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## Anti-Science Ideology

Shi-Ling Hsu  
*Florida State University College of Law*

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# ARTICLES

## Anti-science Ideology

SHI-LING HSU\*

*Political attacks against scientists and scientific research are nothing new, though the Trump Administration appears to have increased both the breadth and the depth of such attacks. What is new, it seems, are attacks on science that are not in service of protecting any identifiable regulated industry. Under the Trump Administration, the attacks on science are more systemic, and aimed more at reducing scientific capacity in the federal government, rather than mere one-off policy interventions to help an individual industry.*

*This Article suggests that the Trump Administration, more than previous administrations, has sought to use science as part of a political culture war, reviving a populist suspicion of intellectuals that has a long and cyclical history in American culture. This current episode of anti-intellectualism, while targeting social science as past episodes have, has also uniquely targeted the biological and physical sciences, the difference being that findings in these fields are more firmly grounded in empirical fact than in the social sciences. The Trump Administration's attacks on science, writ larger, are non-epistemic in nature, seeking to build an ideology of hostility to science. This strategy builds upon a dec-*

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\* D'Alemberte Professor, Florida State University College of Law. I would like to thank the staff and editors of the *University of Miami Law Review* for their hospitality and their hard work on this Article. I would also like to thank the always-helpful, always professional staff of the Florida State University College of Law Library.

*ades-long and continuing misinformation campaign to discredit climate scientists but goes further and seeks to portray scientists as part of the “deep state” that is conspiring to victimize Americans.*

*To be sure, federal funding for most research unrelated to industry regulation remains robust, even higher in some programs. But a manufactured suspicion of “regulatory science” (relating to industry regulation) has begun to bleed ominously over into policy arenas completely outside of regulation. The Trump Administration’s policy meanderings to deal with the COVID-19 crisis are emblematic of a growing and systemic subjugation of science to political objectives, ones that can be bizarrely unscientific. A number of cultural, political, and economic factors contribute to this latest resurgence of anti-intellectualism, one with a unique animus towards the hard sciences. A restoration of endangered and broken societal norms governing the advancement of science will require vigorous enforcement of federal administrative laws but will also require the development of government policies that address the cultural, political, and economic roots of this latest crisis of science.*

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## INTRODUCTION

Well before Donald Trump was elected President on a raucously populist platform,<sup>1</sup> members of the Republican Party at the federal and state levels had long been at work with their own populist project: an assault on the use of science and analytics in government policy and decision-making.<sup>2</sup> Steady streams of scientific and economic research on climate change, the health and economic effects of air and water pollution, and the health impacts of chemical substances have proven embarrassing to the fossil fuel and chemical industries.<sup>3</sup> Republicans have generally defended these industries and increasingly defend them by questioning the research justifying regulation.<sup>4</sup> President Trump assumed this mantle enthusiastically, having led efforts to undermine and obstruct science so as to protect industries from pesky regulation.<sup>5</sup> Climate change, in particular, drew President Trump's ire while in office, as he withdrew the United States from the Paris Agreement<sup>6</sup> (a key multilateral agreement on climate change),<sup>7</sup> reversed a number of President Obama's

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<sup>1</sup> See Michael Lind, *Donald Trump, the Perfect Populist*, POLITICO (Mar. 9, 2016), <https://www.politico.com/magazine/story/2016/03/donald-trump-the-perfect-populist-213697>.

<sup>2</sup> See Emily Atkin, *Bush Showed Trump How to Attack Climate Science*, NEW REPUBLIC (Nov. 16, 2017), <https://newrepublic.com/article/145798/bush-showed-trump-attack-climate-science>.

<sup>3</sup> See Melissa Denchak, *Fossil Fuels: The Dirty Facts*, NRDC (June 29, 2018), <https://www.nrdc.org/stories/fossil-fuels-dirty-facts>.

<sup>4</sup> See Kate Aronoff, *The Republican Party is the Political Arm of the Fossil Fuel Industry*, GUARDIAN (Mar. 27, 2019, 10:48 AM), <https://www.theguardian.com/commentisfree/2019/mar/27/climate-change-green-new-deal-republicans>.

<sup>5</sup> See Jeff Tollefson, *How Trump Damaged Science—and Why It Could Take Decades to Recover*, NATURE (Oct. 5, 2020), <https://www.nature.com/articles/d41586-020-02800-9>; see also *A Four-Year Timeline of Trump's Impact on Science*, NATURE (Oct. 5, 2020), <https://www.nature.com/articles/d41586-020-02814-3>.

<sup>6</sup> United Nations Framework Convention on Climate Change, *Adoption of the Paris Agreement*, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015), <http://unfccc.int/resource/docs/2015/cop21/eng/109.pdf> [<https://perma.cc/9WA5-SMFT>].

<sup>7</sup> See Brady Dennis, *Trump Makes It Official: U.S. Will Withdraw from the Paris Climate Accord*, WASH. POST (Nov. 4, 2019, 7:17 PM), <https://www.washingtonpost.com/climate-environment/2019/11/04/trump-makes-it-official-us-will-withdraw-paris-climate-accord/>.

climate initiatives on energy and motor vehicles,<sup>8</sup> and undertook many, many executive actions to try and purge climate change from federal government policy.<sup>9</sup> In response to the release of a federal government report warning of the dire economic consequences of climate change, President Trump simply stated, “I don’t believe it.”<sup>10</sup>

But, curiously, the Trump Administration’s assaults on science seemed to go beyond just reaping political advantage by protecting favored industries. Some moves seemed to be aimed at scientific research itself, with little or no constituency backing them.<sup>11</sup> Indeed, the President’s advocacy on behalf of the coal industry did not actually produce much in the way of electoral benefits, as electric utilities are rapidly abandoning coal as a fuel source, and in the coal industry itself, very few of the roughly 55,000 remaining mining and extraction employees<sup>12</sup> are in a position to swing a state. There was something besides rent-seeking going on. The Trump Administration at times undermined its own health experts on the COVID-19 crisis,<sup>13</sup> dismantled scientific and technical programs popular with a variety of energy industries,<sup>14</sup> reduced vehicle fuel efficiency standards to *below* levels called for by the automotive industry,<sup>15</sup> and

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<sup>8</sup> See *infra* Part II.B.

<sup>9</sup> See Brigham Daniels, *Come Hell and High Water: Climate Change Policy in the Age of Trump*, 13 FLA. INT’L U. L. REV. 65, 69–70 (2018).

<sup>10</sup> Philip Bump, *Trump Responds to His Administration’s Report Indicating a Huge Cost from Climate Change: “I Don’t Believe It,”* WASH. POST (Nov. 26, 2018, 4:55 PM), <https://www.washingtonpost.com/politics/2018/11/26/trump-responds-report-indicating-huge-cost-climate-change-i-dont-believe-it/>.

<sup>11</sup> See, e.g., Joseph Guzman, *Trump Attacks Scientific Research That Contradicts His Coronavirus Messaging*, HILL (May 22, 2020), <https://thehill.com/changing-america/well-being/longevity/499139-trump-looks-to-discredit-coronavirus-research-opposed>.

<sup>12</sup> NAT’L ASS’N OF STATE ENERGY OFFS. & ENERGY FUTURES INITIATIVE, *THE 2019 U.S. ENERGY & EMPLOYMENT REPORT* 4 (2019).

<sup>13</sup> Laurie McGinley & Yasmeen Abutaleb, *White House Effort to Undermine Fauci Is Criticized by Public Health Experts, Scientists and Democrats*, WASH. POST (July 13, 2020, 6:33 PM), <https://www.washingtonpost.com/health/2020/07/13/white-house-effort-undermine-fauci-is-criticized-by-public-health-experts-scientists-democrats/>.

<sup>14</sup> See *infra* Part II.A.

<sup>15</sup> See, e.g., Michael Laris & Ian Duncan, *Trump Administration Rolls Back Rules on Mileage Standards, Dealing a Blow to Obama-era Climate Policy*,

moved federal research programs out of the nation's capital to Kansas City, Missouri, and Grand Junction, Colorado<sup>16</sup>—nice places, to be sure, but still requiring life adjustments beyond the capacity of most federal workers. The stated resolve of President Trump and his one-time advisor, Steve Bannon, to accomplish the “deconstruction of the administrative state,”<sup>17</sup> or “deep state,”<sup>18</sup> goes far beyond what even the regulation-averse U.S. Chamber of Commerce asked for. Why? Public choice theory, predicated on self-interested politics,<sup>19</sup> can help explain the policy skew of science insofar as it affects regulations, but it cannot explain how it might be politically

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WASH. POST (Mar. 31, 2020, 1:11 PM), [https://www.washingtonpost.com/local/trafficandcommuting/trump-administration-rolls-back-rules-on-mileage-standards-dealing-a-blow-to-obama-era-climate-policy/2020/03/31/cb42cbb8-7359-11ea-87da-77a8136c1a6d\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/trump-administration-rolls-back-rules-on-mileage-standards-dealing-a-blow-to-obama-era-climate-policy/2020/03/31/cb42cbb8-7359-11ea-87da-77a8136c1a6d_story.html) (“An earlier draft of the rollback envisioned freezing the standards, requiring no improvement in fuel efficiency in those years. But following broad pushback, including from environmental experts as well as some carmakers, administration officials said they opted to require modest gains in efficiency.”). The revised standards also drew legal challenges from a coalition of states led by California that plan to impose more stringent standards, and four automakers—Ford, Honda, Volkswagen, and BMW—voluntarily agreed to comply with the more stringent standards, while other automakers, including General Motors, announced they would comply only with the federal standards, and intervened on behalf of the Trump Administration standards. Maxine Joselow, *5 Things to Know About the Split Between Automakers, GOVERNORS’ WIND & SOLAR ENERGY COAL.* (Oct. 31, 2019), <https://governorswindenergycoalition.org/5-things-to-know-about-the-split-between-automakers/>.

<sup>16</sup> See *infra* Part II.C; Rebecca Beitsch, *This Colorado Town Might Be the New Home of a Federal Agency*, HILL (Aug. 24, 2019, 2:44 PM), <https://thehill.com/policy/energy-environment/458587-this-small-colorado-town-might-be-the-new-headquarters-for-a>.

<sup>17</sup> Max Fisher, *Stephen K. Bannon’s CPAC Comments, Annotated and Explained*, N.Y. TIMES (Feb. 24, 2017), <https://www.nytimes.com/2017/02/24/us/politics/stephen-bannon-cpac-speech.html> (“The third, broadly, line of work is deconstruction of the administrative state. . . . If you look at these cabinet appointees, they were selected for a reason and that is the deconstruction.”).

<sup>18</sup> Julie Hirschfeld Davis, *Rumblings of a ‘Deep State’ Undermining Trump? It Was Once a Foreign Concept*, N.Y. TIMES (Mar. 6, 2017), <https://www.nytimes.com/2017/03/06/us/politics/deep-state-trump.html>.

<sup>19</sup> See JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* 3–5, 7 (1962).

advantageous to launch broadsides on scientific bodies unrelated to the protection of industries.

This Article suggests that the reason President Trump and some Republicans have adopted a platform of hostility to science itself is because they have become attuned to the possibility of leveraging scientific expertise as a *cultural* issue, ripe for political exploitation. By “science,” I mean not only the physical and biological sciences, but also the social sciences, including economics. A subset of Republicans, including President Trump, turned skepticism and hostility to science into an *ideology*, a non-epistemic set of beliefs that seem to resonate among key voters.<sup>20</sup> To be sure, attacks are not couched as attacks on science itself, as no one consciously considers themselves “anti-science.”<sup>21</sup> But by attacking *certain* scientists and *certain* science and labeling them as illegitimate, fake, or conspiratorial, shrewd political strategists can activate emotions that lead people to react negatively, vehemently, and even violently in such a way as to reduce the impact of scientific research and chill the research itself.<sup>22</sup> Crusades against science can be appealing to voters that have little in common with scientists, perhaps materially much less than scientists,<sup>23</sup> and perhaps have a poor understanding of science.<sup>24</sup> Federal agency decision-making on a wide range of matters

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<sup>20</sup> See Clare Foran, *Donald Trump and the Triumph of Climate-Change Denial*, ATLANTIC (Dec. 25, 2016), <https://www.theatlantic.com/politics/archive/2016/12/donald-trump-climate-change-skeptic-denial/510359/>.

<sup>21</sup> See Marc Brazeau, *(Practically) No One Is Anti-Science, and How That Can Help Us Talk About GMOs*, GENETIC LITERACY PROJECT (July 12, 2019), <https://geneticliteracyproject.org/2019/07/12/practically-no-one-is-anti-science-and-how-that-can-help-us-talk-about-gmos/>.

<sup>22</sup> See Stephan Lewandowsky et al., *Recurrent Fury: Conspiratorial Discourse in the Blogosphere Triggered by Research on the Role of Conspiracist Ideation in Climate Denial*, 3 J. SOC. & POL. PSYCH. 142, 143, 170, 172 (2015).

<sup>23</sup> See Ivan De Luce, *Here's How Much Money 25 Types of Scientists Really Make*, BUS. INSIDER (May 29, 2019, 8:04 AM), <https://www.businessinsider.com/how-much-money-types-of-scientists-make-2019-5>.

<sup>24</sup> See generally *An Examination of the 2016 Electorate, Based on Validated Voters*, PEW RSCH. CTR. (Aug. 9, 2018), <https://www.pewresearch.org/politics/2018/08/09/an-examination-of-the-2016-electorate-based-on-validated-voters/> (according to the Pew Research Center, white voters *without* a college degree favored Trump over Clinton by sixty-four to twenty-eight percent, while white voters *with at least a college degree* favored Clinton over Trump by fifty-five to thirty-eight percent. It is also worth noting, however, that nonwhites without a college degree favored Clinton over Trump by seventy-seven to eighteen percent).

must inevitably employ some scientific reasoning, including economic reasoning,<sup>25</sup> so when the outcome is unfavorable to a constituency, attacking the scientific bases for the decision is a natural response. While such attacks from the left for perceived under-regulation have sometimes unfairly caricatured agency scientists as agents of regulated industry, the attacks from the right for perceived over-regulation have been more broadly dismissive of the scientific endeavor itself.<sup>26</sup> President George W. Bush was openly contemptuous of scientists, once mocking one of his advisors at a town hall by stating: “I’m a C-student. He’s the PhD. He’s the adviser. I’m the President. What does that tell you?”<sup>27</sup>

Some Republican politicians seem to have caught sense that many voters are apparently willing to believe that scientific experts might be part of a “mainstream establishment” conspiring to oppress them.<sup>28</sup> My view is that there is more than a grain of truth to that cynical view of a mainstream “establishment,” but that directing animus towards scientific experts and science is grotesquely misguided. Moreover, it is dangerous in a way that is tragically self-defeating.

Several substantial caveats are in order. First, a hostility or distrust of science is certainly not limited to the Republican Party or those on the political right. Suspicion of genetically modified organisms (“GMOs”) has persisted despite declarations by the National Academy of Sciences that no evidence exists linking GMOs with adverse health outcomes.<sup>29</sup> GMO foods are, as far as we know, safe to eat, but some people, on both sides of the aisle, have continued to

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<sup>25</sup> See, e.g., *Role of Science at EPA*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/research/role-science-epa> (last visited Jan. 24, 2021).

<sup>26</sup> See Ari Schulman, *The Coronavirus and the Right’s Scientific Counterrevolution*, NEW REPUBLIC (June 15, 2020), <https://newrepublic.com/article/158058/coronavirus-conservative-experts-scientific-counterrevolution>.

<sup>27</sup> Colleen J. Shogan, *Anti-Intellectualism in the Modern Presidency: A Republican Populism*, 5 PERSPS. ON POL. 295, 300 (2007).

<sup>28</sup> See Marc Hetherington & Jonathan M. Ladd, *Destroying Trust in the Media, Science, and Government Has Left America Vulnerable to Disaster*, BROOKINGS (May 1, 2020), <https://www.brookings.edu/blog/fixgov/2020/05/01/destroying-trust-in-the-media-science-and-government-has-left-america-vulnerable-to-disaster/>.

