

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA**

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PHYSICIANS FOR SOCIAL	)	
RESPONSIBILITY, <i>et al.</i> ,	)	
	)	
<i>Plaintiffs,</i>	)	
	)	
v.	)	Case No. 17-2742 (TNM)
	)	
E. SCOTT PRUITT, Administrator, U.S.	)	
Environmental Protection Agency,	)	
in his official capacity	)	
	)	
<i>Defendant.</i>	)	
	)	

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**BRIEF OF *AMICI CURIAE***

**KARL BROOKS, LYNN R. GOLDMAN, BERNARD GOLDSTEIN, DAVID MICHAELS,  
KENNETH OLDEN, BOB PERCIASEPE, AND TERRY YOSIE, IN SUPPORT OF  
PLAINTIFFS' OPPOSITION TO DEFENDANT'S MOTION TO DISMISS**

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## **INTERESTS OF AMICI CURIAE<sup>1</sup>**

*Amici* are former officials in the U.S. Environmental Protection Agency (“EPA”) and other federal agencies who have seen first-hand the critical role that science plays in EPA’s work and understand the importance of agencies’ obtaining the best possible scientific advice. They are deeply concerned that EPA’s decision to exclude recipients of its grants from its science advisory committees will undermine the agency’s ability to protect human health and the environment. As former federal officials who were involved in various aspects of scientific decisionmaking at federal agencies, including EPA’s issuance of research grants and the management of EPA’s science advisory committees, they collectively have decades of relevant experience and expertise to share with the Court.

*Amicus* Dr. Karl Brooks served as acting Assistant Administrator for EPA’s Office of Administration and Resources Management (“OARM”) during 2015-16. In that capacity, he supervised the office that managed most of EPA’s advisory committees, working to ensure that EPA received the best advice from the most qualified advisers, and to make sure that advisers observed the rules dedicated to keeping them free from self-interest and bias. In addition, at OARM he supervised the disbursement and management of all agency grants, including science grants such as the Science to Achieve Results (“STAR”) program. Before that, Dr. Brooks served as regional administrator for EPA Region 7 from 2010 to 2015.

*Amicus* Dr. Lynn R. Goldman is the Michael and Lori Milken Dean and Professor of Environmental and Occupational Health at the Milken Institute School of Public Health at the George Washington University. She was previously Assistant Administrator for Toxic

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<sup>1</sup> Pursuant to Local Rule 7(o)(5) and Federal Rule of Appellate Procedure 29(A)(4)(e), *amici* certify that no person or entity, other than *amici* or their counsel, made a monetary contribution to the preparation or submission of this brief or authored this brief in whole or in part.

Substances at EPA, where she directed the Office of Chemical Safety and Prevention (1993–1998). She completed a BS and MS from UC Berkeley, an MD from UC San Francisco, and an MPH from Johns Hopkins University. She is a member of the National Academy of Medicine.

*Amicus* Dr. Bernard Goldstein is emeritus professor of environmental health at the University of Pittsburgh. He is a physician and toxicologist who was EPA Assistant Administrator for Research and Development under President Reagan and is also former chairperson of the EPA Clean Air Scientific Advisory Committee. He is a member of the National Academy of Medicine for whom he has chaired numerous committees evaluating scientific studies as he has also done for the World Health Organization, the United Nations Environmental Program, and various US federal and state agencies.

*Amicus* Dr. David Michaels is a Professor of Environmental and Occupational Health at the Milken Institute School of Public Health of George Washington University. From 2009 until 2017, he was Assistant Secretary of Labor for Occupational Safety and Health, the longest serving Administrator in OSHA's history. From 1998 to 2001, he served as Assistant Secretary of Energy for Environment, Safety and Health.

*Amicus* Kenneth Olden, Ph.D., was Director of the National Center for Environmental Assessment in the Office of Research and Development at EPA between 2012 and 2016. He previously served as both Director of the National Institute of Environmental Health Sciences and Director of the National Toxicology Program within the Department of Health and Human Services between 1991 and 2005. Dr. Olden, a cell biologist and biochemist by training, has authored and co-authored more than 200 scientific papers.

*Amicus* Bob Perciasepe was Deputy Administrator of EPA from 2009 through 2014, as well as Acting Administrator from February 2013 through July 2013. He had previously served

as Assistant Administrator for Water and Assistant Administrator for Air and Radiation in the Clinton Administration. Mr. Perciasepe has also held senior positions in the non-profit sector, state government and local government.

*Amicus* Dr. Terry Yosie was director of EPA's Science Advisory Board from 1981-1988. In this role, he advised EPA Administrators and the U.S. Congress on the scientific basis of public health and environmental decisions, and he instituted policies and procedures to improve the technical basis for EPA-wide policy decisions. He has served on numerous committees of the National Academy of Sciences/National Research Council and served in senior executive positions in the private sector. Dr. Yosie has published more than 80 articles on science, risk assessment, and environmental policy making.

### **SUMMARY OF ARGUMENT**

EPA's mission is to protect human health and the environment. To fulfill this charge, the agency must address a variety of scientific questions involving sources of pollution, the transport and fate of those pollutants, the impacts of those pollutants, and the feasibility and cost of different pollution control technologies. The statutes that EPA implements mandate that the agency satisfy specific, science-based standards before reaching various decisions. EPA has therefore long taken the position—and continues to assert—that its decisions must be based on the “best available science.” Over the past 48 years, this approach has resulted in significant net benefits for the American people.

The Directive issued by EPA Administrator Scott Pruitt on October 31, 2017 (the “Directive”) bars scientists who hold EPA grants from serving on the agency’s advisory committees. By doing so, it keeps EPA from accessing highly relevant scientific expertise, undermining its ability to base its decisions on the best available science.

Throughout the agency’s history, independent science reviews have been essential to ensuring that EPA is using the highest quality science as a foundation for agency actions and decisions. In order to receive the best scientific advice possible, and to ensure that the public, industry, and elected officials have confidence in agency actions, EPA must strive to staff its science advisory committees with the most qualified scientists.

