center for Survey Statistics & Methodology Project Staff.

Name	Title	Project Responsibilities
Janice Larson	Survey Manager	Project Management
Sarah Nusser, PhD	Professor of Statistics, Director of CSSM	Data Analyst Consultant
Jean Opsomer, PhD	Professor of Statistics	Sampling & Methodology Consultant
Rick Charles	Programmer	Survey Programming
Allison Tyler	Data Collection Supervisor	Data Collection Implementation
Karen Fliehler	Quality Assurance Supervisor	Project Monitoring
Glenda Ashley	Secretarial Support	Key Entry
Cherié Alf	Graduate Research Assistant	Analysis Programming
Russell Hoffman	Systems Support Analyst	Systems Support
Dianne Anderson	Assistant Director, CSSM	CSSM Administration Liaison

Sample Design.

The sample for this project was compiled by UCS staff by using public records available online. The UCS staff referenced EPA departmental web sites and identified potentially eligible individuals through job titles and descriptions, authorship of scientific articles and reports, and other specific scientific references. Although efforts were made to obtain a complete sample of EPA scientists, it was acknowledged that the sample would likely contain some non-scientists and omit some scientists due to the manner in which it was compiled. In addition, contact information consisted exclusively of work addresses and e-mail addresses. The completed sample was delivered to CSSM, where it was cleaned and prepared for data collection. The definition of “scientist” or “scientific work” from an eligibility perspective was of necessity somewhat vague, so sampled individuals contacted for the study may have interpreted the survey’s application to themselves differently.

Survey Design.

CSSM staff proposed implementing a Web survey format rather than mail. It was assumed that most people employed in a scientific field would likely be comfortable with computers and Web applications. Both paper and Web surveys can raise confidentiality concerns, particularly when all contacts are directed at work addresses; however it was surmised that this population might view a Web survey as equally if not more secure than paper. Assigned usernames and passwords would be required to access the survey online, and both the survey and data submitted would be stored on a secure server at Iowa State University.

The initial contact with sampled scientists would consist of a paper letter on Iowa State University letterhead with the UCS logo added. The letter would assure sampled scientists of the legitimacy of the project and serve as a tangible reminder to complete the survey. All other contacts would be via e-mail.

II. SURVEY IMPLEMENTATION AND PROCEDURES

Survey Development and Programming.

The EPA survey was developed by UCS staff in consultation with CSSM. Many of the questions were similar to those used by the UCS in previous surveys, with revisions primarily relating to its EPA application and neutrality issues. The survey (Appendix A) consisted of approximately 40 items. CSSM staff submitted a project application with copies of the final survey document and proposed correspondence to the Iowa State University Institutional Review Board, and project approval was received on June 14, 2007.

The online survey was programmed in June of 2007 by CSSM staff. The online survey instrument pages were coded with standard HTML, with JavaScript for client-side controls and Perl CGI scripting for server side controls. The instrument was deployed to the Center's web server.

The layout of the web instrument was designed using TDM (Tailored Design Method) protocols for maximizing respondent comprehension and ease of navigation with online forms. Many of the questions were constructed in a table format, and a minimal amount of scrolling was required to view some questions.

CSS (Cascading Style Sheets) were used to control layout, font size and style, and color, thus accommodating differing window sizes and screen resolutions, and allowing users who need to override these choices for accessibility reasons to do so.

The online survey was tested and adjustments were made as needed, with a final version available on June 25, 2007.

Site Security.

Access to Internet survey sites at Iowa State University is restricted through the requirement of digital authenticated authorization. For this survey, each sampled EPA scientist was assigned a unique username and password to be entered at the survey homepage in order to gain access to the survey itself. The username served as a Case ID, and a combination of the two made survey access by unauthorized persons highly unlikely. Instructions on the survey homepage and in the advance letter and e-mails provided a name, toll-free telephone number, and e-mail address for Center project staff who would be available to assist with any difficulties encountered in accessing the survey as well as to answer questions about the survey itself.

Data Collection Procedure.