<sup>29</sup> NAT’L ACADS. OF SCIS., ENG’G & MED., GENETICALLY ENGINEERED CROPS: EXPERIENCES AND PROSPECTS 2, 16 (2016).

abstain from consumption.<sup>30</sup> Populist suspicion of vaccines is persistent, frustrating, dangerous, and bipartisan.<sup>31</sup> The environmental advocate Robert F. Kennedy, Jr., made common cause with President Trump on the discrediting of vaccines,<sup>32</sup> parroting to each other long-debunked links between vaccines and autism.<sup>33</sup> On climate policy, the left-wing organization Food and Water Watch has declared that a carbon tax is a “fake solution[]” that is a “win-win for factory farms [and] fossil fuels” and fails to reduce emissions,<sup>34</sup> paralleling eerily similar crackpot claims made on the extreme right,<sup>35</sup>

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<sup>30</sup> See CARY FUNK & BRIAN KENNEDY, PEW RES. CTR., *THE NEW FOOD FIGHTS: U.S. PUBLIC DIVIDES OVER FOOD SCIENCE* 6–7, 50 (2016) (finding that 39% of Republicans and 40% of Democrats surveyed believed that food with GMO ingredients are generally worse for health than foods with no genetically modified ingredients); PEW RES. CTR., *PUBLIC AND SCIENTISTS’ VIEWS ON SCIENCE AND SOCIETY* 39 (2015). A Pew Research study found that 88% of surveyed members of the American Association for the Advancement of Science said that genetically modified foods were safe to eat, while only 37% of the general public thought so. CARY FUNK & BRIAN KENNEDY, *supra* note 30, at 20, 58; PEW RES. CTR., *supra* note 30, at 39.

<sup>31</sup> Sarah Boseley, *Vaccine Scepticism Grows in Line with Rise of Populism—Study*, *GUARDIAN* (Feb. 25, 2019, 8:02 AM), <https://www.theguardian.com/world/2019/feb/25/vaccine-scepticism-rises-in-line-with-votes-for-populists-study-finds>.

<sup>32</sup> See, e.g., Sarah Kaplan, *The Truth About Vaccines, Autism and Robert F. Kennedy Jr.’s Conspiracy Theory*, *WASH. POST* (Jan. 10, 2017, 5:40 PM), <https://www.washingtonpost.com/news/speaking-of-science/wp/2017/01/10/the-facts-about-vaccines-autism-and-robert-f-kennedy-jr-s-conspiracy-theory/>.

<sup>33</sup> See Keith Kloor, *Robert Kennedy Jr.’s Belief in Autism-Vaccine Connection, and Its Political Peril*, *WASH. POST* (July 18, 2014), [https://www.washingtonpost.com/lifestyle/magazine/robert-kennedy-jrs-belief-in-autism-vaccine-connection-and-its-political-peril/2014/07/16/f21c01ee-f70b-11e3-a606-946fd632f9f1\\_story.html?postshare=7081484090118096&tid=ss\\_tw](https://www.washingtonpost.com/lifestyle/magazine/robert-kennedy-jrs-belief-in-autism-vaccine-connection-and-its-political-peril/2014/07/16/f21c01ee-f70b-11e3-a606-946fd632f9f1_story.html?postshare=7081484090118096&tid=ss_tw).

<sup>34</sup> Jim Walsh, *The Oil Industry’s Carbon Tax Dream Is a Climate Nightmare*, *FOOD & WATER WATCH* (Oct. 7, 2019), <https://www.foodandwaterwatch.org/news/oil-industrys-carbon-tax-dream-climate-nightmare>.

<sup>35</sup> See, e.g., Robert P. Murphy et al., *Policy Analysis No. 801: The Case Against a U.S. Carbon Tax*, *CATO INST.* (Oct. 17, 2016), <https://www.cato.org/publications/policy-analysis/case-against-us-carbon-tax> (falsely claiming, for example, that “[a]fter an initial (but temporary) drop, the [British Columbia] carbon tax has not yielded significant reductions in gasoline purchases, and it has arguably reduced the [British Columbia] economy’s performance relative to the rest of Canada,” which flies in the face of numerous reports, data, and findings, some of which are summarized in Brian Murray & Nicholas Rivers, *British Columbia’s*

both of which fly in the face of decades of empirical economic research<sup>36</sup> and both of which could be corrected by a diligent undergraduate economics student.

For the most part, these left-wing suspicions have not metastasized into cultural identifiers, with one possible exception. The Green New Deal is a very broad and ambitious program created by the political left (some would say far-left) to deal simultaneously with climate change and a variety of social and economic issues and, at times, seems to be a basis for a Democratic Party litmus test.<sup>37</sup> My own view of the Green New Deal is that it admirably tries to address many pressing issues and contains some useful policy elements, but its proponents seem defiantly tone-deaf with respect to its fiscal implications, suggestive of resistance to or ignorance of economic science. Representative Ocasio-Cortez, a sponsor, acknowledges the Green New Deal will be expensive but argues economic growth will help the plan pay for itself.<sup>38</sup> The statement is similar to speculative claims by the Trump Administration that federal government revenue lost by the 2017 Tax Cuts and Jobs Act would be recaptured through economic growth.<sup>39</sup>

A second caveat is that, while arguing this latest charge of anti-science sentiment has been led by Republicans, this Article does *not* argue that it has swallowed the entire Republican Party. On the contrary, a very significant number of prominent Republicans have recoiled against the former president and for what he stands, including

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*Revenue-Neutral Carbon Tax: A Review of the Latest “Grand Experiment” in Environmental Policy*, 86 ENERGY POL’Y 674, 678–80 (2015)).

<sup>36</sup> See generally SHI-LING HSU, THE CASE FOR A CARBON TAX: GETTING PAST OUR HANG-UPS TO EFFECTIVE CLIMATE POLICY 140–41 (2011) (explaining that “the likelihood that people adjust to even small price changes in fossil fuel price is so well-established that it almost rises to the level of an economic maxim”).

<sup>37</sup> See, e.g., Zoya Teirstein, *How to Really Judge Whether 2020 Candidates Support the Green New Deal? Look at Their Climate Plans*, GRIST (July 1, 2019), <https://grist.org/article/how-to-really-judge-whether-2020-candidates-support-the-green-new-deal-look-at-their-climate-plans/>.

<sup>38</sup> Lisa Friedman, *What Is the Green New Deal? A Climate Proposal, Explained*, N.Y. TIMES (Feb. 21, 2019), <https://www.nytimes.com/2019/02/21/climate/green-new-deal-questions-answers.html>.

<sup>39</sup> See William G. Gale, *Did the 2017 Tax Cut—the Tax Cuts and Jobs Act—Pay for Itself?*, BROOKINGS (Feb. 14, 2020), <https://www.brookings.edu/policy2020/votervital/did-the-2017-tax-cut-the-tax-cuts-and-jobs-act-pay-for-itself/>.

his ignorance of and hostility to science.<sup>40</sup> At many, many times, the Republican Party has been frustratingly passive, having enabled President Trump to do abhorrent things.<sup>41</sup> The Republican Party has also remained largely recalcitrant on climate change, still rallying around the most regressive members of their party.<sup>42</sup> But suspicion of science and the desire to reduce its importance in government is clearly not shared by all Republicans.<sup>43</sup>

Third, whenever populist hostility to science rears its head, organized religion seems to receive at least part of the blame.<sup>44</sup> But even among the fundamentalist, evangelical denominations in which skepticism is most common, there is great diversity. The Evangelical Environmental Network, for example, argues that “pro-life Christians must lead the charge on clean energy” because “[p]ollution harms the unborn, causing damage that lasts a lifetime . . . [and d]irty air and water have serious consequences for the health of our children and other vulnerable populations like the elderly.”<sup>45</sup> Among climate scientists, few are more respected than Katharine Hayhoe, a prominent atmospheric scientist and Christian who, with her husband, an evangelical pastor, wrote *A Climate for Change: Global Warming Facts for Faith-Based Decisions*, a book synthesizing the Christian faith with the science of climate change.<sup>46</sup> It is certainly true that many religious groups view science with suspicion because they find it difficult to reconcile with their faith.<sup>47</sup> But

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<sup>40</sup> See, e.g., LINCOLN PROJECT, <https://lincolnproject.us> (last visited Jan. 24, 2021) (among several organizations founded by Republicans, the Lincoln Project fundraised and campaigned heavily to defeat Donald Trump in the 2020 election.).

<sup>41</sup> See Olivia Nuzzi, *Enablement: The Tortured Self-Justification of One Very Powerful Trump-Loathing Anonymous Republican*, N.Y. MAG. (Oct. 26, 2020), <https://nymag.com/intelligencer/2020/10/anonymous-republican-donald-trump.html>.

<sup>42</sup> See Friedman, *supra* note 38.

<sup>43</sup> See, e.g., Nicole Acevedo, *GOP Governor in North Dakota Gives Emotional Plea Against “Mask Shaming,”* NBC NEWS (May 23, 2020, 2:56 PM), <https://www.nbcnews.com/news/us-news/gop-governor-north-dakota-gives-emotional-plea-against-mask-shaming-n1213801>.

<sup>44</sup> See, e.g., SUSAN JACOBY, *THE AGE OF AMERICAN UNREASON* 27 (2008).

<sup>45</sup> *What We Do*, EVANGELICAL ENV’T NETWORK, <https://creationcare.org/what-we-do/initiatives-campaigns/overview.html> (last visited Jan. 24, 2021).

<sup>46</sup> KATHARINE HAYHOE & ANDREW FARLEY, *A CLIMATE FOR CHANGE: GLOBAL WARMING FACTS FOR FAITH-BASED DECISIONS* xv (2009).

<sup>47</sup> See *id.* at xiv–xv.

to make an over-attribution to them minimizes the deeply spiritual and progressive efforts of groups and persons working to help others reconcile faith and science.

Finally, as noted above, a disposition towards science is only one of several cultural identifiers. The implications are profoundly important for government, for civil society, and for civilization. But it is mixed in with a number of other cultural identifiers that provide a context for this phenomenon, and potentially provide synergistic or perhaps counteracting effects. Even among President Trump's supporters, the role of hostility to science is unclear. I leave the larger question of how science fits in and interacts with other cultural identifiers to future research and scholarship.

#### I. ANTI-SCIENCE AND ANTI-INTELLECTUALISM FROM THE BEGINNING

Hostility to science, or more broadly, hostility to intellectuals, is ancient and finds expression in American politics from nearly its very beginnings. The 1824 election, which pitted John Quincy Adams against Andrew Jackson, highlighted divisions already festering in the American political psyche.<sup>48</sup> Adams, son of the second president, was educated at Harvard, Amsterdam, Leiden, and The Hague and complained that Europeans were contributing more to the advancement of science, suggesting American adoption of some European policies.<sup>49</sup> By contrast the combat-hardened,<sup>50</sup> autocratic, pro-slavery Jackson<sup>51</sup> grew up in poverty,<sup>52</sup> educated himself, bore a lifelong hatred of the British,<sup>53</sup> and would later be remembered for his role in the brutal relocation of over 125,000 Native Americans, an exodus ignominiously remembered as the Trail of Tears.<sup>54</sup> *Both* camps described the contest as between “John Quincy Adams who

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<sup>48</sup> RICHARD HOFSTADTER, ANTI-INTELLECTUALISM IN AMERICAN LIFE 157–58 (1963) [hereinafter HOFSTADTER, ANTI-INTELLECTUALISM].

<sup>49</sup> *Id.*

<sup>50</sup> CYRUS TOWNSEND BRADY, THE TRUE ANDREW JACKSON 64 (1906).

<sup>51</sup> *Id.* at 304–05.

<sup>52</sup> *See id.* at 30.

<sup>53</sup> HOFSTADTER, ANTI-INTELLECTUALISM, *supra* note 48, at 158–59.

<sup>54</sup> *Trail of Tears*, HISTORY (Nov. 9, 2009), <https://www.history.com/topics/native-american-history/trail-of-tears>.

can write [a]nd Andrew Jackson who can fight.”<sup>55</sup> Despite narrowly losing the 1824 election, Jackson was plainly more popular nationally and routed Adams in 1828.<sup>56</sup> Jackson was deeply suspicious of government, arguing that government employees inevitably came to view their public service with entitlement, and preferred unskilled or untrained people to serve in government.<sup>57</sup> That was considerably more feasible than it would be in the present day.

Historian Richard Hofstadter’s *Anti-Intellectualism in American Life*, published in 1963, reads almost as much like an account of modern disruption and populism as it does of the early twentieth century.<sup>58</sup> Transformative new modes of communication, rising global trade, and the emergence of industrial giants besieged rural, small-town America in the 1920s.<sup>59</sup> Tennessee schoolteacher John Scopes was convicted of violating a state law prohibiting the teaching of evolution. The trial pitted Scopes against the new anti-science movement in Tennessee and Clarence Darrow against William Jennings Bryan, the three-time Democratic populist presidential candidate,<sup>60</sup> who was fond of saying: “It is better to trust in the Rock of Ages than to know the ages of the rocks.”<sup>61</sup> In 1952, Dwight D. Eisenhower was elected President and promptly set about ejecting government experts installed by President Franklin Roosevelt, replacing “New Dealers [with] car dealers,”<sup>62</sup> and railing against intellectual elites.<sup>63</sup> Despite (or, perhaps, because of) service as the

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<sup>55</sup> HOFSTADTER, ANTI-INTELLECTUALISM, *supra* note 48, at 159.

<sup>56</sup> *Id.* at 159–60.

<sup>57</sup> See BRADY, *supra* note 50, at 301–02; see also *Andrew Jackson Shuts Down Second Bank of the U.S.*, HISTORY (Sept. 6, 2019), <https://www.history.com/this-day-in-history/andrew-jackson-shuts-down-second-bank-of-the-u-s>.

<sup>58</sup> See generally HOFSTADTER, ANTI-INTELLECTUALISM, *supra* note 48, at 38 (discussing unpopularity and distrust of intellect).

<sup>59</sup> See *The Decade That Roared*, U.S. HISTORY, <https://www.ushistory.org/us/46.asp> (last visited Jan. 24, 2021).

<sup>60</sup> *State of Tennessee v. Scopes*, ACLU, <https://www.aclu.org/other/state-tennessee-v-scopes> (last visited Jan. 24, 2021).

<sup>61</sup> J. Kingston Pierce, *Scopes Trial*, HISTORYNET (Aug. 2000), <https://www.historynet.com/scopes-trial.htm>; see also Doug Linder, *William Jennings Bryan (1860–1925)*, FAMOUS TRIALS (July 10, 2000), <https://famous-trials.com/scopesmonkey/2127-home>.

<sup>62</sup> HOFSTADTER, ANTI-INTELLECTUALISM, *supra* note 48, at 4.

<sup>63</sup> See *id.*

President of Columbia University,<sup>64</sup> President Eisenhower once quipped that an intellectual is “a man who takes more words than are necessary to tell more than he knows.”<sup>65</sup> And in the 1950s, a glib, bombastic, habitually dishonest Republican politician in the person of Joseph McCarthy seized on national insecurities to send the nation into turmoil and fear through a campaign of bullying, with intellectuals, as Hofstadter put it, “in the line of fire.”<sup>66</sup>

Beleaguered intellectuals should bear in mind that some of their lot provided some grist for anti-intellectualism. William Jennings Bryan not only stood opposed to evolution but was also opposed to “social Darwinism,” a dubious extension of evolution into social policy, representing a laissez-fair view that government should refrain from protecting the weak and vulnerable because it was their lot to be bred out of existence, thereby improving the gene pool.<sup>67</sup> Advocates of social Darwinism included Andrew Carnegie, John D. Rockefeller, and Yale rector William Graham Sumner.<sup>68</sup> It is not hard to see how this alignment could produce a lasting suspicion of those with wealth and education.<sup>69</sup>

Fast forwarding past an American science renaissance spurred by the Soviet launch of Sputnik,<sup>70</sup> President George W. Bush encouraged the teaching of intelligent design in schools,<sup>71</sup> terminated federal funding for research using new stem cells lines,<sup>72</sup> later vetoed legislation that would have reversed that action,<sup>73</sup> and muzzled his Surgeon General on emergency contraception, sex education,

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<sup>64</sup> Dwight D. Eisenhower, COLUMBIA250 (2004), [http://c250.columbia.edu/c250\\_celebrates/remarkable\\_columbians/dwight\\_d\\_eisenhower.html](http://c250.columbia.edu/c250_celebrates/remarkable_columbians/dwight_d_eisenhower.html).

<sup>65</sup> HOFSTADTER, ANTI-INTELLECTUALISM, *supra* note 48, at 10.

<sup>66</sup> *Id.* at 3 (remarking on McCarthyism).

<sup>67</sup> See, e.g., RICHARD HOFSTADTER, SOCIAL DARWINISM IN AMERICAN THOUGHT 200 (1955).

<sup>68</sup> JACOBY, *supra* note 44, at 61.

<sup>69</sup> See BRADY, *supra* note 50, at 301.

<sup>70</sup> JACOBY, *supra* note 44, at xii–xiii.

<sup>71</sup> Jennifer Couzin-Frankel, *Bush Backs Teaching Intelligent Design*, SCI. MAG. (Aug. 2, 2005, 12:00 AM), <https://www.sciencemag.org/news/2005/08/bush-backs-teaching-intelligent-design>.

<sup>72</sup> Press Release, Office of the Press Secretary, White House, President Discusses Stem Cell Research (Aug. 9, 2001).