Scientists who receive EPA grants often possess expertise useful to EPA’s science advisory committees. Because the EPA grant process is very competitive, the scientists who receive these grants are likely to be leaders in their fields. Moreover, the agency directs its grant funding to research investigating emerging or newly-recognized environmental questions. As a result, the recipients of that funding become experts on highly specialized scientific issues likely to come before the agency. The Directive, then, keeps some of the most qualified scientists off of EPA science advisory committees.

Finally, the Directive tries to solve a problem that does not exist. The Directive’s stated purpose is to prevent conflicts of interest on advisory committees and remove bias towards the agency. Office of Government Ethics (“OGE”) guidelines do not treat grant funding as a disqualifying conflict of interest; as a result, EPA science advisory committees have always welcomed scientists who received grant funding from either the agency or from regulated industries. An effective and detailed conflict of interest framework already governed these and all federal advisory committees before the Directive took effect. In fact, a recent report by EPA’s own Inspector General found that the receipt of agency grants did not create a conflict of interest for prospective committee members. The Directive thus undermines EPA’s ability to base its decisions on the best available science while serving no countervailing purpose.

## **ARGUMENT**

### **I. To Fulfill its Statutory Mandates to Protect the Human Health and the Environment, EPA Must Use the Best Available Science**

EPA’s mission is to protect human health and the environment.<sup>2</sup> Therefore, EPA is not a “science agency” in the manner of the National Institutes of Health or the National Science Foundation. Nevertheless, “science is and always has been the backbone of EPA’s decision-making.”<sup>3</sup> The statutes that EPA implements require the agency to base many of its decisions on specific types of scientific information and pursuant to discrete, science-based standards. More generally, the regulatory decisions that EPA must make inevitably involve scientific questions such as what impacts various pollutants have on human health and the environment; how those pollutants interact with each other and how they move through the air, water, and soil; and the feasibility and cost of different pollution control technologies. As a result, EPA has always taken the position that its decisions should be based on the best available science—an approach that has produced immense benefits for the American people.

#### **A. EPA’s Statutory Authorities Require Science-Based Decisionmaking**

Many of the statutes that EPA implements have specific requirements for science-based decisionmaking. For example, one of EPA’s core duties under the Clean Air Act (“CAA”) is to set and periodically review the National Ambient Air Quality Standards (“NAAQS”) for six common air pollutants: carbon monoxide, lead, ground-level ozone, nitrogen dioxide, particulate matter, and sulfur dioxide. 42 U.S.C. § 7409. In carrying out this responsibility, EPA must use

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<sup>2</sup> *Our Mission and What We Do*, EPA, <https://www.epa.gov/aboutepa/our-mission-and-what-we-do> (last visited June 21, 2018).

<sup>3</sup> Press Release, EPA, EPA Administrator Gina McCarthy Testimony before House Committee on Science, Space and Technology (Nov. 14, 2013), [https://archive.epa.gov/epapages/newsroom\\_archive/newsreleases/201f4594a4b43bad85257c22007ac270.html](https://archive.epa.gov/epapages/newsroom_archive/newsreleases/201f4594a4b43bad85257c22007ac270.html) (last visited June 21, 2018).

“the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects [of air pollution] on public health or welfare.” *Id.* § 7408(a)(2). Similarly, the Safe Drinking Water Act (“SDWA”) commands EPA in general to use “the best available, peer-reviewed science,” *id.* § 300g-1(b)(3)(A)(i), and when deciding whether to regulate a particular contaminant to consider the “best available public health information.” *Id.* § 300g-1(b)(1)(B)(ii)(II). The Toxic Substances Control Act (“TSCA”) requires that regulation of chemical substances be “consistent with the best available science,” 15 U.S.C. § 2625(h), and that EPA make decisions “based on the weight of the scientific evidence,” *id.* at § 2625(i). The water quality criteria that EPA develops under the Clean Water Act (“CWA”) must “accurately reflect[] the latest scientific knowledge” on a variety of factors. 33 U.S.C. § 1314(a)(1).<sup>4</sup> Under all of these statutes, EPA must assess the current state of scientific knowledge on the issue in front of it before deciding whether, and if so how, to act.

More generally, EPA’s statutory authorities require that the agency make decisions about environmental, public health, and technological issues that inevitably implicate scientific questions. For example, under the CAA, EPA must set the NAAQS at a level “requisite to protect the public health.” 42 U.S.C. § 7409(b). Under the SDWA, EPA must determine

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<sup>4</sup> The full list of factors is:

(A) on the kind and extent of all identifiable effects on health and welfare including, but not limited to, plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation which may be expected from the presence of pollutants in any body of water, including ground water; (B) on the concentration and dispersal of pollutants, or their byproducts, through biological, physical, and chemical processes; and (C) on the effects of pollutants on biological community diversity, productivity, and stability, including information on the factors affecting rates of eutrophication and rates of organic and inorganic sedimentation for varying types of receiving waters.

33 U.S.C. § 1314(a)(1).

whether a contaminant “may have an adverse effect on the health of persons” and whether “the contaminant is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern” before deciding to regulate it. 42 U.S.C. § 300g-1(b)(1)(A)(i). These statutory standards involve questions about the exposure of populations to pollutants and about the effects of those exposures—both of which are scientific questions.

Scientific questions are also central to the decisions that EPA must make to set technology-based emission or discharge standards. Thus, for example, the CAA requires that EPA establish emission limitations for hazardous air pollutants to “require the maximum degree of reduction in emissions . . . achievable.” 42 U.S.C. § 7412(d)(2). Under the CWA, EPA must set effluent discharge limitations that embody standards such as “the best practicable control technology currently available” or “the best available technology economically achievable.” 33 U.S.C. § 1311(b)(1)(A), (b)(2)(A). These, too, are science-based determinations.