The sample of EPA scientists was provided to CSSM in three waves due to the difficulty of compiling sample information. Each wave was checked by CSSM staff and duplicate listings were removed from the samples before they were released for use. The first wave was comprised of 4838 names, the second contained 733 names, and the third contained 464, bringing the total sample size to 6035. The samples contained names, location/division, and contact information. Each sample member was sent a letter printed on CSSM letterhead with the UCS logo in the lower right corner. The letter (Appendix B)

explained the purpose of the survey, the confidential and voluntary nature of the survey, and procedures for completing it. It included the survey web site and a unique user name and password to use to access the survey. Contact information was provided for both CSSM and UCS staff and recipients were encouraged to contact project staff if they had questions or felt they had been contacted in error. A few days later email invitations with the same information were sent to the same individuals. The e-mail contained a link to the survey web site. Apparently some letters reached their destination within a few days, while others were delayed and not delivered for two or more weeks. This seemed to be a function of varying protocols within different EPA units; and based on the e-mails and telephone calls received by CSSM, it resulted in some confusion or concern for some people.

Approximately 450 e-mails bounced back to CSSM as undeliverable. These were checked with the online EPA locator to verify the accuracy of the address and were resent if corrected addresses were available. Follow-up emails (Appendix C, D, and E) were sent to remind employees of the opportunity to complete the survey and also to advise them that the EPA legal and computer security departments had ruled that the survey was legal and posed no security threat to EPA computers or employees.

The three sample waves followed the same contact procedures and protocols but with varying contact dates. These are listed in the table below.

Table 2. Contact Schedule for Sample Waves.

	Wave 1 N = 4838	Wave 2 N = 733	Wave 3 N = 464
Letter sent (US Mail)	6/25/07	7/20/07	8/8/07
E-Mail notification	6/27/07	7/27/07	8/14/07
E-Mail reminder 1	7/11/07	8/2/07	8/20/07
E-Mail reminder 2	7/18/07	8/10/07	8/24/07
E-Mail reminder 3	7/30/07	8/14/07	8/30/07

CSSM staff received and responded to over 600 e-mails and telephone calls from individuals who requested additional information about the survey or felt that the survey did not apply to them. Respondents who were not employed as scientists or in a science-related capacity with the EPA were classified as ineligible and eliminated from future contacts.

Respondents were allowed to access their survey as often as they wished using assigned usernames and passwords. If a respondent accessed the survey multiple times, any responses from earlier visits were stored and visible upon re-entering the survey. In addition, answers to specific items could be changed as often as desired. All attempts to access the survey, both successful and unsuccessful, as well as all responses were stored in the survey database.

The data collection period closed on September 7, 2007. The resulting data file was edited and cleaned in SAS using frequencies and cross tabulations. The final data delivery consisted of an Excel data file, frequency file, open text file, and coding manual.

III. SURVEY PROCESS OUTCOMES AND RESPONSE RATE

Final results are itemized in Table 3 below. There were 221 individuals classified as ineligible, because they were not employed at the EPA in a scientific capacity. This resulted in an eligible sample of 5814. There were 395 cases in which all e-mail messages bounced as undeliverable and no locating information was available. Although it is suspected that these individuals are no longer employed by the EPA and would therefore be ineligible, CSSM staff was unable to verify that information and therefore those cases are considered part of the overall survey non-response. There were 10 individuals who were unreachable on special assignment for a period of several months, including the entire data collection period, and were classified accordingly. These are also considered part of overall survey non-response. Included among the 3750 general non-respondents are 18 individuals who started the survey but did not complete enough of it to be included in the final data set. In addition, 73 individuals actively refused to participate. Completed surveys were received from 1586 EPA employees.

When adjusted for eligibility, 1586 eligible responses were received from the adjusted eligible sample of 5814, for a response rate of 27.3%. The response rate is calculated as the ratio of completed surveys to the total eligible sample.

Table 3. Final Dispositions and Response Rate.

	#	%	#	%
Total Sample	6035	100.0%		
Ineligible	221	3.7%		
Total Eligible Sample	5814	96.3%		100.0%
Refusals			73	1.3%
Unavailable for study duration			10	0.2%
No E-mail available			395	6.8%
Non-Response			3750	64.5%
Completed Surveys			1586	27.3%
Response Rate	27.3 %			

IV. SURVEY ANALYSIS

Data analyses were conducted as requested by UCS. This involved defining variables for analysis, computing tabular summaries and testing for independence among variables. All analyses were run in the SAS statistical analysis system.