<sup>73</sup> David Greene, *Bush Vetoes Bill to Expand Stem Cell Research*, NPR (July 19, 2006, 2:19 PM), <https://www.npr.org/templates/story/story.php?storyId=5568219>.

prison health, and mental health.<sup>74</sup> To be sure, President Bush was devoutly Christian and made numerous policy decisions directed by faith, sometimes ill-advisedly, as in the case of the invasion of Iraq.<sup>75</sup> But President Bush was, despite his privileged upbringing, also a self-anointed champion of “ordinary folk”<sup>76</sup> and seemed to have found political advantage in using science (or suspicion thereof) as a marker of group identity.<sup>77</sup> For decades, it was received wisdom among economists that governments needed to manage their sovereign debt lest they lose credibility and markets start to lose faith in repayment and demand higher interest for loans.<sup>78</sup> Republicans once held an intellectual upper-hand on fiscal discipline but surrendered it as deficits exploded under Presidents Reagan,<sup>79</sup> George W. Bush,<sup>80</sup> and Trump,<sup>81</sup> all falling in behind Vice President Dick Cheney’s glib proclamation that “deficits don’t matter.”<sup>82</sup>

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<sup>74</sup> Gardiner Harris, *White House Is Accused of Putting Politics Over Science*, N.Y. TIMES (July 10, 2007), <https://www.nytimes.com/2007/07/10/washington/11cnd-surgeon.html?hp>.

<sup>75</sup> See, e.g., Shogan, *supra* note 27, at 300; Ron Suskind, *Faith, Certainty and the Presidency of George W. Bush*, N.Y. TIMES (Oct. 17, 2004), <https://www.nytimes.com/2004/10/17/magazine/faith-certainty-and-the-presidency-of-george-w-bush.html>.

<sup>76</sup> See JACOBY, *supra* note 44, at 3–4.

<sup>77</sup> See, e.g., Shogan, *supra* note 27, at 299–300; Richard M. Skinner, *George W. Bush and the Partisan Presidency*, 123 POL. SCI. Q. 605, 608 (2008) (“[T]he executive branch is used as a tool to support the president’s agenda; advice is valued to the extent that it promotes the party’s platform and the president’s political future, rather than how it fulfills the ideals of neutral competence.”).

<sup>78</sup> See Mark De Broeck et al., *The Debt Web: The Interwar Period Shows How a Complex Network of Sovereign Debt Can Aggravate Financial Crises*, 55 FIN. & DEV. 30, 30–31 (2018).

<sup>79</sup> Andrew Stoeckel & Warwick McKibbin, *Exploding Fiscal Deficits in the United States: Implications for the World Economy*, 6 ECON. SCENARIOS 1, 1–2 (2003).

<sup>80</sup> See *id.* at 2.

<sup>81</sup> Editorial, *Trump and the GOP Are Fueling the Explosion of Our National Debt*, WASH. POST (Feb. 1, 2020, 7:00 AM), [https://www.washingtonpost.com/opinions/trump-and-the-gop-are-fueling-the-explosion-of-our-national-debt/2020/01/31/4d84b3fa-42b5-11ea-b5fc-ee848cde99\\_story.html](https://www.washingtonpost.com/opinions/trump-and-the-gop-are-fueling-the-explosion-of-our-national-debt/2020/01/31/4d84b3fa-42b5-11ea-b5fc-ee848cde99_story.html).

<sup>82</sup> O’Neill Says Cheney Told Him, ‘Deficits Don’t Matter,’ CHI. TRIB. (Jan. 12, 2004), <https://www.chicagotribune.com/news/ct-xpm-2004-01-12-0401120168-story.html>.

Anti-intellectualism had historically steered clear of the physical and biological sciences, but because environmental law now requires the input of these scientists, they too have become targets.<sup>83</sup> The genesis of this most recent surge can be traced to an aggressive campaign waged by Republicans to discredit the work of scientists studying climate change.<sup>84</sup> These crusades, aimed at trying to keep afloat fossil fuel industries, have been driven by misinformation<sup>85</sup> and sometimes even incited threats of violence against scientists.<sup>86</sup> A report written by the Minority (Republican) staff on the Senate Committee on Environment and Public Works, working under the direction of Senator James Inhofe, entitled “‘Consensus’ Exposed: The CRU Controversy,” purported to document instances of deception from emails hacked from the accounts of climate scientists involved with the University of East Anglia’s Climatic Research Unit.<sup>87</sup> Taken out of context, the emails suggested that scientists were making up climate data.<sup>88</sup> The end of the report listed the seventeen scientists, claiming “[t]he scientists involved in the CRU controversy violated fundamental ethical principles governing taxpayer-funded research and, in some cases, may have violated federal laws.”<sup>89</sup> Predictably, the scientists became the target of frequent death threats,<sup>90</sup> many opting for private security measures.<sup>91</sup>

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<sup>83</sup> *Climate Scientists in U.S. Barraged with Death Threats*, CLIMATEWIRE (July 7, 2010), <https://www.eenews.net/climatewire/2010/07/07/stories/92904>.

<sup>84</sup> See NAOMI ORESKES & ERIK M. CONWAY, *MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING* 169–214 (2010).

<sup>85</sup> See *id.* at 183–87.

<sup>86</sup> *Climate Scientists in U.S. Barraged with Death Threats*, *supra* note 83.

<sup>87</sup> MINORITY STAFF OF S. COMM. ON ENV’T & PUB. WORKS, 111TH CONG., ‘CONSENSUS’ EXPOSED: THE CRU CONTROVERSY 1, 7 (2010), <https://www.inhofe.senate.gov/imo/media/doc/Consensus%20Exposed%20The%20CRU%20Controversy.pdf>.

<sup>88</sup> *Id.* at 6, 18.

<sup>89</sup> *Id.* at 34–37.

<sup>90</sup> *Climate Scientists in U.S. Barraged with Death Threats*, *supra* note 83; Stephen Leahy, *Environment: Violent Backlash Against Climate Scientists*, INTER PRESS SERV. (Mar. 9, 2010), <http://ipsnews.net/news.asp?idnews=50607>.

<sup>91</sup> See, e.g., Bryan Schatz, *Michael Mann Fought Climate Denial. Now He’s Fighting Climate Doom*, CAL. ALUMNI ASS’N. (Summer 2020), <https://alumni.berkeley.edu/california-magazine/summer-2020/michael-mann->

Times have changed a bit. Even the most recalcitrant Republicans have grudgingly and gradually retreated on climate change denial. The first retreat from outright denial was demurring “I’m not a scientist,” which veteran Republican strategist Michael McKenna lamented was “the dumbest answer I’ve ever heard.”<sup>92</sup> Next, reluctant Republicans acknowledged climate change but doubted that it was caused by human activity in the form of greenhouse gas emissions.<sup>93</sup> Later still, there is the retreat that even if climate change is a serious threat, and even if human greenhouse gas emissions are responsible, Americans should resist reducing emissions because other nations like China cannot be trusted to do the same.<sup>94</sup> At the time this Article was written, the vast majority of Republican Party members of Congress were still opposed to reducing emissions through reduction of fossil fuel usage.<sup>95</sup>

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on-climate-denial-and-doom; Louis Bergeron & Dan Stober, *Stephen Schneider, a Leading Climate Expert, Dead at 65*, STAN. NEWS (July 19, 2010), <https://news.stanford.edu/news/2010/july/schneider-071910.html>.

<sup>92</sup> Coral Davenport, *Why Republicans Keep Telling Everyone They’re Not Scientists*, N.Y. TIMES (Oct. 30, 2014), <https://www.nytimes.com/2014/10/31/us/why-republicans-keep-telling-everyone-theyre-not-scientists.html>.

<sup>93</sup> See, e.g., Ellen Cranley, *These Are the 130 Current Members of Congress Who Have Doubted or Denied Climate Change*, BUS. INSIDER (Apr. 29, 2019, 1:39 PM), <https://www.businessinsider.com/climate-change-and-republicans-congress-global-warming-2019-2> (“Rep. Don Young: ‘Alaska is the focal point in the global warming debate. I do not challenge that climate change is occurring, but the central question awaiting an answer is to what extent man-made emissions are responsible for this change. Contrary to popular opinion, that question remains unanswered.’”).

<sup>94</sup> See, e.g., Marco Rubio, Opinion, *Rubio on Climate Change: ‘We Should Choose Adaptive Solutions,’* USA TODAY (Aug. 19, 2019, 6:00 AM), <https://www.usatoday.com/story/opinion/2019/08/19/rubio-on-climate-change-we-should-choose-adaptive-solutions-column/2019310001/>.

<sup>95</sup> See Jonathan Chait, *Republicans Remain Opposed to Any Policies That Would Reduce Fossil-Fuel Use*, N.Y. MAG. (Nov. 28, 2020), <https://nymag.com/intelligencer/2020/11/republicans-climate-change-biden-science-greenhouse-gas.html>. Some Republicans proposed planting many trees, and federal funding for carbon capture technology, which seeks to capture carbon dioxide emissions from coal-fired power plants. *Id.* Louisiana Republican Congressman Garret Graves has argued that “[t]hose who identify fossil fuels as the enemy have misidentified what the enemy is. It’s the emissions.” Nick Sobczyk, *Republicans Take Heat from the ‘Retro’ Crowd*, E&E NEWS (Feb. 13, 2020), <https://www.eenews.net/stories/1062336799>. The technology has worked poorly,

Some have turned to other forms of policy mischief to undermine climate policy and retard environmental progress. One scientific thorn in the side of the fossil fuel industries is a vast, ongoing epidemiological study on the effects of air pollution on public health.<sup>96</sup> Numerous updates to the study over the four decades of research have firmly established a link between fine particulate matter pollution (“PM<sub>2.5</sub>”) and premature deaths.<sup>97</sup> PM<sub>2.5</sub> is present in the air as soot and dirt, emitted by coal-fired power plants, and is also formed by other “precursor” pollutants such as sulfur dioxide and ammonia, which are transformed by chemical processes into PM<sub>2.5</sub>.<sup>98</sup> PM<sub>2.5</sub> pollution kills about 100,000 Americans each year,<sup>99</sup> millions worldwide.<sup>100</sup> Because coal combustion is implicated in PM<sub>2.5</sub> pollution, Republicans have sought to undermine the study and block its application to policy, most recently under the guise of

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however, as even the electricity generation firms with whom the federal government partnered—the firms that subsidies were meant to help—ultimately abandoned the effort, opting instead to focus on installing renewable energy sources. Kristi E. Swartz, *Southern Co. Suspends \$7.5B Next-Generation Plant*, E&E NEWS (June 29, 2017), <https://www.eenews.net/stories/1060056779/print>.

<sup>96</sup> A relatively recent update is Johanna Lepeule et al., *Chronic Exposure to Fine Particles and Mortality: An Extended Follow-Up of the Harvard Six Cities Study from 1974 to 2009*, 120 ENV'T HEALTH PERSPS. 965, 970 (2012).

<sup>97</sup> *Id.*; see also Francine Laden et al., *Reduction in Fine Particulate Air Pollution and Mortality: Extended Follow-Up of the Harvard Six Cities Study*, 173 AM. J. RESPIRATORY & CRITICAL CARE MED. 667, 668–69 (2006) (finding that every 10 µg/m<sup>3</sup> increase in fine-particulate matter pollution resulted in an increase in premature deaths on the order of 3% higher (Table 1)); C. Arden Pope III et al., *Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution*, 287 JAMA 1132, 1141 (2002). Recent studies have estimated that fine particulate matter pollution is connected to over two million premature deaths annually. Raquel A. Silva et al., *Global Premature Mortality Due to Anthropogenic Outdoor Air Pollution and the Contribution of Past Climate Change*, 8 ENV'T RSCH. LETTERS, NO. 8, at 2 (2013).

<sup>98</sup> See Peter Tschofen et al., *Fine Particulate Matter Damages and Value Added in the US Economy*, 116 PROC. NAT'L ACAD. SCI. 19857, 19858 (2019).

<sup>99</sup> Andrew L. Goodkind et al., *Fine-Scale Damage Estimates of Particulate Matter Air Pollution Reveal Opportunities for Location-Specific Mitigation of Emissions*, 116 PROC. NAT'L ACAD. SCI. 8775, 8775 (2019).

<sup>100</sup> *Burden of Disease from Ambient Air Pollution for 2016*, WHO (Apr. 2018), [https://www.who.int/airpollution/data/AAP\\_BoD\\_results\\_May2018\\_final.pdf?ua=1](https://www.who.int/airpollution/data/AAP_BoD_results_May2018_final.pdf?ua=1).

“transparency.”<sup>101</sup> Republicans seeking to protect the coal industry dutifully argued against the study, the Harvard Six Cities study, complaining of the anonymity of the research subjects.<sup>102</sup> Establishing a causal link between PM<sub>2.5</sub> pollution and death requires extensive and confidential information about the health conditions of research subjects, which triggers concerns over the privacy of health data.<sup>103</sup> Republicans have seized on this need for anonymity, calling it “secret science,”<sup>104</sup> as if the data had been cooked up by the thousands of researchers and dozens of universities involved with the research over the four decades that it has been carried out.

The Trump Administration took up this cause, seeking to accomplish by regulation what failed to pass as proposed legislation under now-retired Congressman (and climate denier) Lamar Smith.<sup>105</sup> The Trump Administration’s Strengthening Transparency in Science rule would either force disclosure of confidential information or forbid its use in rulemaking.<sup>106</sup>

## II. BEYOND JUST PLAIN CORRUPTION

Like previous deregulation-focused administrations, the Trump Administration practices old-fashioned political interference with science to help favored industries. It has abruptly ended studies of

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<sup>101</sup> See Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 35612, 35612 (proposed June 11, 2020) (to be codified at 40 C.F.R. pt. 83).

<sup>102</sup> See Christopher Rowland, *House GOP Demands Harvard Study Data*, BOS. GLOBE (Sept. 6, 2013, 8:57 PM), <https://www.bostonglobe.com/news/nation/2013/09/06/landmark-harvard-study-health-effects-air-pollution-target-house-gop-subpoena/2K0jhfbJsZcfXqcQHc4jzL/story.html>.

<sup>103</sup> See *id.*; AM. INDEP. INST., *Republicans Wage Anti-‘Secret Secret’ Campaign Against the EPA*, HUFFINGTON POST (June 25, 2014, 11:02 AM), [https://www.huffpost.com/entry/secret-science-epa\\_n\\_5529521](https://www.huffpost.com/entry/secret-science-epa_n_5529521).

<sup>104</sup> *Id.*

<sup>105</sup> Secret Science Reform Act of 2015, H.R. 1030, 114th Cong. (2015); see also H.R. 1030 – *Secret Science Reform Act of 2015*, CONGRESS.GOV, <https://www.congress.gov/bill/114th-congress/house-bill/1030/text> (last visited Jan. 24, 2021).

<sup>106</sup> Strengthening Transparency in Regulatory Science, 83 Fed. Reg. 18768, 18773–74 (Apr. 30, 2018) (to be codified at 40 C.F.R. pt. 30).

flame retardants on pregnant women, the health effects of mountain-top removal coal mining,<sup>107</sup> and terminated funding for thirteen research centers studying children's health because of their research on the effects of chemicals.<sup>108</sup> After President Trump's parodically silly claim that wind turbines cause cancer,<sup>109</sup> the Bureau of Ocean Energy Management, which has leased over 1.7 billion acres of federal seabed to oil and gas companies,<sup>110</sup> began to slow walk permitting for the country's second offshore wind project.<sup>111</sup> The Environmental Protection Agency ("EPA") overruled a staff recommendation to ban the pesticide chlorpyrifos,<sup>112</sup> which was backed by a long record of research, showing a strong linkage to endocrine disruption, cognitive disorders, and neurodevelopmental disabilities resulting from use of the pesticide.<sup>113</sup> Chlorpyrifos had already been voluntarily withdrawn from household use by its maker, Dow Chemical.<sup>114</sup>

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<sup>107</sup> Brad Plumer & Coral Davenport, *Science Under Attack: How Trump Is Sidelineing Researchers and Their Work*, N.Y. TIMES (Dec. 28, 2019), <https://www.nytimes.com/2019/12/28/climate/trump-administration-war-on-science.html>.

<sup>108</sup> Corbin Hiar & Ariel Wittenberg, *EPA Cuts Off Funding for Kids' Health Research Centers*, E&E NEWS (May 20, 2019), <https://www.eenews.net/stories/1060367917>.

<sup>109</sup> Ledyard King, *Do Wind Farms Cause Cancer? Some Claims Trump Made About the Industry Are Just Hot Air*, USA TODAY (Apr. 3, 2019, 4:38 PM), <https://www.usatoday.com/story/news/politics/2019/04/03/cancer-causing-wind-turbines-president-donald-trump-claim-blown-away/3352175002/>.

<sup>110</sup> See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-19-531, OFFSHORE OIL AND GAS: OPPORTUNITIES EXIST TO BETTER ENSURE A FAIR RETURN ON FEDERAL RESOURCES 6 (2019).