EPA also relies on scientific information to set regulatory priorities. The relative magnitude of two different risks is fundamentally a scientific question. “In the absence of sound scientific information, high-risk problems might not be adequately addressed, while high-profile but lower-risk problems might be targeted wastefully.”<sup>5</sup>

B. EPA’s Longstanding Approach of Relying on the Best Available Science Has Produced Immense Benefits for the Nation

EPA has long taken the position that all of its decisions must be based on the best available science. For example, the agency’s 1997 strategic plan provided that one of the EPA’s seven overall purposes was to ensure that “efforts to reduce environmental risk are based on the

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<sup>5</sup> NATIONAL RESEARCH COUNCIL, STRENGTHENING SCIENCE AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY: RESEARCH-MANAGEMENT AND PEER-REVIEW PRACTICES 24 (2000).

best available scientific information.”<sup>6</sup> As indicated above, the SDWA requires that EPA use “the best available, peer-reviewed science.” 42 U.S.C. § 300g-1(b)(3)(A)(i). In 2002, the agency issued Information Quality Guidelines in which it took the position that this standard should apply to all of its risk assessments.<sup>7</sup> As recently as April of this year, EPA reiterated in a notice of proposed rulemaking that “[t]he best available science must serve as the foundation of EPA’s regulatory actions.”<sup>8</sup>

In fact, the need for a centralized, scientific approach to environmental regulation was one of the main reasons President Nixon created the agency in the first place. In April 1969, President Nixon appointed an advisory council—known as the Ash Council after its chairman, Roy Ash—to provide him with advice on the organization of the executive branch.<sup>9</sup> The council recommended “that key anti-pollution programs be merged into an Environmental Protection Administration, a new independent agency of the Executive Branch.”<sup>10</sup> Among the reasons it cited in support of creating the agency were that “[w]e must know that [regulatory] standards are soundly based; thus a research capability is necessary . . . ; we must thus be able to monitor the environment.”<sup>11</sup> When President Nixon announced the new agency to Congress, he identified

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<sup>6</sup> EPA, EPA/190-R-97-002, *EPA Strategic Plan* 16 (1997).

<sup>7</sup> EPA, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency* 22 (2005), available at <https://www.epa.gov/sites/production/files/2017-03/documents/epa-info-quality-guidelines.pdf>.

<sup>8</sup> Strengthening Transparency in Regulatory Science (Proposed Rule), 83 Fed. Reg. 18,768, 18,769 (Apr. 30, 2018).

<sup>9</sup> *President’s Advisory Council on Executive Organization*, Richard Nixon Presidential Library and Museum, <https://www.nixonlibrary.gov/forresearchers/find/textual/central/smof/paceo.php> (last visited June 21, 2018).

<sup>10</sup> Memorandum from the President’s Advisory Council on Executive Organization to Richard Nixon, President of the United States (Apr. 29, 1970), <https://archive.epa.gov/epa/aboutepa/ash-council-memo.html> (last visited June 21, 2018).

<sup>11</sup> *Id.*

one of its main functions as “[t]he conduct of research on the adverse effects of pollution and on methods and equipment for controlling it, the gathering of information on pollution, and the use of this information in strengthening environmental protection programs and recommending policy changes.”<sup>12</sup> This research function remains a central one for the agency, and “[d]oing the right science and the science right is the foundation of EPA’s work to protect public health and the environment.”<sup>13</sup>

By following a science-based approach to environmental regulation, EPA has achieved substantial benefits for the American people over the last 48 years. To take air emissions regulated under the CAA as an example, between 1970 and 2015 emissions of the six criteria air pollutants declined by an average of 70 percent, resulting in 160,000 fewer premature deaths per year, even as gross domestic product increased by 246 percent.<sup>14</sup> Regulation under the CAA has also achieved significant reductions in emissions of hazardous air pollutants, has reduced acid

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<sup>12</sup> Richard Nixon, President of the United States, Reorganization Plan No. 3 of 1970, Special Message from the President to the Congress About Reorganization Plans to Establish the Environmental Protection Agency and the National Oceanic and Atmospheric Administration (July 9, 1970), <https://archive.epa.gov/epa/aboutepa/reorganization-plan-no-3-1970.html> (last visited June 21, 2018). Note that it was not inevitable that environmental science and technology would be included administratively within EPA. The Occupational Safety and Health Administration (“OSHA”) also was created in 1970, but the scientific arm for OSHA, the National Institute for Occupational Safety and Health (“NIOSH”), was established in the Department of Health, Education and Welfare (now the Department of Health and Human Services). The arguably greater impact and effectiveness of EPA is at least partially due to its much closer direct working relationship with the scientific community. See Jonathan M. Samet, et al., *The Trump Administration and the Environment—Heed the Science*, 376 NEW ENG. J. MED. 1182 (2017). This effective working relationship is imperiled by Administrator Pruitt’s decision.

<sup>13</sup> Press Release, EPA, EPA Administrator Appoints Advisors to Lead Science Panels (Oct. 15, 2004), [https://archive.epa.gov/epapages/newsroom\\_archive/newsreleases/dfd5bca479cbd06085256f2e00581b94.html](https://archive.epa.gov/epapages/newsroom_archive/newsreleases/dfd5bca479cbd06085256f2e00581b94.html) (last visited June 21, 2018).

