

Sidelining Science Since Day One

How the Trump Administration Has Harmed Public Health and Safety in Its First Six Months



Sidelining Science Since Day One

*How the Trump Administration Has Harmed
Public Health and Safety in Its First Six Months*

Jacob Carter

Gretchen Goldman

Genna Reed

Peter Hansel

Michael Halpern

Andrew Rosenberg

July 2017

© 2017 Union of Concerned Scientists
All Rights Reserved

Jacob Carter is the scientist in the Center for Science and Democracy at the Union of Concerned Scientists (UCS). **Gretchen Goldman** is the research director of the Center. **Genna Reed** is the science and policy analyst in the Center. **Peter Hansel** is a research consultant working with the Center and formerly of UCS. **Michael Halpern** is the deputy director of the Center. **Andrew Rosenberg** is the director of the Center.

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

The Center for Science and Democracy at UCS works to strengthen American democracy by advancing the essential role of science, evidence-based decision making, and constructive debate as a means to improve the health, security, and prosperity of all people.

More information about UCS and the Center for Science and Democracy is available on the UCS website: www.ucsusa.org

This report is available online (in PDF format) at www.ucsusa.org/SideliningScience

Designed by:
David Gerratt, Acton, MA
www.NonprofitDesign.com

Cover photo: Alison Slattery & House9 Design
Printed on recycled paper

[CONTENTS]

iv Timeline and Boxes

v Acknowledgments

1 **EXECUTIVE SUMMARY**

CHAPTER 1

5 **Introduction**

5 The Risks of Political Interference in Science

7 A President Hostile to Science

CHAPTER 2

10 **Sidelining Independent Science Advice**

10 Circumventing Guidance from Scientific Experts

12 Appointing Conflicted Officials

14 Leaving Key Science Positions Vacant

CHAPTER 3

15 **Placing Profits over Public Protections**

15 Revoking Public Safeguards: The Congressional Review Act

16 Preventing the Integration of Science in the Rulemaking Process

16 Rolling Back Climate Change Safeguards

20 Weakening Pollution Standards

21 Undermining Protections from Hazards at Work and Home

25 Placing Profits over People

CHAPTER 4

26 **Reducing Public Access to Government Science and Scientists**

26 Altering Webpages

26 Reducing Access to and Retracting Requests for Data

- 28 Restricting Scientists' Communication
- 29 Creating a Chilling Environment

CHAPTER 5

- 32 **Conclusion**
- 32 Recommendations for Scientists and Science Supporters
- 34 Recommendations for Congress
- 35 Recommendations for the Media

- 36 References

[TIMELINE AND BOXES]

TIMELINE

- 8 Timeline of Attacks Against Science

BOXES

- 11 Box 1. Disregarding Science Threatens Kids' Health
- 13 Box 2. EPA Administrator Pruitt Wants to Stir False Debate on Climate Change Science
- 23 Box 3. Congress Assaults Science-Based Decisionmaking
- 27 Box 4. Budgeting to Limit Government Science
- 28 Box 5. Repainting the Digital Landscape: Changes in Web Content under the Trump Administration
- 30 Box 6. President Trump's Immigration Ban Harms Science

[ACKNOWLEDGMENTS]

This report was made possible by the support of the Bauman Foundation, Deer Creek Foundation, the John Merck Fund, Wilburforce Foundation, and UCS members.

The authors would like to thank the many individuals who provided input and context for this report. We would like to thank Andrew Gunther, board member of UCS, for his peer review. The authors would also like to thank the many UCS staff members who contributed to this report: Emily Berman, James Barry, Rachel Cleetus, Dave Cooke, Cynthia DeRocco, Peter Frumhoff, Michael Halpern, Matt Heid, Tiffany Hsieh, Ken Kimmell, Yogin Kothari, Brian Middleton, Seth Michaels, Kathleen Rest, Andrew Rosenberg, Suzanne Shaw, Seth Shulman, and Bryan Wadsworth. Finally, we would like to thank Marc Miller for his editing and David Gerratt and Farah Kahn for their design. Organization affiliations are listed for identification purposes only.

The opinions expressed herein do not necessarily reflect those of the organizations that funded the work or the individuals who reviewed it. The Union of Concerned Scientists bears sole responsibility for the report's content.



To do:

- Write grant proposal
- Collect data
- Develop model

STAND UP FOR SCIENCE

A clear pattern has emerged over the first six months of the Trump presidency: multiple actions by his administration are eroding the ability of science, facts, and evidence to inform policy decisions, leaving us more vulnerable to threats to public health and the environment.

The Trump administration is attempting to delegitimize science, it is giving industries more ability to influence how and what science is used in policymaking, and it is creating a hostile environment for federal agency scientists who serve the public.

This is a new era in which political interference in science is more likely and more frequent and will present serious risks to the health and safety of the American people. The science community and the general public have responded vigorously: standing up for science, calling out “alternative facts,” articulating the importance of science-based policymaking, and marching in the streets. Sustained engagement will be necessary to prevent the most significant damage.

The Union of Concerned Scientists (UCS) has long advocated for strong principles of scientific integrity in the federal government to ensure that science can serve society fully. Scientific integrity includes not only the ability of scientists to perform and communicate their work freely but also the ability of policymakers and the public to access unvarnished scientific information and utilize it to advance the public interest. It is a process by which independent science fully and transparently informs policy decisions, free from inappropriate political, ideological, financial, or other undue influence.

When the federal government does not uphold principles of scientific integrity, our nation’s ability to respond effectively to complex challenges to public health, the

environment, and national security is compromised. Furthermore, the loss of scientific integrity in federal agencies can create hostile environments for scientists, often chilling basic scientific activities. Most important, a loss of scientific integrity betrays the public’s trust in our government and undermines the democratic principles upon which this nation was founded.

Political interference in science is not new. All modern presidents have politicized science to some extent. Past administrations and their allies have falsified, fabricated, or suppressed evidence, selectively and deceptively edited documents, exaggerated uncertainty, tampered with scientific procedures, allowed conflicts of interest to interfere with decision-making, let political considerations drive science advisory board appointments, targeted essential data collection initiatives for elimination, and intimidated, censored, and coerced scientists. Under the Trump administration, these threats to the federal scientific enterprise have escalated markedly.

Political Interference in Science Under the Trump Administration

In a few short months, the Trump administration has undermined the process by which science informs the policymaking process. The administration has shown a blatant disregard



Throughout the first six months of the Trump administration, science, evidence, and facts have been sidelined.

for scientific facts and evidence, appointing officials with a track record of misrepresenting scientific information, overruling the recommendations of scientists on exposure to toxic pesticides, removing scientific information from agency websites, and dismissing independent science advisors. Aided and abetted by Congress, the administration has delayed or eviscerated science-based rules that safeguard the American people, from protecting workers from toxic work environments to helping communities prepare for the impacts of climate change. Moreover, President Trump and his administration have created a hostile environment for federal government scientists, making it more difficult for these individuals to meet their job duties and responsibilities and engendering fear about discussing their work.

Emerging patterns reveal tactics to diminish the crucial role of science in our democracy. These actions seem to align with a broader administration strategy to achieve, as White House chief strategist Steve Bannon put it, the “deconstruction of the administrative state.” Yet the national and global challenges we face require the development of scientific knowledge and its application to public safeguards and policy solutions.

Emerging patterns reveal tactics to diminish the crucial role of science in our democracy.

To effectively counter the Trump administration’s assaults on science and science-based solutions, we must identify and understand their tactics and then connect them to real consequences. UCS is closely monitoring and exposing the Trump administration’s attacks on science, analyzing their impacts on people, raising awareness about the problem, and organizing scientists to push back. This report documents many of the tactics being used by the Trump administration and Congress to diminish the role of science in our democracy. These include:

- **Sideling independent science advice.** The Trump administration has weakened federal advisory committees that provide scientific advice to the government.

- **Appointing conflicted individuals to scientific leadership positions.** President Trump has appointed to the highest positions in government individuals with little science background and with strong ties to the industries they are charged with regulating.
- **Leaving key science positions vacant.** President Trump has taken an unusually long time to fill many high-level science positions, signaling the low priority his administration places on science.
- **Revoking science-based safeguards.** Aided and abetted by Congress, President Trump has allowed politics to supersede science by signing an unprecedented 13 congressional resolutions rolling back science-based protections, including safe drinking water standards and safeguards to prevent worker exposure to harmful chemicals.
- **Misrepresenting climate science and rolling back climate change safeguards.** Attacking science-based policies and communications on preparing for and mitigating climate change is a clear focus for the Trump administration. Officials have misrepresented climate science, removed climate-related content from several government communications, and proposed sharp reductions in climate research.
- **Weakening science-based pollution standards without scientific justification.** The administration has delayed or repealed several science-based pollution standards designed to protect public health, including protections against mercury, air toxics, and coal wastewater, without replacing them with new, scientifically defensible standards.
- **Undermining protections from hazards at work and home.** The Trump administration has delayed many science-based rules intended to keep communities safe from dangerous chemical spills and to safeguard workers from harmful toxins, with little to support halts except for letters and petitions from companies or industry trade associations.
- **Altering scientific content on federal websites.** The scientific content of federal agency webpages, including those of the Environmental Protection Agency, the State Department, and the Department of Energy, has been altered or deleted since January, particularly in regard to climate change science.
- **Reducing public access to data.** The Trump administration has reduced public access to scientific data

and information. The administration also has stopped collecting certain data for programs that benefit disadvantaged groups. And it has withdrawn requests to industry to supply data that would help inform public health and environmental protections.

- **Restricting communication of scientists.** The Trump administration is making it more difficult for government scientists to speak publicly about their work, as well as about misconduct within an agency. It has restricted communication with Congress, placed vague gag orders on agency staff, and failed to affirm the ability of scientists to share their expertise publicly.
- **Creating a hostile environment for scientific staff.** Evidence is growing that a culture of fear is increasing at government agencies, undermining scientific research and communication. Scientists are speaking to the media anonymously out of fear of retaliation; some are afraid to utter the words “climate change.”

The public deserves independent, impartial scientific information.

Science Will Not Stand Down

As global challenges become ever more complex, the science the nation relies on is more important than ever. In the coming decades, the United States will face some of the most difficult challenges in its history, including climate change, antibiotic resistance, and threats to our national security. Science and technology are instrumental to meeting these challenges. The public deserves independent, impartial scientific information, even—or perhaps especially—when that information indicates the need for politically unpopular or inconvenient action.

Recognizing the stakes, scientists and science supporters are speaking up, taking advantage of the momentum of successful marches and new opportunities for political engagement. Scientists and science supporters are connecting the administration’s actions to consequences for public health and the environment. By understanding current and evolving threats and taking advantage of new vehicles for advocacy, we can defend the scientific enterprise our democracy depends on and preserve the public health, safety, security, and environmental protections that make our nation great.



Many actors, including Congress, can play a vital role to make sure science continues to inform policies that are critical to safeguarding American's well-being.

Scientists and science supporters, Congress, and the media can all play a role.

- **Scientists and science supporters** should scrutinize administration and congressional actions and sound the alarm when science is misused. They can also play a unique role in articulating to others the importance of science in our daily lives. Communicating the importance of science and science-based policies to the public and decisionmakers is crucial to fighting attacks on science in this highly charged political environment.
- **Congress** should use its oversight authorities to investigate and hold accountable the administration for actions that threaten scientific integrity and science-based policies, and it should act to protect whistleblowers. With the growing trend of abuses against science in the Trump administration, Congress must exercise its full authority as a check against the executive branch. Also, Congress should pass legislation to better protect federal scientists and the integrity of science in our federal agencies.
- **Journalists** must continue to hold administration officials and members of Congress accountable for their words and actions and investigate cases of suppressing, misrepresenting, manipulating, or otherwise politicizing science, along with related allegations of wrongdoing in our federal government. The media should seek out scientists as sources when possible and call out agencies that place unnecessary barriers on communications between journalists and government scientists.

Introduction

A clear pattern has emerged just six months into the Trump administration. In multiple ways, the new president's administration is eroding the ability of science, facts, and evidence to inform policy decisions. It is attempting to delegitimize science, giving industry lobbyists more influence over how and what science is used in policymaking, and creating a hostile environment for scientists who serve the public at the Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention (CDC), and many other federal agencies.

As they undermine public health, safety, and environmental protection, the administration's attacks on science are altering the day-to-day lives of Americans. Indeed, the president, his advisors and appointees, and the 115th Congress aim at anti-science goals that, if fully achieved, will be difficult to reverse and leave in their wake lasting and widespread damage for years to come.

Alarmed scientists and their supporters are pushing back, recognizing that making wise decisions in a democracy depends on free and open access to the best available scientific information. Fueled by hundreds of marches worldwide, science supporters and public interest organizations are connecting the administration's actions to the consequences for public health and the environment. Their success depends on a clear understanding of current and evolving threats as well as the persistent and energetic engagement of the science community and their allies.

The Risks of Political Interference in Science

The Union of Concerned Scientists (UCS) promotes scientific integrity in policymaking, a process through which independent science fully and transparently informs policy decisions,

As they undermine public health, safety, and environmental protection, the administration's attacks on science are altering the day-to-day lives of Americans.

free from inappropriate political, ideological, financial, or other undue influence. Scientific integrity includes not only the ability of scientists to perform and communicate about their work freely but also the ability of policymakers and the public to gain access to unvarnished scientific information and use that knowledge to advance the public interest.

All modern presidents, to some extent, have politicized science and compromised scientific integrity. At times, presidents and their affiliates have falsified, fabricated, or suppressed evidence, selectively and deceptively edited documents, exaggerated uncertainty, tampered with scientific procedures, allowed conflicts of interest to interfere with decisionmaking, let political considerations drive advisory board appointments, and intimidated, censored, and coerced scientists.

Scientific integrity issues came to widespread attention during the George W. Bush administration as political appointees routinely sought to influence science as a strategy for justifying predetermined policy outcomes. After UCS and others exposed these anti-science tactics, 62 leading US scientists signed a statement calling for an end to political interference

in science; more than 15,000 scientists eventually added their names to the call. The work of UCS and others mobilized the scientific community and raised the political price of abusing science.

Because of pressure like this from scientists and good government advocates, the federal government has made progress in protecting scientists and their work. At least 28 agencies have put in place scientific integrity policies aimed at preventing abuses, and many agencies have created scientific integrity officers to oversee these policies. Further, some agencies have improved the ability of scientists to share their expertise with the public and the press. Vast amounts of data are now available on federal government websites, as well as tools that enable the public to interpret and use these resources. The 2012 Whistleblower Protection Enhancement Act expanded protections for federal employees who report waste, fraud, and abuse to include the issue of scientific integrity.

Every day, policymakers turn to science as they make decisions that improve public health, protect our environment, and advance the well-being of all Americans. Research in the 1970s about the neurological effects of lead on children

Every day, policymakers turn to science as they make decisions that improve public health, protect our environment, and advance the well-being of all Americans.

resulted in policies to phase-out its use in paint and gasoline. Research on chemicals and metals has improved the quality of our air, water, and soil. Research on infectious diseases has saved innumerable lives by helping governments prevent or anticipate responses to future outbreaks. Advancements in technology have made household appliances, automobiles, and other consumer products safer, cleaner, and more cost-effective and energy-efficient. Government science has improved weather predictions, and climate studies have helped



Stephen McKeethan/Creative Commons (Flickr)

On April 22nd, the March for Science attracted over a million people worldwide to gather and call for evidence-based policy decisions. Roughly 100,000 scientists and science supporters protested in Washington, D.C.

communities across the United States prepare for rising sea levels, drought, extreme heat, and other impacts of climate change.

This progress is in serious danger of stalling and being rolled back. We risk reducing the role of science in policy-making by decades, just when science is more important than ever in addressing global challenges—from keeping our air and water clean and staying off global pandemics to mitigating and preparing for the effects of climate change. Science is an indispensable asset to our democracy, with countless examples of how federal science and science-based policies benefit our lives every day. From the discovery of lifesaving vaccinations, to landing on the moon, to developing the Internet, scientists employed by the federal government make Americans safer, healthier, more prosperous, and better informed about our world.

A President Hostile to Science

In the new political environment, attacks on science and scientists occur at great frequency at the highest levels of government (see timeline, p. 8). Just a few months into the Trump administration, emerging patterns reveal tactics to diminish the crucial role of science in our democracy. These activities seem to align with the broader administration strategy to achieve, as White House chief strategist Steve Bannon stated, the “deconstruction of the administrative state” (Rucker and Costa 2017).

Just a few months into the Trump administration, emerging patterns reveal tactics to diminish the crucial role of science in our democracy.

President Trump and his advisors and appointees, along with allied members of Congress, have willfully distorted scientific information, targeted scientists for doing their jobs, impeded scientists’ ability to conduct research, limited access to taxpayer-funded scientific information, disregarded the science in science-based policies, and rolled back science-based protections aimed at advancing public health. They have appointed officials with severe conflicts of interest to oversee industries to which they are tied, and, in some cases,



EyeCamera/Stock



Ingrid Taylor/Creative Commons (Flickr)



Des Moines Water Works

Lifesaving vaccines, clean air and protected lands, and clean drinking water: none would be possible without independent, impartial science informing policy decisions.