<sup>111</sup> See, e.g., Benjamin Storrow, *Northeast States Hit Snag on Offshore Wind: Trump*, E&E NEWS (June 15, 2020), <https://www.eenews.net/stories/1063389915>.

<sup>112</sup> Chlorpyrifos: Final Order Denying Objections to March 2017 Petition Denial Order, 84 Fed. Reg. 35555 (July 24, 2019).

<sup>113</sup> Martine Bellanger et al., *Neurobehavioral Deficits, Diseases, and Associated Costs of Exposure to Endocrine-Disrupting Chemicals in the European Union*, 100 J. CLINICAL ENDOCRINOLOGY & METABOLISM 1256, 1256–59 (2015).

<sup>114</sup> *Chlorpyrifos*, U.S. ENV'T PROT. AGENCY (Dec. 4, 2020), <https://www.epa.gov/ingredients-used-pesticide-products/chlorpyrifos>; see NAT. RES. DEF. COUNCIL, *World's Largest Producer of Toxic Pesticide Chlorpyrifos Ends Its Production*, ECOWATCH (Feb. 7, 2020, 11:39 AM), <https://www.eco-watch.com/chlorpyrifos-pesticide-2645064560.html?rebelltitem=1#rebelltitem1>.

Of course, one could extend this list considerably. But whether the Trump Administration has engaged in more or less of these she-nanigans than previous administrations is not my focus. Rather, the purpose of this Article is to consider the more systemic changes proposed and implemented by the Trump Administration that have the effect of inhibiting scientific research and the use of science in federal agencies, in many ways more lasting and more widespread than previous White House interventions.<sup>115</sup> Again, this would include the use of economic analysis in federal policymaking, albeit mixed in with other sciences.

#### A. *Scientific Advisory Committees*

The Federal Advisory Committee Act<sup>116</sup> (“FACA”) sets out procedures and requirements for the establishment and operation of federal advisory committees, the purpose of which is to provide expertise and policy advice to federal government bodies.<sup>117</sup> About 1,000 advisory committees with about 72,000 members have an operating budget of about \$350 million and oversee everything from “from organ transplant practices” to Department of Homeland Security operations.<sup>118</sup> In addition to the general requirements of the FACA, some advisory committees are created by federal statute,<sup>119</sup> sometimes creating some ambiguity about the FACA’s applicability.

In 2017, then-EPA Administrator Scott Pruitt issued a directive that barred scientists from serving on EPA advisory committees if they received grant funding from the EPA.<sup>120</sup> As a general matter, federal advisory committee members serve at the pleasure of the appointing authority,<sup>121</sup> but agency actions regarding federal advisory

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<sup>115</sup> See Plumer & Davenport, *supra* note 107.

<sup>116</sup> 5 U.S.C. app. § 1.

<sup>117</sup> WENDY GINSBERG & CASEY BURGAT, CONG. RSCH. SERV., R44253, FEDERAL ADVISORY COMMITTEES: AN INTRODUCTION AND OVERVIEW 1 (2016).

<sup>118</sup> *Id.* at 1, 6.

<sup>119</sup> *Id.* at 1.

<sup>120</sup> Letter from E. Scott Pruitt, Administrator, EPA, Strengthening and Improving Membership on EPA Federal Advisory Committees (Oct. 31, 2017), [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>121</sup> 41 C.F.R. § 102-3.130(a) (2020).

committees must comply, like other agency actions, with the Administrative Procedure Act.<sup>122</sup> With respect to the specious conflict-of-interest justifications offered by Pruitt, a 1992 regulation governing ethical standards provides:

A special Government employee serving on an advisory committee within the meaning of [FACA] may participate in any particular matter of general applicability where the disqualifying financial interest arises from his non-Federal employment or non-Federal prospective 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.<sup>123</sup>

Conflicts of interest on the grant-recipient side are generally negligible, and in any, they case are regulated by the Office of Government Ethics regulations.<sup>124</sup> What looms much larger, and is less regulated, are the conflicts of interest of the industry scientists that Pruitt, and his successor Andrew Wheeler, have appointed to replace the academic scientists.<sup>125</sup>

A number of environmental organizations sued, and in at least two separate opinions, by U.S. District Court Judge Denise Cote and by D.C. Circuit Court Judge David S. Tatel, the EPA directive was held to have violated the APA.<sup>126</sup> Both courts ruled that the EPA directive plainly failed to provide a “reasoned explanation for the change” in policy regarding committee membership, and by ruling out most of the top scientists in these specific fields, it clearly frus-

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<sup>122</sup> See 5 U.S.C. § 500.

<sup>123</sup> 5 C.F.R. § 2640.203(g) (2020) (emphasis removed).

<sup>124</sup> See *Enforcement Responsibilities*, U.S. OFFICE GOV'T ETHICS, [https://www.oge.gov/web/oge.nsf/ethicsofficials\\_enforcement-resp](https://www.oge.gov/web/oge.nsf/ethicsofficials_enforcement-resp) (last visited Jan. 24, 2021).

<sup>125</sup> See Sean Reilly, *Agency Quits Fight Over Advisory Panel Membership*, E&E NEWS (June 25, 2020), <https://www.eenews.net/greenwire/2020/06/25/stories/1063452447>.

<sup>126</sup> *Nat. Res. Def. Council, Inc. v. U.S. Env't Prot. Agency*, 438 F. Supp. 3d 220, 231 (S.D.N.Y. 2020); *Physicians for Soc. Resp. v. Wheeler*, 956 F.3d. 634, 638 (D.C. Cir. 2020).

trated statutory mandates to rely upon the “best available science.”<sup>127</sup> The EPA has surrendered this legal point, but having already replaced the academic scientists, it has refused to revisit the committee memberships and is keeping in place its industry scientists.<sup>128</sup> At the time this Article was written, the Clean Air Scientific Advisory Committee, one of the most important committees because of its charge to evaluate the necessity of air pollution standards, was still loaded up with industry advocates of deregulation and climate skeptics.<sup>129</sup> It was still chaired by Louis Anthony Cox, Jr., a Denver consultant who has performed more than a dozen studies for Exxon, the American Petroleum Institute, the Western States Petroleum Association, and the Western Oil and Gas Association<sup>130</sup> and published numerous papers arguing that the dangers of benzene, a carcinogenic gasoline additive, are lower than other scientists would argue.<sup>131</sup>

But even appointing all new members did not satisfy the Trump Administration. By executive order, President Trump ordered all

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<sup>127</sup> *Physicians*, 956 F.3d at 639, 646–47 (citing *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016)).

<sup>128</sup> Sean Reilly, *Agency Rejects Call to Revisit Advisory Board Membership*, E&E NEWS (July 22, 2020), <https://www.eenews.net/greenwire/2020/07/22/stories/1063609935>.

<sup>129</sup> Albert C. Lin, *President Trump’s War on Regulatory Science*, 43 HARV. ENV’T L. REV. 247, 264–65 (2019).

<sup>130</sup> Louis Anthony (Tony) Cox, Jr., Ph.D., *Bio Sketch*, COX ASSOCS. 1, 11, 13–14, 42, 47, [https://cox-associates.com/index\\_htm\\_files/Coxbio.pdf](https://cox-associates.com/index_htm_files/Coxbio.pdf) (last visited Jan. 21, 2021).

<sup>131</sup> See, e.g., Louis Anthony Cox, Jr. & Paolo F. Ricci, *Reassessing Benzene Cancer Risks Using Internal Doses*, 12 RISK ANALYSIS 401, 401 (1992); Louis Anthony Cox Jr., *Reassessing Benzene Risks Using Internal Doses and Monte-Carlo Uncertainty Analysis*, 104 ENV’T HEALTH PERSPS. 1413, 1413 (1996); Louis A. Cox et al., *Non-Parametric Estimation of Low-Concentration Benzene Metabolism*, 278 CHEMICO-BIOLOGICAL INTERACTIONS 242, 249 (2017); Paolo F. Ricci & Louis A. Cox, Jr., *Empirical Analysis of the Variability of the Maximum Likelihood Estimates of Benzene Cancer Risks*, 25 ENV’T INT’L 745, 745 (1999); LOUIS ANTHONY COX JR. ET AL., CAUSAL ANALYTICS FOR APPLIED RISK ANALYSIS 285–91 (2018).

federal agencies to “terminate at least one-third of its current committees established under [the FACA] . . . .”<sup>132</sup> Technical and scientific advisory panels for the EPA<sup>133</sup> and the Department of Energy (“DOE”)<sup>134</sup> were disbanded entirely. EPA Administrator Andrew Wheeler also proposed some changes to “revamp” the EPA Science Advisory Board, but seemed to move in a direction that rattled even its own, industry-heavy Board.<sup>135</sup> Wheeler had considered changing the process by which the Board would take up reviews of regulatory actions that would exclude rank-and-file members.<sup>136</sup> Even industry members of the Board were concerned: A retired oil company geologist, Rob Merritt, was quoted as saying, “I have serious concerns about the impact of the EPA proposal which has the potential to strip the [Science Advisory Board] of any realistic oversight.”<sup>137</sup>

Industry would indeed have reason to be concerned if supposedly independent advisory committees were sidelined entirely. It could find itself at the mercy of an extremely liberal Democrat presidency intent on implementing new regulations that are costly and ineffective, without the grounding provided by a genuinely independent (and competent) advisory board. To be sure, stuffing the committees with industry scientists is expedient for purposes of constructing a rationale for deregulation. But over the long run, an excessively thorough hollowing-out of science advisory committees will be problematic from the industry side as well.

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<sup>132</sup> Exec. Order No. 13875, 84 Fed. Reg. 28711, 28711 (June 14, 2019).

<sup>133</sup> Sean Reilly, *EPA Scraps Science Panel: ‘Your Service . . . Has Concluded,’* E&E NEWS (Oct. 12, 2018), <https://www.eenews.net/greenwire/2018/10/12/stories/1060102455>.

<sup>134</sup> Lesley Clark, *Trump Called for Killing Advisory Panels. What Happened?*, E&E NEWS (June 22, 2020), <https://www.eenews.net/stories/1063430131>.

<sup>135</sup> Sean Reilly, *Science Advisory Board Revamp Faced Internal Pushback — Docs*, E&E NEWS (Mar. 31, 2020), <https://www.eenews.net/stories/1062751121>.

<sup>136</sup> See Draft Memorandum from Andrew Wheeler, EPA Adm’r, to Gen. Couns., Assistant Adm’rs, Assoc. Adm’rs, and Reg’l Adm’rs, [https://www.eenews.net/assets/2019/12/09/document\\_gw\\_01.pdf](https://www.eenews.net/assets/2019/12/09/document_gw_01.pdf) (on file with author).

<sup>137</sup> Reilly, *Science Advisory Board Revamp Faced Internal Pushback — Docs*, *supra* note 135.

### B. *Cost-Benefit Analysis*

Cost-benefit analyses have, since President Reagan's Executive Order 12,291,<sup>138</sup> become routine in almost all federal agency actions. Cost benefit analyses of regulations under the Clean Air Act and its amendments have consistently shown the coal industry in an unfavorable light, with the health and environmental benefits far exceeding the compliance costs of regulation at a ratio of thirty-to-one.<sup>139</sup> Plummeting natural gas prices have rendered coal uneconomic and almost moot,<sup>140</sup> but that did not stop the Trump Administration from doctoring cost-benefit analyses to make coal seem more economical.<sup>141</sup> One method of doctoring has been to separate out the different harms from coal combustion, such as PM<sub>2.5</sub> emissions, carbon dioxide emissions that cause climate change, and mercury emissions, which thereby eliminates consideration of "co-benefits," the incidental benefits that were not targeted by the regulation.<sup>142</sup> Because of the rigorous epidemiological research linking PM<sub>2.5</sub> emissions with premature deaths, and because no one disputes death as a costly outcome, the largest benefit category of many air pollution regulations, not just PM<sub>2.5</sub> standards, is the avoidance of

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<sup>138</sup> Exec. Order No. 12291, 3 C.F.R. § 127 (1981).

<sup>139</sup> OFFICE OF AIR & RADIATION, U.S. ENV'T PROT. AGENCY, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT FROM 1990 TO 2020, at 7-8 (2011), [https://www.epa.gov/sites/production/files/2015-07/documents/fullreport\\_rev\\_a.pdf](https://www.epa.gov/sites/production/files/2015-07/documents/fullreport_rev_a.pdf).

<sup>140</sup> See John Kemp, *Plunging U.S. Gas Prices Intensify Squeeze on Coal*, REUTERS (Jan. 21, 2020, 8:21 AM), <https://www.reuters.com/article/us-usa-gas-kemp/plunging-u-s-gas-prices-intensify-squeeze-on-coal-kemp-idUSKBN1ZK1J2>.

<sup>141</sup> Brad Plumer, *Trump Put a Low Cost on Carbon Emissions. Here's Why It Matters*, N.Y. TIMES (Aug. 23, 2018), <https://www.nytimes.com/2018/08/23/climate/social-cost-carbon.html>.

<sup>142</sup> Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process, 83 Fed. Reg. 27524, 27526 (proposed June 13, 2018) (to be codified at 40 C.F.R. ch. 1). ("For example, some commenters argued that the approach of considering compliance cost divided by the total emission reductions (*i.e.*, summing across pollutants) resulted in controls that appear cost-effective that may not have been deemed cost-effective if each pollutant was considered separately. Such a situation arose in in [sic] consideration of the best system of emissions reductions . . . . Other commenters argued in past rulemakings the Agency has justified the stringency of a standard based on the estimated benefits from reductions in pollutants not directly regulated by the action (*i.e.*, 'ancillary benefits' or 'co-benefits').").

premature deaths.<sup>143</sup> But by cabining off those health benefits from other benefits of reducing PM<sub>2.5</sub> pollution, the Trump Administration's EPA has been able to divide up the health benefits and distribute them among the analyses for different regulations for different pollutants, despite the fact that all the pollutants move together;<sup>144</sup> reducing emissions of PM<sub>2.5</sub> concomitantly reduces emissions from mercury and carbon dioxide.<sup>145</sup> Dividing up different benefits of pollution makes no sense; it would be like saying that reducing consumption of fatty foods is good for health because it reduces the risk of heart attack, but not because it also reduces the risk of type 2 diabetes. It is nonsensical.

In proposing to reverse an Obama Administration rule regulating mercury emissions of coal- and oil-fired power plants, the Trump Administration repeated this dividing exercise. The administration reversed the regulation on the grounds that it regulated mercury as a hazardous air pollutant under section 112 of the Clean Air Act, while PM<sub>2.5</sub> emissions are regulated as an ambient air pollutant under section 109 of the Clean Air Act.<sup>146</sup> There is no justification for this practice: a cost-benefit analysis of a single policy action should consider all of the benefits of that action; there is no corresponding dividing up the costs of that policy action.<sup>147</sup> Considering co-benefits in cost-benefit analyses dates back to the genesis of cost-benefit analysis under the Reagan Administration, which considered co-benefits in its initiative to eliminate lead from gasoline,<sup>148</sup> and

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<sup>143</sup> See, e.g., Karen Clay & Nicholas Z. Muller, *Recent Increases in Air Pollution: Evidence and Implications for Mortality 2* (Nat'l Bureau of Econ. Rsch., Working Paper No. 26381, 2019).

<sup>144</sup> See Richard L. Revesz, *Destabilizing Environmental Regulation: The Trump Administration's Concerted Attack on Regulatory Analysis* 63–64 (N.Y.U. L. & Econ. Paper Series, Working Paper 20-33, 2020).

<sup>145</sup> *Id.* at 69–70.

<sup>146</sup> See National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding and Residual Risk and Technology Review, 84 Fed. Reg. 2670, 2677 (proposed Feb. 7, 2019) (to be codified at 40 C.F.R. pt. 63).

<sup>147</sup> For authoritative debunkings of this practice, see Joseph E. Aldy et al., *Co-Benefits and Regulatory Impact Analysis: Theory and Evidence from Federal Air Quality Regulations 5* (Nat'l Bureau Econ. Rsch., Working Paper No. 27603, 2020); Revesz, *Destabilizing Environmental Regulation*, *supra* note 144, at 5–6.