<sup>14</sup> *Progress Cleaning the Air and Improving People’s Health*, EPA, <https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health> (last visited June 21, 2018).

rain, and has helped reverse the destruction of the ozone layer.<sup>15</sup> As recently summarized by William Ruckelshaus, the first Administrator of the EPA, “[t]he environment is far healthier today than it was forty-seven years ago, when the E.P.A. was created, precisely because of the science-based standards that the agency implemented.”<sup>16</sup>

## **II. EPA’s Independent Scientific Advisory Committees Play a Key Role in the Agency’s Decisionmaking**

EPA oversees 23 federal advisory committees.<sup>17</sup> Among these are several science advisory committees—including the Science Advisory Board (“SAB”), Clean Air Scientific Advisory Committee (“CASAC”), and Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel (“FIFRA SAP”—which “review scientific research and . . . provide advice and expertise from outside the agency.”<sup>18</sup>

The science advisory committees perform multiple functions. For example, by “review[ing] EPA’s research strategies and plans,” these committees “provide critical, early input to the Agency at the planning stage as it establishes its research priorities.”<sup>19</sup> Advisory committees also respond to specific research requests to advise the agency on developing situations. In addition, they review EPA’s scientific conclusions, in a process analogous to peer review that includes significant opportunities for public input.

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<sup>15</sup> Samet et al., *supra* note 12, at 1184.

<sup>16</sup> William D. Ruckelshaus, Letter to the Editor, NEW YORKER, Apr. 16, 2018, at 5.

<sup>17</sup> *All Federal Advisory Committees at EPA*, EPA, <https://www.epa.gov/faca/all-federal-advisory-committees-epa> (last visited June 21, 2018).

<sup>18</sup> NATIONAL RESEARCH COUNCIL, SCIENCE FOR ENVIRONMENTAL PROTECTION: THE ROAD AHEAD 180 (2012).

<sup>19</sup> Statement of Paul Gilman, Assistant Administrator for Research and Development and EPA Science Advisor, EPA, Before the House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and the Environment 2 (Mar. 5, 2003), available at [https://archive.epa.gov/ocir/hearings/testimony/108\\_2003\\_2004/web/pdf/2003\\_0305\\_pg.pdf](https://archive.epa.gov/ocir/hearings/testimony/108_2003_2004/web/pdf/2003_0305_pg.pdf).

In many cases, EPA is required by statute to consult with a specific committee before taking an action. For example, the SDWA requires that EPA consult with the SAB when identifying drinking water contaminants that may require regulation. 42 U.S.C. § 300g-1(b)(1)(B)(i)(I). The SAB must also review all criteria documents developed under the CAA, as well as any “standard, limitation, or regulation” that EPA provides to other federal agencies “for formal review and comment,” including those developed under the CAA, CWA, TSCA, SDWA, and the Resource Conservation and Recovery Act (“RCRA”). *Id.* § 4365(c)(1). The duties of CASAC include reviewing the criteria documents and NAAQS every five years, *id.* § 7409(d)(2)(B), as well as advising the Administrator on “areas in which additional knowledge is required to appraise the adequacy and basis of existing, new, or revised” NAAQS and “describ[ing] the research efforts necessary to provide” this information, *id.* § 7409(d)(2)(C). The FIFRA SAP provides comments on proposed FIFRA regulations and decisions whether to cancel the registration of a pesticide or change its classification. 7 U.S.C. § 136w(d)(1).

CASAC offers a good example of how advisory committees fit into EPA decision-making. As mentioned above, under the CAA, CASAC must review the NAAQS every five years and recommend any new standards or “revisions of existing criteria and standards as may be appropriate.” 42 U.S.C. § 7409(d)(2). When proposing to issue new NAAQS or revise existing ones, EPA must “set forth or summarize . . . any pertinent findings, recommendations, and comments by [CASAC]” and explain any “important” departures from those recommendations. 42 U.S.C. § 7607(d)(3). If it disagrees with CASAC’s scientific analysis, “EPA must give a sound scientific reason for its disagreement” in order to “preserve the integrity of CASAC’s scientific role.” *Mississippi v. EPA*, 744 F.3d 1334, 1355 (D.C. Cir. 2013). If, instead, EPA accepts CASAC’s scientific analysis, but departs from its recommendation because

of policy considerations, it must only show that it made its decision “in a manner calculated to negate the dangers of arbitrariness and irrationality.” *Id.* CASAC is thus the primary independent body that reviews the scientific basis of the NAAQS.

As CASAC’s role demonstrates, the agency’s science advisory committees provide the scientific input that makes informed environmental policymaking possible. EPA regularly relies on this advice, making it especially important that the committees include the most qualified scientists. For example, in 1989 “SAB estimated that 50% of EPA’s major activities in one form or another are debated, reviewed, or influenced by SAB.”<sup>20</sup> More recently, SAB’s Research Strategies Advisory Committee studied the impact of peer review on three EPA guidance documents. It reported that SAB “peer reviews had substantial effects on” all three documents,<sup>21</sup> which then-Assistant Administrator for Research and Development Paul Gilman understood to “demonstrate the value that peer review provides to all our scientific and technical work products.”<sup>22</sup> The availability of expert input from advisory committees also allows EPA to respond to rapidly developing public health crises. After Hurricane Katrina, then-Administrator Stephen Johnson reported that he “asked our [SAB] to convene an emergency expert panel to provide advice and counsel the Agency on flood water sampling and” how to ensure that “the continuing and the future of flood water sampling was done in an appropriate and scientifically sound way.”<sup>23</sup>

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<sup>20</sup> MARK POWELL, SCIENCE AT EPA 40 (1999).

<sup>21</sup> Research Strategies Advisory Comm., Sci. Advisory Bd., EPA, *Implementation of the Environmental Protection Agency’s Peer Review Program: An SAB Evaluation of Three Reviews* 8 (2001).

<sup>22</sup> Statement of Paul Gilman, *supra* note 19, at 9.

<sup>23</sup> Press Release, EPA, EPA Administrator Briefs Reporters on EPA efforts in Gulf Coast: Transcript of Sept. 14 Press Roundtable (Sept. 14, 2005), <https://archive.epa.gov/katrina/web/html/091405transcript.html> (last visited June 21, 2018).