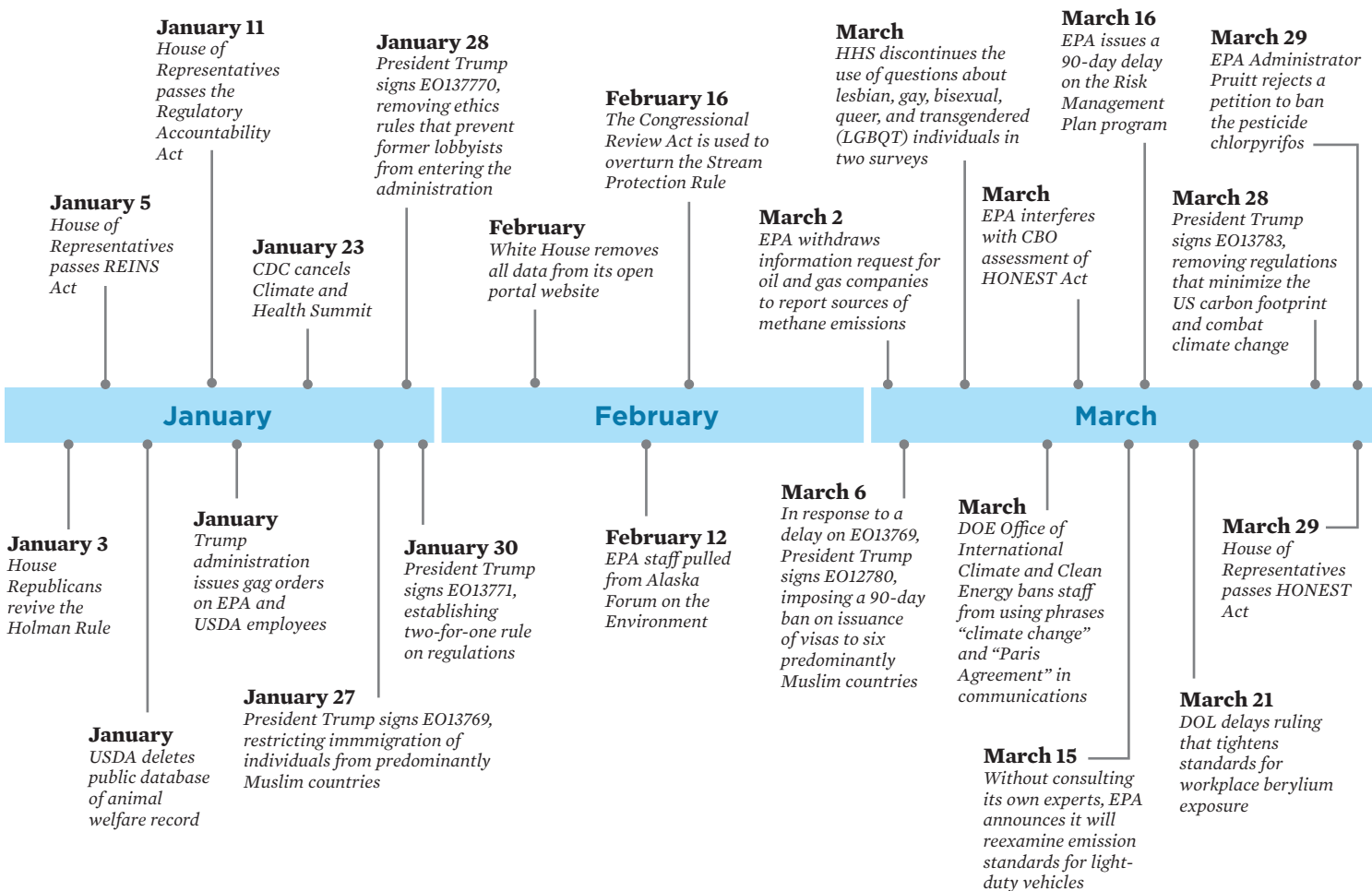
they now lead agencies they have previously disparaged or even sued. They have dismissed climate science despite overwhelming evidence of the devastating impacts of climate change. And they have restricted agencies from considering scientific evidence fully in the decisionmaking process. Further, the president's budget blueprints reveal the administration's desire to scrap investments in basic data collection and research at major agencies, threatening the government's ability to enforce our nation's public health and environmental laws (see Box 3, p. 25).

These attacks on science will have substantial consequences on public health and the environment. Scaled-back investments in cutting-edge research will inhibit the nation's

ability to respond to new infectious diseases and prevent the United States from leading the world in creating clean energy jobs. Decisions on the safety and effectiveness of drugs and medical devices can have life-altering impacts on any patient who uses them. Financially conflicted political officials and the capture of regulatory agencies by the very entities they are responsible for regulating have the potential to lead to gross mismanagement of natural resources and public services, as the goal moves toward advancing private and commercial concerns rather than the public interest.

To push back effectively against the Trump administration's attempts to dismantle science-based health and safety protections, we must understand what its tactics are and

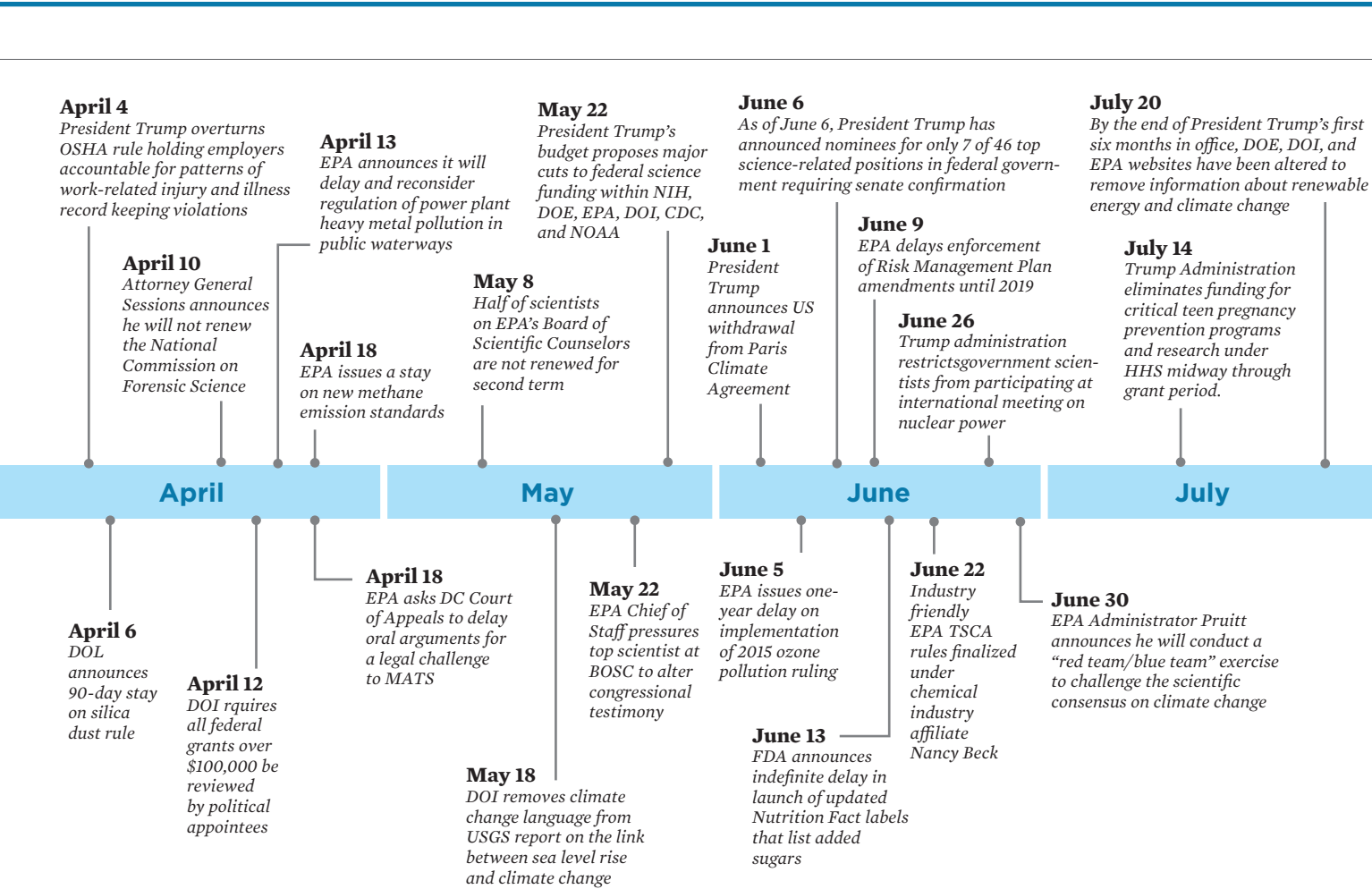
Timeline of Attacks on Science



their consequences for the public. UCS is watchdogging the Trump administration's attacks on science, analyzing their impacts on people, raising awareness about the problem, and organizing scientists to push back. An early and ongoing assessment of these behaviors can help Americans

act swiftly and most effectively to counteract attacks on science and reduce the possibility of long-term damage. We cannot afford to reverse recent progress on scientific integrity and science-based policies. The public's health and safety depend on it.

An early and ongoing assessment of these behaviors can help Americans act swiftly and most effectively to counter-act attacks on science.



Sidelining Independent Science Advice

During a Republican presidential debate in 2015, candidate Donald Trump was asked about a purported link between vaccines and autism in children. As shown by study after study, there is no link between autism and vaccines (Jain, Marshall, and Buikema 2015; Madsen et al. 2002). Yet millions of Americans watching the televised debate heard him say, “We had so many instances, people that work for me, just the other day, two years old, a beautiful child, went to have the vaccine, and came back, and a week later got a tremendous fever, got very, very sick, now is autistic” (Cha 2015). Similarly, candidate Trump in 2012 called climate change science a hoax perpetrated by the Chinese to make US manufacturing less competitive, blatantly dismissing the scientific consensus that climate change is real, caused by humans, and changing people’s lives now (Cook et al. 2016; Trump 2012; UCS n.d.a; HHS, n.d.).

Subsequent false statements about voter fraud, the size of the inauguration crowd, inner-city crime, and crime committed by immigrants have raised the specter that inconvenient facts will be met not just with resistance but with misinformation. And while social science shows that human beings tend to champion evidence that supports their worldviews and downplay evidence that does not, the president of the United States should not enjoy the privilege of creating his own facts and misleading the American public with false statements. One of the president’s advisors even coined the phrase “alternative facts” to describe the president’s mismatch between fact and fiction (Gajanan 2017).

In the first six months of the Trump administration, senior-level government officials, misrepresenting or rejecting science, have declined to ban a pesticide known to damage public health (Box 1). The administration has disregarded and devalued the scientific consensus on climate change and other critical issues. It has dismissed independent scientists

Candidate Trump in 2012 called climate change science a hoax perpetrated by the Chinese to make US manufacturing less competitive.

from federal advisory committees. And the president has not only yet to nominate a science adviser, but he also has left unfilled hundreds of other high-level science positions.

Circumventing Guidance from Scientific Experts

The Trump administration has weakened committees that provide scientific advice to federal agencies and departments. For example, the administration announced it would not reappoint nine members to its Board of Scientific Counselors (BOSC) for the EPA’s Office of Research and Development (Reed 2017a). That decision was unusual: BOSC members typically serve two three-year terms, and the nine members not reappointed had only served their first three-year term. Prior to a House Science Committee hearing on May 23, EPA Chief of Staff Ryan T. Jackson attempted to interfere with the Congressional testimony of BOSC Chair Dr. Deborah Swackhamer. A series of emails obtained by the House Science Committee reveals that Jackson pressured Dr. Swackhamer to stick to the agency’s “talking points” and to remember that a decision had not been made regarding BOSC member

BOX 1.

Disregarding Science Threatens Kids' Health

On March 29, 2017, EPA administrator Scott Pruitt announced that his agency would decline to ban chlorpyrifos despite years of scientific study and deliberation indicating that the pesticide poses a clear risk to children, farmworkers, and users of rural drinking water. In doing so, the administration made a 180-degree turn from the EPA Office of Chemical Safety and Pollution Prevention's scientific conclusion that chlorpyrifos has harmful effects on children's brain development (Stillerman 2017; EPA 2016a). In fact, EPA banned the use of chlorpyrifos indoors in 2000, citing concerns for the health of children.

Exposure to chlorpyrifos, which kills pests by interrupting the electrochemical processes in nerve cells, is already affecting families in Tulare County in California's Central Valley, where those who live and work close to fruit and nut orchards are particularly at risk. When farmers spray the chemical on crops, the resulting plumes drift into homes, schools, and workplaces in the surrounding area.

"We know this is dangerous for the children, but what are we supposed to do?" says Fidelia Moreles. Her five children suffer from asthma and bronchitis and have difficulty concentrating in school (Levin 2017). In a recent study of mothers and children living in the agricultural Salinas Valley of California, children living within a kilometer of farm fields that use chlorpyrifos and other neurotoxic pesticides exhibited lowered IQs and impaired verbal comprehension (Stillerman

2017). Tulare County resident Domitila Lemus recounted a time when a pesticide spray drifted toward students in a school playground. "They were out of breath. Some were throwing up. . . . It's a strong smell that gets into your head and hurts your brain." Latino children living in California are 91 percent more likely than white children to attend schools near areas of heavy pesticide use. Tulare County has some of the highest rates of poverty in California and some of the nation's worst air quality (Levin 2017).

Chlorpyrifos is still widely sprayed on corn, soybeans, fruit and nut trees, brussels sprouts, broccoli, and other crops, with exposure to the chemical disproportionately affecting vulnerable communities (Stillerman 2017). Administrator Pruitt has not said what science he relied on to make his decision on chlorpyrifos. In June, it was revealed that Administrator Pruitt met with the CEO of Dow Chemical prior to making his decision to allow continued use of chlorpyrifos across the US (Biesecker 2017). And immediately after the decision, Dow Chemical, which sells chlorpyrifos, asked the EPA to set aside studies showing that the insecticide is harmful to children's health, calling them flawed (Biesecker 2017b). Dow Chemical also wrote a \$1 million check for President Trump's inaugural activities, and Dow CEO Andrew Liveris chairs the White House manufacturing group (Gibbons 2016).



Aqua Mechanical/Creative Commons (Flicker)

When the pesticide chlorpyrifos is sprayed on corn, soybeans, and other crops, it can drift to neighboring communities. In 2016, after years of scientific study, the EPA concluded that chlorpyrifos can have harmful effects on child brain development. However, in 2017, under the leadership of the Trump administration, the agency announced that they would allow continued use of the neurotoxic pesticide.

dismissals. The move demonstrated a clear effort to downplay the removal of expert advisers from the BOSC by silencing its top scientist (Davenport 2017; Reed 2017b). Advice from the BOSC’s scientific experts helps ensure that the EPA’s research effectively informs critical policies that protect our environment and public health. For example, the board recommended how the EPA could better integrate social science into the Air, Climate, and Energy Research Program to facilitate the inclusion of a broad set of perspectives when addressing key environmental issues.

Science becomes more vulnerable to political interference when officials have close ties to regulated industries.

In April 2017, Attorney General Jeff Sessions ended support for the Department of Justice’s National Commission on Forensic Science (Bell 2017). The Trump administration also hindered the work of many science advisory panels of the Department of the Interior (DOI) by postponing meetings and freezing their charters (Streater 2017). Further, the administration has yet to tap any of the science advice committees that served Presidents George W. Bush and Barack Obama, such as the President’s Council of Advisors on Science and Technology, the Council of Economic Advisers, and the National Science and Technology Council.

On April 4, it was reported that leadership at the EPA interfered with the Congressional Budget Office’s assessment of the Honest and Open New EPA Science Treatment (HONEST) Act of 2017. The EPA suppressed the comments of its own analysts to support a claim that this bill would impose little to no cost on the agency (Box 2, p. 23) (Dabbs 2017). This was another indication that, under the leadership of Administrator Scott Pruitt, the EPA is unwilling to accept information that undermines the policies it wants to put forward.

If scientists and public health experts do not provide independent advice to the government on understanding the natural world, highly technical issues, and threats to health, safety, and the environment, who will? Advice will be provided by those who seek to benefit specific interests rather than the public interest.

Science becomes more vulnerable to political interference when government officials have close ties to regulated industries. While officials and agencies can benefit from

sector-specific advice, good governance depends on transparency and openness to a broad range of stakeholders. President Trump created a task force of industry executives—the Strategic and Policy Forum—to provide guidance on economic policies. Comprised of representatives of the automobile, food, and financial industries, the Forum has conducted meetings behind closed doors, possibly in violation of the Federal Advisory Committee Act, which requires full transparency and public participation for committees making policy recommendations (Gerstein 2017). At one of its meetings, President Trump remarked, “We’re bringing back jobs, we’re bringing down your taxes. We’re getting rid of your regulations” (Trump 2017a).

Those regulations are public safeguards that, among virtually countless examples, prevent the use of pesticides that endanger child development, reduce stream degradation from mining operations, prevent workplace injuries, and set limits on carbon dioxide emissions from automobiles and power plants. We have not seen openness to the creation of a similar task force that represents the beneficiaries of the public protections provided by these regulations.

Appointing Conflicted Officials

Candidate Trump promised to “drain the swamp” of former lobbyists serving in the federal government, but his actions in office go in the opposite direction. The president’s own clear conflicts of interest as well as those of his cabinet, combined with a growing lack of transparency, add to the vulnerability of science-based policy in this administration.

The regulatory process is set up at science-based agencies so that technical experts can inform effective approaches to carry out their agencies’ missions and laws passed by Congress. This process allows industry and other stakeholders to provide input, although it is not intended to override scientific evidence. We know from history that when industry’s senior leaders and former lobbyists have the president’s ear and lead science-based agencies, scientific evidence can take a back seat in decision-making on science-based policy (Grossmann 2012).

Even before entering office, President-Elect Trump’s transition team announced it would reverse policies designed to slow the revolving door between lobbyists and government officials, and during his first week in office, the president began weakening ethics requirements (Arnsdorf and Vogel 2016). A presidential executive order covering executive branch appointees removed some ethics rules put in place by President Obama barring individuals from entering the administration in any capacity until a year after serving as

BOX 2.

EPA Administrator Pruitt Wants to Stir False Debate on Climate Change Science

On June 30, a senior EPA official told E&E News that Administrator Pruitt is launching a formal process to challenge established climate science involving a “red team/blue team” exercise (Holden 2017). The “red team” would challenge established climate science and the “blue team” would respond. There is strong consensus among the scientific community that climate change is primarily caused by anthropogenic emissions of greenhouse gases, these emissions are increasing average global temperatures, and these changes have cascading effects on US public health. Multiple assessments of the US National Academy of Sciences have affirmed these core findings. However, this scientific consensus has not stopped EPA Administrator Scott Pruitt from suggesting that there is no link between climate change and human generated greenhouse gas emissions, or that climate change impacts US public health. Administrator Pruitt said that a “red team/blue team” exercise would improve understanding of the health risks that climate change poses to the US, stating, “The American people need to have that type of honest, open discussion, and it’s something that we hope to provide as part of our leadership (Samenow, 2017).”

A “red team/blue team” exercise would politicize an inherently scientific issue, and undermine the peer-review process in which science is vetted by experts in the field. Indeed, ample opportunities for robust review of climate science have long existed through peer-reviewed journals, scientific meetings, and government-led assessments. Such “calls for special teams of investigators are not about honest scientific debate. They are dangerous attempts to elevate the status of minority opinions, and to undercut the legitimacy, objectivity, and transparency of existing climate science (Santer, Emanuel, and Oreskes, 2017).



Gage Skidmore/Creative Commons (Glich)

Administrator Pruitt has made many decisions to sideline science, and is on the record denying climate change science.