<sup>148</sup> Revesz, *Destabilizing Environmental Regulation*, *supra* note 144, at 68.

was most recently formalized under the Bush Administration in Office of Management and Budget Circular A-4.<sup>149</sup>

But the Trump Administration did not settle for these one-offs. It sought to systematize this strategy and embed it into the cost-benefit analysis process. A draft guidance released in June 2020 for public comment seemed only to propose “presentational requirements” that would separate out co-benefits,<sup>150</sup> but EPA Administrator Andrew Wheeler confirmed that the rule would prevent the use of co-benefits to justify any air pollution or climate regulation going forward.<sup>151</sup> Nonetheless, co-benefits could be considered, but they could not be “the express rationale for a regulation.”<sup>152</sup>

Indeed, the Trump Administration’s assaults on economic science were wide-ranging in scope and effect. In addition to easing regulations on coal combustion and mercury emissions, the Trump Administration reversed the Obama Administration’s Clean Power Plan and instituted its own Affordable Clean Energy Rule,<sup>153</sup> eliminating consideration of co-benefits.<sup>154</sup> The Trump Administration changed the Obama Administration’s calculation of the “social cost of carbon,”<sup>155</sup> an estimate of the harm of emitting one ton of carbon

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<sup>149</sup> OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, REGULATORY ANALYSIS 1–2, 26 (2003) [hereinafter OMB CIRCULAR A-4].

<sup>150</sup> Increasing Consistency and Transparency in Considering Costs and Benefits in the Clean Air Act Rulemaking Process, 85 Fed. Reg. at 35624.

<sup>151</sup> Sean Reilly, *Advisers Blast EPA on Health Impacts in Cost-Benefit Overhaul*, E&E NEWS (June 8, 2020), <https://www.eenews.net/eenewspm/2020/06/08/stories/1063353779>.

<sup>152</sup> *Id.*

<sup>153</sup> Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32520 (July 8, 2019) (to be codified at 40 C.F.R. pt. 60).

<sup>154</sup> See EPA, OFFICE OF AIR QUALITY PLANNING & STANDARDS, REGULATORY IMPACT ANALYSIS FOR THE REPEAL OF THE CLEAN POWER PLAN, AND THE EMISSION GUIDELINES FOR GREENHOUSE GAS EMISSIONS FROM EXISTING ELECTRIC UTILITY GENERATING UNITS 6-6 to 6-7 (2019) [hereinafter REGULATORY IMPACT ANALYSIS FOR THE REPEAL OF THE CLEAN POWER PLAN].

<sup>155</sup> INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 1 (2010) [hereinafter 2010 INTERAGENCY RPT. ON CARBON], [https://www.epa.gov/sites/production/files/2016-12/documents/scc\\_tsd\\_2010.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf); INTERAGENCY WORKING

dioxide.<sup>156</sup> As originally derived by an interagency working group under the Obama Administration, the social cost of carbon was estimated to be \$52 per ton, in 2020 dollars, with a range of \$15 to \$78 per ton, depending on the assumed discount rate.<sup>157</sup> The Trump Administration lowered that figure to between \$1 and \$6 per ton,<sup>158</sup> relying upon two tricks. First, the Trump Administration adopted discount rates of 3% and 7%.<sup>159</sup> Seven percent is a very high discount rate.<sup>160</sup> Under the Bush Administration, agency guidance on cost-benefit analysis suggested that with respect to discounting the welfare of future generations—which would be the case for the most serious damages from climate change—a discount rate of 1% to 3% was appropriate.<sup>161</sup> Second, in the spirit of cleaving off inconvenient benefits, the Trump Administration limited consideration of benefits to those suffered by Americans only.<sup>162</sup> Normal cost-benefit analyses might only consider domestic costs and domestic benefits but only because domestic regulations only impact domestic parties.<sup>163</sup> Climate change, on the other hand, is a global phenomenon, and the emissions of carbon dioxide a global externality.<sup>164</sup> Carbon dioxide is a nearly perfectly-mixing greenhouse gas, so a ton emitted in the

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GROUP ON SOCIAL COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 3 (2016), [https://www.epa.gov/sites/production/files/2016-12/documents/sc\\_co2\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf).

<sup>156</sup> Jean Chemnick, *Trump Slashed the Social Cost of Carbon. A Judge Noticed*, E&E NEWS (July 28, 2020), <https://www.eenews.net/stories/1063640201>.

<sup>157</sup> See 2010 INTERAGENCY RPT. ON CARBON, *supra* note 155, at 3.

<sup>158</sup> REGULATORY IMPACT ANALYSIS FOR THE REPEAL OF THE CLEAN POWER PLAN, *supra* note 154, at 4-4.

<sup>159</sup> *Id.*

<sup>160</sup> See Simon Evans, Roz Pidcock & Sophie Yeo, *Q&A: The Social Cost of Carbon*, CARBONBRIEF (Feb. 14, 2017, 8:00 AM), <https://www.carbon-brief.org/qa-social-cost-carbon>.

<sup>161</sup> OMB CIRCULAR A-4, *supra* note 149, at 35–36.

<sup>162</sup> REGULATORY IMPACT ANALYSIS FOR THE REPEAL OF THE CLEAN POWER PLAN, *supra* note 154, at 4-2.

<sup>163</sup> See Evans, Pidcock & Yeo, *supra* note 160 (discussing the use of global, rather than domestic, benefits in the social cost of carbon context as a typical line of attack).

<sup>164</sup> See *id.*

United States has the same effect as a ton emitted in China.<sup>165</sup> If every country counted only its own domestic costs and domestic benefits of climate change, each country's social cost of carbon would be different, when in fact it is known with certainty that the harm from every ton emitted is the same.<sup>166</sup>

And yet, to underscore the unprincipled, analytical bankruptcy of the Trump Administration, the administration did not hesitate to include co-benefits in support of its own rules.<sup>167</sup> In justifying its rollback of vehicle fuel efficiency standards, the Trump Administration included calculations of avoided deaths from car crashes from having a heavier, less fuel-efficient vehicle fleet,<sup>168</sup> a co-benefit much like avoided deaths from PM<sub>2.5</sub> reductions. The 2,196-page report has graphs and tables but is light on justifying its claim that a heavier vehicle fleet will result in fewer car crash deaths.<sup>169</sup> The report does not cite or draw upon the seminal article that first analyzed the interaction between vehicle fuel efficiency and car crash deaths.<sup>170</sup> Indeed, EPA staff identified numerous errors in the report that they thought might not bode well for the rule on judicial review.<sup>171</sup>

Is this really what regulated industries want? To do away with economic analysis altogether? The Trump Administration's economic analysis is not really analysis at all, but pages and pages of economic-sounding gibberish. Do they want regulations driven by

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<sup>165</sup> See generally Bert Bolin & Charles D. Keeling, *Large-Scale Atmospheric Mixing as Deduced from the Seasonal and Meridional Variations of Carbon Dioxide*, 68 J. GEOPHYSICAL RSCH. 3899 (1963).

<sup>166</sup> See *id.*

<sup>167</sup> See, e.g., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP. & U.S. ENV'T PROT. AGENCY, FINAL REGULATORY IMPACT ANALYSIS, THE SAFER AFFORDABLE FUEL-EFFICIENT (SAFE) VEHICLES RULE FOR MODEL YEAR 2021–2026 PASSENGER CARS AND LIGHT TRUCKS 1004 (2020).

<sup>168</sup> See *id.*

<sup>169</sup> *Id.*

<sup>170</sup> See *id.* The seminal article is Robert W. Crandall & John D. Graham, *The Effect of Fuel Economy Standards on Automobile Safety*, 32 J.L. & ECON. 97 (1989).

<sup>171</sup> Juliet Eilperin & Brady Dennis, *EPA Staff Warned That Mileage Rollbacks Had Flaws. Trump Officials Ignored Them*, WASH. POST (Mar. 19, 2020, 8:15 PM), [https://www.washingtonpost.com/climate-environment/epa-staff-warned-that-mileage-rollbacks-had-flaws-trump-officials-ignored-them/2020/05/19/242056ba-960f-11ea-91d7-cf4423d47683\\_story.html](https://www.washingtonpost.com/climate-environment/epa-staff-warned-that-mileage-rollbacks-had-flaws-trump-officials-ignored-them/2020/05/19/242056ba-960f-11ea-91d7-cf4423d47683_story.html).

ideology instead of science, which will not survive judicial scrutiny? The Trump Administration's record on judicial review is exceptionally poor, losing thirty-four of its first thirty-six challenges.<sup>172</sup> Perhaps worse, as I have noted early in the article, hostility to science is not exclusively Republican or right-wing.<sup>173</sup> Is it not foreseeable that a dangerously reactionary environmental President could run roughshod over industries and feel not the slightest need for economic analysis at all? Why not, after what the Trump Administration has done?

In August 2020, the Trump Administration published a final rule, reversing another Obama-era rule, which regulates the incidental emissions of methane from oil and gas operations.<sup>174</sup> Atmospheric methane, a greenhouse gas at least twenty-five times as powerful as carbon dioxide in warming the planet,<sup>175</sup> has been increasing rapidly since about 2007, when hydraulic fracturing in the United States for oil and natural gas began to increase dramatically; this suggests that at least a substantial portion of global methane emission increases are attributable to leakage from oil and gas operations.<sup>176</sup> The EPA estimated in 2014 that the contribution from oil

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<sup>172</sup> Richard L. Revesz, *Institutional Pathologies in the Regulatory State: What Scott Pruitt Taught Us About Regulatory Policy*, 34 J. LAND USE & ENV'T L. 211, 213 (2019).

<sup>173</sup> See *supra* text accompanying notes 29–36.

<sup>174</sup> Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35824, 35825–27 (June 2, 2016) (to be codified at 40 C.F.R. pt. 60).

<sup>175</sup> OFFICE OF AIR & RADIATION, U.S. ENV'T PROT. AGENCY, REGULATORY IMPACT ANALYSIS OF THE FINAL OIL AND NATURAL GAS SECTOR: EMISSION STANDARDS FOR NEW, RECONSTRUCTED, AND MODIFIED SOURCES 3-1, 4-15 (2016). If one were to take a shorter time horizon of twenty years for measurement, methane would have eighty-four to eighty-seven times the global warming potential of carbon dioxide. *Understanding Global Warming Potentials*, U.S. ENV'T PROT. AGENCY (Sept. 9, 2020), <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.

<sup>176</sup> OXFORD INST. FOR ENERGY STUD., METHANE EMISSIONS: FROM BLIND SPOT TO SPOTLIGHT 3, 7 (2017) (“Global ambient methane levels have been rising and the coinciding growth in global gas production—and the rise of unconventional gas and hydraulic fracturing—led some to conclude that methane emissions from the natural gas industry were primarily responsible. This hypothesis received further support in 2016 when the US EPA published a major upgrade (subsequently partially reversed) in emission estimates from natural gas supply.”).

and gas was thirty-two percent,<sup>177</sup> but that was when EPA officials likely felt compelled by professionalism to make solid, conservative assumptions. The contribution from oil and gas is likely even larger.<sup>178</sup> The Trump Administration's regulatory impact analysis was sickeningly familiar: The climate impacts of methane were considered separately from the health impacts of the volatile organic compounds because "those methane requirements are entirely redundant with the existing [New Source Performance Standards] for [volatile organic compounds] and, thus, establish no additional health protections."<sup>179</sup>

Long-term sensibility in opposition to the Trump Administration methane rule comes from the unlikeliest of places: large oil and gas firms such as ExxonMobil, BP, and Shell.<sup>180</sup> The worry of large oil and gas firms is that, if methane emissions continue to rise unabated, they would lose the argument that natural gas should be utilized because it is less carbon-intensive than coal, and it would place further pressure to reduce the use of oil.<sup>181</sup> It is troublingly easy to imagine that a President Ocasio-Cortez, having suffered through the Trump Administration, would not hesitate to take draconian actions without pausing to even consider economic impacts.

### C. *The Economic Research Service Relocation*

The Economic Research Service ("ERS") at the United States Department of Agriculture ("USDA") has long been one of the most

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<sup>177</sup> OFFICE OF AIR & RADIATION, REGULATORY IMPACT ANALYSIS OF THE FINAL OIL AND NATURAL GAS SECTOR, *supra* note 175, at 4-6.

<sup>178</sup> OXFORD INST. FOR ENERGY STUD., *supra* note 176, at 3 ("[T]he . . . largely unchallenged, environmental credentials of natural gas as the 'greenest' fossil fuel have been questioned by environmental groups and some government agencies. Even objective observers have suspected the worst, perhaps best exemplified by the Economist article of July 2016, 'A dirty little secret.'").

<sup>179</sup> Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 84 Fed. Reg. 50244, 50246 (Sept. 24, 2019) (to be codified at 40 C.F.R. pt. 60).

<sup>180</sup> Jeff Brady, *Trump's Methane Rollback That Big Oil Doesn't Want*, NPR (Aug. 13, 2020, 4:40 PM), <https://www.npr.org/2020/08/13/901863874/trumps-methane-rollback-that-big-oil-doesn-t-want>. Shell executive Gretchen Watkins was quoted as saying: "The negative impacts of leaks and fugitive emissions have been widely acknowledged for years, so it's frustrating and disappointing to see the administration go in a different direction." *Id.*

<sup>181</sup> *Id.*

widely respected groups of economists in the world.<sup>182</sup> As of July 2020, the economic research organization IDEAS/Research Papers in Economics, which ranks departments and economic organizations by research productivity, ranked it sixth out of all institutions worldwide that conduct agricultural economics research (a pool of about 300)<sup>183</sup> and 227th out of all economics institutions in the world (a pool of about 4,000), higher than the highly-regarded economics departments at Emory University, the University of Illinois, the University of Rochester, and the Federal Reserve Bank of Richmond.<sup>184</sup> Unfortunately for President Trump, the ERS has—consistent with its mission of supporting government decisionmakers and the American agricultural industry—developed an extensive research portfolio relating to climate change.<sup>185</sup> Climate change, and the attendant likelihood of higher temperatures, longer droughts, and more severe rainfall, poses an extremely dangerous, and in some cases existential, threat to farmers.<sup>186</sup> The ERS contributed to the inter-agency U.S. National Climate Assessments,<sup>187</sup> estimating impacts of climatic changes to American agriculture and developing research on resilience strategies—such as drought,<sup>188</sup> heat,<sup>189</sup> and risk management<sup>190</sup>—and on the economics of developing new crops genetically

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<sup>182</sup> See *About ERS*, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC. (Jan. 28, 2019), <https://www.ers.usda.gov/about-ers/>.

<sup>183</sup> *Top 25% Agricultural Economics Departments, as of November 2020*, IDEAS, <https://ideas.repec.org/top/top.agecon.html> (last visited Dec. 17, 2020).

<sup>184</sup> *Top 10% Economic Institutions, as of September 2020*, IDEAS, <https://ideas.repec.org/top/top.inst.all.html> (last visited Dec. 17, 2020).

<sup>185</sup> *Climate Change: Overview*, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC. (Dec. 24, 2020), <https://www.ers.usda.gov/topics/natural-resources-environment/climate-change/>.

<sup>186</sup> See Tracey Farrigan et al., *Agriculture and Rural Communities, in 2 U.S. GLOB. CHANGE RSCH. PROGRAM: FOURTH NATIONAL CLIMATE ASSESSMENT* 391–403 (D.R. Reidmiller et al. eds., 2018).

<sup>187</sup> *Id.* at 391.

<sup>188</sup> ELIZABETH MARSHALL ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC RESEARCH REPORT NO. 201: CLIMATE CHANGE, WATER SCARCITY, AND ADAPTATION IN THE U.S. FIELD CROP SECTOR (2015).

<sup>189</sup> NIGEL KEY ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC RESEARCH REPORT NO. 175, CLIMATE CHANGE, HEAT STRESS, AND U.S. DAIRY PRODUCTION (2014).

<sup>190</sup> SCOTT MALCOLM ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC RESEARCH REPORT NO. 136, AGRICULTURAL ADAPTATION TO A

engineered to be drought-tolerant.<sup>191</sup> Also consistent with its statutory mandate, the ERS has been closely involved with studying the agricultural sector as a source of greenhouse gas emissions and as a potential carbon sink, identifying opportunities for farmers to not just reduce their carbon footprint but also absorb ambient carbon dioxide (and, in so doing, possibly capture some subsidies for their practices).<sup>192</sup>

Perhaps the most central mandate of the ERS is to monitor and support the economic health of the American agricultural industry.<sup>193</sup> As such, it has become one of the world's most important collectors of agricultural statistics,<sup>194</sup> a critical information support

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CHANGING CLIMATE: ECONOMIC AND ENVIRONMENTAL IMPLICATIONS VARY BY U.S. REGION (2012); ANDREW CRANE-DROESCH ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC RESEARCH REPORT NO. 266, CLIMATE CHANGE AND AGRICULTURAL RISK MANAGEMENT INTO THE 21ST CENTURY (2019).

<sup>191</sup> PAUL W. HEISEY & KELLY DAY RUBENSTEIN, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC INFORMATION BULLETIN NO. 139, USING CROP GENETIC RESOURCES TO HELP AGRICULTURE ADAPT TO CLIMATE CHANGE: ECONOMICS AND POLICY (2015); JONATHAN MCFADDEN ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC INFORMATION BULLETIN NO. 204, DEVELOPMENT, ADOPTION, AND MANAGEMENT OF DROUGHT-TOLERANT CORN IN THE UNITED STATES (2019).