Science advisory committee input helps the agency properly understand risks to public health and decide how best to address them. For example, SAB peer review changed EPA’s characterization of the risks posed to drinking water by hydraulic fracturing. In 2015, the agency published a draft report, which concluded that there was “no[] . . . evidence that [hydraulic fracturing] ha[s] led to widespread, systemic impacts on drinking water resources in the United States.”<sup>24</sup> On review, SAB expressed “particular concern” with this statement, and found that EPA “did not support quantitatively its conclusion.”<sup>25</sup> It requested that the agency “revise the major statements of findings . . . to clearly link these statements to evidence” provided elsewhere in the report.<sup>26</sup> After reviewing SAB’s comments, EPA “concluded that [its earlier statement] could not be quantitatively supported given the existing data gaps and uncertainties.”<sup>27</sup> Its final report stated that hydraulic fracturing “can impact drinking water resources under some circumstances” and that “[i]mpacts can range in frequency and severity, depending on the” circumstances.<sup>28</sup>

By grounding these decisions in science, though, the science advisory committees also ensure that EPA does not *over-regulate*. For example, refusals by SAB to support the designation of perchloroethylene—a chemical used in commercial dry cleaning—as a carcinogen

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<sup>24</sup> Office of Research & Dev., EPA, *Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources*, at ES-23 (2015).

<sup>25</sup> Office of Research & Dev., EPA, *Response to the U.S. Environmental Protection Agency’s Science Advisory Board Review of the Draft Report: Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources* 6 (2017).

<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 7.

<sup>28</sup> Office of Research & Dev., EPA, *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States* 1 (2016).

in 1987<sup>29</sup> and 1991<sup>30</sup> dissuaded the agency from regulating the chemical.<sup>31</sup> In 1997, EPA set the Ozone NAAQS at 0.08 ppm, despite numerous public comments calling for a more stringent standard. *See Am. Trucking Ass’ns v. EPA*, 283 F.3d 355, 377, 379 (D.C. Cir. 2002). It based its decision, in part, on the fact that no CASAC member at the time “supported a standard set lower than 0.08 ppm, specifically after considering a range of alternative standards that included 0.07 ppm.” *Id.* at 377 (citation and internal quotation marks omitted). Similarly, in 2012, EPA refused to issue a combined NO<sub>x</sub>-SO<sub>x</sub> standard, which some advocates desired, upon CASAC’s recommendation. *See Ctr. for Biological Diversity v. EPA*, 749 F.3d 1079, 1086 nn.11 & 13 (D.C. Cir. 2014).

Science advisory committees are not a one-way ratchet in support of more stringent regulation, but instead guide EPA toward making whatever decision is most strongly supported by scientific evidence. They are “critical in ensuring that EPA’s best available scientific knowledge has been independently reviewed by leading scientists in the field.”<sup>32</sup> The science

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<sup>29</sup> See EPA, EPA-SAB-EHC-87-018, *Report of the Halogenated Organics Subcommittee of the Environmental Health Committee on a Draft Addendum to the Health Assessment Document for Tetrachloroethylene (Perchloroethylene)* (1984), available at [https://yosemite.epa.gov/sab/sabproduct.nsf/14374A2A3BAF0F9A852573280068C57E/\\$File/PERCHLOROETHYLENE+++++EHC-87-018\\_87018\\_5-23-1995\\_309.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/14374A2A3BAF0F9A852573280068C57E/$File/PERCHLOROETHYLENE+++++EHC-87-018_87018_5-23-1995_309.pdf).

<sup>30</sup> See EPA, EPA-SAB-EHC-91-013, *Health Effects Assessment of Perchloroethylene: Review of the Office of Research and Development’s Draft Document “Response to Issues and Data Submissions on the Carcinogenicity of Perchloroethylene (EPA/600/6-91/002A) by the Environmental Health Committee*” (1991), available at [https://yosemite.epa.gov/sab/sabproduct.nsf/8D3F55B7C594202385257325004AD957/\\$File/PERCHLOROETHYLENE+++++EHC-91-013\\_91013\\_5-11-1995\\_169.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/8D3F55B7C594202385257325004AD957/$File/PERCHLOROETHYLENE+++++EHC-91-013_91013_5-11-1995_169.pdf).

<sup>31</sup> Terry F. Yosie, *The EPA Science Advisory Board: A Case Study in Institutional History and Public Policy*, 27 ENVTL. SCI. & TECH. 1476, 1478 (1993).

<sup>32</sup> Press Release, EPA, Science Advisory Board (Nov. 4, 2003) (quoting Acting EPA Administrator Marianne Horinko) (describing SAB), [https://archive.epa.gov/epapages/newsroom\\_archive/newsreleases/ebffbb3e52764e85256dd4007b73d4.html](https://archive.epa.gov/epapages/newsroom_archive/newsreleases/ebffbb3e52764e85256dd4007b73d4.html) (last visited June 21, 2018).

advisory committees can continue to play this role effectively, however, only as long as they continue to be made up of leading independent scientists. As explained in a recent report of the National Research Council, EPA’s science advisory committees “will remain a valuable resource for the agency assuming the members of these bodies continue to be chosen based on the virtue of their expertise and experience.”<sup>33</sup>

### **III. The Directive Undermines the Efficacy of EPA’s Science Advisory Committees**

On October 31, 2017, EPA Administrator Scott Pruitt issued a directive entitled “Strengthening and Improving Membership on EPA Federal Advisory Committees,” which, among other things, included a requirement that “no member of an EPA federal advisory committee be currently in receipt of EPA grants.”<sup>34</sup> The Directive’s stated purpose was to ensure that “[m]embers shall be independent from EPA.”<sup>35</sup> An accompanying memorandum explains that “receipt of EPA grants while serving on an EPA [advisory committee] can create the appearance or reality of potential interference with their ability to independently and objectively serve as a [committee] member.”<sup>36</sup> The Directive will harm EPA’s science advisory committees—and therefore harm EPA’s ability to base its decisions on the best available science—because it excludes qualified scientists from sitting on those committees while producing no countervailing benefits.

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<sup>33</sup> NATIONAL RESEARCH COUNCIL, *supra* note 18, at 181.