Some have expressed concern that Administrator Pruitt is attempting to lay the groundwork for efforts to overturn the EPA’s 2009 endangerment finding that CO₂ is harmful to US public health. Administrator Pruitt has attempted to overturn the EPA’s 2009 endangerment finding previously (Lehman and von Kaenel, 2016). Furthermore, the idea that the Trump administration would want to undo climate change legislation or policy is not unfounded given the administration’s record-to-date and that several administration officials do not accept climate change science. Administrator Pruitt, Secretary Perry, Secretary Perdue, Secretary Zinke, Secretary Tillerson, Secretary Carson, and even President Trump himself are all on record denying the long-standing scientific consensus on climate change.

registered lobbyists (Trump 2017b; Arnsdorf 2017). President Trump’s order allows lobbyists to enter the administration immediately provided they not work on issues on which they lobbied during the previous two years.

The President’s order also opens up more room for shadow lobbying. After leaving government service, individuals take jobs with industry and then informally lobby the administration without registering as lobbyists (Schmidt and Lipton 2017). The executive order shortens the exit ban for all appointees except cabinet members, and it even allows officials to lobby their former agencies just one year

after leaving the administration. The executive order allows waivers for certain unavoidable conflicts and removes a requirement to publicly disclose those waivers in the federal register.

Several of President Trump’s political appointees have strong ties to the industries they now oversee. The fossil fuel industry had heavily funded EPA Administrator Scott Pruitt while he was attorney general of Oklahoma; he had even used the industry’s talking points verbatim in an official state letter (Davenport and Lipton 2017; Lipton 2014). As Oklahoma Attorney General, Pruitt sued the EPA 13 times and stated

that he does not think carbon dioxide pollution is a major contributor to global warming (Mosbergen 2017; DiChristopher 2017). Secretary of State Rex Tillerson was CEO of Exxon-Mobil when nominated. Energy Secretary Rick Perry led the boards of Energy Transfer Partners LP and Sunoco Logistics Partners LP, which together developed the Dakota Access Pipeline project (Garrett and Farhi 2016). Perry, supported by the oil and gas industry during his own 2016 presidential run, is on record calling for the abolition of the agency that he now heads, dismisses climate change science, and has close ties to the fossil fuel industry (Reilly 2016; Murphy 2016; Braun 2016). Secretary of Agriculture Sonny Perdue, who also denies the evidence for climate change, has extensive ties to agribusiness (Reed 2017c; Salvador and Gilbert 2017). It is expected that President Trump will nominate a non-scientist as chief scientist for the US Department of Agriculture (USDA) (Harvey and Eilperin 2017).

Leaving Key Science Positions Vacant

President Trump has taken unusually long to fill many high-level science positions, signaling the low priority his administration places on science. At the top, he has yet to nominate a science adviser to direct the White House Office of Science and Technology Policy (OSTP). Established by Congress in 1976, the OSTP drives policies and regulations related to science, technology, and innovation, coordinates industry standards, advises the president on science and technology budget priorities, and provides the president with timely advice when a catastrophe occurs. It plays a crucial role in orchestrating interagency processes to tackle cross-cutting scientific issues.

The president will break tradition if he declines to appoint an adviser on scientific issues.

The president will break a strong tradition if he declines to appoint an adviser to guide him on scientific issues and leaves the country less prepared to meet emerging challenges. Every president since Harry S. Truman, with the exception of Richard Nixon, has had a science adviser in some capacity, although some presidents have made the appointment more quickly than others (Levitan 2016). President Obama appointed his chief science adviser weeks before his inauguration, while President George W. Bush nominated his science adviser five months after his inauguration (Kintisch 2008; Jones 2001).

The Trump administration also has yet to fill a number of other science-related positions. In late February, asked about the 600+ unfilled senior-level positions, President Trump responded, “Well, a lot of those jobs, I don’t want to appoint because they’re unnecessary to have” (Trump 2017c). In his first 100 days, President Trump appointed people to fill only 11 science-related federal government positions.* And as of June 6, 2017, President Trump had announced nominees for only seven of 46 top science-related positions in the federal government requiring confirmation from the Senate (Mooney 2017). In the final weeks of June, the White House OSTP science division was left vacant as the three remaining employees, holdovers of the Obama Administration, departed. As one of four subdivisions of the OSTP, the science division provides critical guidance on policy issues such as STEM education, biotechnology, and crisis response (Alemany 2017).

* UCS determined science-affiliated positions in the US federal government from a list of key science and technology positions in the 2008 National Academies of Sciences report, “Science and Technology for America’s Progress: Ensuring the Best Presidential Appointments in the New Administration.”

Placing Profits over Public Protections

Under the Trump administration, science has taken a backseat to political, ideological, and financial interests. When science is misrepresented or dismissed in decision making processes to address an inherently scientific issue, the federal government has sidelined science. This approach rarely contradicts science directly; rather, it attempts to remove it entirely through censorship or by distorting, denigrating, or dismissing scientific evidence. When decisions are made on scientific issues without being informed by science, one can logically question the basis of the decision. Did it benefit private and special interests over the public interest?

The Trump administration and Congress are displaying a clear pattern of disregarding science to benefit priorities of polluting corporations at the expense of the public's health and safety. Moreover, these decisions disproportionately hurt low-income communities and communities of color, which bear the heaviest burdens of pollution and other public health threats.

Revoking Public Safeguards: The Congressional Review Act

In his first six months in office, President Trump signed an unprecedented 13 congressional resolutions rolling back

Congress and the president exploited the Congressional Review Act, a tool used only one other time since its enactment in 1996.



Appalachian Voices/Creative Commons (Flicker)

Lower Bad Creek, in Leslie County, KY, has become contaminated since mountaintop removal mining began on the hills above it. In February 2016, Congress used the Congressional Review Act to overturn the Stream Protection Rule, rolling back requirements for mining companies to monitor conditions of nearby streams and exposing Americans to birth defects, cancer, and other health risks stemming from contaminated water.

science-based protections on clean and safe drinking water and protections instituted to ensure that workers are not exposed to harmful chemicals (CSS 2017). Each had been developed over years with thousands of hours of research and study; scientific experts, industry leaders, and other stakeholders had multiple opportunities to comment on and shape these now defunct rules.

To accomplish this reversal, Congress and the president exploited the Congressional Review Act (CRA), a tool used only one other time since its enactment in 1996. The CRA allows Congress to render regulations issued within 60 days of the end of House or Senate sessions null and void. The

Trump administration embraced attempts by members of Congress to repeal science-based rules.

Congress used the CRA to overturn the Department of the Interior's science-based Stream Protection Rule, which required mining companies to test and monitor the condition of streams potentially affected by mountaintop removal mining (OSMRE 2017). Without this data-collection requirement, the DOI is less equipped to make evidence-based decisions on mining permits. This will make it harder to improve the quality of streams, their ecosystems, and the communities that live near them, making it more likely that Americans will see their water sources and their environment degraded (Wasson 2016). The department had put the regulation in place based on scientific evidence of a causal link between mountaintop coal mining and higher rates of birth defects, cancer, and cardiovascular and respiratory diseases in nearby communities (Esch and Hendryx 2011; Ahern et al. 2011; Hendryx and Ahern 2008; Hendryx, O'Donnell, and Horn 2008; Alliance for Appalachia n.d.). Moreover, mountaintop removal results in more pollution to drinking water sources than other types of coal mining (Cappiello and Borenstein 2014). According to a 2012 study of systems providing water to over one million residents in 14 West Virginia counties, violations of safe drinking water standards were seven times more likely in mining than in non-mining counties (Hendryx, Fulk, and McGinley et al. 2012).

Representatives Bill Johnson of Ohio and Evan Jenkins and David McKinley of West Virginia were among the sponsors of the legislation to repeal the Stream Protection Rule. These legislators, who have received over \$1 million in political contributions from the mining industry, echoed the talking points of the National Mining Association and Murray Energy Company in their statements supporting the rule's repeal (Johnson 2016; Conti 2015; CRP n.d.a; CRP n.d.b; CRP n.d.c; NMA n.d.). The CEO of Murray Energy was among those on hand to watch as President Trump signed the CRA resolution into law (Rushe 2017).

Preventing the Integration of Science in the Rulemaking Process

While Congress has overturned science-based rules, the Trump administration has followed suit even without congressional action. A clear example of the administration's anti-regulatory fervor and approach to science-based policymaking is a January executive order requiring federal agencies to identify for elimination two regulations of equal or greater costs to industry for every new regulation issued (Trump 2017d). In effect, the order puts federal agencies in the

The two-for-one executive order puts profits over people, emphasizing costs to industry while failing to consider benefits to the public.

position of choosing which threats to public health and safety to remove in order to address a newly identified need. It dramatically slows or even halts the work of agencies to put protections in place no matter how urgent the need.

The two-for-one executive order also puts profits over people; it emphasizes rules' costs to industry while failing to consider science-based benefits to the public, even in agencies that have clear public health missions like the CDC, Department of Health and Human Services (HHS), or the EPA. The order relies heavily on methodology that favors the inclusion of costs to the regulated industry without a fair consideration of the monetized benefits to public health, safety, and the environment. The Office of Management and Budget's Office of Information and Regulatory Affairs issued interim guidance to agencies, detailing how agencies should repeal regulations to offset the costs of new rules (Mancini 2017). Truly balanced decisions would not only consider costs to industry but also benefits to public health. For example, the cumulative net benefits of the Clean Air Act are expected to have an estimated \$60 trillion value over the time between its inception in 1970 out to 2020 (UCS 2011).

Ironically, repealing rules often has little impact on industry costs—as much of these are already incurred and cannot be recovered—yet it foregoes future benefits arising from those rules. For example, requiring pollution reduction equipment results in upfront costs, but the benefits accrue over generations. In effect, the two-for-one rule makes the task of implementing a new public health or safety protection so difficult that the end result is likely to be a halt to the regulatory process altogether.

Rolling Back Climate Change Safeguards

Policies to limit global warming emissions and prepare for and mitigate the impact of climate change are clear targets for President Trump. In its first six months, the administration weakened climate-related policies at several federal agencies.



The Trump administration is rolling back many science-informed policies that safeguard Americans from the impacts of climate change.

NULLIFYING CLIMATE CHANGE EFFORTS

On June 1, President Trump officially announced that he would take action to withdraw the US from the Paris Agreement. Initially adopted on December 12, 2015, the Agreement was celebrated as a diplomatic triumph and represents a multilateral effort to confront and address the climate change crisis. Nations worldwide set aside differences, recognizing that the threat of climate change to future economic strength, public health, and environmental protection is imminent and severe (Meyer 2017). They also recognize the significant economic and public health benefits the world stands to gain by transitioning to cleaner forms of energy. The Agreement requires that members put forward their best efforts through voluntary “nationally determined contributions,” with a ratchet mechanism to raise the ambition of these pledges over time, in line with the long-term temperature goal of the Paris Agreement of “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (UNFCCC 2015). It also aims to strengthen the abilities of countries to deal with the effects of

climate change (UNFCCC 2017). President Trump’s decision to withdraw demonstrates a blatant disregard for the threat of climate change—and the impacts that Americans are already experiencing—and a devaluation of climate change science. Despite his attempts to undermine near-term federal action, US states, cities, businesses and everyday Americans—along with countries around the world—have demonstrated a strong, joint resolve to continue to work together to fulfill the promise of the Paris Agreement.

President Trump’s decision to withdraw demonstrates a blatant disregard for the threat of climate change—and the impacts that Americans are already experiencing.

President Trump showed the same disregard on March 28 when he signed the Presidential Executive Order on Promoting Energy Independence and Economic Growth, targeting a slew of Obama-era regulations and other actions aimed at reducing the US carbon footprint and preparing the country for climate change. The order demands a review of all regulations deemed to threaten domestic energy production to ensure that the costs to industry do not outweigh the benefits to the public even if an overall societal cost-benefit analysis had been conducted already (Trump 2017e). It primarily removes energy producers' and automakers' obligations to consider the consequences of their actions on climate change.

This executive order impedes progress on issues surrounding climate change and national security. It requires a review of the Clean Power Plan, which will result in suspending, revising, or rescinding the plan. Yet the Clean Power Plan, promulgated under the Clean Air Act and finalized by the EPA in 2015, is firmly grounded in law and extensive science. It is underpinned by a 2007 Supreme Court ruling in *Massachusetts v. EPA* and the EPA's Endangerment finding, which established that carbon dioxide emissions are a threat to public health and welfare (*Massachusetts v. EPA* 2007).

The order removes energy producers' and automakers' obligations to consider the consequences of their actions on climate change.

This order also rescinds the Council on Environmental Quality's guidance requiring federal agencies to consider climate impacts in National Environmental Policy Act reviews for federal actions. Along with that, it orders the Interagency Working Group on the Social Cost of Greenhouse Gases to be disbanded and its documents withdrawn. The work of this group has been beneficial for understanding monetary costs associated with the release of carbon dioxide into the atmosphere. Its scientifically based calculations account for a variety of factors, including the destruction of property due to weather events, declining agricultural and labor productivity, and elevated mortality rates (Interagency Working Group on Social Cost of Carbon 2010). The work of this group has informed 79 science-based safeguards (GAO 2014).

Not only does the order rescind the EPA's efforts to limit heat-trapping air pollutants, but it also requires the agency



Willie B. Thomas/Stock

In February 2017, at the urging of the industry group, the Alliance of Automobile Manufacturers, the EPA and DOT delayed new emissions standards for light-duty vehicles for 2022 to 2025, a determination the EPA had previously declared to be achievable and affordable. Delaying implementation of these standards means denying consumers the chance to save money on fuel and improve air quality.

to reconsider any rule that could “potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources.” This provision could lead to increased waste of natural gas, weakened fuel efficiency standards, and the construction of the Keystone and Dakota Access pipelines, which could impact endangered species, increase greenhouse gas emissions in the atmosphere, and pollute drinking water (Baker and Davenport 2017; Brady 2017).

SLOWING INNOVATION: VEHICLE FUEL ECONOMY STANDARDS

Since President George W. Bush signed the 2007 Energy Bill, we have seen an astounding and profitable transformation in the transportation sector, particularly regarding the rapid improvement in the fuel efficiency of passenger vehicles after decades of stagnation. As transportation emissions account for about one-third of US heat-trapping carbon emissions, primarily from burning gasoline, improving fuel economy is essential to address emissions from this sector.

In the last days of the Obama administration, the EPA finalized a determination on light-duty vehicle global warming emissions standards for 2022 to 2025, finding the standards to be achievable and affordable (EPA 2017a). The EPA had spent years and millions of taxpayer dollars on research and analysis. Independent research showed that increased fuel economy would especially benefit lower-income

Independent research showed that increased fuel economy would especially benefit lower-income individuals.

individuals because savings on fuel as a percent of income would be greatest for such households (Greene, Welch, and Baker 2016).

In February 2017, however, the Alliance of Automobile Manufacturers urged the agency to withdraw the Final Determination on the Appropriateness of the Model Year 2022–2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards (Bainwol et al. 2017). In March, the EPA and the US Department of Transportation (DOT) announced they would pull back the EPA’s determination and conduct a thorough review to ensure that the program is “good for consumers and good for the environment” (EPA 2017b). The administration did not consult any of the EPA experts who had worked on this rule for years. As justification for the change, the EPA cited only the letter from the Alliance of Automobile Manufacturers. A delay in this cost-saving and emissions-reducing measure will hurt all Americans (Restuccia 2017; EPA 2017a).

STOPPING DATA COLLECTION ON METHANE EMISSIONS

The explosive gas methane, with 30 times the heat-trapping effect of carbon dioxide, is released in large quantities during oil and gas drilling and from leaks in gas pipelines. In November 2016, the EPA issued a final Information Collection Request to oil and gas operations, seeking information to help the agency understand existing sources of methane emissions and the technologies used to reduce them (EPA 2016b; EPA 2016c). The agency planned to use the results to determine the best ways to reduce methane and other polluting emissions from oil and gas sources. These data would fill a gap in reporting requirements of the EPA’s Greenhouse Gas Reporting Program, which currently do not cover certain emission sources, and it would have made it easier to base future safeguards on strong evidence (EPA 2016b).

On March 1, 2017, nine attorneys general from states with strong oil and gas industry interests and the governors of Texas and Montana asked EPA Administrator Pruitt to suspend the information request because of its “onerous burden” on industry (Paxton et al. 2017). Just one day later,

the EPA withdrew the request so that Pruitt could “assess the need for the information that the agency was collecting” (EPA 2017c). In his first interview on CNBC as administrator, Pruitt referred to the EPA’s decision saying, “We’ve withdrawn that after hearing from industry.” Several other times, he mentioned his commitment to “making sure we’re listening to those in industry and how it’s going to impact them as rules are passed” (CNBC 2017). Administrator Pruitt never mentioned public health.

NIXING METHANE EMISSION STANDARDS UNDER THE CLEAN AIR ACT

In May 2016, in response to a growing body of research showing the important contribution of methane emissions to global warming pollution in the United States, the EPA issued a rule to set methane emissions standards (EPA 2016d). In response to industry opposition and petitions from the American Petroleum Institute, Texas Oil and Gas Association, Independent Associations, and GPA Midstream Association, in April 2017, the EPA informed them that the agency found



By delaying the 2015 ground-level ozone rule, the Trump administration is putting Americans’ respiratory health at risk.

fault with the rule (Pruitt 2017). The agency announced plans to issue a 90-day stay of the compliance date for methane emissions monitoring requirements (EPA 2017d).

The methane emissions standards, which would hold oil and gas companies accountable for their emissions, are vital to protecting public health and reducing the risk of climate change. Increases in methane also can lead to increases in extraction co-pollutants such as ground-level ozone, benzene, formaldehyde, and hydrogen sulfide, some of which can trigger asthma and even cancer (Deyette et al. 2015).

Weakening Pollution Standards

Beyond climate-related policies, the administration has targeted several science-based pollution standards designed to protect public health.

SETTING BACK PROTECTIONS ON RESPIRATORY HEALTH: OZONE RULE

Asthma, a serious respiratory condition, affects one out of every 10 children in the United States and nearly as many adults (CDC 2011). Scientists have long understood that ground-level ozone pollution is a primary trigger for asthma attacks and other cardiovascular and respiratory conditions. However, industry trade groups, notably the American Petroleum Institute and the National Association of Manufacturers, have long sowed doubt around the science illustrating the association between high ozone levels and negative health impacts (Reilly 2015).

On June 5, the Trump administration issued a one-year delay in implementing the EPA's 2015 ambient ground-level ozone rule, a public health protection based on long-held, solid science (Cama 2017). As Oklahoma attorney general, Scott Pruitt had sued the EPA over the rule (as well as several other pollution rules) (Dennis 2017a). As EPA's administrator, he quickly sought to postpone the agency's oral argument in the US Court of Appeals case so the agency could "reconsider" the rule (Eilperin 2017).