<sup>192</sup> *See generally* ROGER CLAASSEN ET AL., ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ECONOMIC INFORMATION BULLETIN NO. 197, TILLAGE INTENSITY AND CONSERVATION CROPPING IN THE UNITED STATES 1 (2018) (noting within a review of different soil tillage methods that “[h]ealthier soils can reduce environmental damage”).

<sup>193</sup> *ERS Annual Report, FY 2018: Customer-Focused Research*, ECON. RSCH. SERV., U.S. DEP'T OF AGRIC., ANNUAL REPORT (Aug. 20, 2019), <https://www.ers.usda.gov/about-ers/plans-and-accomplishments/ers-annual-report-fy-2018/customer-focused-research-how-ers-information-delivers-for-the-american-people/> (“ERS provides research, data, and analyses that inform a variety of decisions that affect the farm sector and the lives of farm families. These analyses provide evidence-based information for the design of policy that directly affects farmers, like the 2018 Farm Act. In addition, farmers can use ERS research and data to inform decisions about future investments in equipment or crop management planning, such as determining what crop is likely to deliver them the best return.”).

<sup>194</sup> *See id.*

mechanism for farmers navigating the increasingly complex (and increasingly generous) Farm Act and other laws affecting farmers.<sup>195</sup>

In January 2018, two ERS economists, Siraj Bawa and James Williamson, presented a paper at the annual meeting of the Allied Social Sciences Association, the largest meeting of economists in the United States.<sup>196</sup> It was entitled “Tax Reform and Farm Households,” and was an analysis of the 2017 Tax Cuts and Jobs Act (“TCJA”),<sup>197</sup> one of the few legislative accomplishments of President Trump’s stormy, anarchic administration. The paper estimated that between seventy and eighty percent of the benefits from the TCJA would accrue to the top ten percent of farm households by income, while it would shrink the income of the lowest-earning twenty percent of farm households.<sup>198</sup> Using the farm-level data that the ERS has routinely collected for decades, Bawa and Williamson applied the various tax changes of the TCJA—including capital gains treatment, itemized deductions, and the alternative minimum tax—to different farm households, estimating their net effects after adjustments.<sup>199</sup> The paper attracted the attention of Agriculture Secretary Sonny Perdue and the White House, which found the results embarrassing, since President Trump relied heavily upon rural voters for his electoral victory.<sup>200</sup>

After the Bawa and Williamson presentation, and the media coverage following it, the USDA implemented new rules about researchers submitting their work for publication in peer-reviewed

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<sup>195</sup> *Agriculture Improvement Act of 2018: Highlights and Implications*, ECON. RSCH. SERV., U.S. DEP’T OF AGRIC. (Oct. 1, 2019), <https://www.ers.usda.gov/agriculture-improvement-act-of-2018-highlights-and-implications/>.

<sup>196</sup> SIRAJ G. BAWA & JAMES M. WILLIAMSON, ECON. RSCH. SERV., U.S. DEP’T. OF AGRIC., *TAX REFORM AND FARM HOUSEHOLDS 1* (2017).

<sup>197</sup> *Id.*; Pub. L. 115-97, 131 Stat. 2054 (2017) (codified as amended in scattered sections of Title 26 United States Code).

<sup>198</sup> BAWA & WILLIAMSON, *supra* note 196, at 30 tbl. 8. This was originally misreported by the New York Times as accruing to the top one percent of farm households. Ana Swanson & Jim Tankersley, *As Trump Appeals to Farmers, Some of His Policies Don’t*, N.Y. TIMES (Jan. 7, 2018), <https://www.nytimes.com/2018/01/07/us/politics/trump-farmers-agriculture-trade-taxes.html>.

<sup>199</sup> See BAWA & WILLIAMSON, *supra* note 196, at 3–4.

<sup>200</sup> See Alan Rappeport & Thomas Kaplan, *Unhappy with Findings, Agriculture Department Plans to Move Its Economists Out of Town*, N.Y. TIMES (May 30, 2019), <https://www.nytimes.com/2019/05/30/us/politics/agriculture-department-economists.html>.

journals, including a requirement that, even after peer review and publication, articles written by the ERS economists still had to disclaim the work as “preliminary.”<sup>201</sup> After an outcry and a bit of ridicule,<sup>202</sup> the USDA walked back the requirement, demanding only that the final published article state that it does not represent the views of the USDA or the U.S. government.<sup>203</sup>

In theory, there is no way to silence researchers hired to do exactly this kind of research. But the Trump Administration appears to have found a way around the normal protections for government researchers, and Bawa and Williamson are now gone.<sup>204</sup> On August 9, 2018, Agriculture Secretary Sonny Perdue announced that the ERS and another USDA unit, the National Institute of Food and Agriculture (“NIFA”), would be moved out of Washington, D.C., to some remote location, for three stated reasons: (1) to improve the USDA’s ability to attract and retain personnel, (2) to place the USDA researchers closer to farm stakeholders, and (3) to save money.<sup>205</sup> In addition, the two previously independent divisions would be placed under the USDA Office of the Chief Economist, who reports directly to the Secretary.<sup>206</sup> By September 2018, the USDA had contracted with Ernst & Young for almost \$340,000 to help it decide where to move, a process that landed the USDA in Kansas City,

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<sup>201</sup> See Ben Guarino, *USDA Orders Scientists to Say Published Research is ‘Preliminary,’* WASH. POST (Apr. 19, 2019, 12:08 PM), <https://www.washingtonpost.com/science/2019/04/19/usda-orders-scientists-say-published-research-is-preliminary/>.

<sup>202</sup> Melanie Ehrenkranz, *USDA Is Forcing Its Researchers to Label Their Peer-Reviewed Studies as Only ‘Preliminary,’* GIZMODO (Apr. 19, 2019, 5:45 PM), <https://gizmodo.com/usda-is-forcing-its-researchers-to-label-their-peer-rev-1834176766> (“No scientist would want to base their own work on someone else’s unreliable study! Peer-reviewed work isn’t necessarily correct or conclusive, but it does meet the standards of science.”).

<sup>203</sup> Memorandum from Chavonda Jacobs-Young, Acting Chief Scientist, U.S. Dep’t of Agric., to Agency Adm’rs, U.S. Dep’t of Agric., at 1 (May 8, 2019), <https://www.ree.usda.gov/sites/default/files/2019-05/Final%20Guidance%20-%20Scientific%20Publications%20and%20Presentations.pdf>.

<sup>204</sup> SIRAJ G. BAWA, PH.D, <https://sirajbawa.wordpress.com/> (last visited Jan. 24, 2021); Rappoport & Kaplan, *supra* note 200.

<sup>205</sup> Press Release, U.S. Dep’t of Agric., Release No. 0162.18, USDA to Realign ERS with Chief Economist, Relocate ERS & NIFA Outside DC (Aug. 9, 2018), <https://www.usda.gov/media/press-releases/2018/08/09/usda-realign-ers-chief-economist-relocate-ers-nifa-outside-dc>.

<sup>206</sup> *Id.*

Missouri.<sup>207</sup> Employees were given thirty-two days to decide whether to move<sup>208</sup> and then given until September 30, 2019, to report to work in Kansas City.<sup>209</sup> That was an aggressive timetable, especially given that Perdue did not sign a lease for the Kansas City office space until late October.<sup>210</sup> The ERS lease in Washington, D.C., meanwhile, was not due to expire until 2023.<sup>211</sup> Of the nearly 600 employees that were ordered to move, more than seventy-five percent resigned or retired immediately, and only sixty-one had moved to Kansas City by the September 30 deadline.<sup>212</sup>

The effects of hollowing out the ERS and the NIFA have been predictable. Although a USDA spokesperson claimed that “the agency is on track to complete its congressionally mandated projects,”<sup>213</sup> the Washington Post reported that the release of nearly

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<sup>207</sup> Erica Martinson & Marc Heller, *USDA Relocates 2 Research Agencies*, E&E NEWS (June 13, 2019), <https://www.eenews.net/stories/1060571667>; Liz Crampton, *Inspector General: USDA May Have Broken Law in Moving ERS, NIFA*, POLITICO (Aug. 5, 2019, 7:18 PM), <https://www.politico.com/story/2019/08/05/inspector-general-usda-may-have-broken-law-in-moving-ers-nifa-1636046>.

<sup>208</sup> See Nicole Ogrysko, *USDA Relocation Could Cut Existing ERS, NIFA Workforces in Half*, FED. NEWS NETWORK (July 17, 2019, 12:38 PM), <https://federalnewsnetwork.com/workforce/2019/07/usda-relocation-could-cut-existing-ers-nifa-workforces-by-half/>. The deadline was ultimately extended after negotiations with the American Federation of Government Employees, which also secured some pay incentives and temporary housing assistance. *Id.* Niina H. Farah, *USDA, Union Reach Deal on Moving Staff to Kansas City*, E&E NEWS (Aug. 12, 2019), <https://www.eenews.net/greenwire/stories/1060930715>.

<sup>209</sup> Frank Morris, *Critics of Relocating USDA Research Agencies Point to Brain Drain*, NPR (Sept. 10, 2019), <https://www.npr.org/2019/09/10/759053717/critics-of-relocating-usda-research-agencies-point-to-brain-drain>.

<sup>210</sup> Marc Heller, *USDA Decides on New Research HQ Location*, E&E NEWS (Oct. 31, 2019), <https://www.eenews.net/stories/1061426617>.

<sup>211</sup> U.S. Government Lease for Real Property, Washington, D.C., Lease No. GS-11B-02141 (Nov. 12, 2009) (on file with author).

<sup>212</sup> Ben Guarino, *USDA Relocation Has Delayed Key Studies and Millions in Funding, Employees Say*, WASH. POST (Oct. 2, 2019, 6:00 AM), <https://www.washingtonpost.com/science/2019/10/02/usda-relocation-has-delayed-key-studies-millions-funding-employees-say/> (discussing sixteen relocated ERS employees plus forty-five relocated NIFA employees).

<sup>213</sup> Liz Crampton, *USDA Expects ‘Significant Delays’ in Economic Research Reports*, POLITICO (Sept. 24, 2019, 6:31 PM), <https://www.politico.com/story/2019/09/24/usda-expects-significant-delays-in-economic-research-reports-1766009>.

forty studies was delayed due to the loss of the entire ERS publishing staff.<sup>214</sup> Delayed reports included those on veterans' diets, obesity, and international markets.<sup>215</sup> Tens of millions of dollars in approved grant funding were held up.<sup>216</sup> A report on a critical herbicide, dicamba, was also held up, jeopardizing soybean farmers whose weeds had developed resistance to older herbicides.<sup>217</sup> Reflecting the shoddy work of the EPA and the USDA, the Ninth Circuit recently vacated an EPA decision to register dicamba, finding that an "absence of substantial evidence to support the EPA's decision compels us to vacate the registrations."<sup>218</sup>

In supposedly justifying the move, the USDA published something that only a Trump Administration agency would call a cost-benefit analysis. In arguing that attrition was high because of the high cost of living in Washington, D.C., the USDA estimated turnover by including *summer interns*, which had the effect of doubling the figure, to 16.5 percent.<sup>219</sup> Without that "fudge," the turnover rate would be similar to that of other federal agencies, about eight percent.<sup>220</sup> A spartan eleven-page cost-benefit analysis released by the USDA in June 2019 claimed that the move to Kansas City would

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<sup>214</sup> Guarino, *USDA Relocation Has Delayed Key Studies and Millions in Funding, Employees Say*, *supra* note 212.

<sup>215</sup> *Id.*

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*

<sup>218</sup> *Nat'l Fam. Farm Coal. v. U.S. Env't Prot. Agency*, 960 F.3d 1120, 1145 (9th Cir. 2020).

<sup>219</sup> AM. STAT. ASS'N, ADDRESSING THE USDA'S RATIONALE FOR RELOCATING AND REALIGNING THE ECONOMIC RESEARCH SERVICE 3, [https://www.amstat.org/asa/files/pdfs/AddressingUSDA\\_Rationale.pdf](https://www.amstat.org/asa/files/pdfs/AddressingUSDA_Rationale.pdf) (last visited Jan. 24, 2021); Marc Heller, *Resistance Grows to Proposed USDA Reorganization*, E&E NEWS (Sept. 14, 2018), <https://www.eenews.net/stories/1060097081>.

<sup>220</sup> See Letter from Sonny Purdue, Secretary, Dep't of Agric., to Pat Roberts, Chairman, Comm. on Agric., Nutrition, and Forestry, and Debbie Stabenow, Ranking Member, Comm. on Agric., Nutrition, and Forestry (Sept. 2, 2018), [http://www.hagstromreport.com/assets/2018/2018\\_0924-USDA-PerdueNIFA-ERS-Response.pdf?utm\\_source=MadMimi&utm\\_medium=email&utm\\_content=The+Hagstrom+Report+%7C+Monday+09\\_24\\_2018&utm\\_campaign=20180924\\_m147316021\\_The+Hagstrom+Report+%7C+Monday+09\\_24\\_2018&utm\\_term=USDA+\\_E2\\_80\\_94+Secretary+Perdue+response+to+Roberts+and+Stabenow](http://www.hagstromreport.com/assets/2018/2018_0924-USDA-PerdueNIFA-ERS-Response.pdf?utm_source=MadMimi&utm_medium=email&utm_content=The+Hagstrom+Report+%7C+Monday+09_24_2018&utm_campaign=20180924_m147316021_The+Hagstrom+Report+%7C+Monday+09_24_2018&utm_term=USDA+_E2_80_94+Secretary+Perdue+response+to+Roberts+and+Stabenow).

save taxpayers nearly \$300 million in lease term costs,<sup>221</sup> a surprisingly confident assertion given that the lease was not actually signed until October.<sup>222</sup> The analysis also stated: “There were no assumptions around move-related attrition (and associated costs). Such assumptions can be updated upon receipt of declared intentions from Stay-Go employees.”<sup>223</sup> While it is understandable to refrain from guessing how many employees would decline to move, it has certainly proven to be a ridiculous assumption that everyone would move when only about ten percent actually did.<sup>224</sup> Omitted from the cost-benefit analysis was any consideration of all of those held-up or missing reports, stalled funding, loss in knowledge and capacity, and the recruiting costs of replacing all those lost employees.<sup>225</sup> Hiring hundreds of Ph.D. economists will also be hard to do, if the USDA actually intended to do it.

The legality of this shockingly fast *coup* was questionable. The USDA argued that obscure legislation known as “Reorganization Plan No. 2,”<sup>226</sup> passed by Congress in 1953 to direct a series of organizational changes, gave it authority to relocate the ERS and the NIFA.<sup>227</sup> The Inspector General, called upon to scrutinize the relocation plan, agreed,<sup>228</sup> despite conspicuous omissions of consultation with USDA employees, Congress, and other stakeholders.<sup>229</sup>

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<sup>221</sup> U.S. DEP’T OF AGRIC., NIFA AND ERS RELOCATION: COST BENEFIT ANALYSIS 1 (June 13, 2019), <https://www.usda.gov/sites/default/files/documents/061319-CBA.pdf> [hereinafter NIFA AND ERS RELOCATION: COST BENEFIT ANALYSIS].

<sup>222</sup> Heller, *USDA Decides on New Research HQ Location*, *supra* note 210.

<sup>223</sup> NIFA AND ERS RELOCATION: COST BENEFIT ANALYSIS, *supra* note 221, at 7.

<sup>224</sup> See Guarino, *USDA Relocation Has Delayed Key Studies and Millions in Funding, Employees Say*, *supra* note 212; see also Heller, *USDA Decides on New Research HQ Location*, *supra* note 210.

<sup>225</sup> See NIFA AND ERS RELOCATION: COST BENEFIT ANALYSIS, *supra* note 221.

<sup>226</sup> 5 U.S.C. app. 1 Reorg. Plan No. 2 of 1953 (amended 1982).

<sup>227</sup> OFFICE OF INSPECTOR GEN., U.S. DEP’T OF AGRIC., INSPECTION REPORT 91801-0001-23, USDA’S PROPOSAL TO REORGANIZE AND RELOCATE THE ECONOMIC RESEARCH SERVICE AND THE NATIONAL INSTITUTE OF FOOD AND AGRICULTURE 5 (2019).

<sup>228</sup> *Id.* at 3.