<sup>34</sup> EPA Administrator E. Scott Pruitt, Directive, “Strengthening and Improving Membership on EPA Federal Advisory Committees,” Oct. 31, 2017, *available at* [https://www.epa.gov/sites/production/files/2017-10/documents/final\\_draft\\_fac\\_directive-10.31.2017.pdf](https://www.epa.gov/sites/production/files/2017-10/documents/final_draft_fac_directive-10.31.2017.pdf).

<sup>35</sup> *Id.*

<sup>36</sup> EPA Administrator E. Scott Pruitt, Memorandum, “Strengthening and Improving Membership on EPA Federal Advisory Committees,” Oct. 31, 2017, *available at* [https://www.epa.gov/sites/production/files/2017-10/documents/final\\_draft\\_fac\\_memo-10.30.2017.pdf](https://www.epa.gov/sites/production/files/2017-10/documents/final_draft_fac_memo-10.30.2017.pdf).

Congress clearly intended that EPA select the members of these committees based on their possession of relevant scientific expertise. For example, the statute that authorizes the SAB provides that the committee’s members “shall be qualified by education, training, and experience to evaluate scientific and technical information on matters referred to the Board.” 42 U.S.C. § 4365(b). CASAC must be “composed of seven members including at least one member of the National Academy of Sciences, one physician, and one person representing State air pollution control agencies.” *Id.* § 7409(d)(2)(A). The FIFRA SAP:

shall consist of 7 members appointed by the Administrator from a list of 12 nominees, 6 nominated by the National Institutes of Health and 6 by the National Science Foundation. . . . Members of the panel shall be selected on the basis of their professional qualifications to assess the effects of the impact of pesticides on health and the environment. To the extent feasible to insure multidisciplinary representation, the panel membership shall include representation from the disciplines of toxicology, pathology, environmental biology, and related sciences.

7 U.S.C. § 136w(d). In each case, the possession of relevant scientific expertise is a critical consideration in selecting committee members, with FIFRA even identifying the specific scientific fields that should be represented on the committee.

Far from being an indication that a scientist should be disqualified from serving on EPA science advisory committees, a scientist’s receipt of EPA research grants demonstrates that he or she is likely to have precisely the kind of expertise that Congress wanted committee members to possess. Scientists in academia rely on grants for their research funding. The nature of this arrangement makes grants competitive and means that highly-qualified scientists generally get the most grants.

EPA grants are especially competitive, making leading scientists more likely to receive them. For example, under the Science to Achieve Results (“STAR”) grant program—EPA’s

largest extramural grants program—only 16% of applicants receive grants.<sup>37</sup> Last year, the National Academy of Sciences found that this low award rate is “notable for its competitiveness” and “is a measure of the vitality of a sponsored-research program.”<sup>38</sup>

The research funded by these grants has a high impact, further demonstrating the qualifications of the grant recipients. For example, between 2002 and 2017, STAR-funded research resulted in 5,760 publications.<sup>39</sup> Some of these studies are very highly cited—a proxy for scientific importance. The National Academy of Sciences identified 63 such publications since 2000 that have been cited more than 100 times,<sup>40</sup> nearly ten times more than the average number of citations for scientific papers during a similar period.<sup>41</sup> A review of one category of STAR grants (the Safe and Sustainable Water Resources program) found that “half the grants analyzed had at least one publication that was among the most highly cited publications in their field.”<sup>42</sup>

Moreover, as a result of the targeted nature of the program, recipients often become experts in regulatory matters that come before EPA. Therefore, the Directive turns away scientists with expertise in areas *specifically relevant* to the committees’ work. The operation of the STAR grant program demonstrates why this is the case. EPA issues STAR grants to answer

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<sup>37</sup> NATIONAL ACADEMY OF SCIENCES, A REVIEW OF THE ENVTL. PROT. AGENCY’S SCIENCE TO ACHIEVE RESULTS RESEARCH PROGRAM 29 (2017) (measured from 2013-2014). For the annual grant award rate, see *id.* at 29, fig. 2-1.

<sup>38</sup> *Id.* at 31 (citations omitted).

<sup>39</sup> See *id.* at 35.

<sup>40</sup> *Id.* at 37. For a list of the highest-cited STAR-grantee publications, see *id.* at 40 tbl. 3-1, 42 tbl. 3-2.

<sup>41</sup> See *Citation Averages, 2000-2010, by Fields and Years*, TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS, <https://www.timeshighereducation.com/news/citation-averages-2000-2010-by-fields-and-years/415643.article> (last visited June 21, 2018).

<sup>42</sup> NATIONAL ACADEMY OF SCIENCES, *supra* note 37, at 35.

emerging research questions related to the Office of Research and Development’s four national programs: Air, Climate, and Energy; Chemical Safety for Sustainability; Safe and Sustainable Water Resources; and Sustainable and Healthy Communities.<sup>43</sup> The national director for each program develops a four-year strategic research action plan, which identifies pressing research needs and important scientific questions in the relevant area.<sup>44</sup> EPA then publicly announces individual Requests for Applications (“RFAs”) for grants to address these needs.<sup>45</sup>

The effect of this process is that grantees develop expertise relevant to new and emerging regulatory issues. American industry is characterized by innovation and rapid technological advancement. While this innovation produces many benefits, new technologies and practices can potentially have harmful environmental impacts. EPA’s grant funding often addresses such cutting-edge environmental and public health issues. For example, between 2003 and 2015, EPA awarded 78 STAR grants to evaluate the environmental impacts of engineered nanoparticles.<sup>46</sup> Nanoparticles are microscopic materials that have become increasingly easy to develop and manipulate.<sup>47</sup> Although they present opportunities for technological advances, little was known about their effect on human health and the environment when EPA started funding this research.<sup>48</sup>

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<sup>43</sup> *Id.* at 24.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 57.