The 2015 rule was a long time in coming. Both the George W. Bush and Obama administrations had delayed action. In 2013, the agency's Science Advisory Board recommended a standard in the range of 60 to 70 parts per billion (ppb), noting the potential for harm at the upper end of that range. In a 2013 letter to then EPA administrator Gina McCarthy, they wrote, "Although a level of 70 ppb is more protective of public health than the current standard, *it may not meet the statutory requirement to protect public health with an adequate margin of safety. . . . [T]hus, our policy advice is to set the level of the standard lower than 70 ppb.*"

The EPA finalized a rule in 2015, setting the standard at 70 ppb (Goldman et al. 2017). Administrator Pruitt's efforts to further delay enforcement of this rule put children with asthma, the elderly, and adults with lung illnesses at continued risk of harm.

EXPOSING KIDS TO COAL WASTE: THE COAL PLANT WASTEWATER RULE

Exposure to heavy metals can cause developmental issues in children and other serious public health problems, along with damage to ecological systems (Tchounwou et al. 2014; Singh et al. 2011). Nonetheless, in April, Administrator Pruitt announced that the EPA would delay and reconsider its regulation aimed at limiting the amounts of toxic metals (lead, mercury, arsenic, and other heavy metals) that power plants may release into public waterways (Dennis 2017b).

According to the rule, power plants had till 2018 to show they were using modern techniques for removing heavy metals from wastewater (*Federal Register* 2015). On March 24, 2017, the Utility Water Act Group, part of a legal firm representing the water industry, petitioned the EPA to reconsider the rule. The next month, the EPA announced it would stay and review the rule, noting it would be "appropriate and in the public interest" to do so (EPA 2017e; Dennis 2017b). The reconsideration of this science-based rule will pose the greatest threats to communities nearest coal plants.

HARMING CHILDREN'S DEVELOPMENT: THE MERCURY AND AIR TOXICS STANDARDS RULE

Mercury emissions are particularly troubling, with serious health impacts for women of childbearing age, babies in utero, infants, and young children (EPA n.d.a). When converted to methylmercury (a neurotoxin) and ingested, mercury can impair vision and speech; longer-term effects on children include impairing their ability to think and learn.

Despite this well-understood science, the Trump administration has delayed public health protections on mercury and air toxics pollution. On April 18, 2017, rather than defend

Despite this well-understood science, the Trump administration has delayed public health protections on mercury and air toxics pollution.



Yvette Arellano/TEJAS

The EPA Risk Management Plan is a commonsense provision to protect Americans from the harmful effects of toxic chemicals released from manufacturing plants. In Houston, where chemical plants have been placed, residents are already experiencing higher risk of lung disease.

its Mercury and Air Toxics Standards (MATS) rule in court, the EPA asked the US Court of Appeals to delay oral arguments for a legal challenge “in order to give the time to fully review” the case. The challenge was brought against the EPA by 15 state attorneys general and several companies (Eilperin and Dennis 2017). EPA Administrator Pruitt was attorney general of Oklahoma when it joined the list of states seeking to overturn this rule. The National Mining Association, a trade group, has opposed the rule for years (Guillén and Whieldon 2017).

In the 1990s, Congress gave the EPA authority to regulate metal byproducts of burning coal, and the agency settled on standards for these toxins in 2011 (EPA 2011). The MATS rule would establish standards for power plants emitting mercury, lead, and other airborne toxins at least as stringent as the emission reductions achieved by the average of the top 12 percent best controlled sources (EPA n.d.b). The rule would have multiple benefits, including preventing up to 11,000 premature deaths, 4,700 heart attacks, and 130,000 asthma attacks annually. It has been projected to save up to \$90 billion in health expenses and lost work days (EPA n.d.c).

Undermining Protections from Hazards at Work and Home

RISKING CHEMICAL DISASTERS: THE EPA RISK MANAGEMENT PLAN

Businesses across the country manufacture, use, and store chemicals that are often toxic or volatile and pose grave risks to workers, neighbors, and first responders. On average in

The 2016 EPA Risk Management Plan rule is a commonsense, science-based provision designed to regulate industrial facilities that release toxic chemicals.

recent years, approximately 150 catastrophic accidents have occurred annually at these facilities. Currently, the EPA Risk Management Plan (RMP) program requires industrial facilities to maintain some documentation about what chemicals are on site. However, the public, first responders, and local authorities have only limited access to crucial information about the chemicals and companies’ plans to avert or deal with accidental chemical releases.

In 2016, to better protect workers, first responders, and neighboring communities, the EPA amended the RMP requirements to improve safety and transparency at facilities that use or store large amounts of dangerous chemicals. Major industrial facilities, including oil and gas companies, have strongly opposed the amendments. A coalition, including the American Chemistry Council, the American Forest & Paper Association, the American Fuel & Petrochemical Manufacturers, the American Petroleum Institute, the US Chamber of Commerce, the National Association of Manufacturers, and the

Utility Air Regulatory Group, asked Administrator Pruitt in February 2017 to stay the final rule. As attorney general of Oklahoma, Scott Pruitt and 10 other attorneys general had petitioned EPA in July 2016 to withdraw the proposed rule (Rodriguez 2016; Lafolla 2014).

In March 2017, the EPA granted a 90-day stay of the RMP amendments, delaying the effective implementation date to June 19, 2017 (*Federal Register* 2017a). On June 9, the EPA issued a final ruling to further delay the effective date of the Risk Management Plan rule to February 19, 2019 (*Federal Register* 2017b).

People of color and in poverty will continue to shoulder the health impacts from accidents at chemical facilities.

The 2016 EPA Risk Management Plan rule is a common-sense, science-based provision designed to regulate industrial facilities that release toxic chemicals (EPA n.d.). A significantly greater percentage of African Americans, Latinos, and people in poverty live near these facilities, increasing their risk for exposure to chemical releases. For example, residents in Houston communities with RMP facilities have a higher risk of developing or worsening lung diseases such as asthma and chronic bronchitis due to exposure to high concentrations of toxic air pollutants including chromium compounds (White et al. 2016).

The amended RMP would have made facilities safer for surrounding communities, reduced the risk of explosions, leaks, and other chemical accidents, and helped ensure that first responders were well informed and protected. The rule also would have improved public access to information about the chemicals stored at and risks posed by facilities. While the original rule will remain in place even if the amendments are rolled back or delayed indefinitely, the status quo is not good enough, and people of color and in poverty will continue to bear the brunt of health impacts from accidents and spills at these facilities.

ABANDONING THE OPPORTUNITY TO STRENGTHEN CHEMICAL SAFETY REGULATION: THE TOXIC SUBSTANCES CONTROL ACT

On June 22, 2016, President Barack Obama signed the Frank R. Lautenberg Chemical Safety for the 21st Century Act into

law, reforming the Toxic Substances Control Act (TSCA) and revising the regulatory process for American chemical safety in consumer products. The reformed law was long overdue as our policies for protecting Americans from unsafe chemicals were inadequate and outdated. While the original TSCA law granted the EPA the power to regulate chemicals harmful to public health, it was difficult for the agency to enact such regulation in practice. This was partly because the EPA had difficulty obtaining the data necessary to determine the risks chemicals presented to public health and the environment. Industries are not particularly motivated to provide evidence that their products cause harm if they are making a profit off of them; thus, the agency faced a high burden of proof. Additionally, the law was difficult for the EPA to implement as the agency had to consider the costs of regulation in deciding what makes the risk “unreasonable.” As a result, out of over 80,000 chemicals on the market in the US, only nine chemicals were banned in four decades under the former TSCA legislation (Harrington, 2016).

Since Congress passed TSCA reform, the EPA has worked to finalize three framework rules to determine the process by which the agency will evaluate health and environmental risks of chemicals, as well as a requirement for industry to report chemicals manufactured or processed in the US during the last 10 years. The draft version of these rules had bipartisan support from Congress as well as the Obama administration, and incorporated extensive feedback from both the public and industry.

The draft rules were changed before they were finalized on June 22 by EPA Deputy Assistant Administrator Dr. Nancy Beck, who had most recently served as the senior director of regulatory science policy at the American Chemistry Council, the chemical industry’s leading lobbying and trade group. Career EPA employees with long-term experience working on chemical safety expressed concern about these changes in a memo sent by the head of the EPA’s Waste and Chemical Enforcement Division to Wendy Cleland-Hamnett, the acting assistant administrator of the EPA’s chemical office (Snider and Guillèn, 2017). Of particular concern was that under the revised rules, the EPA would not evaluate risks to human health from all possible exposure pathways for a chemical, only those pathways considered

A lack of data on all possible exposures may lead to wide use of dangerous chemicals.

to be of the highest risk. Public health and environmental groups have argued that a lack of data on all possible exposures may lead to wide use of dangerous chemicals (Snider and Guillèn, 2017).

**NEGLECTING WORKER SAFETY:
OSHA'S WORK-RELATED INJURIES RULE**

Job hazards in the United States kill over 4,800 workers a year (13 every day) and seriously injure another 3 million individuals in the private sector alone.

On April 4, 2017, President Trump signed a CRA resolution to overturn a decades-long and critical element of protecting our nation's workforce from irresponsible

employers (NSC Congress & Expo 2017). The resolution now permanently removes the ability of the Occupational Safety and Health Administration (OSHA) to cite employers with a history and pattern of record keeping violations related to workplace injuries and illnesses. Although employers still must retain injury and illness records for five years, OSHA can no longer enforce any violations prior to six months from the citation date. This places an additional onus on OSHA, with its limited budget and inspection resources, to catch poor record keeping within six months. It also effectively precludes the imposition of large OSHA record keeping fines that had been a strong incentive for entire industries to institute healthy and safety improvements.

BOX 3.

Congress Assaults Science-Based Decisionmaking

Myriad proposals in the 115th Congress would severely restrict the ability of federal agencies to use science when instituting public health, safety, and environmental protections. While such attacks are not new, the current political climate and a president willing to undercut federal science and roll back public health, safety, and environmental safeguards gives the proposals a greater chance of becoming law (Goldman et al. 2017; Rosenberg et al. 2015).

Federal agencies have authority to gather scientific information and issue rules and regulations in response to threats to the public. The process allows for the scientific community and the public to provide input into agency decisionmaking. However, Congress is considering several ways to dismantle this process. For example, the proposed Regulatory Accountability Act would take a "paralysis by analysis" approach to science-based decisionmaking by requiring agencies to conduct superfluous analyses and hold adversarial, trial-like hearings that would enable regulated industries to undermine independent science informing agency decisions. Adding more red tape to an already slow and deliberate process and other types of so-called regulatory reforms would add burdensome requirements for federal agencies before they can protect the public through science-based safeguards. In effect, these reforms will make it increasingly difficult if not nearly impossible for agencies to issue science-based rules.

Other proposals would shift more power to Congress from executive branch agencies when it comes to science-based decisionmaking. For example, the proposed Regulations from the Executive in Need of Scrutiny (REINS) Act would allow Congress to override science-based rules developed at federal agencies, undercutting the role of technical expertise. Under such proposals, science-based public health and safety

protections could essentially become a popularity contest in Congress and more vulnerable to political interference.

Other congressional proposals would further undermine the role of independent science in advising government decisions. For example, the proposed EPA Science Advisory Board Reform Act would discourage academics from serving on EPA's board of independent scientists, which advises the agency on science policy decisions. It also would open a door to inappropriate influence from regulated industries on science advisory committees through provisions that would discourage academic scientists from serving and provide minimal scrutiny of representatives from industry. The HONEST Act, though innocuous sounding, would prevent the EPA from using data in regulatory decisions if those data are not publicly available. Though versions of the bill have included exemptions, the bill raises concerns given that much of the data that EPA uses cannot be made publicly available due to considerations related to patient privacy, intellectual property, and confidential business information, but they are critical to research the agency requires to develop effective policies.

Some congressional activity seeks to undermine bedrock environmental laws, including the highly effective Endangered Species Act. The act had been designed to be resistant to political influence, enabling federal agencies to make decisions based on science alone. At the same time, it gives states, farmers, ranchers, and other stakeholders ensure significant input to minimize harm to their interests as protections are developed. Proposals to "reform" the Endangered Species Act would lead to undue political influence in what should be a science-based process.

Accurate records of work-related injuries and illnesses are key to identifying, correcting, and preventing the hazards and exposures that cause them. OSHA also relies on accurate records to allocate resources for inspection, enforcement, and assisting employers with compliance. The Department of Labor uses them to publish statistics on occupation injury and illness rates, providing important data for research on occupational safety and health.

SICKENING MINER AND CONSTRUCTION WORKERS: SILICA RULE DELAY

Workers in a variety of industries and occupations, including construction, sandblasting, mining, and pharmaceuticals, are exposed to dust from crystalline silica. Cutting, grinding, drilling, or mining silica-containing materials creates a fine dust that when inhaled may result in silicosis, an aggressive and irreversible lung disease. Exposure to silica dust also is linked to lung cancer, other respiratory illnesses, and chronic kidney disease. Evidence for this has been known and mounting since the 1930s, and the National Institute for Occupational Safety and Health (NIOSH) published a recommended exposure standard in 1974. Thirty-seven years later, in 2011, OSHA proposed a draft rule in line with that recommendation. Once implemented, the new rule would prevent the loss of 600 lives per year and provide a net economic benefit of \$7.7 billion annually.

The administration has proven to be a willing partner in rolling back public protections and putting industry first.

Despite nearly 40 years of evidence, in April the Department of Labor announced a 90-day delay in enforcement of the silica dust rule to further analyze its impact on the construction industry; the Construction Industry Safety Coalition has asked the agency to delay enforcement for a year or longer (DOL 2017; NAHB 2017; Hammock 2015). Already, instead of what should have been a 120-day review period by the Office of Management and Budget, it had taken OSHA four years to issue a final and updated silica rule. Industry pushed back strongly against that OSHA proposal: the American Chemistry Council said it could increase the chemical industry's costs and attempted to cast doubt on the scientific justification for the standard (Lafolla 2014).



clauderohillard/creative commons (flickr)

Decades in the making, an OSHA rule to limit workers' exposure to silica dust was delayed in April 2017. It is expected that this rule would prevent the loss of 600 lives per year, yet it continues to be postponed.

EXPOSING WORKERS TO CHEMICAL HAZARDS: THE BERYLLIUM RULE

The metal beryllium is widely used—from aerospace, defense, and telecommunications to the automotive, electronic, construction, shipyard, and medical specialty industries. It is also highly dangerous, and the health effects of exposure have been known since the 1930s. It is a known carcinogen and the cause of chronic beryllium disease, a devastating, incurable, and often fatal illness.

OSHA first proposed tightening the standard for beryllium in 1975. Forty years in the making, the rule was finalized in January 2017 with an effective date of February 1 (DOL n.d.). In late January and in response to a presidential directive in a memo entitled “Regulatory Freeze Pending Review,” OSHA delayed the effective date until March 10. It was then delayed another two months, complying with requests from the construction industry (*Federal Register* 2017c; *Federal Register* 2017d). In April, OSHA announced it would delay enforcement in the construction industry until September (Meier and Ivory 2017). Until the rule takes effect, workers will continue to be exposed to beryllium at levels clearly known to be unsafe. OSHA estimates that approximately 62,000 workers are potentially exposed to beryllium in some 7,300 US establishments.

The “permissible exposure limit” (PEL) that currently applies to beryllium was set in 1949 by the Atomic Energy

Commission at 2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). This level was known as the “taxicab standard” because an Atomic Energy Commission hygienist and a consulting physician decided on it while riding in a taxicab. They reached the number without an epidemiological basis and despite a 1949 study showing that beryllium exposure at levels as low as $.01\mu\text{g}/\text{m}^3$ for 24 hours was harmful to workers’ health (Eisenbud 1949). In 1975, OSHA proposed cutting the PEL to half of the taxicab standard, and two years later NIOSH pushed to lower it further. Labor unions petitioned OSHA to lower the standard in 1999 and in 2001. In 2016, after a long rulemaking process, OSHA proposed to lower the PEL to $0.2 \mu\text{g}/\text{m}^3$.

DELAYING THE PUBLIC’S RIGHT TO KNOW ABOUT SUGARS IN FOOD

The FDA announced in early June that it would extend compliance dates to meet the Revision of Nutrition and Supplement Facts Labels rule (Choi 2017). The rule would ensure that nutrition labels include a separate line for added sugars and the percent daily value (%DV) that amount represents (Federal Register 2016). This rule was finalized in May 2016 and FDA originally gave companies until July 26, 2018 to comply. The rule was put in place due to scientific evidence linking excessive sugar consumption to public health issues including tooth decay, type 2 diabetes, and cardiovascular disease (Goldman et al. 2014).

The FDA’s plan to extend compliance dates for this rule comes after the food industry’s requests to the Department of Health and Human Services that the rule’s enforcement be delayed (Food and Beverage Issue Alliance 2016). According to the FDA’s economic analysis, the benefits of the rule would range between \$0.2 and \$5 billion (Federal Register 2016). The delay in implementation of this rule will mean that the realization of these benefits, as well as safeguards to public health, will be stalled.

Placing Profits over People

Governmental protections place a necessary and vital check on industrial and other operations that can put our and our children’s health and safety at risk. These safeguards help keep our air, water, and food clean and our workplaces, homes, and communities safe. When industry exerts undue influence that prevents government from making decisions based on science, it prioritizes private and special interests over the public good and undermines our democracy. The Trump administration has proven to be a willing partner in rolling back public protections and putting industry first, delaying the implementation or enforcement of science-based



In June 2017, the FDA announced a delay in enforcing the Revision of Nutrition and Supplement Facts Labels rule, which ensures that nutrition labels clearly call out added sugars. Overconsumption of sugary foods puts Americans, especially children, at risk for tooth decay, type 2 diabetes, and cardiovascular disease.

rules. In his first several months in office, the list of stalled agency rules is long, with little evidence to support the delays beyond letters, petitions, and requests from industry or their trade associations.

Delays will have real-world consequences for our health, safety, and environment. Every day that goes by without a silica rule in place, workers are exposed to harmful silica dust. Every day without a coal plant wastewater rule in place, heavy metals cause developmental issues in children. And every day that the administration prioritizes private and special interests over the public interest, it denies Americans the public health and safety protections that science tells us we need.

Reducing Public Access to Government Science and Scientists

Central to democracy is the free flow of information between the government and the people. While the federal government requires some control over official communications on policies, especially those involving sensitive or classified information, usually there is no valid reason why science cannot be communicated openly. The public has a right to access government science and to hear from the scientists that produce it. Yet the Trump administration has limited access to scientific information and expertise from the public, media, and policymakers.