<sup>229</sup> Reorganization Plan No. 2 provides,

But as with many, many other moves in the Trump Administration, legality was simply irrelevant. Given the anti-research predilections of the Trump Administration, and previous attempts to slash the budget for these two research-oriented offices,<sup>230</sup> few doubt the move was an attempt to intimidate and discourage researchers.<sup>231</sup>

Actually, there is no need to infer the motivations of the move. In a speech to the South Carolina Republican Party, then-White House chief of staff Mick Mulvaney openly boasted about shrinking the ERS and the NIFA:

The USDA [moved] . . . two offices out of Washington, D.C., . . . to Kansas City, Missouri . . . . Guess what happened? More than half the people quit. Now, it's nearly impossible to fire a federal worker. I know that because a lot of them work for me, and I've tried. And you can't do it. But by simply saying to people "you know what, we're going to take you outside the bubble, outside the Beltway, outside this liberal haven of Washington, D.C., and move you out

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(b) To the extent that the carrying out of subsection (a) of this section involves the assignment of major functions or major groups of functions to major constituent organizational units of the Department of Agriculture, now or hereafter existing, or to the heads or other officers thereof, and to the extent deemed practicable by the Secretary, he shall give appropriate advance public notice of delegations of functions proposed to be made by him and shall afford appropriate opportunity for interested persons and groups to place before the Department of Agriculture their views with respect to such proposed delegations.

5 U.S.C. app. 1 Reorg. Plan No. 2 of 1953 § 4(b). House Democrats objected repeatedly, if fecklessly, suggesting that they had *no* say in the matter at all. Marc Heller, *Dems Vow to Block Agency Moves*, E&E NEWS (Dec. 20, 2018), [https://www.eenews.net/greenwire/stories/1060110253?show\\_login=1&t=https%3A%2F%2Fwww.eenews.net%2Fgreenwire%2Fstories%2F1060110253](https://www.eenews.net/greenwire/stories/1060110253?show_login=1&t=https%3A%2F%2Fwww.eenews.net%2Fgreenwire%2Fstories%2F1060110253); Heller, *Resistance Grows to Proposed USDA Reorganization*, *supra* note 219. The attrition of over three-quarters of the employees suggests that they at least would have objected, had they been given the forum.

<sup>230</sup> Liz Crampton, *White House Seeks Ag Research Cuts*, POLITICO (Mar. 19, 2019, 10:00 AM), <https://www.politico.com/newsletters/morning-agriculture/2019/03/19/white-house-seeks-ag-research-cuts-550290>.

<sup>231</sup> See Morris, *supra* note 209.

into the real part of the country,” and they quit. What a wonderful way to sort of streamline government.<sup>232</sup>

Is this what farmers want? In a globally competitive marketplace for agricultural commodities, do American farmers want to deprive themselves of research and support? And is this what Trump conservatives want—to have government operate by ideology alone, devoid of science? Do they not quaver when they consider the possibility of a president from New York or California, with no affection for the heartland, unbound by any norms of informed decision-making?

### III. HOW DOES IDEOLOGY TRUMP SCIENCE?

Why do this? These forays against science—scientific advisory committees, cost-benefit analyses, and moving USDA employees—do not seem like red meat for an angry constituency behind Donald Trump. But these moves are a new part of a sustained campaign of grievance against government, or “the establishment,” or the “deep state.”<sup>233</sup> Life in a globalized, technologically sophisticated, and environmentally hazardous world has become far too complex for government to run without thousands upon thousands of experts, a vast number of Ph.D.s, in fields from nuclear security to conservation biology to disease epidemiology. And yet this dependence upon a vast network of government experts breeds suspicion and resentment,<sup>234</sup> especially if economic or social insecurities are prevalent and the level of expertise has grown far beyond the capacity of most people to grasp. In 1963, Richard Hofstadter wrote:

Once the intellectual was gently ridiculed because he was not needed; now he is fiercely resented because he is needed too much . . . . It is not his abstractness,

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<sup>232</sup> *Mick Mulvaney Equates Federal Worker Attrition With “Drain the Swamp,”* C-SPAN (Aug. 2, 2019), <https://www.c-span.org/video/?c4811884/mick-mulvaney-equates-federal-worker-attrition-drain-swamp>.

<sup>233</sup> See generally BENJAMIN MOFFITT, *THE GLOBAL RISE OF POPULISM: PERFORMANCE, POLITICAL STYLE, AND REPRESENTATION* (2016) (discussing extensively the growing divide between “the people” and “the elite” and how this divide is fed by disillusionment with mainstream politics).

<sup>234</sup> See HOFSTADTER, *ANTI-INTELLECTUALISM*, *supra* note 48, at 34.

futility, or helplessness that makes him prominent enough to inspire virulent attacks, but his achievements, his influence, his real comfort and imagined luxury, as well as the dependence of the community upon his skills. Intellect is resented as a form of power or privilege.<sup>235</sup>

Even top academic and government scientists (including economists) rarely achieve great wealth.<sup>236</sup> But life for these scientists is still comfortable; jobs come with health and retirement benefits, and the perks of professional life—traveling to conferences, often-flexible hours, and occasional influence over policy<sup>237</sup>—can be easily made to seem luxurious, especially to people living in newly depressed parts of the United States and those who lack retirement benefits or health care. It is easy to portray scientists as part of a privileged “elite,” a time-tested political epithet that has often been deployed to great effect in American political campaigns.<sup>238</sup> Republicans have found it politically advantageous to claim that “liberty” is under assault from a liberal intelligentsia.<sup>239</sup> Some have argued

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<sup>235</sup> *Id.*

<sup>236</sup> Cf. Robert Krulwich, *Why Aren't There More Scientists? A One-Word Explanation*, NAT'L GEOGRAPHIC (Apr. 29, 2016), <https://www.nationalgeographic.com/science/phenomena/2016/04/29/why-we-dont-produce-more-scientists-a-one-word-explanation/> (“Science has never been a flush business, but it’s getting parched . . . ‘Ask a science professor what she worries about . . . It won’t take long. She’ll look you in the eye and say one word: “Money.””).

<sup>237</sup> See Phil Dee, *The Fringe Benefits of Working as a Scientist*, SCI. MAG. (Jan. 28, 2005, 10:00 AM), <https://www.sciencemag.org/careers/2005/01/fringe-benefits-working-scientist>.

<sup>238</sup> See, e.g., MOFFITT, *supra* note 233, at 1 (discussing how “populists across the world have made headlines by setting ‘the people’ against ‘the elite’ in the name of popular sovereignty and ‘defending democracy.’”); Oscar Winberg, *In-sult Politics: Donald Trump, Right-Wing Populism, and Incendiary Language*, 12 EUR. J. AM. STUD. 1, 4 (2017).

<sup>239</sup> See, e.g., Chuck DeVore, *The Administrative State Is Under Assault and That’s a Good Thing*, FORBES (Nov. 27, 2017, 1:53 PM), <https://www.forbes.com/sites/chuckdevore/2017/11/27/the-administrative-state-is-under-assault-and-thats-a-good-thing/#f1665bd393cc>.

that liberals are attacking affordable energy and something Republicans have characterized as an “American way of life.”<sup>240</sup>

For whom do these appeals resonate? Certainly, as noted above, a white underclass has emerged over the past several decades of increasing globalization, as the increasing mobility of capital has moved jobs overseas, creating high levels of dislocation, poverty, despair, and even an astonishing decline in the life expectancy of white working-class males in the United States (a decline that occurred *only* in the United States).<sup>241</sup> The economic casualties of globalization could cast blame in many directions, drawing in political leaders in both parties and swelling into a populist rage.<sup>242</sup> Scientists do not obviously present a convenient target, but Republicans have succeeded in linking, falsely, job losses to science-backed environmental regulation.<sup>243</sup> A false narrative of President Obama’s “war on coal” has benefited Republicans, who point to regulations on coal combustion as the reason the coal industry has declined precipitously, when in fact it has been plummeting natural gas prices that has sent coal to the sidelines.<sup>244</sup> A more appropriate target of blame would be the economists that have preached free trade as a

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<sup>240</sup> 2016 Republican Party Platform, AM. PRESIDENCY PROJECT (July 18, 2016), <https://www.presidency.ucsb.edu/documents/2016-republican-party-platform>. (“The Democratic Party’s energy policy can be summed up in a slogan currently popular among its activists: ‘keep it in the ground.’ Keeping energy in the earth will keep jobs out of reach of those who need them most. For low-income Americans, expensive energy means colder homes in the winter and hotter homes in the summer, less mobility in employment, and higher food prices.”); Rachel Stoltzfoos, *The Democratic Party Is Working to Destroy the American Way of Life*, THE FEDERALIST (Nov. 1, 2018), <https://thefederalist.com/2018/11/01/democratic-party-working-destroy-american-way-life/>.

<sup>241</sup> See generally Anne Case & Angus Deaton, *Rising Morbidity and Mortality in Midlife Among White Non-Hispanic Americans in the 21st Century*, 112 PROC. NAT’L ACAD. SCI. 15078, 15078 (2015).

<sup>242</sup> Dani Rodrik, *Why Does Globalization Fuel Populism? Economics, Culture, and the Rise of Right-Wing Populism* 2–3 (Nat’l Bureau of Econ. Rsch., Working Paper No. 27526, 2020), [https://www.nber.org/system/files/working\\_papers/w27526/w27526.pdf](https://www.nber.org/system/files/working_papers/w27526/w27526.pdf).

<sup>243</sup> See RICHARD L. REVESZ & JACK LIENKE, STRUGGLING FOR AIR: POWER PLANTS AND THE “WAR ON COAL” 1, 4 (2016).

<sup>244</sup> See, e.g., *id.* at 2–4.

win-win economic proposition.<sup>245</sup> But, while both parties share blame for increased globalization, free trade has been a more central tenet of the Republican party, at least until Donald Trump's 2016 presidential campaign,<sup>246</sup> which identified some of the problem.

The economic decline in these newly depressed parts of the United States is so acute and so traumatizing that it has driven large populations into the waiting arms of authoritarianism.<sup>247</sup> Over the past eighty years, an extensive body of research has established a set of personality indicators for “right-wing authoritarianism,” a political disposition towards intolerance of others and a need for strong authority structures necessitating obedience and, if deemed necessary, violence.<sup>248</sup> This overlaps with “social dominance orientation,” the belief that relations between social groups should be hierarchical, some groups having more control than, and over, others.<sup>249</sup> Both of these types voted overwhelmingly for Donald Trump.<sup>250</sup>

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<sup>245</sup> See Malcolm Fairbrother, *Economists, Capitalists, and the Making of Globalization: North American Free Trade in Comparative-Historical Perspective*, 119 AM. J. SOCIOLOGY 1324, 1329–31 (2014).

<sup>246</sup> See Inu Manak, *Are Republicans Still the Party of Free Trade?*, CATO INST. (May 16, 2019, 2:45 PM), <https://www.cato.org/blog/are-republicans-still-party-free-trade>.

<sup>247</sup> See DALIBOR ROHAC ET AL., DRIVERS OF AUTHORITARIAN POPULISM IN THE UNITED STATES 8–11 (2018).

<sup>248</sup> See, e.g., THEODOR W. ADORNO, ELSE FRENKEL-BRUNSWIK, DANIEL J. LEVINSON & R. NEVITT SANFORD, *THE AUTHORITARIAN PERSONALITY* (1950); BOB ALTEMAYER, *THE AUTHORITARIAN SPECTER* (1996); ERICH FROMM, *ESCAPE FROM FREEDOM* (1941); SEYMOUR M. LIPSET, *POLITICAL MAN: THE SOCIAL BASES OF POLITICS* (1960); Jaime L. Napier & John T. Jost, *The “Antidemocratic Personality” Revisited: A Cross-National Investigation of Working-Class Authoritarianism*, 64 J. SOC. ISSUES 595 (2008); John Duckitt, *A Dual-Process Cognitive-Motivational Theory of Ideology and Prejudice*, 33 ADV. EXPERIMENTAL SOC. PSYCH. 41 (2001).

<sup>249</sup> See, e.g., JIM SIDANIUS & FELICIA PRATTO, *SOCIAL DOMINANCE: AN INTERGROUP THEORY OF SOCIAL HIERARCHY AND OPPRESSION* (1999); Felicia Pratto, Jim Sidanius & Shana Levin, *Social Dominance Theory and the Dynamics of Intergroup Relations: Taking Stock and Looking Forward*, 17 EUR. REV. SOC. PSYCH. 271 (2010); John Duckitt & Chris G. Sibley, *Right-Wing Authoritarianism, Social Dominance Orientation and the Dimensions of Generalized Prejudice*, 21 EUR. J. PERSONALITY 113 (2007).

<sup>250</sup> See Becky L. Choma & Yaniv Hanoach, *Cognitive Ability and Authoritarianism: Understanding Support for Trump and Clinton*, 106 PERSONALITY & INDIV. DIFFERENCES 287, 290–91 (2017); Howard Michael Crowson & Joyce L.

Neither authoritarianism or social dominance directly implicate science and scientists, but both are highly and robustly correlated with low levels of education and high levels of intolerance.<sup>251</sup> And again, people scoring high on intolerance and possessing lower levels of education voted strongly for Donald Trump.<sup>252</sup> Moreover, people low in education and high in intolerance have less patience with gaining a level of scientific literacy simply because they lack the training, providing more cause for suspicion.<sup>253</sup> Seymour Lipset, whose 1960 work has formed the basis for much empirical work over the last sixty years, argued that people low in educational attainment, suffering from financial insecurity, and raised in an authoritarian household (what Lipset called the “lower classes”) were “much less committed to democracy as a political system than are the urban middle and upper classes.”<sup>254</sup> Viewed in the broad lens of a long American history of poverty and upheaval, that generalization has held up well.

Jaime Napier and John Jost resurrect one more factor discussed by Lipset, less prominent in recent research: cynicism.<sup>255</sup> Cynicism has been found to predict authoritarian attitudes.<sup>256</sup> In a nineteen-country study, Napier and Jost found low levels of education strongly predicted both high propensities to obey an authoritarian

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Brandes, *Differentiating Between Donald Trump and Hillary Clinton Voters Using Facets of Right-Wing Authoritarianism and Social-Dominance Orientation: A Brief Report*, 120 PSYCH. REPS. 364, 368–70 (2017); Thomas F. Pettigrew, *Social Psychological Perspectives on Trump Supporters*, 5 J. SOC. & POLIT. PSYCH. 107, 108–09 (2017); Jake Womick et al., *Group-Based Dominance and Authoritarian Aggression Predict Support for Donald Trump in the 2016 U.S. Presidential Election*, 10 SOC. PSYCH. & PERSONALITY SCI. 643, 644 (2018).

<sup>251</sup> See, e.g., Napier & Jost, *supra* note 248, at 608; Choma & Hanoach, *supra* note 250, at 290–91; Crowson & Brandes, *supra* note 250, at 366–67; Paul Dekker & Peter Ester, *Working-Class Authoritarianism: A Re-Examination of the Lipset Thesis*, 15 EUR. J. POLIT. RES. 395, 404–05 (1987); Edward G. Grabb, *Working-Class Authoritarianism and Tolerance of Outgroups: A Reassessment*, 79 PUB. OP. Q. 36, 43 (1979); Richard Christie & Peggy Cook, *A Guide to Published Literature Relating to the Authoritarian Personality Through 1956*, 45 J. PSYCH. 171, 176–77 (1958).

<sup>252</sup> See *An Examination of the 2016 Electorate, Based on Validated Voters*, *supra* note 24.

<sup>253</sup> See Choma & Hanoach, *supra* note 250, at 290–91.

<sup>254</sup> LIPSET, *supra* note 248, at 92, 108.

<sup>255</sup> Napier & Jost, *supra* note 248, at 604–05.

<sup>256</sup> See Grabb, *supra* note 251, at 42–44.

and high levels of cynicism.<sup>257</sup> Cynicism rides high these days, a companion to despair.<sup>258</sup> This combination of attributes has been fertile ground for conspiracy theories,<sup>259</sup> and there are few more convenient targets of conspiracy theories than scientists and their esoteric work, which can be made out by skilled demagogues as the cause of harm to marginalized communities.<sup>260</sup>

Amy Chua argues in *Political Tribes: Group Instinct and the Fate of Nations* that white working-class Americans have developed a toxic political identity, having been left out of what she argues is identity politics on the left.<sup>261</sup> Finding themselves in opposition to a panoply of non-white, non-Christian, non-heterosexual groups, Chua argues that the newly impoverished white working class seeks desperately to coalesce to regain political power they perceive they have lost.<sup>262</sup> It is not hard to see how part of that white working-class identity, rooted in grievance, would find scientific experts, including economists, to be part of the despicable “other.”

#### IV. INFECTION

The implications for democracy are grave, but those are the subject of other works. This Article warns of the implications of the attack on regulatory science in other scientific realms. The effects of these seemingly esoteric intrusions into science for the protection of regulated industries such as fossil fuels and chemicals are no longer limited to these policy areas. Albert Lin has argued that President Trump’s focus has been on regulatory science, but he warns of “[c]ollateral [e]ffects on [r]esearch [s]cience.”<sup>263</sup> Whether intended

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<sup>257</sup> Napier & Jost, *supra* note 248, at 607. Cynicism was measured by agreement or disagreement with the statements “most people can be trusted,” and “you need to be very careful in dealing with people.” *Id.* at 605.