Derived analysis variables.

In most cases, responses from the survey could be used to summarize the data. In some cases, it was necessary to create variables from the survey responses for analysis.

In response to question 3, which asked the employee to identify what their scientific work at the EPA primarily involves, many respondents gave multiple responses. Indicator variables were created for each of the fifteen possible responses to the question so that the total number of individuals whose work involved a task could be calculated. These fifteen indicator variables were used in the analyses as the responses to question 3.

A new variable was created for the identification of the individual's organizational unit. The organizational unit was initially defined as the combination of the employee's location and division. For some of the possible combinations of location and division, the cell size was too small to be used in the analyses. In order to create adequate sample sizes, some of the organizational units were collapsed. Collapsing rules were defined by UCS and are listed in Table 4.

Table 4. Organizational Units Codes for Collapsed Cells.

Location	Division	New Organizational Unit
Ada	NRMRL	Labs Other
Las Vegas	NERL	Labs Other
Michigan	NHEERL	Labs Other
Athens	all	Labs Other
Ann Arbor	all	Labs Other
Cincinnati	NCEA	Cincinnati Other
Cincinnati	NHSRC	Cincinnati Other
Cincinnati	NERL	Cincinnati Other
RTP	NCCT	RTP Other
RTP	NCEA	RTP Other
RTP	NHSRC	RTP Other
RTP	NRMRL	RTP Other
HQ	OARM	HQ Other
HQ	NCEA	HQ ORD
HQ	NCER	HQ ORD

There is an interest in knowing the results for the divisions: NHEERL, NERL, NRMRL, and NCEA. These divisions were represented in a new variable so that the analyses could be performed on these specific divisions separately.

The variables for questions 1 (major field of training), 41 (employment grade level), and 43 (highest education level) had been recoded to incorporate some of the “Other” responses and to make cell sizes large enough for the analyses. These recoded values used in the analysis.

Frequency Tables.

Basic frequencies were run for all variables. For each variable, summaries were generated for the frequency of respondents for each code, the percentage of respondents for each code, standard errors for the percentage, and 95% confidence intervals for the percentage.

Also of interest were cross-tabulations of all variables with the organizational unit and with questions 1 (major field of training), 2 (percentage of scientific job duties), 3 (primary scientific work), 14 (perceived resource levels), 39 (number of political situations), 41 (employment grade level), 42 (years worked at EPA), and 43 (highest education level). The indicator variables were used for question 3. Once again, the frequency, percentage, standard error for the percentage, and 95% confidence intervals for the percentage for the crossed variables were produced.

In order to be able to calculate the percentage of respondents for whom the question was deemed applicable, the not applicable responses were removed and the frequencies were reproduced for questions 5 (perception of publication freedom) and 25-38 (political interference questions).

Tests for independence.

To test for independence between the cross-tabulated responses, a chi-square test was performed for each of the variables against all other variables. In some cases the cell size is too small for the test to be considered accurate, as indicated by the SAS output. UCS was advised to ignore these results.

[Introductory Screen]

**Iowa State University
Center for Survey Statistics & Methodology**

Survey of EPA Scientists

Thank you for your willingness to participate in the Survey of Scientists working with the U.S. Environmental Protection Agency (EPA). Please complete this survey on your personal time.

The purpose of this survey is to better understand the role of science at the EPA and the contributions of EPA scientists to policy decision-making. The information you provide will be combined with responses from other EPA scientists and reported in summary form only. Contact information will be used only during the data collection period and will be kept strictly confidential by researchers at Iowa State University. Any connection between your identity and your survey responses will be destroyed after data collection is completed and before survey results are made public.

- Please use the User name and Password that appear in the letter and/or e-mail that you received from Iowa State University to enter the survey.
- Click on the **Continue** button at the bottom of each screen to proceed. You may have to scroll down to see the Continue button on some screens.

After beginning the survey, you may exit and complete the remaining items later if you like, but you must **use your assigned survey user name and password each time to re-enter**.