Altering Webpages

During the transition to a new president, some changes to government websites are normal as the new administration sets new priorities. The Trump administration has taken this to a new level, altering or removing specific websites, particularly those focused on climate change (see Box 4).

The scientific content of the webpages of federal agencies, including those of the EPA, the State Department, and the Department of Energy (DOE), have all been altered since January. For example, climate action reports are gone from the State Department's website, and climate change information has been altered on the EPA and DOE websites. Additionally, the administration appears to be downplaying the fact that human-generated greenhouse gas emissions are the root cause of global climate change (Spanger-Siegfried 2017).

The EPA's Office of Science and Technology (OST), which is in charge of developing clean water standards, removed "science" in a paragraph describing the office's function. Until January 30, the OST webpage described its function as "developing sound, science-based standards." That has been changed to say that the OST "develops

Climate action reports are gone from the State Department's website, and climate change information has been altered on the EPA and DOE websites.

national economically and technologically achievable performance standards to address water pollution from industry" (Atkin 2017). Omitting the word "science," if reflected in policy, is almost certain to benefit industry at the expense of Americans' health. It could signal a move to policies less informed by science than in the past. The emphasis on a "technologically achievable" standard may mean that the EPA will move away from regulating polluting industries via science-based standards that could encourage development of new or improved technologies and toward regulating pollution based on what an industry says it can achieve through existing technology.

Reducing Access to and Retracting Requests for Data

If you don't track it or measure it, you can't manage it. By reducing access to data, the Trump administration impedes scientific inquiry that should inform US policies to safeguard public health. Preventing scientists and citizens from accessing taxpayer-funded scientific data hampers the nation's

ability to make informed decisions on everything from preparing for climate change to addressing disparities in health care. The administration also has stopped collecting data for programs that benefit disadvantaged groups and withdrawn requests to industry to supply data that would help inform regulations pertinent to public health and the environment.

Reducing access to government data eliminates transparency on critical issues and makes it increasingly challenging to conduct science that would inform strong policies to protect the American people. For example, in February 2017 the Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) removed inspection reports and other data related to the welfare of animals housed in zoos, research laboratories, and other facilities. These data had been used to identify places that treat animals unethically. APHIS claimed it was removing the data to protect personal information, yet most personal information had been

BOX 4.

Budgeting to Limit Government Science

President Trump's proposed budget outline for fiscal year 2018 signals his belief that science has little role to play in federal policymaking. The outline sends a clear signal that the administration is not serious about providing the best science possible to inform decisions for the American people. Deep cuts to the science offices of regulatory agencies and to agencies that support basic research on health and disease prevention would greatly erode our governmental science enterprise and seriously impede efforts to ensure high-quality health care, safeguard our air and water, and effectively manage our environmental resources.

In May, the White House proposed to cut the National Institutes of Health's annual budget by 18 percent, the Department of Energy Office of Science's budget by 20 percent, the EPA's overall budget by 31 percent, and the EPA's budget for the Office of Research and Development, which conducts most of the agency's science, by 50 percent. The proposal also would reduce the Interior Department's budget by 11.7 percent and cut the CDC's budget by 17 percent (Baumgaertner 2017). It calls for eliminating the National Oceanographic and Atmospheric Administration's Sea Grant program, which supports academic research to help communities manage their coastal resources as climate change progresses (EOPOTUS 2017).

Reducing access to government data eliminates transparency on critical issues.

removed already. And when *National Geographic* submitted a Freedom of Information Act request on why APHIS deleted these records, the agency responded with blacked-out pages (Daly and Bale 2017).

In another case, the administration removed all data from the White House Open Data Portal in February 2017. The 31 databases that were deleted include White House payroll reports and visitor records posted in accordance with President Obama's Open Data Executive Order 13642 (Biryukov 2017; Obama 2013). While there is no legal mandate to provide these data to the public, rolling back public access makes it more difficult to conduct important analyses to inform policymaking and decreases transparency on administrative decisionmaking.

In addition to reducing access, the Trump administration is discontinuing the collection of data that would improve the effectiveness of government programs. In March 2017, the US Department of Health and Human Services discontinued the inclusion of questions about lesbian, gay, bisexual, and



In March 2017, the Department of Health and Human Services, removed questions about LGBTQ individuals in surveys designed to help the department respond to the needs of persons with disabilities and of advanced age.

transgendered (LGBTQ) individuals in two surveys (Singh and Durso 2017). The surveys help HHS respond to the special needs of disabled and elderly LGBTQ individuals enrolled in programs that provide social and nutrition services; they also better enable the agency to help disabled individuals live independently.

Similarly, a March 2 EPA press release announced plans to withdraw a request for owners and operators of onshore oil and gas production facilities to respond to two surveys. One asked the operators of all such facilities in the United States to provide basic information on the numbers and types of equipment they use. The other asked a representative sampling of facilities in several segments of the industry for more detailed information on sources of methane emissions and emission control devices or practices (EPA 2017e). Methane contributes to climate change, yet it is unknown

how much methane the oil and gas industry produces, making it difficult to regulate these emissions.

One final example of how the Trump administration impedes data collection is by not voluntarily releasing visitor records of those who visit the White House or the president's Mar-A-Lago resort. While the Trump administration has the right to withhold such records, not releasing them will make it difficult to know who visits the White House seeking to influence the president and his staff. This could potentially result in political considerations overtaking policies that should be informed by science (Sunlight Foundation 2017).

Restricting Scientists' Communication

The Trump administration is making it more difficult for government scientists to speak publicly about either their

BOX 5.

Repainting the Digital Landscape: Changes in Web Content Under the Trump Administration

BY TOLY RINBERG, ON BEHALF OF ENVIRONMENTAL DATA AND GOVERNANCE INITIATIVE'S WEBSITE MONITORING COMMITTEE

Accessing federal websites is one of the easiest ways the public can obtain information and learn about the government's work and priorities. However, with tens of millions of federal.gov webpages, it is impossible for any individual to comprehend the scope of available information. When the government decides to significantly alter or remove information from its websites without announcing or identifying the changes, the changes can easily go unnoticed, altering the government record in a potentially long-lasting way and making important public resources less accessible.

The Environmental Data & Governance Initiative's Website Monitoring Working Group has been closely tracking federal agency websites to understand and help inform the public about the ways in which information and information access are being altered during the Obama-Trump transition. Over the first 100 days of the Trump presidency, notable patterns emerged, particularly regarding renewable energy and climate change.

On multiple DOE websites, including those of the Office of Energy Efficiency and Renewable Energy's technology offices for bioenergy, vehicles, and wind energy and the Office of Technology Transitions, emphasis on renewable energy has decreased. Terms like "clean energy" and "greenhouse gases" were removed and language stressing US jobs and economic growth added (EDGI 2017a; EDGI 2017b; EDGI 2017c).

Several top-level climate change domains, including those of the Department of Interior and the DOE, also have been changed substantially, removing information and statements about agency responsibilities to mitigate climate change. On President Trump's 99th day in office, the day before the People's Climate March, multiple EPA climate change domains began forwarding to a notice page stating, "This page is being updated." While the notice directed website visitors to a January 19 snapshot of the EPA's website, that snapshot contained errors (Rinberg 2017a). Due to the hasty website overhaul, important subdomains, such as a student's website on climate change, became inaccessible to the public (Rinberg 2017b). This example illustrates how making large changes to websites without proper documentation can have unintended consequences, making public resources inaccessible.

Changes to federal websites may reflect important shifts in focus and policy; indeed, the EPA said that it took down the climate change pages to revise them "to reflect EPA's priorities under the leadership of President Trump and Administrator Pruitt" (Rinberg 2017a). Vigilance in identifying and clarifying the significance of changes to digital information is important in order to highlight data and information governance responsibilities. It helps keep the public informed as the federal government is transformed under the Trump administration.

work or misconduct within an agency. In the first week of the Trump administration, many federal agencies, including the USDA, DOI, HHS, EPA, and DOT, issued media blackouts. While the agencies described some of these gag orders as “recommendations” that staff not speak with the press, others appear to have been directed by the White House, including the one at the EPA (Lartey 2017). A pause in communications may be typical during a presidential transition, but these blackouts centered on specific agencies. The EPA seems to have been a particular target: it was not allowed to tweet until after Congress confirmed Scott Pruitt as administrator. The science office at the EPA, which regularly blogged under the Obama administration, has been silent since January 19, 2017.

In some cases, scientists have been told to avoid certain phrases. In March 2017, a supervisor within the DOE’s International Climate Office asked staff to not use “climate change,” “emissions reduction,” or “Paris Agreement” in any form of communication (Wolff 2017). Our government scientists must be able to discuss the relevant science openly and freely, in this case to help the nation prepare for the extreme weather events, ecological disasters, and health impacts resulting from climate change.

Agency scientists also report that political appointees are reviewing their work. For example, on January 25, Doug Eriksen, the Trump transition team’s communication lead at the EPA, said that agency staffers and the transition team were reviewing the agency’s roughly \$4 billion grant program, scientific data, and studies. “We’re taking a look at everything on a case-by-case basis, including the web page and whether climate stuff will be taken down. Obviously with a new administration coming in, the transition time, we’ll be taking a look at the web pages and the Facebook pages and everything else involved here at EPA,” Eriksen said. When asked whether the review would include scientific data and studies, Eriksen responded, “Everything is subject to review” (Biesecker and Borenstein 2017).

In April 2017, a memo circulated at the Interior Department indicated that its staff could expect political appointees to review grants and cooperative agreements of \$100,000 or more. The review of science-based grants and contracts by political appointees is problematic (Cason 2017). Such appointees are put in place to support the administration’s political agenda and will have an incentive to pull support for science that may not align with their preferred outcomes. Additionally, many political appointees lack the background needed to accurately assess whether or not a research proposal is rigorous and scientifically sound.

Federal scientists now face new restrictions on attending conferences related to climate change. In February 2017, the Trump administration pulled EPA staff from the Alaska

The administration’s anti-science views, rhetoric, and threats have resulted in self-censorship by government employees.

Forum on the Environment, an annual conference on climate change and other environmental issues affecting the state (AFE 2017). The administration claimed that too much money had been spent in prior years on staff travel; however, some staff pulled from the forum could have walked to the meeting center from their homes or workplaces (Waldholz and Chappel 2017). In June, an EPA air-quality scientist told the *Guardian* that “climate work has been de-emphasized and halted. There was a climate conference in Atlanta last month and EPA employees were told not to go, so even simple interactions are coming to an end” (Milman 2017). Additionally, in late June, the Trump administration barred government scientists from participating in an international conference on nuclear power. Technical experts from the United States were restricted from delivering scheduled talks at the International Conference on Fast Reactors and Related Fuel Cycles, a forum to discuss national and international nuclear energy programs (Lyman 2017).

Creating a Chilling Environment

Perhaps the most devastating long-term impact of attacks on science may come from the creation of a hostile work environment for government scientists. There is evidence of a growing culture of fear at government agencies, undermining scientific research and communication. Many agency scientists have spoken to the media anonymously out of fear of retaliation. Some say they are afraid to utter the words “climate change” (Lerner 2017). In particular, the Trump administration’s immigration ban left many Muslim scientists from other countries afraid to continue their work in the United States (Box 5) (Lerner 2017).

The administration’s anti-science views, rhetoric, and threats have resulted in self-censorship by government employees. For example, the CDC canceled a climate change conference that had been planned months in advance. The Climate and Health Summit, planned for February 2017, would have focused on “the state of the science on climate and health, adaptation through interagency collaboration,

President Trump's Immigration Ban Harms Science

Science thrives on diversity, and immigration is the foundation of America's unparalleled scientific leadership. For example, all six of the American science Nobel Prize winners in 2016 are immigrants (Grenoble 2016). The free flow of individuals and information is fundamental to both economic growth and our ability to respond to urgent public health and environmental challenges. President Trump's efforts to restrict immigration from some Muslim countries harms our nation's ability to keep Americans safe and healthy.

On January 27, President Trump's Executive Order 13769 restricted immigration of individuals from seven predominantly Muslim countries: Iran, Iraq, Libya, Somalia, Sudan, Syria and Yemen (Calamur 2017). It also suspended all refugee admissions for 120 days and admissions of refugees from Syria indefinitely (Trump 2017f).

On February 3, US District Judge James Robart issued a temporary restraining order on the executive order. The administration appealed, arguing that the states challenging the order did not have standing to do so (Brunner, Lee, and Gutman 2017). On February 9, the US Court of Appeals for the Ninth Circuit determined the states did have standing because the ban harmed

teachers and scientists; it issued an emergency stay (Dreyfuss 2017). "The states contend that the travel prohibitions harmed the States' university employees and students, separated families, and stranded the States' residents abroad. These are substantial injuries and even irreparable harms," the court found (US Court of Appeals 9th Cir. 2017).

The Trump administration's revised executive order, issued on March 6, would impose a 90-day ban on issuing visas to six predominantly Muslim countries, omitting Iraq from the list. It would suspend the refugee program for 120 days, with no more than 50,000 refugees accepted during a given year (Trump 2017g). The revised executive order was scheduled to take effect on March 16, but many states immediately began legal challenges to it, and it, too, was stayed by the courts (BBC News 2017).

The Supreme Court partially lifted a block on President Trump's executive order on June 26. The court's ruling states that a 90-day ban on visitors from Iran, Libya, Somalia, Sudan, Syria and Yemen, as well as a 120-day suspension of the US refugee resettlement program, can be enforced against those without a "credible claim of a bona fide relationship with a person or entity in the United States" (Laughland 2017).



President Trump's executive order banning immigrants from predominantly Muslim countries sparked protests nationwide.

Scott Lamm/Creative Commons (Flickr)

and communication and stakeholder engagement strategies” (Waldman 2017). Many experts and scientists expressed concern that canceling the conference could indicate a future of “self-sabotage” or “self-censorship” within federal agencies to avoid conflict with political appointees from the Trump administration (Maron 2017).

For its part, Congress has revived a procedural rule that sends an intimidating signal to scientists that their jobs could be cut. During the first week of 2017, House Republicans revived the Holman Rule, a procedural maneuver that allows lawmakers to slash the pay of individual federal workers to \$1, effectively firing them. Any member of the House of Representatives can single out an individual federal employee by filing an amendment to an appropriations bill (Portnoy and Rein 2017).

Even though a majority of the House would have to approve such an amendment, and then the Senate would have to agree to it and the president sign it, the Holman Rule has been criticized for its potential misuse and the message it sends to scientists whose results might be politically inconvenient (*Washington Post* 2017). For example, someone who did not like the scientific findings from a federal researcher could ask a member of Congress to threaten that person with the loss of their job. Even if the individual were not fired, the time devoted to a defense would divert time from conducting

Congress has revived a procedural rule that sends an intimidating signal to scientists that their jobs could be cut.

science. The rule sends a clear message to federal employees that their employment is subject to whims of those on the hill (Raymond 2017).

In a short time, the Trump administration has created an environment counterproductive to the vital scientific work and communication needed to keep Americans healthy and safe. We know from a large body of research that workers—including scientists—are more productive in a positive work culture (Seppala and Cameron 2015). Scientists should not have to worry about discussing their work with the media or speaking about scientific conclusions at conferences. We should ensure that our country’s scientists work in environments where they thrive, not one in which they cannot do their jobs effectively.

Conclusion

To resist the Trump administration's attempts to dismantle science-based health and safety protections, we must understand its tactics and connect them to their real consequences. UCS is documenting the administration's attacks on science, analyzing their effects on the American people, raising awareness about the issues involved, and organizing scientists to push back. We cannot afford to retreat from recent progress on scientific integrity and science-based policies. The public's health and safety depend on it.

In January 2017, UCS issued *Preserving Scientific Integrity in Federal Policymaking*, a blueprint for the incoming administration, with recommendations to ensure the integrity of science in federal policymaking. Not only has the Trump administration failed to embrace these recommendations, it is taking deeply worrying steps to the contrary. Yet the science the nation relies on is more important than ever. In the coming decades, the United States will face some of the most difficult and complex challenges in its history. Science and technology are instrumental to meeting the challenges. The public deserves independent, impartial scientific information, even—or perhaps especially—when that information indicates the need for politically unpopular or inconvenient action.

Recognizing the stakes, scientists and science supporters are speaking up, taking advantage of the momentum of

successful marches and new opportunities for political engagement. Scientists and science supporters are connecting the administration's actions to consequences for public health and the environment. By understanding current and evolving threats and taking advantage of new vehicles for advocacy, we can defend the scientific enterprise our democracy depends on and preserve the public health measures and environmental protections that help make our nation great.

To ensure that public policy draws on the best-available scientific information, free from inappropriate political interference, UCS presents the following recommendations, built on those in our January report.

Recommendations for Scientists and Science Supporters

Communicating the importance of science and science-based policies to the public and to decisionmakers is crucial to fighting attacks on science and ensuring effective public safeguards. Scientists and science supporters have an important role to play in articulating the benefits that science and science-based policies bring to our families, communities, and daily lives. We need scientists and science supporters to sound the alarm when science is attacked, misused, or ignored and to push back against efforts to roll back science-based safeguards.

1. **Report abuses of science.** Scientists and government employees must blow the whistle when they witness abuses of science. Agencies have the tools to help scientists report these instances through their scientific integrity policies and inspector general offices. UCS has resources to help scientists securely share information: www.ucsusa.org/seureshare.

In the coming decades, the United States will face some of the most difficult and complex challenges in its history.



Andrew Bynning/UCS

Scientists and science supporters must continue to speak up against abuses of science by the Trump administration.

2. **Become a watchdog for science.** Scientists can help track and resist attacks on science as they happen. We need eyes on the administration and Congress to know when and how attacks are happening and to identify patterns of abuse. If you are a scientific expert, you can work with UCS to get the tools, updates, and opportunities needed to watchdog attacks on science. Learn more at www.ucsusa.org/sciencewatchdog.
3. **Talk to your elected officials.** Call or meet with your US senators' and representatives' state director or chief of staff. Building relationships with staff at these offices is essential to ensuring your issues get their attention and help them understand what is at stake for your state and district when it comes to science-based policies. Offer to be a resource for staff if they are looking into something that fits your expertise. UCS has resources to communicate effectively with your policymakers: www.ucsusa.org/watchdogtoolkit and www.ucsusa.org/action-center.
4. **Participate in town halls, public lectures, and other local venues.** You can help educate the public about the importance of science-based safeguards and federal science for keeping your state safe and healthy. Use your voice to raise awareness about critical issues of science and public health, safety, and the environment by speaking up publicly and inviting others to join in the concert of voices. A steady drumbeat of constituents educating and advocating for science-based policies is essential to defending our vital public protections and informed decisionmaking. To find events and townhalls in your area, sign up for your legislators' email list and regularly check www.townhallproject.com. If you are comfortable, go to public events equipped with a few talking points, signs, and questions. See our guide on participating in public events: www.ucsusa.org/townhallguide.
5. **Write a letter to the editor of your local newspaper or offer support to a local reporter.** Bring your perspective as a scientist or member of the community to talk about the importance of science-based public protections in your state, such as the Clean Air Act, the Endangered Species Act, and the Safe Drinking Water Act. In the letter, speak directly to your senators,

members of your community, and local businesses, and speak from the perspective of a concerned scientist, parent, educator, etc. The more personalized and state-relevant you make it, the more impact it will have. For tips on writing a letter to the editor, see www.ucsusa.org/writingLTEs.