<sup>47</sup> See Office of Research & Dev., EPA, *Nanotechnology & Nanomaterials Research* (2013), available at <https://www.epa.gov/sites/production/files/2013-12/documents/nanotechnology-factsheet.pdf>.

<sup>48</sup> *See id.*

Research funded and directed by STAR grants has also been the basis for EPA decisionmaking. For example, EPA banned the use of azinphos-methyl, an organophosphate insecticide, after a STAR grant-funded study showed increased exposure levels among child farmworkers.<sup>49</sup> EPA also strengthened the NAAQS for small particulate matter (PM<sub>2.5</sub>) from 15 to 12 µg/m<sup>3</sup> in 2012 after a STAR grant-funded study established that the risk of cardiovascular harm was lower with reduced exposure to PM<sub>2.5</sub>.<sup>50</sup>

In sum, EPA grants fund research into current and emerging risks to public health and the environment. Therefore, the recipients of EPA grants typically have expertise in the very issues that EPA's advisory committees need to address. Barring these scientists from membership on advisory committees makes those committees less able to furnish EPA with the “best available scientific knowledge” necessary for it to make informed policy decisions.<sup>51</sup>

Finally, the Directive may make even scientists who do not currently hold EPA grants less willing to join the agency's advisory committees. Most directly, they may not seek to serve

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<sup>49</sup> See EPA, *Final Decisions for the Remaining Uses of Azinphos-Methyl* (2006), available at [https://archive.epa.gov/pesticides/reregistration/web/pdf/azm\\_remaining\\_uses.pdf](https://archive.epa.gov/pesticides/reregistration/web/pdf/azm_remaining_uses.pdf); for the study, see Cynthia Curl et al., *Evaluation of Take-Home Organophosphorus Pesticide Exposure Among Agricultural Workers and their Children*, 110 ENVTL. HEALTH PERSP. 787 (2002).

<sup>50</sup> See 78 Fed. Reg. 3086, 3106–07 (Jan. 15, 2013) (discussing study); *id.* at 3120 (“In considering whether the suite of primary PM<sub>2.5</sub> standards should be revised, the Administrator places primary consideration on the evidence obtained from the epidemiological studies.”); *id.* at 3157 (adopting 12 µg/m<sup>3</sup> as the primary annual PM<sub>2.5</sub> NAAQS). For the study, see Francine Laden, et al., *Reduction in Fine Particulate Air Pollution and Mortality*, 173 AM. J. RESPIRATORY & CRITICAL CARE MED. 667 (2006) (finding that reduced lower ambient “PM<sub>2.5</sub> concentrations were associated with reduced mortality risk” from cardiovascular issues and lung cancer).

<sup>51</sup> Because of this, EPA grant recipients often sat on the agency's advisory committees prior to the Directive. In fact, six of seven CASAC members at the time the Directive went into effect had at one time or another received EPA grants. Amena H. Saiyid, *Scientists Getting EPA Grants Can't Advise Agency, Pruitt Says*, BLOOMBERG ENERGY & ENV'T REP. (Oct. 17, 2017), <https://www.bna.com/scientists-getting-epa-n73014471021/>.

on an advisory committee because they do not want to be precluded from competing for future EPA grants. More generally, however, one factor in scientists' decisions about whether to join advisory committees is often the agency's receptiveness to scientific input. The Directive sends the message that EPA does not value qualified expertise, and may have priorities other than regulation based on the "best available scientific knowledge."<sup>52</sup> This sort of messaging may dissuade even qualified experts who are *not* barred by the Directive from seeking positions on advisory committees.

#### **IV. The Directive is Unnecessary Because EPA Science Advisory Committees Already Have Adequate Mechanisms for Addressing Conflicts of Interest**

The Directive aims to solve a problem that does not exist. EPA science advisory committees already had sufficient mechanisms to address conflicts of interest before the issuance of the Directive. Conflicts checks, strict adherence to Office of Government Ethics ("OGE") guidelines, and recusal protocols governed this process. Moreover, the very nature of consensus-based decisionmaking on advisory committees discourages bias on the part of individual scientists. Notably, Administrator Pruitt, in announcing the rationale for the policy, did not cite any examples of EPA acting on misleading advice from an advisory committee because of the presence of an EPA-funded scientist on the committee. Instead, ironically, the practical effect of the Directive has been to make the science advisory committees less independent by increasing the representation of industry scientists on them.

All of EPA's advisory committees are subject to the Federal Advisory Committee Act ("FACA") and members of these committees are considered Special Government Employees ("SGEs") subject to the ethics rules developed by OGE. FACA requires that "the membership of

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<sup>52</sup> See, e.g., Editorial, *President Trump's War on Science*, N.Y. TIMES (Sept. 9, 2017), <https://www.nytimes.com/2017/09/09/opinion/sunday/trump-epa-pruitt-science.html>.

[an] advisory committee . . . be fairly balanced in terms of the points of view represented and the functions to be performed by the advisory committee.” 5 U.S.C. App. II, § 5(b)(2). In addition, it requires that the committee’s advice and recommendations not be “inappropriately influenced by the appointing authority or any special interest, but . . . instead be the result of the advisory committee’s independent judgment.” *Id.* § 5(b)(3). The General Services Administration (“GSA”) has promulgated regulations to implement FACA, 41 C.F.R. Parts 101-6 & 102-3, under which the fact that someone has received an agency grant does not disqualify that person from serving on an advisory committee.