Click on the Start button to start the survey.

IF you have any difficulties with this form, please contact Allison Tyler, atyler@iastate.edu, phone 877-578-8848 (toll-free).

[Final Screen]**Iowa State University
Center for Survey Statistics & Methodology****Survey of EPA Scientists**

Thank you for your participation. Your responses have been recorded.

If you have any questions about the survey procedures and methodology, please contact the Iowa State University Center for Survey Statistics and Methodology at (877) 578-8848 (toll-free).

If you have questions about survey results please contact Francesca T. Grifo. Contact information appears below: All personal communications with UCS are completely confidential.

Francesca T. Grifo
Senior Scientist
Director, Scientific Integrity Program
Union of Concerned Scientists
1707 H Street NW, Suite 600
Washington, DC 20006
Tel (202) 331-5446
Fax (202) 223-6162

To view results of previous surveys conducted with scientists at other federal agencies, go to www.ucsusa.org/scientific_integrity

Initial Letter/E-Mail

[DATE]

Dear [NAME],

Researchers at Iowa State University's Center for Survey Statistics & Methodology (CSSM), together with the Union of Concerned Scientists (UCS), are conducting a web survey with over 7000 scientists and engineers working for the U.S. Environmental Protection Agency (EPA). With your help, we hope to better understand the role of science at the EPA and the contributions of EPA scientists. The survey is part of a broad effort to examine how public agencies conduct and use science in decision-making in order to better serve the American public.

This survey is an opportunity for the voice of EPA scientists and engineers to be heard. **Please complete the survey on your personal time, no later than August 31, 2007.** It should take about 10 minutes. Random logins and passwords have been assigned to each scientist to ensure that only EPA employees have access to the web-survey. To complete the survey, go to the following URL and login using the username and password provided below. (They are case sensitive.)

https://cssm.iastate.edu/srs/UCS_EPA/

User name: «Case_ID»

Password: «Password»

CSSM maintains strict security procedures to ensure the anonymity of survey respondents. Any connection between your personal information and your survey responses will be kept completely confidential by CSSM and will be destroyed before survey results are made public.

Your participation in this project is voluntary, and you may decline to answer any questions you choose. However, your participation is extremely important since a high response rate is essential to high quality data. Results will be made available online (see below) and may also be provided to the media, Congress, executive branch officials, and members of academia.

This research is sponsored by the Union of Concerned Scientists (UCS), which has produced recent surveys of science professionals within several other federal agencies, including the Food & Drug Administration, the Fish & Wildlife Service and climate scientists in several federal agencies. To view the results of this survey or previous UCS surveys, see www.ucsusa.org/surveys. If you have questions about the results or goals of this survey, contact Francesca T. Grifo, Director of the Scientific Integrity Program at UCS, (202) 331-5446 or fgrifo@ucsusa.org.

Thank you in advance for your important and highly valued contribution to this research. If you have any questions, please feel free to contact me at (877) 578-8848 (toll-free) or jmlarson@iastate.edu.

Sincerely,

Janice Larson, Survey Director
Center for Survey Statistics & Methodology
Iowa State University



If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office of Research Assurances, Iowa State University, Ames, Iowa 50011.

INTERFERENCE AT THE EPA

SCIENCE AND POLITICS AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY

The U.S. Environmental Protection Agency (EPA) has the simple yet profound charge “to protect human health and the environment.” EPA scientists apply their expertise to protect the public from air and water pollution, clean up hazardous waste, and study emerging threats such as global warming. Because environmental challenges are becoming more complex and global, a strong and capable EPA is more important than ever.

The Union of Concerned Scientists, working with the Center for Survey Statistics and Methodology at Iowa State University, distributed a 44-question survey to nearly 5,500 EPA scientists and received completed surveys from 1,586 scientists. The results show that on numerous issues, political appointees have edited scientific documents, manipulated scientific assessments, and generally sought to undermine the science behind dozens of EPA regulations.

These abuses of science highlight the need for strong action by the next president and Congress to restore scientific integrity to the agency’s decision making. Only then can the EPA fully mobilize to serve the public good and ensure the nation’s health.

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Concerned
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Citizens and Scientists for Environmental Solutions