6. **Harness the power of social media.** The fast-paced flow of information and ability to reach people at all levels and in all places in society makes social media an important tool. Social media offers opportunities to listen to and learn about the latest news and dialogues on key issues you care about, as well as to join the discussion, offer information, and connect with others on issues. See the UCS guide on engaging in social media for a slate of tools: www.ucsusa.org/usingsocialmedia. For UCS on-demand workshops on social media, visit: www.ucsusa.org/scinetworkshops.
7. **Connect in your community.** Join a local, state, and national nongovernmental organization to support science and the science used in policymaking. UCS has tools and guidance on ways you can join a movement to organize in your area: www.ucsusa.org/watchdogtoolkit. If you are a scientist, join the UCS Science Network to connect with more than 25,000 scientists throughout the country putting their skills to work for public good: www.ucsusa.org/sciencenetwork. Activists and community members can join the UCS Action Network to advocate for science: www.ucsusa.org/action.

In the coming decades, the United States will face some of the most difficult and complex challenges in its history.

Recommendations for Congress

Congress develops the laws that protect the public's health, safety, security, and environment, as well as laws that protect federal scientists and employees from politically motivated abuse. It holds critical oversight authority to investigate the executive branch and ensure that it fulfills its responsibilities and operates within the law. With growing abuses against science in the Trump administration, congressional vigilance is more important than ever.

1. **Bolster the use of science in decisionmaking.** Congress should explore ways to bolster the scientific information it receives and how this information can promote science-based decisionmaking.
 - Explore ways to strengthen the use and quality of independent scientific advice Congress receives through the Congressional Research Service, the Government Accountability Office (GAO), and other existing structures.
 - Reform the Public Records Act to eliminate mandated yearly reductions in paperwork when they reduce the ability of agencies to conduct surveys and collect data; increase transparency in the information collection approval process; and return authority to federal agencies so they may collect information needed to evaluate programs, identify regulatory gaps, and otherwise pursue their missions.
 - Monitor executive orders. Also, monitor the signing statements issued when the president signs a bill; these explain how the president interprets the law. And call out when these presidential directives undercut or dilute the role of science in policymaking.
2. **Pass a budget that adequately supports science, data collection, and the missions of federal agencies.** The president's budget proposal would hurt the economy, kill jobs, make Americans less safe, widen equity gaps, and gravely weaken our nation's science-based agencies and infrastructure. Congress should disregard that proposal and pass a budget that adequately supports the missions of agencies that rely on science, collect or provide data used in policymaking, and provide safeguards and information the public depends on.
3. **Protect the use of science in decisionmaking at federal agencies.** Use your position to protect and advance the role of science in decisionmaking in the following ways:
 - Request a GAO report on the effectiveness of agency scientific integrity policies. The report should include recommendations for enhancing or strengthening those policies.
 - Ask the National Academy of Sciences to study scientific integrity in decisionmaking across federal agencies and issue agency-specific recommendations for its advancement.

- Request a GAO report assessing how resource constraints and reduced or eliminated funding for monitoring and enforcement within agencies undermine science-based decisionmaking and the implementation of science-based policies. The report should address agency reliance on states and private-sector entities for data and other resources and capacity constraints that limit enforcement of agency mandates and rules.

4. **Use oversight authority to investigate potential abuses of science, conflicts of interest, and other ethical concerns.** The Trump administration quickly appointed a number of officials with conflicts of interest that compromise their ability to carry out their mission. Additionally, UCS has documented attacks on federal scientists and their work (see ucsusa.org/attacks-on-science). These trends undermine the important work of federal agencies. Congress should investigate allegations of compromised scientific integrity, conflicts of interest, and other violations of ethics rules, and make its conclusions available to the American people.
5. **Protect whistleblowers and prevent retaliation for making allegations related to agency scientific integrity policies.** Congress should expand the Whistleblower Protection Enhancement Act to:
 - Increase protections for federal employees against retaliatory investigations;
 - Grant access to district courts and jury trials for whistleblowers in the civil service system who report violations of scientific integrity; and
 - Cover scientists in the intelligence community, military service, and government contractor workforce.
6. **Close loopholes in the Federal Advisory Committee Act.** The legislation should extend the act's rules regarding advisory committees organized by federal contractors, not just committees convened directly by an agency. Committee members, including nonvoting members who regularly attend meetings, should be asked to provide complete information on affiliations and conflicts of interest.

Journalism must continue its quest to hold officials accountable for their words and actions.

Recommendations for the Media

The role of American journalism is to seek out truth and objectively report on it. Yet the Trump administration, including the president, willingly disregards facts, misrepresents scientific consensus, plays up uncertainty, vilifies scientists, and otherwise distorts public perceptions of science. Journalism must continue its quest to hold officials accountable for their words and actions and investigate allegations of wrongdoing in the federal government.

1. **Objectively report science.** The media must report science objectively, avoid false equivalencies that distort scientific consensus on issues, and correct the record when scientific information is misrepresented.
2. **Hold the federal government accountable for attacks on science.** New attacks on science come every day. UCS has documented a range of abuses conducted by the Trump administration, including techniques employed under prior administrations. Journalists and the media must report these abuses and hold officials accountable for actions that interfere with scientific integrity.
3. **Promote communication with federal scientists.** Federal scientists and employees have the right to speak to the public and the media as private citizens and to publish their research. In the past, elected or appointed officials have restricted access to scientists and misrepresented their research in various ways. We encourage the media to seek out scientists directly whenever possible and to call out agencies that place unnecessary barriers on communication between the media and government scientists.

[REFERENCES]

- Ahern, M.M., M. Hendryx, J. Conley, E. Fedorko, A. Ducatman, and K.J. Zullig. 2011. The association between mountaintop mining and birth defects among live births in central Appalachia, 1996–2003, May 9. *Environmental Research* 111(6): 838–846. Online at http://crmw.net/files/Ahern_et_al_MTR_and_birth_defects_2011.pdf, accessed May 23, 2017. doi.org/10.1016/j.envres.2011.05.019.
- AKM LLC v. Secretary of Labor, Department of Labor and Occupational Safety & Health Review Commission. 2012. No. 11-1106.
- Alaska Forum on the Environment (AFE). 2017. About the Alaska Forum on the Environment. Online at www.akforum.org/afe, accessed May 24, 2017.
- Aleman, J. 2017. Science division of White House office left empty as last staffers depart. CBS News, June 30. Online at www.cbsnews.com/news/science-division-of-white-house-office-now-empty-as-last-staffers-depart, accessed July 7, 2017.
- Alliance for Appalachia. No date. The human cost of coal. Online at <http://ilovemountains.org/the-human-cost/study-summaries>, accessed May 23, 2017.
- Arnsdorf, I. 2017. Trump lobbying ban weakens Obama rules. *Politico*, January 28. Online at www.politico.com/story/2017/01/trump-lobbying-ban-weakens-obama-ethics-rules-234318, accessed May 23, 2017.
- Arnsdorf, I., K. Vogel. 2016. Trump team announces tough lobbying ban. *Politico*, November 16. Online at www.politico.com/story/2016/11/donald-trump-lobbying-ban-231534, accessed May 23, 2017.
- Atkin, E. 2017. Guess which word the EPA just deleted from its Science Mission Statement. *Mother Jones*, March 7. Online at www.motherjones.com/environment/2017/03/epa-science-technology-office-removed-science, accessed May 24, 2017.
- Bainwol, M., E. Chao, K. Green, B. Charmley, C. Grundler, M. Olechiw, R. Yoon, J. Tamm, M. McCarthy, and A. Herbert. 2017. Letter to EPA Administrator G. Scott Pruitt, February 21. Online at <https://autoalliance.org/wp-content/uploads/2017/02/Letter-to-EPA-Admin.-Pruitt-Feb.-21-2016-Signed.pdf>, accessed June 12, 2017.
- Baker, P. and C. Davenport. 2017. Trump reviews Keystone Pipeline rejected by Obama. *The New York Times*, January 24. Online at www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?_r=1, accessed May 24, 2017.
- Baumgaertner, E. 2017. Trump's proposed budget cuts trouble bioterrorism experts. *New York Times*, May 28. Online at www.nytimes.com/2017/05/28/us/politics/biosecurity-trump-budget-defense.html, accessed June 7, 2017.
- BBC News. 2017. Trump travel ban: US states launch legal challenges. *BBC News*, March 10. Online at www.bbc.com/news/world-us-canada-39225773, accessed May 24, 2017.
- Bell, S. 2017. Now who will push ahead on validating forensic science disciplines? *Phys.org*, April 19. Online at <https://phys.org/news/2017-04-validating-forensic-science-disciplines.html>, accessed on May 23, 2017.
- Biesecker, M. 2017a. EPA chief met with Dow CEO before deciding on pesticide ban. *Associated Press*, June 27. Online at https://apnews.com/2350d7be5e24469ab445089bf663cdcb/EPA-chief-met-with-Dow-CEO-before-deciding-on-pesticide-ban?utm_campaign=SocialFlow&utm_source=Twitter&utm_medium=AP, accessed June 27, 2017.
- Biesecker, M. 2017b. Pesticide maker tries to kill risk study. *AP News*, April 20. Online at <https://apnews.com/a29073ecef9b4841b2e6cca07202bb67>, accessed May 24, 2017.
- Biesecker, M., and S. Borenstein. 2017. EPA science under scrutiny by Trump political staff. *AP News*, January 26. Online at <https://apnews.com/c1423276fb574b07953651a68a082db9>, accessed May 24, 2017.
- Biryukov, N. 2017. Many of public documents still missing from White House website. *CNBC*, February 23. Online at www.cnb.com/2017/02/23/many-of-public-documents-still-missing-from-white-house-website.html, accessed May 24, 2017.
- Brady, H. 2017. 4 key impacts of the Keystone XL and Dakota Access pipelines. *National Geographic*, January 25. Online at <http://news.nationalgeographic.com/2017/01/impact-keystone-dakota-access-pipeline-environment-global-warming-oil-health>, accessed June 7, 2017.
- Braun, S. 2016. Perry brings oil industry ties to Energy Department. *PBS*, December 14. Online at www.pbs.org/newshour/rundown/perry-oil-industry-energy-department, accessed May 23, 2017.
- Brunner, J., J. Lee, and D. Gutman. 2017. Judge in Seattle halts Trump's immigration order nationwide; White House vows fight. *Seattle Times*, February 4. Online at www.seattletimes.com/seattle-news/politics/federal-judge-in-seattle-halts-trumps-immigration-order, accessed May 24, 2017.
- Calamur, K. 2017. What Trump's Executive Order on immigration does—and doesn't do. *The Atlantic*, January 30. Online at www.theatlantic.com/news/archive/2017/01/trump-immigration-order-muslims/514844, accessed May 24, 2017.
- Cama, T. 2017. EPA delays Obama air pollution rule by one year. *The Hill*, June 6. Online at <http://thehill.com/policy/energy-environment/336663-epa-delays-obama-air-pollution-rule-deadline-by-one-year>, accessed June 7, 2017.

- Cappiello, D., and S. Borenstein. 2014. West Virginia chemical spill exposes a new risk to water from coal. *Weather Channel*, January 18. Online at <https://weather.com/science/environment/news/west-virginia-chemical-spill-exposes-new-risk-water-coal-20140118>, accessed May 24, 2017. Cason, J. 2017. Memorandum to assistant secretaries, heads of bureaus and office directors, April 12. Washington, DC: Secretary of the Interior. Online at www.scribd.com/document/345848749/Interior-Grants, accessed May 24, 2017.
- Centers for Disease Control and Prevention. 2011. CDC Vital Signs: Asthma in the US. Online at <https://www.cdc.gov/vitalsigns/asthma/index.html>, accessed June 28, 2017.
- Center for Responsive Politics (CRP). No date a. Representative Bill Johnson top contributors. Online at www.opensecrets.org/politicians/contrib.php?cycle=Career&type=I&cid=N00032088&newMem=N&recs=20, accessed May 24, 2017.
- Center for Responsive Politics (CRP). No date b. Representative Evan Jenkins top contributors. Online at www.opensecrets.org/politicians/contrib.php?cycle=Career&cid=N00035531&type=I, accessed May 24, 2017.
- Center for Responsive Politics (CRP). No date c. Representative David McKinley top contributors. Online at opensecrets.org/politicians/contrib.php?cycle=Career&type=I&cid=N00031681&newMem=N&recs=20, accessed May 24, 2017.
- Cha, A. 2015. The origins of Donald Trump's autism/vaccine theory and how it was completely debunked eons ago. *Washington Post*, September 17. Online at www.washingtonpost.com/news/to-your-health/wp/2015/09/17/the-origins-of-donald-trumps-autismvaccine-theory-and-how-it-was-completely-debunked-eons-ago/?tid=a_inl&utm_term=.1a5d729b9714, accessed May 23, 2017.
- Choi, C. 2017. FDA delays revamped nutrition facts panel. *Washington Post*, June 13. Online at https://www.washingtonpost.com/business/fda-delays-rule-requiring-new-nutrition-facts-panel-on-food/2017/06/13/0a74a1ba-5041-11e7-b74e-0d2785d3083d_story.html?utm_term=.6338788cfd98, accessed June 14, 2017.
- CNBC. 2017. New EPA head Scott Pruitt: You can be pro-growth and pro-environment. Video, March 9. Online at <http://video.cnb.com/gallery/?video=3000599841>, accessed May 24, 2017.
- Coalition of Sensible Safeguards (CSS). 2017. Rules repealed. Online at www.rulesatrisk.org, accessed May 23, 2017.
- Conti, D. 2015. Foes, advocates testify about Obama's proposed changes to Stream Protection Rule. *Trib Live*, September 10. Online at <http://triblive.com/business/headlines/9067868-74/stream-mining-coal#axzz3lSXMQ1Ej>, accessed May 24, 2017.
- Cook, J., N. Oreskes, P. Doran, W. Anderegg, B. Verheggen, E. Maibach, J. Carlton, S. Lewandowsky, A. Skuce, S. Green, D. Nuccitelli, P. Jacobs, M. Richardson, B. Winkler, R. Painting, and K. Rice. 2016. Consensus on consensus: a synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters* 11. Online at <http://iopscience.iop.org/article/10.1088/1748-9326/11/4/048002/pdf>, accessed on May 23, 2017. doi:10.1088/1748-9326/11/4/048002.
- Dabbs, B. EPA Leaders Trashed Staff Comments Critical of Data Overhaul Bill: Officials. *Bloomberg BNA*. April 4. Online at <https://www.bna.com/epa-leaders-trashed-n57982086175/>, accessed June 13, 2017.
- Daly, N., and R. Bale. 2017. We asked the government why animal welfare records disappeared. They sent 1,700 blacked-out pages. *National Geographic*, May 1. Online at <http://news.nationalgeographic.com/2017/05/usda-animal-welfare-records-foia-black-out-first-release>, accessed May 24, 2017.
- Davenport, C. 2017. E.P.A. Official Pressured Scientist on Congressional Testimony, Emails Show. *New York Times*, June 26. Online at <https://www.nytimes.com/2017/06/26/us/politics/epa-official-pressured-scientist-on-congressional-testimony-emails-show.html>, accessed July 5, 2017.
- Davenport, C., and E. Lipton. 2017. The Pruitt emails: E.P.A. chief was arm in arm with industry. *New York Times*, February 22. Online at www.nytimes.com/2017/02/22/us/politics/scott-pruitt-environmental-protection-agency.html?_r=0, accessed May 23, 2017.
- Dennis, B. 2017a. Scott Pruitt, longtime adversary of EPA, confirmed to lead the agency. *Washington Post*, February 17. Online at www.washingtonpost.com/news/energy-environment/wp/2017/02/17/scott-pruitt-long-time-adversary-of-epa-confirmed-to-lead-the-agency/?utm_term=.8b14a9f528cd, accessed May 24, 2017.
- Dennis, B. 2017b. Trump administration halts Obama-era rule aimed at curbing toxic wastewater from coal plants. *Washington Post*, April 13. Online at www.washingtonpost.com/news/energy-environment/wp/2017/04/13/trump-administration-halts-obama-era-rule-aimed-at-curbing-toxic-wastewater-from-coal-plants/?utm_term=.0bbd1e337e4f, accessed May 24, 2017.
- Dennis, B., J. Eilpern. 2017. EPA chief pushing government wide effort to question climate change science. *Washington Post*, July 1. Online at https://www.washingtonpost.com/news/energy-environment/wp/2017/07/01/epa-chief-pushing-governmentwide-effort-to-question-climate-change-science/?utm_term=.f10e1537cd1b, accessed July 6, 2017.
- Department of Labor (DOL). 2017. OSHA to delay enforcing crystalline silica standard in the construction industry. News Release, April 6. Online at www.osha.gov/news/newsreleases/national/04062017, accessed June 7, 2017.
- Department of Labor (DOL). No date. Final rule to protect workers from beryllium exposure. Washington, DC: Occupational Safety and Health Administration. Online at www.osha.gov/berylliumrule, accessed May 25, 2017.
- Deyette, J., S. Clemmer, R. Cleetus, S. Sattler, A. Bailie, and M. Rising. 2015. *The natural gas gamble: A risky bet on America's clean energy future*. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/sites/default/files/attach/2015/03/natural-gas-gamble-full-report.pdf, accessed May 24, 2017.
- DiChristopher, T. 2017. EPA chief Scott Pruitt says carbon dioxide is not a primary contributor to global warming. *CNBC*, March 9. Online at www.cnb.com/2017/03/09/epa-chief-scott-pruitt.html, accessed May 23, 2017.