As SGEs subject to the uniform federal ethics rules, advisory committee members must annually file a financial disclosure report and go through ethics training.<sup>53</sup> EPA staff review assignments to committees and the participation of committee members in specific matters to determine whether they “would present a conflict of interest or might raise an appearance of a lack of impartiality.”<sup>54</sup>

OGE regulations provide that an SGE cannot participate in any “particular matter” in which the SGE will have “a direct and predictable effect on that [financial] interest.” 5 C.F.R. § 2635.402(c). Such “particular matters” include things such as permit applications or criminal charges; they do not include “the consideration or adoption of broad policy options that are directed to the interests of a large and diverse group of persons.” *Id.* § 2635.402(b)(3). With regard to advisory committees in particular, the regulations state that a committee member “may

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<sup>53</sup> EPA SAB Staff Office, *Serving on the EPA Science Advisory Board: A Handbook for Members and Consultants* 1-2 (2012), available at [https://yosemite.epa.gov/sab/sabproduct.nsf/Web/Serving%20on%20the%20EPA%20Science%20Advisory%20Board:%20A%20Handbook%20for%20Members%20and%20Consultants/\\$File/Serving%20on%20the%20EPA%20Science%20Advisory%20Board%20SABSO-12-001.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/Web/Serving%20on%20the%20EPA%20Science%20Advisory%20Board:%20A%20Handbook%20for%20Members%20and%20Consultants/$File/Serving%20on%20the%20EPA%20Science%20Advisory%20Board%20SABSO-12-001.pdf).

<sup>54</sup> *Id.*

participate in any particular matter of general applicability where the disqualifying financial interest arises from his non-Federal employment . . . , provided that the matter will not have a special or distinct effect on the employee or employer other than as part of a class.” *Id.* § 2630.203(g).

Under this scheme, the possession of an EPA research grant was not, prior to the Directive, considered a basis for excluding scientists entirely from EPA’s science advisory committees. A recent report by the EPA’s Inspector General noted that the agency “d[id] not consider a prospective or current member’s receipt of an agency or other federal research grant to create the basis for a financial conflict of interest.”<sup>55</sup> The report explained that this was “consistent with other federal guidance in the area” and cited an OMB bulletin stating that “when a scientist is awarded a government research grant . . . there generally should be no question as to that scientist’s ability to offer independent scientific advice to the agency on other projects.”<sup>56</sup> Similarly, the Fifth Circuit Court of Appeals found, in a case involving a NIOSH advisory committee, that scientists’ possession of agency grants “does not in itself render them susceptible to improper influence.” *Cargill, Inc. v. United States*, 173 F.3d 323, 339 (5th Cir. 1999). The court explained:

NIOSH is the major sponsor of occupational safety and health research, and it is therefore not surprising that [the advisory committee], whose members are selected because they are experts in that field, would include some persons who had . . . received a grant from HHS. . . . [R]eceiving a grant from HHS . . . does not impair a scientist’s ability to provide technical, scientific peer review of a study sponsored by HHS or one of its agencies. Moreover, if HHS were required to exclude from peer review committees all scientists who somehow had been

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<sup>55</sup> Office of Inspector General, EPA, Report No. 13-P-0387, *EPA Can Better Document Resolution of Ethics and Partiality Concerns in Managing Clean Air Federal Advisory Committees* 9 (2013).

<sup>56</sup> *Id.* at 9–10 (citing Office of Management & Budget, *Final Information Quality Bulletin for Peer Review*, 70 Fed. Reg. 2664, 2669 (Jan. 14, 2005)).

affiliated with the department, it would have to eliminate many of those most qualified to give advice.

*Id.* Exactly the same reasoning applies to EPA’s science advisory committees.

The EPA Inspector General report did acknowledge that a potential conflict existed when the committee on which a grant recipient sits “plans to address work performed under [her] research grant.”<sup>57</sup> However, it concluded that EPA adequately dealt with that issue by requiring all committee members to report any grants received in the two years prior to their service, and recuse themselves from any consideration of the research produced under those grants.<sup>58</sup> Thus, to the extent that the possession of a research grant presented a conflict in a particular matter—such as when the committee would discuss the research that was the subject of the grant—EPA already had adequate methods of dealing with those conflicts.

In addition, the nature of the science advisory committee process—and of the scientific process itself—reduces the risk that the receipt of EPA grants will influence the role played by a member of a committee. Science advisory committees work as a team and provide a space within which experts consult with each other to arrive at rational, scientifically-supported conclusion through a deliberative process. When confronted with a question, scientists will learn from each other, presenting evidence and weighing and discussing different viewpoints. At the end of this process, the committee will arrive at “the most likely estimation of truth as perceived by expert scientists.”<sup>59</sup>

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<sup>57</sup> Office of Inspector General, *supra* note 55, at 10.

<sup>58</sup> *Id.*

<sup>59</sup> Bernard D. Goldstein, *Risk Assessment and the Interface between Science and Law*, 14 COLUM. J. ENVTL. L. 343, 345 (1989).

This consensus-based approach already disincentivizes the type of biased decisionmaking that the Directive claims to prevent. It is a knowledge-driven process, not a viewpoint-driven one. In addition, the structure of the academic scientific community includes a heavy reliance on reputation to achieve success in receiving peer-reviewed competitive grants from the National Institutes of Health and National Science Foundation and in obtaining professorial promotions. Because of this dynamic, committee members are unlikely to jeopardize their reputations to advance an ideological agenda—the type of conduct envisioned by the Directive. In practice, as the examples of advisory committee recommendations that did not support EPA proposals discussed above underscore, *see supra* pp. 14-15, the scientists on these committees do not feel beholden to the agency.

Moreover, if committee members' sources of funding did present a disqualifying conflict of interest, then the Directive adopts a partial and biased solution to that problem. It bars only scientists who receive EPA grants. These scientists will generally be based at universities. The Directive does not, however, bar scientists who receive funding from the regulated industries that will be affected by EPA regulatory decisions. Nothing in the Directive provides any justification for treating one source of funding as disqualifying and the other as acceptable.

## **CONCLUSION**

EPA grantees frequently possess expertise relevant to issues before the agency because of research they carried out pursuant to those grants. Barring only EPA grant-holders from these committees withdraws important expertise from the committees' deliberations, potentially biasing or undermining their results. In so doing, the Directive undermines EPA's ability to develop sound environmental policy.

For the foregoing reasons, *amici* respectfully request that this Court deny Defendant's Motion to Dismiss.

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