- Dreyfuss, E. 2017. The Ninth Circuit banned Trump's ban because it hurts science. *Wired*, February 9. Online at www.wired.com/2017/02/ninth-circuit-banned-trumps-ban-hurts-science, accessed May 24, 2017.
- Eilperin, J. 2017. D.C. circuit grants EPA's request to delay smog rule case. *Washington Post*, April 11. Online at www.washingtonpost.com/news/energy-environment/wp/2017/04/11/d-c-circuit-grants-epas-request-to-delay-smog-rule-case/?utm_term=.f6e196ddc59a, accessed May 24, 2017.
- Eilperin, J. and B. Dennis. 2017. EPA seeks delay over rule curbing coal plants' toxic pollution. *Washington Post*, April 18. Online at www.washingtonpost.com/news/energy-environment/wp/2017/04/18/epa-seeks-delay-over-rule-curbing-coal-plants-toxic-pollution/?utm_term=.9843fecc4fd8, accessed May 25, 2017.
- Eisenbud, M., et al. 1949. Aerosols generated during beryllium machining. *Journal of Industrial Hygiene and Toxicology* 31:281-294.
- Environmental Data & Governance Initiative (EDGI). 2017a. Changes to DOE's Office of Energy Efficiency & Renewable Energy Bioenergy Technologies Office web pages. Washington, DC. Online at <https://envirodatagov.org/wp-content/uploads/2017/04/DOE-EERE-Bioenergy-Technologies-Office.pdf>, accessed May 24, 2017.
- Environmental Data & Governance Initiative (EDGI). 2017b. Changes to DOE's Office of Energy Efficiency & Renewable Energy Vehicle Technologies Office web pages. Washington, DC. Online at <https://envirodatagov.org/wp-content/uploads/2017/04/DOE-EERE-Vehicle-Technologies-Office.pdf>, accessed May 24, 2017.
- Environmental Data & Governance Initiative (EDGI). 2017c. Changes to DOE's Office of Energy Efficiency & Renewable Energy Wind Energy Technologies Office web pages. Washington, DC. Online at <https://envirodatagov.org/wp-content/uploads/2017/04/DOE-EERE-Wind-Technologies-Office.pdf>, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2017a. Regulations for emissions from vehicles and engines: Midterm evaluation of light-duty vehicle greenhouse gas (GHG) emissions standards for model years 2022–2025, March 15. Online at www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ghg, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2017b. EPA to reexamine emission standards for cars and light duty trucks—model years 2022–2025. News release, March 15. Online at <https://www.epa.gov/newsreleases/epa-reexamine-emission-standards-cars-and-light-duty-trucks-model-years-2022-2025>, accessed June 12, 2017.
- Environmental Protection Agency (EPA). 2017c. EPA withdraws information request for the oil and gas industry. Press Release, March 2. Online at www.epa.gov/newsreleases/epa-withdraws-information-request-oil-and-gas-industry, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2017d. EPA to reconsider oil and gas rule: EPA continues to follow through with President Trump's EO on American energy independence. News release, April 19. Online at <https://www.epa.gov/newsreleases/epa-reconsider-oil-and-gas-rule>, accessed June 12, 2017.
- Environmental Protection Agency (EPA). 2017e. EPA to reconsider ELG rule: EPA takes another action to implement President Trump's vision. News release, April 13. Online at www.epa.gov/newsreleases/epa-reconsider-elg-rule, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2016a. Revised Human Health Risk Assessment on chlorpyrifos. Online at www.epa.gov/ingredients-used-pesticide-products/revised-human-health-risk-assessment-chlorpyrifos, accessed May 23, 2017.
- Environmental Protection Agency (EPA). 2016b. Information collection effort for oil and gas facilities, November 9. North Carolina: EPA Sector Policies and Programs Division. Online at www.epa.gov/sites/production/files/2016-11/documents/oil-natural-gas-icr-supporting-statement-epa-icr-2548-01.pdf, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2016c. Reducing methane emissions from the oil and natural gas industry, March 10. Online at www.epa.gov/sites/production/files/2016-09/documents/20160310fs1.pdf, accessed May 24, 2017.
- Environmental Protection Agency (EPA). 2016d. EPA releases first-ever standards to cut methane emissions from the oil and gas sector. News release, May 12. Online at <https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector>, accessed June 12, 2017.
- Environmental Protection Agency (EPA). 2011. EPA issues first national standards for mercury pollution from power plants. News release, December 21.
- Environmental Protection Agency (EPA). 1996. EPA takes final step in phaseout of leaded gasoline. Press release, January 29. Online at <https://archive.epa.gov/epa/aboutepa/epa-takes-final-step-phaseout-leaded-gasoline.html>, accessed June 12, 2017.
- Environmental Protection Agency (EPA). 1973. EPA requires phase-out of lead in all grades of gasoline. Press release, November 28. Online at <https://archive.epa.gov/epa/aboutepa/epa-requires-phase-out-lead-all-grades-gasoline.html>, accessed June 12, 2017.
- Environmental Protection Agency (EPA). No date a. Health effects of exposures to mercury. Online at www.epa.gov/mercury/health-effects-exposures-mercury, accessed May 25, 2017.
- Environmental Protection Agency (EPA). No date b. Cleaner Power Plants. Online at epa.gov/mats/cleaner-power-plants, accessed June 7, 2017.
- Environmental Protection Agency (EPA). No date c. Mercury and air toxic standards: Healthier Americans. Online at epa.gov/mats/healthier-americans, accessed May 25, 2017.

- Environmental Protection Agency (EPA). No date d. Final amendments to the Risk Management Program (RMP) Rule. Online at www.epa.gov/rmp/final-amendments-risk-management-program-rmp-rule, accessed May 25, 2017. Esch, L. and M. Hendryx. 2011. Chronic cardiovascular disease mortality in mountaintop mining areas of central Appalachia states. *The Journal of Rural Health* 00: 1-8. West Virginia: Department of Community Medicine, West Virginia University. Online at http://crmw.net/files/Esch_Hendryx_Chronic_cardiovascular_disease_mortality_in_MTR_2011.pdf, accessed May 24, 2017. doi: 10.1111/j.1748-0361.2011.00361.x.
- Executive Office of the President of the United States (EOPOTUS). 2017. *America first: A budget blueprint to make America great again*. Washington, DC: Office of Management and Budget.
- Federal Register*. 2017a. Accidental release prevention requirements: Risk Management Programs under the Clean Air Act; further delay of effective date, March 16. Washington, DC: Government Publishing Office: Vol. 82, No. 50. Online at www.gpo.gov/fdsys/pkg/FR-2017-03-16/pdf/2017-05288.pdf, accessed May 25, 2017.
- Federal Register*. 2017b. Accidental release prevention requirements: Risk Management Programs under the Clean Air Act; further delay of effective date, June 14. Washington, DC: Government Publishing Office. Online at <https://www.gpo.gov/fdsys/pkg/FR-2017-06-14/pdf/2017-12340.pdf>, accessed July 5, 2017.
- Federal Register*. 2017c. Occupational exposure to beryllium: Delay of effective date, February 1. Washington, DC: Occupational Safety and Health Administration. Online at www.federalregister.gov/documents/2017/02/01/2017-02149/occupational-exposure-to-beryllium-delay-of-effective-date, accessed May 25, 2017.
- Federal Register*. 2017d. *Occupational Exposure to Beryllium; Further Delay of Effective Date, March 21*. Washington, DC: Occupational Safety and Health Administration. Online at <https://www.gpo.gov/fdsys/pkg/FR-2017-03-21/pdf/2017-05569.pdf>, accessed May 25, 2017.
- Federal Register*. 2015. Effluent limitations guidelines and standards for the steam electric power generating point source category, November 3. Washington, DC: US Environmental Protection Agency. Online at www.federalregister.gov/documents/2015/11/03/2015-25663/effluent-limitations-guidelines-and-standards-for-the-steam-electric-power-generating-point-source, accessed May 24, 2017.
- Food and Beverage Issue Alliance. 2016. Letter addressed to Burwell, Vilsack, Donovan, and Contreras-Sweet. Online at <http://www.idfa.org/docs/default-source/d-news/fbia-letter.pdf>, accessed June 14, 2017.
- Gajanan, M. 2017. Kellyanne Conway defends White House's falsehoods as alternative facts. *Time*, January 22. Online at <http://time.com/4642689/kellyanne-conway-sean-spicer-donald-trump-alternative-facts>, accessed May 23, 2017.
- Garrett, M, and A. Farhi. 2016. Trump picks ExxonMobil CEO Rex Tillerson as secretary of state. *CBS News*, December 13. Online at www.cbsnews.com/news/donald-trump-picks-exxonmobil-ceo-rex-tillerson-as-secretary-of-state, accessed May 24, 2017.
- Gerstein, J. 2017. Trump may be skirting transparency law on advisory boards. *Politico*, February 2. Online at www.politico.com/story/2017/02/trump-transparency-law-advisory-boards-234583, accessed June 7, 2017.
- Gibbons, L. 2016. Dow Chemical CEO named chair of national Manufacturing Council by Trump. *M Live*, December 9. Online at www.mlive.com/news/index.ssf/2016/12/dow_chemical_ceo_named_by_trum.html, accessed May 24, 2017.
- Goldman, G., G. Reed, M. Halpern, C. Johnson, E. Berman, Y. Kothari, and A. Rosenberg. 2017. *Preserving scientific integrity in federal policymaking: Lessons from the past two administrations and what's at state under the Trump administration*. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/sites/default/files/attach/2017/01/preserving-scientific-integrity-in-federal-policymaking-ucs-2017.pdf, accessed May 24, 2017.
- Goldman, G., C. Carlson, D. Bailin, L. Fong, and P. Phartiyal. 2014. *Added sugar, subtracted science: How industry obscures science and undermines public health policy on sugar*. Cambridge, MA: Union of Concerned Scientists. Online at <http://www.ucsusa.org/center-for-science-and-democracy/sugar-industry-undermines-public-health-policy.html#.WUGLoBuGPcs>, accessed June 14, 2017.
- Government Accountability Office (GAO). 2014. *Report to congressional requestors: Regulatory impact analysis: Development of social costs of carbon estimates*. Washington, DC. Online at www.gao.gov/assets/670/665016.pdf, accessed May 24, 2017.
- Greene, D.L., J.G. Welch, and H.H. Baker, Jr. 2016. Comment submitted to Environmental Protection Agency Notice: Notice of availability of Midterm Evaluation Draft Technical Assessment Report for Model Year 2022–2025 Light Duty Vehicle GHG Emissions and CAFÉ Standards. Online at www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-4311, accessed May 24, 2017.
- Grenoble, R. 2016. All of America's science Nobel Prizes this year were won by immigrants. *Huffington Post*, October 10. Online at www.huffingtonpost.com/entry/nobel-prize-immigrants_us_57bfd51e4b068ecb5e0cd4e, accessed June 8, 2017.
- Grossmann, M. 2012. Interest group influence on US policy change: An assessment based on policy history. *Interest Groups & Advocacy* 1-2: 171-192. Online at <https://link.springer.com/article/10.1057%2Figa.2012.9>, accessed June 7, 2017.
- Guillén, A., and E. Whieldon. 2017. Energy executives, secretive nonprofit raise money to back Pruitt. *Politico*, January 6. Online at www.politico.com/story/2017/01/scott-pruitt-epa-nonprofit-backers-233306, accessed June 7, 2017.
- Hammock, B.T. 2015. Construction Industry Safety Coalition letter to Department of Labor Assistant Secretary David Michaels, March 25. Online at https://www.asaonline.com/eweb/upload/CISC%20New%20Report%20re%20Occupational%20Exposure%20to%20Crystalline%20Silica_Docket%20No....pdf, accessed June 12, 2017.

- Harrington, R. 2016. The EPA has only banned these 9 chemicals—out of thousands. *Business Insider*, February 10. Online at <http://www.businessinsider.com/epa-only-restricts-9-chemicals-2016-2/>, accessed on July 7, 2017.
- Harvey, C., J. Eilperin. 2017. Trump's expected choice for USA science job lacks hard-science background. *Washington Post*, May 13. Online at www.washingtonpost.com/news/energy-environment/wp/2017/05/13/trumps-expected-choice-for-the-leading-usda-science-job-isnt-a-trained-scientist/?utm_term=.dd4ed7da210b, accessed May 23, 2017.
- Hendryx, M. and M. Ahern. 2008. Relations between health indicators and residential proximity to coal mining in West Virginia, April. *American Journal of Public Health* 98(4): 669–671. Online at http://crmw.net/files/Hendryx_Ahern_Health_Indicators.pdf, accessed May 24, 2017. doi:10.2105/AJPH.2007.113472.
- Hendryx, M., K. O'Donnell, and K. Horn. 2008. Lung cancer mortality is elevated in coal-mining areas of Appalachia, February 1. *Lung Cancer* 2008 62: 1–7. *West Virginia: Department of Community Medicine, West Virginia University*. Online at http://crmw.net/files/Hendryx_et_al_Lung_Cancer_rates_elevated_2008.pdf, accessed May 23, 2017. doi:10.1016/j.lungcan.2008.02.004.
- Hendryx, M., F. Fulk, and A. McGinley. 2012. Public drinking water violations in mountaintop coal mining areas of West Virginia, USA, August 3. *Water Quality, Exposure and Health* 4(3): 169–175. Online at <https://link.springer.com/article/10.1007%2Fs12403-012-0075-x>, accessed on May 24, 2017. doi:10.1007/s12403-012-0075-x.
- Holden, E. 2017. Pruitt will launch program to 'critique' climate science. *E&E News*. June 30. Online at <https://www.eenews.net/stories/1060056858>, accessed July 10, 2017.
- Interagency Working Group on Social Cost of Carbon. 2010. Social cost of carbon for regulatory impact analysis, February. Online at <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>, accessed June 7, 2017.
- Jain, A., J. Marshall, and A. Buikema. 2015. Autism occurrence by MMR vaccine status among US children with older siblings with and without autism. *Journal of the American Medical Association* 313-15: 1534–1540. Online at <http://jamanetwork.com/journals/jama/fullarticle/2275444>, accessed May 23, 2017.
- Johnson, B. 2016. Bill Johnson on the Office of Surface Management's ill-advised "Stream Protection Rule." Press release, December 19. Online at <https://billjohnson.house.gov/news/documentsingle.aspx?DocumentID=399114>, accessed June 12, 2017.
- Jones, R. 2001. Marburger nominated as OSTP director. *APS News*. Online at aps.org/publications/apsnews/200108/marburger.cfm, accessed May 23, 2017.
- Kintisch E. 2008. Sources: John Holdren to be nominated as Obama's Science Adviser. *Science*, December 18. Online at www.sciencemag.org/news/2008/12/sources-john-holdren-be-nominated-obamas-science-adviser, accessed May 23, 2017.
- Lafolla, R. 2014. Chamber of Commerce, Chemistry Council cast doubt on OSHA's science on silica. *Bloomberg BNA*, March 20. Online at www.bna.com/chamber-commerce-chemistry-n17179888697, accessed June 7, 2017.
- Lartey, J. 2017. US federal communications crackdown: what we know and what we don't. *The Guardian*, January 26. Online at www.theguardian.com/us-news/2017/jan/26/us-federal-agency-crackdown-epa-sean-spicer, accessed May 24, 2017.
- Laughland, Oliver. 2017. Trump travel ban: US supreme court partially lifts block on order. *The Guardian*, June 26. Online at <https://www.theguardian.com/us-news/2017/jun/26/trump-travel-ban-supreme-court-block-partially-lifted>, accessed June 27, 2017.
- Lehmann, E., C. von Kaenel. 2016. EPA pick sought to unravel endangerment finding. *ClimateWire*, December 8. Online at <https://www.eenews.net/climatewire/2016/12/08/stories/1060046865>, Accessed July 6, 2017.
- Lerner, S. 2017. Government scientists at U.S. climate conference terrified to speak with the press. *The Intercept*, January 26. Online at <https://theintercept.com/2017/01/26/government-scientists-at-u-s-climate-conference-terrified-to-speak-with-the-press>, accessed May 24, 2017.
- Levin, S. 2017. "Like a slow death": families fear pesticide poisoning after Trump reverses ban. *The Guardian*, April 17. Online at www.theguardian.com/us-news/2017/apr/17/california-pesticides-central-valley-trump, accessed May 24, 2017.
- Levitan, D. 2016. When a president banishes science from the White House. *The Atlantic*, October 31. Online at www.theatlantic.com/science/archive/2016/10/when-a-president-banishes-science-from-the-white-house/505937, accessed May 23, 2017.
- Lipton, E. 2014. Energy firms in secretive alliance with attorneys general. *New York Times*, December 6. Online at www.nytimes.com/2014/12/07/us/politics/energy-firms-in-secretive-alliance-with-attorneys-general.html, accessed May 23, 2017.
- Lyman, E. 2017. Trump Administration Blocks Government Scientists from Attending International Meeting on Nuclear Power. Washington DC: Union of Concerned Scientists. Blog, June 26. Online at <http://allthingsnuclear.org/elyman/trump-admin-blocks-government-scientists-from-meeting>, accessed July 5, 2017.
- Madsen, K., A. Hviid, M. Vestergaard, D. Schendel, J. Wohlfahrt, P. Thorsen, J. Olsen, and M. Melbye. 2002. A population-based study of measles, mumps, and rubella vaccination and autism. *The New England Journal of Medicine* 347-19: 1477–1482. Online at www.nejm.org/doi/pdf/10.1056/NEJMoa021134, accessed 5/23/2017.
- Mancini, D.J. 2017. Memorandum: Interim guidance implementing Section 2 of the Executive Order of January 30, 2017, titled "Reducing Regulation and Controlling Regulatory Costs." Washington, DC: Office of the White House Press. Online at whitehouse.gov/the-press-office/2017/02/02/interim-guidance-implementing-section-2-executive-order-january-30-2017, accessed May 24.

- Maron, D.F. 2017. CDC's canceled climate change summit raises self-censorship concerns. *Scientific American*, January 27. Online at www.scientificamerican.com/article/cdc-s-canceled-climate-change-summit-raises-self-censorship-concerns, accessed May 24, 2017.
- Massachusetts v. Environmental Protection Agency*. 2007. 549 US. 497 (2007).
- Meier, B., and D. Ivory. 2017. Under Trump, worker protections are viewed with new skepticism. *New York Times*, June 5. Online at www.nytimes.com/2017/06/05/business/under-trump-worker-protections-are-viewed-with-new-skepticism.html, accessed June 7, 2017.
- Meyer, A. 2017. President Trump's epic fail on Paris. Washington, DC: Union of Concerned Scientists. Blog, June 1. Online at <http://blog.ucsusa.org/alden-meyer/president-trumps-epic-fail-on-paris>, accessed June 7, 2017.
- Milman, O. 2017. Climate change progress at Trump's EPA is grinding to a halt, workers reveal. *The Guardian*, June 6. Online at www.theguardian.com/environment/2017/jun/06/climate-change-work-trump-epa, accessed June 8, 2017.
- Mooney, C. 2017. 85 percent of the top science jobs in Trump's government don't even have a nominee. *Washington Post*, June 6. Online at www.washingtonpost.com/news/energy-environment/wp/2017/06/06/trump-has-filled-just-15-percent-of-the-governments-top-science-jobs/?utm_term=.f6bc4a1b9923, accessed June 6, 2017.
- Mosbergen, D. 2017. Scott Pruitt has sued the Environmental Protection Agency 13 times. Now he wants to lead it. *The Huffington Post*, January 17. Online at www.huffingtonpost.com/entry/scott-pruitt-environmental-protection-agency-us_5878ad15e4b0b3c7a7b0c29c, accessed May 23, 2017.
- Murphy, T. 2016. Rick Perry's war on science. *Mother Jones*, December 13. Online at www.motherjones.com/environment/2016/12/rick-perry-energy-secretary-climate-censorship, accessed May 23, 2017.
- National Association of Home Builders (NAHB). 2017. OSHA further delays silica rule enforcement, April 7. Online at <http://nahbnow.com/2017/04/osha-further-delays-silica-rule-enforcement>, accessed May 25, 2017.
- National Mining Association (NMA). No date. *Protecting bureaucracy, not streams: Stream Protection Rule*. Online at <http://nma.org/wp-content/uploads/2016/09/Fact-Sheet-SPR.pdf>, accessed May 24, 2017.
- NSC Congress & Expo. 2017. Trump signs resolution to strike down "Volks" recordkeeping rule. *Safety+Health*, April 4.
- Obama, B. 2016. Presidential memorandum: Climate change and national security. Washington, DC: Office of the White House Press Secretary. Online at <https://obamawhitehouse.archives.gov/the-press-office/2016/09/21/presidential-memorandum-climate-change-and-national-security>, accessed May 24, 2017.
- Obama, B. 2013. Executive Order 13642: Making open and machine readable the new default for government information. Washington, DC: Office of the White House Press Secretary. Online at <https://obamawhitehouse.archives.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine-readable-new-default-government->, accessed May 24, 2017.
- Office of Surface Mining Reclamation and Enforcement (OSMRE). 2017. *Stream protection rule*, May 1. Washington, DC: Department of Interior. Online at www.osmre.gov/programs/rcm/streamprotectionrule.shtm, accessed May 23, 2017.
- Paxton, K., M. Brnovich, M. Bevin, P. Bryant, M. Hunter, P. Morrissey, S.T. Marshall, D. Schmidt, J. Landry, T. Fox, and A. Wilson. 2017. Letter to EPA Administrator Scott Pruitt, March 1. Online at https://www.texasattorneygeneral.gov/files/epress/FINAL_Signed_Letter_to_EPA.pdf?cachebuster%3A40=&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=, accessed June 12, 2017.
- Pruitt, E.S. 2017. Letter to Mr. Feldman, Ms. Broome, Mr. Elliot and Mr. Hite regarding convening a proceeding for reconsideration of finale rule, "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed and Modified Sources," published June 3, 2016, 81 Fed. Reg. 35824, April 18. Online at www.epa.gov/sites/production/files/2017-04/documents/oil_and_gas_fugitive_emissions_monitoring_reconsideration_4_18_2017.pdf, accessed May 24.
- Portnoy, J., and L. Rein. 2017. House Republicans revive obscure rule that allows them to slash the pay of individual federal workers to \$1. *Washington Post*, January 5. Online at www.washingtonpost.com/local/virginia-politics/house-republicans-revive-obscure-rule-that-could-allow-them-to-slash-the-pay-of-individual-federal-workers-to-1/2017/01/04/4e80c990-d2b2-11e6-945a-76f69a399dd5_story.html, accessed May 24, 2017.
- Raymond, L. 2017. New House rules allow Congress to slash the pay of individual federal workers. *Think Progress*, January 5. Online at <https://thinkprogress.org/congress-can-now-target-individual-employees-263b330eeabb>, accessed May 24, 2017.
- Reed, G. 2017a. Advisory Committee shakeup targets independent science and scientists. Washington, DC: Union of Concerned Scientists. Blog, May 8. Online at <http://blog.ucsusa.org/genna-reed/advisory-committee-shakeup-targets-independent-science-and-scientists>, accessed May 23, 2017.
- Reed, G. 2017b. Want to squash science? Follow Pruitt's lead at the EPA. Washington DC: Union of Concerned Scientists. Blog, June 21. Online at <http://blog.ucsusa.org/genna-reed/pruitt-epa-scientific-advisory>, accessed July 5, 2017.
- Reed, G. 2017c. USDA nominee Perdue's connection to Coca-Cola is deeper than Georgia roots. Washington DC: Union of Concerned Scientists. Blog, January 19. Online at <http://blog.ucsusa.org/genna-reed/usda-nominee-perdues-connection-to-coca-cola-is-deeper-than-georgia-roots>, accessed May 23, 2017.
- Reilly, K. 2016. Rick Perry infamously forgot about the Department of Energy. Now he might lead it. *Time*, December 13. Online at <http://time.com/4598910/rick-perry-department-energy-oops-gaffe>, accessed May 23, 2017.

- Reilly, A. 2015. EPA foes turned asthma study into weapon for ozone fight. *E&E News*, August 6. Online at www.eenews.net/stories/1060023092, accessed May 24, 2017.
- Restuccia, A. 2017. CEOs take front-seat role driving policy: Transportation, energy and finance executives are among the first tapped by the Trump team for guidance. *Politico*, March 28. Online at www.politico.com/story/2017/03/ceos-take-front-seat-role-driving-policy-236562, accessed May 24, 2017.
- Rinberg, T. 2017a. The announced overhaul of EPA.gov has already begun and pages relating to climate change are currently inaccessible. Environmental Data and Governance Initiative. Blog, April 29. Online at <https://envirodatagov.org/the-overhaul-of-epa-gov-has-already-begun>, accessed May 24, 2017.
- Rinberg, T. 2017b. Errors in the January 19 snapshot of EPA.gov are problematic from transparency, data preservation, and information access standpoints and may have legal implications. Environmental Data and Governance Initiative. Blog, May 5. Online at <https://envirodatagov.org/errors-in-the-january-19-snapshot-of-epa-gov-are-problematic-from-transparency-data-preservation-and-information-access-standpoints-and-may-have-legal-implications>, accessed May 24, 2017.
- Rodriguez, J.C. 2016. EPA Risk Management Rule may help terrorists, AGs say. *Law360*, August 5. Online at www.law360.com/articles/825532/epa-risk-management-rule-may-help-terrorists-ags-say, accessed May 25, 2017.
- Rosenberg, A.A., L.M. Branscomb, V. Eady, P.C. Frumhoff, G.T. Goldman, M. Halpern, K. Kimmell, Y. Kothari, L.D. Kramer, N.F. Lane, J.J. McCarthy, P. Phartiyal, K. Rest, R. Sims, and C. Wexler. 2015. Congress's attacks on science-based rules. *Science*. May 29. 348(6238):964-6. doi: 10.1126/science.aab2939. Online at <https://www.ncbi.nlm.nih.gov/pubmed/26023118>, accessed June 13, 2017.
- Rucker, P. and R. Costa. 2017. Bannon vows a daily fight for “deconstruction of the administrative state.” *Washington Post*, February 23. Online at www.washingtonpost.com/politics/top-wh-strategist-vows-a-daily-fight-for-deconstruction-of-the-administrative-state/2017/02/23/03f6b8da-f9ea-11e6-bf01-d47f8cf9b643_story.html?utm_term=.5d4315dad94, accessed May 23, 2017.
- Rushe, D. 2017. Top US coal boss Robert Murray: Trump “can’t bring mining jobs back.” *The Guardian*, March 27. Online at www.theguardian.com/environment/2017/mar/27/us-coal-industry-clean-power-plan-donald-trump, accessed May 24, 2017.
- Salvador, R., and N. Gilbert. 2017. Sonny Perdue vows to make American agriculture great again—but for whom? *The Guardian*, January 29. Online at www.theguardian.com/sustainable-business/2017/jan/29/sonny-perdue-agriculture-secretary-farming-american-agribusiness, accessed May 23, 2017.
- Samenow, J. 2017. EPA's Scott Pruitt wants to set up opposing teams to debate climate change science. *Washington Post*, June 7. Online at https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/06/07/epas-scott-pruitt-wants-to-set-up-opposing-teams-to-debate-climate-change-science/?utm_term=.77b9743c4fc5, accessed July 6, 2017.
- Santer, B. et al. 2017. Attention Scott Pruitt: Red teams and blue teams are no way to conduct climate science. *Washington Post*, June 12. Online at https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/06/21/attention-scott-pruitt-red-teams-and-blue-teams-are-no-way-to-conduct-climate-science/?utm_term=.ed549b18b34d, accessed July 11, 2017.
- Schmidt, M., E. Lipton. 2017. Trump toughens some facets of lobbying ban and weakens others. *New York Times*, January 28. Online at www.nytimes.com/2017/01/28/us/politics/trump-toughens-some-facets-of-lobbying-ban-and-weakens-others.html?_r=1, accessed May 23, 2017.
- Seppala, E., and K. Cameron. 2015. Proof that positive work cultures are more productive. *Harvard Business Review*, December 1. Online at <https://hbr.org/2015/12/proof-that-positive-work-cultures-are-more-productive>, accessed May 24, 2017.
- Singh, R., N. Gautam, A. Mishra, and R. Gupta. 2011. *Heavy metals and living systems: An overview*. *Indian Journal of Pharmacology* 43(3): 246–253. Online at www.ncbi.nlm.nih.gov/pmc/articles/PMC3113373, accessed May 24, 2017. doi: 10.4103/0253-7613.81505.
- Singh, S., L. Durso. 2017. The Trump Administration is rolling back data collection on LGBT older adults. Washington, DC: Center for American Progress. Blog, March 20. Online at americanprogress.org/issues/lgbt/news/2017/03/20/428623/trump-administration-rolling-back-data-collection-lgbt-older-adults, accessed May 24, 2017.
- Snider, A., A. Guillén. 2017. EPA staffers, Trump official clashed over new chemical rules. *Politico*, June 22. Online at www.politico.com/story/2017/06/22/trump-epa-energy-chemicals-clash-239875, accessed on July 7, 2017.
- Spanger-Siegfried, E. 2017. Dear Scott Pruitt: Stop lying. We see what you are doing. Cambridge, MA: Union of Concerned Scientists. Blog, March 10. Online at http://blog.ucsusa.org/erika-spanger-siegfried/dear-scott-pruitt-stop-lying-we-see-what-you-are-doing?_ga=2.187234731.2033859912.1495221873-494072756.1485283143, accessed May 24, 2017.
- Stillerman, K. P. 2017. Disregarding science, Trump administration trades kid’s brains for Dow profit. Union of Concerned Scientists. Blog, March 30. Online at <http://blog.ucsusa.org/karen-perry-stillerman/disregarding-science-trump-administration-trades-kids-brains-for-dow-profit>, accessed May 24, 2017.
- State of Hawaii v. Donald J. Trump. United State Court of Appeals for the Ninth Circuit. 2017. No. 17-15589, D.C. No. 1:17-cv-00050-DKW-KSC. Online at http://cdn.ca9.uscourts.gov/datastore/uploads/general/cases_of_interest/17-15589%20per%20curiam%20opinion.pdf, accessed on June 14, 2017.
- Streater, S. 2017. Agency suspends advisory panels even as decisions loom. *Greenwire*, May 5. Online at www.eenews.net/stories/1060054139, accessed on May 23, 2017.

- Sunlight Foundation. 2017. Sunlight joins C-SPAN to make sense of the state of open government. March 15. Online at <https://sunlightfoundation.com/2017/03/15/sunlight-joins-c-span-to-make-sense-of-the-state-of-open-government>, accessed May 24, 2017.
- Tchounwou, P.B., C.G. Yedjou, A.K. Patlolla, and D.J. Sutton. 2014. *Heavy metals toxicity and the environment*, August 26. *National Institutes of Health U.S. National Library of Medicine* 101: 133–164. Online at www.ncbi.nlm.nih.gov/pmc/articles/PMC4144270, accessed May 24, 2017. doi:10.1007/978-3-7643-8340-4_6.
- Trump, D. 2017a. Remarks by President Trump in Strategy and Foreign Policy Forum, February 3. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/02/03/remarks-president-trump-strategy-and-policy-forum, accessed May 23, 2017.
- Trump, D. 2017b. Executive Order 13770: Ethics commitments by executive branch appointees. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/01/28/executive-order-ethics-commitments-executive-branch-appointees, accessed May 23, 2017.
- Trump, D. 2017c. Donald Trump's A+/C+ presidency. *Washington Post*, February 28. Online at www.washingtonpost.com/news/the-fix/wp/2017/02/28/president-trumps-friendly-fox-and-friends-interview-went-exactly-about-how-you-think-it-would/?utm_term=.4de57c9d2943, accessed on May 23, 2017.
- Trump, D. 2017d. Executive Order 13771: Reducing regulations and controlling regulatory costs. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/01/30/presidential-executive-order-reducing-regulation-and-controlling, accessed May 24, 2017.
- Trump, D. 2017e. Executive Order 13783: Promoting energy independence and economic growth. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/03/28/presidential-executive-order-promoting-energy-independence-and-economy-1, accessed May 24, 2017.
- Trump, D. 2017f. Executive Order 13769: Protective the Nation from Foreign Terrorist Entry Into the United States. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/01/27/executive-order-protecting-nation-foreign-terrorist-entry-united-states, accessed May 24, 2017.
- Trump, D. 2017g. Executive Order 13780: Protecting the Nation from Foreign Terrorist Entry Into the United States. Washington, DC: Office of the White House Press Secretary. Online at www.whitehouse.gov/the-press-office/2017/03/06/executive-order-protecting-nation-foreign-terrorist-entry-united-states, accessed May 24, 2017.
- Trump, D. 2012. Twitter post. November 6. 11:15 AM. Online at <https://twitter.com/realdonaldtrump/status/265895292191248385?lang=en>, accessed May 23, 2017.
- United Nations Framework Convention on Climate Change (UNFCCC). 2017. The Paris agreement. Online at http://unfccc.int/paris_agreement/items/9485.php, accessed June 7, 2017.
- Union of Concerned Scientists (UCS). 2011. The UCS Clean Air Act ticker. Online at www.ucsusa.org/global_warming/solutions/reduce-emissions/methodology-for-ucs-clean-air-act-ticker.html, accessed June 6, 2017.
- Union of Concerned Scientists (UCS). No date a. How do we know that humans are the major cause of global warming? Online at www.ucsusa.org/global_warming/science_and_impacts/science/human-contribution-to-gw-faq.html#bf-toc-0, accessed May 23, 2017.
- US Department of Health and Human Services (HHS). No date. Climate change and human health. Online at www.hhs.gov/climate, accessed May 23, 2017.
- US Court of Appeals for the Ninth Circuit (9th Cir.). 2017. Motion for stay of an order of the United States District Court for the Western District of Washington. No. 17-35105 D.C. No. 2:17-cv-00141. Online at <http://cdn.ca9.uscourts.gov/datastore/opinions/2017/02/09/17-35105.pdf>, accessed May 24, 2017.
- Waldholz, R., and B. Chappell. 2017. EPA Halves staff attending environmental conference in Alaska. NPR, February 10. Online at www.npr.org/sections/thetwo-way/2017/02/10/514479451/epa-halves-staff-attending-alaska-environmental-conference, accessed May 24, 2017.
- Waldman, S. 2017. CDC quietly cancels long-planned climate summit. *ClimateWire*, January 23. Online at www.eenews.net/stories/1060048779, accessed May 24, 2017.
- Washington Post*. 2017. The Holman Rule will have a chilling effect on federal workers. January 10. Online at www.washingtonpost.com/opinions/the-holman-rule-will-have-a-chilling-effect-on-federal-workers/2017/01/10/c0c91158-d6a2-11e6-a0e6-d502d6751bc8_story.html?utm_term=.bf5d6b8ca090, accessed June 8, 2017.
- Wasson, M. 2016. Testimony before the US Senate Committee on Environment and Public Works, February 3. Online at www.epw.senate.gov/public/_cache/files/d0c817b3-43c7-4a9d-be73-2cedea60c6b0/wassonmf-testimony-senateepw-20160304-final.pdf, accessed May 24, 2017.
- White, R., C. Johnson, P. Phartiyal, D. Moore, Y. Arellano, and J. Parras. 2016. *Double jeopardy in Houston: Acute and chronic chemical exposure pose disproportionate risks for marginalized communities*. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/center-science-anddemocracy/connecting-scientists-and-communities/doublejeopardy#.WSbvCmgrKUL, accessed May 25, 2017.
- Wolff, E. 2017. Energy Department climate office bans use of phrase “climate change.” *Politico*, March 29. Online at www.politico.com/story/2017/03/energy-department-climate-change-phrases-banned-236655, accessed May 24, 2017.

Sidelining Science Since Day One

How the Trump Administration Has Harmed Public Health and Safety in Its First Six Months

We cannot afford to retreat from recent progress on scientific integrity and science-based policies. The public's health and safety depend on it.

The Trump administration is waging a war on science and on science input in the policymaking process, endangering the nation's health, economy, environment, and leadership in the world. This administration and its allies in Congress are undermining science-based policies, violating the principles of scientific integrity, showing contempt for the role of science in general, and seeking to dismantle the very processes by which science informs public policy. The attacks will severely worsen the nation's health and safety, with the greatest impact on the nation's most vulnerable populations.

To resist the Trump administration's attempts to dismantle science-based health and safety protections, we must understand its tactics and connect them to their real consequences. UCS is documenting the administration's attacks on science, analyzing their effects on the American people, raising awareness about the issues involved, and organizing scientists to push back. We cannot afford to retreat from recent progress on scientific integrity and science-based policies. The public's health and safety depend on it.

**Union of
Concerned Scientists**

FIND THIS DOCUMENT ONLINE: www.ucsus.org/SideliningScience

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

NATIONAL HEADQUARTERS

Two Brattle Square
Cambridge, MA 02138-3780
Phone: (617) 547-5552
Fax: (617) 864-9405

WASHINGTON, DC, OFFICE

1825 K St. NW, Suite 800
Washington, DC 20006-1232
Phone: (202) 223-6133
Fax: (202) 223-6162

WEST COAST OFFICE

500 12th St., Suite 340
Oakland, CA 94607-4087
Phone: (510) 843-1872
Fax: (510) 451-3785

MIDWEST OFFICE

One N. LaSalle St., Suite 1904
Chicago, IL 60602-4064
Phone: (312) 578-1750
Fax: (312) 578-1751