<sup>258</sup> *See id.* at 612.

<sup>259</sup> *See* MARK FENSTER, CONSPIRACY THEORIES: SECRECY AND POWER IN AMERICAN CULTURE 9–12 (2008).

<sup>260</sup> *See* Amy E. Mendes, *Digital Demagogue: The Critical Candidacy of Donald J. Trump*, 6 J. CONTEMP. RHETORIC 62, 64 (2016).

<sup>261</sup> *See* AMY CHUA, POLITICAL TRIBES: GROUP INSTINCT AND THE FATE OF NATIONS 142–44 (2019).

<sup>262</sup> *Id.* at 161–64.

<sup>263</sup> Albert C. Lin, *President Trump’s War on Regulatory Science*, 43 HARV. ENV’T. L. REV. 247, 304–06 (2019).

or not, the strategies for sowing doubt and misinformation about regulatory science cannot be contained, the techniques cannot be unlearned. They now show signs of infecting other areas of law and policy, as well as other countries. Few examples illustrate this better than the COVID-19 crisis.

Deep into the spread of COVID-19, many Trump supporters believed that the pandemic was being exaggerated to politically harm President Trump.<sup>264</sup> As almost everyone has now experienced firsthand, wearing masks became political, violently so in some cases,<sup>265</sup> prompting North Dakota's Republican governor to plead for people to be less hostile towards mask-wearers.<sup>266</sup> Dr. Anthony Fauci, the iconic director of the National Institute for Allergy and Infectious Diseases came under repeated, vicious personal political attack and, of course, received death threats.<sup>267</sup> The *New Yorker Magazine* reported on armed militias that sprung up around the country to protest mask mandates and other public health measures aimed at curbing the spread of the COVID-19 virus.<sup>268</sup> Daring law enforcement to

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<sup>264</sup> Alison Durkee, *Nearly a Third of Americans Believe Covid-19 Death Toll Conspiracy Theory*, FORBES (July 21, 2020, 1:42 PM), <https://www.forbes.com/sites/alisondurkee/2020/07/21/nearly-a-third-of-americans-believe-covid-19-death-toll-conspiracy-theory/#8faf3f340ab3> (reporting that fifty-nine percent of Republicans and nine percent of Democrats believe the COVID-19 death toll conspiracy theory).

<sup>265</sup> See, e.g., Terry Spencer, *Walmart Shopper Charged with Pulling Gun During Mask Dispute*, WASH. POST (July 23, 2020, 12:04 PM), [https://www.washingtonpost.com/health/walmart-shopper-charged-with-pulling-gun-during-mask-dispute/2020/07/23/2508258c-ccfe-11ea-99b0-8426e26d203b\\_story.html](https://www.washingtonpost.com/health/walmart-shopper-charged-with-pulling-gun-during-mask-dispute/2020/07/23/2508258c-ccfe-11ea-99b0-8426e26d203b_story.html) (a Walmart shopper in Fort Lauderdale, Florida, was charged for pointing a gun at another shopper who had told him to put on a face mask.).

<sup>266</sup> Acevedo, *supra* note 43.

<sup>267</sup> Isaac Stanley-Becker et al., *Anthony Fauci's Security Is Stepped Up as Doctor and Face of U.S. Coronavirus Response Receives Threats*, WASH. POST (Apr. 1, 2020, 8:11 PM), [https://www.washingtonpost.com/politics/anthony-faucis-security-is-stepped-up-as-doctor-and-face-of-us-coronavirus-response-receives-threats/2020/04/01/ff861a16-744d-11ea-85cb-8670579b863d\\_story.html](https://www.washingtonpost.com/politics/anthony-faucis-security-is-stepped-up-as-doctor-and-face-of-us-coronavirus-response-receives-threats/2020/04/01/ff861a16-744d-11ea-85cb-8670579b863d_story.html); Emily Czachor, *Dr. Fauci Says He and His Family Have Received Serious Threats: 'Is This the United States of America?'*, NEWSWEEK (July 25, 2020, 9:47 AM), <https://www.newsweek.com/dr-fauci-says-he-his-family-have-received-serious-threats-this-united-states-america-1520485>.

<sup>268</sup> Luke Mogelson, *The Militias Against Masks*, NEW YORKER (Aug. 24, 2020), <https://www.newyorker.com/magazine/2020/08/24/the-militias-against-masks>.

make an arrest, hundreds of heavily armed members of a Michigan militia stood guard outside a barbershop that had been ordered to close by the governor.<sup>269</sup> One militia member railed, “This has nothing to do with the virus . . . . This has to do with power. They want to take power away from the people, and they want to control us.”<sup>270</sup>

Why do people believe these things? A conspiracy theory group called QAnon believes that President Trump is fighting against a deep state government bureaucracy of Satan-worshipping pedophiles.<sup>271</sup> Does it do anyone any actual good to have crackpot conspiracy theories infecting millions of Americans? If politicians are exploiting that, how do they benefit? There is almost certainly no single answer, but there are a good number of conditions and antecedents that make this all possible.

First, as noted above, the history of anti-intellectualism in the United States suggests that the anti-science rhetoric propounded by President Trump and some Republicans is drawing upon the centuries-old, ever-present populist suspicion of intellectuals.<sup>272</sup> By stoking this suspicion, they can solidify this anti-intellectual support and possibly mobilize more voters. What is different this time around is that President Trump and kindred Republicans are trafficking in misinformation about hard, provable scientific facts that are susceptible to empirical verification—if only the verification process would attract as much attention as the original outlandish claim. In 2018, a twenty-five-year-old Canadian man drove a rented van down a crowded Toronto street, killing ten and wounding dozens more.<sup>273</sup> A Canadian journalist arrived on the scene quickly.<sup>274</sup> Based on early interviews with eyewitnesses, she first tweeted that the attacker had been “Middle Eastern” and “angry.”<sup>275</sup> But that was

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<sup>269</sup> *Id.*

<sup>270</sup> *Id.*

<sup>271</sup> See Zeke Miller et al., *Trump Praises QAnon Conspiracists, Appreciates Support*, ASSOCIATED PRESS (Aug. 19, 2020), <https://apnews.com/article/535e145ee67dd757660157be39d05d3f>.

<sup>272</sup> See *supra* Part I.

<sup>273</sup> Chris Meserole, *Spreading Terror: How the Toronto Attack Echoes Recent Trends in Extremist Violence*, BROOKINGS (Apr. 25, 2018), <https://www.brookings.edu/blog/order-from-chaos/2018/04/25/spreading-terror-how-the-toronto-attack-echoes-recent-trends-in-extremist-violence/>.

<sup>274</sup> *Id.*

<sup>275</sup> *Id.*

false. The attacker had in fact been white, and the journalist tweeted the accurate description half an hour later, but to little effect: the incorrect tweet had ten times the number of retweets as the correct one, and discouragingly, that gap persisted even after twenty-four hours.<sup>276</sup>

Second, the pre-existing but latent antipathy towards science has proliferated with the help of social media, alongside crackpot conspiracy theories. In the case of the Toronto van attack, Twitter's algorithm prioritized content that garnered a higher amount of engagement, effectively locking in the initial inaccurate tweet just because so many people were inclined to believe it.<sup>277</sup> Few people better understand and exploit this positive feedback more effectively than President Trump, who had tens of millions of followers on Twitter.<sup>278</sup> He seems to grasp that his falsehoods have a long shelf-life. Social media organizations themselves have no incentive to moderate this effect and in fact have been defiant, until recently.<sup>279</sup> Facebook, in particular, profits from widely spread misinformation because of the advertising revenues it can garner from viral content.<sup>280</sup>

And third, but closely related, professional journalism is collapsing, losing out in competition to social media. The tension between

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<sup>276</sup> *Id.*; Chris Meserole, *How Misinformation Spreads on Social Media—and What to Do About It*, LAWFARE (May 9, 2018, 10:00 AM), <https://www.lawfare-blog.com/how-misinformation-spreads-on-social-media-and-what-to-do-about-it>.

<sup>277</sup> See Meserole, *How Misinformation Spreads on Social Media—and What to Do About It*, *supra* note 276.

<sup>278</sup> Compare Donald J. Trump (@realDonaldTrump), TWITTER, <https://twitter.com/realDonaldTrump> [<https://web.archive.org/web/20210107000120/https://twitter.com/realDonaldTrump>] (last visited Jan. 7, 2021), with Donald J. Trump (@realDonaldTrump), TWITTER, <https://twitter.com/realDonaldTrump> (last visited Jan. 24, 2021).

<sup>279</sup> VICTOR PICKARD, *DEMOCRACY WITHOUT JOURNALISM? CONFRONTING THE MISINFORMATION SOCIETY* 3–4 (2019); see, e.g., Hannah Denham, *These Are the Platforms That Have Banned Trump and His Allies*, WASH. POST. (Jan. 10, 2021, 6:11 p.m. EST), <https://www.washingtonpost.com/technology/2021/01/11/trump-banned-social-media/>

<sup>280</sup> See, e.g., *id.* (“Although many analysts attribute the problems with misinformation to political polarization and foreign interference, commercial incentives facilitate its dissemination. Facebook’s reckless behavior stems from maximizing advertising revenues, and more generally from its unregulated monopoly power . . . . Because its business model depends on user engagement, Facebook is not incentivized to address the problem . . . .”).

information and entertainment long preceded the advent of social media, but now, journalism is rushing headlong towards entertainment.<sup>281</sup> The claims are so outlandish—that Hillary Clinton was running a child sex-trafficking ring out of the basement of a Washington, D.C., pizza restaurant, for example<sup>282</sup>—that one wonders if all of this is just for fun. And yet, at least one man drove from North Carolina to D.C. to check it out for himself, and he fired a shot into a closet.<sup>283</sup>

These conditions are so ripe for misinformation that more and more preposterous theories are gaining greater and greater credence. With the COVID-19 crisis, the consequences are far greater than a single shot fired into a pizza restaurant. President Trump himself was persistent in trumpeting the curative benefits of hydroxychloroquine, incorrectly claiming that it is an effective treatment for COVID-19.<sup>284</sup> His advocacy may explain the death of a Florida teenager whose parents gave her hydroxychloroquine after she contracted COVID-19.<sup>285</sup> It is hard to see where else the suggestion of such a bizarre treatment might have come from.<sup>286</sup> Also, in July 2020, President Trump retweeted the claims of a doctor named Stella Immanuel that hydroxychloroquine was a cure for COVID-19,<sup>287</sup> eliding some of Dr. Immanuel's other claims, including

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<sup>281</sup> *Id.* at 4.

<sup>282</sup> See Emily Davies, *Comet Ping Pong Survived Pizzagate. Can it Survive the Coronavirus?*, WASH. POST (Apr. 30, 2020), [https://www.washingtonpost.com/local/comet-ping-pong-survived-pizzagate-can-it-survive-the-coronavirus/2020/04/30/e368adc0-83fd-11ea-ae26-989cfce1c7c7\\_story.html](https://www.washingtonpost.com/local/comet-ping-pong-survived-pizzagate-can-it-survive-the-coronavirus/2020/04/30/e368adc0-83fd-11ea-ae26-989cfce1c7c7_story.html).

<sup>283</sup> *Id.*

<sup>284</sup> Allyson Chiu, *A High-Risk Florida Teen who Died from Covid-19 Attended a Huge Church Party, then Was Given Hydroxychloroquine by Her Parents, Report Says*, WASH. POST (July 7, 2020), <https://www.washingtonpost.com/nation/2020/07/07/florida-carsyn-davis-coronavirus/>.

<sup>285</sup> *Id.*

<sup>286</sup> *Id.*

<sup>287</sup> Will Sommer & Adam Rawnsley, *Trump Doubles Down on Demon Sperm Doc*, DAILY BEAST (July 29, 2020, 6:33 AM), <https://www.thedailybeast.com/trump-hails-demon-sperm-doc-dr-stella-immanuel-as-important-voice-in-nations-covid-19-battle>; Travis M. Andrews & Danielle Paquette, *Trump Retweeted a Video with False Covid-19 Claims. One Doctor in It Has Said Demons Cause Illnesses*, WASH. POST (July 29, 2020, 10:17 AM) (“In a news conference Tuesday, Trump addressed the video, saying: ‘I think they’re very respected doctors.

claims that scientists have used alien DNA in experiments, that reptilian aliens work for the federal government, and that some gynecological illnesses are caused by people dreaming of having sex with demons.<sup>288</sup> But, as is seen repeatedly, President Trump's word carries weight: Jenny Beth Martin, founder of the Tea Party Patriots and an organizer for the event at which Dr. Immanuel spoke, condemned social media for taking down Dr. Immanuel's tweets and posts, complaining that the doctors at her event were being "ridiculed"; she tweeted that "the leftist media don't want hydroxychloroquine to work because it will mean President @realDonaldTrump was right!"<sup>289</sup>

Alas, such pungent silliness has, by virtue of being transmitted by the President and amplified by social media, grabbed hold of many, many Trump followers,<sup>290</sup> who have followed him to other laughable but dangerous places. What almost seems to start out as a prank is now a clear and present danger to science. While not a frontal attack, propounding crackpot science as science, as political actors such as President Trump and his acolytes have done, undermines public faith in science, diluting it by flooding the public with crackpot science.<sup>291</sup> Presenting crackpot science in a manner entertaining or otherwise emotionally appealing turns out to be an effective way of elevating crackpot science up to, and sometimes beyond, the level of credibility of real science. It is clearly no accident that these wild, ridiculous conspiracy theories such as those propounded

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There was a woman who was spectacular.' He did not specify which woman. He added of hydroxychloroquine, 'I happen to think it works in the early stages.' When asked directly about Immanuel and why he might trust someone who believes that alien DNA is used in modern medicine, Trump responded: 'I thought she was very impressive, in the sense that, from where she came—I don't know what country she comes from—but she said that she's had tremendous success with hundreds of different patients. I thought her voice was an important voice, but I know nothing about her.'").

<sup>288</sup> Sommer & Rawnsley, *supra* note 287 (noting Dr. Immanuel thanked Daily Beast for summarizing her work).

<sup>289</sup> *Id.*; Jenny Beth Martin @jennybethm, Twitter (July 28, 2020, 3:12 PM), <https://twitter.com/jennybethm/status/1288190526404153346>.

<sup>290</sup> Michael Barkun, *President Trump and the "Fringe,"* 29 *TERRORISM & POL. VIOLENCE* 437, 440–43 (2017).

<sup>291</sup> See Jerome Amir Singh, Editorial, *COVID-19: Science and Global Health Governance Under Attack*, *S. AFR. MED. J.* (Apr. 20, 2020), <http://www.scielo.org.za/pdf/samj/v110n6/04.pdf>.

by QAnon have been made to appeal to right-wing authoritarians supportive of Trump, sometimes stoking their vision for a post-apocalyptic society governed by a strongman.<sup>292</sup>

Especially bizarre is the amount of political effort marshaled against the advocacy of a public health measure—the wearing of face masks.<sup>293</sup> Wearing masks is widely considered among public health experts to be essential in slowing the transmission of COVID-19.<sup>294</sup> But with President Trump’s reluctance to wear a mask in public, Republican politicians have rallied to make mask-wearing—a trivial inconvenience—into a cause célèbre.<sup>295</sup> A Republican state legislator in Florida, Anthony Sabatini, has filed at least five legal challenges to local mask ordinances; he lost all five.<sup>296</sup> His defeat in his challenge to the Gadsden County mask ordinance prompted a warning from the circuit judge that Mr. Sabatini might at some point be sanctioned for filing frivolous lawsuits.<sup>297</sup> His reaction was defiant: he tweeted, “this is why we fight.”<sup>298</sup>

On August 11, 2020, five months into the full-blown COVID-19 crisis, and after Florida had already passed 500,000 cases and

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<sup>292</sup> See Richard Wolffe, *Donald Trump Is the QAnon President. And He’s Proud of It*, GUARDIAN (Oct. 17, 2020, 10:08 AM), <https://www.theguardian.com/commentisfree/2020/oct/17/donald-trump-is-the-qanon-president-and-hes-proud-of-it>.

<sup>293</sup> See Will Weissert & Jonathan Lemire, *Face Masks Make a Political Statement in Era of Coronavirus*, ASSOCIATED PRESS (May 7, 2020), <https://apnews.com/article/7dce310db6e85b31d735e81d0af6769c>.

<sup>294</sup> See, e.g., Cornelia Betsch et al., *Social and Behavioral Consequences of Mask Policies During the COVID-19 Pandemic*, 117 PROC. NAT’L ACAD. SCI. 21851, 21851 (2020); Steffen E. Eikenberry et al., *To Mask or Not to Mask: Modeling the Potential for Face Mask Use by the General Public to Curtail the COVID-19 Pandemic*, 5 INFECTIOUS DISEASE MODELING 293, 294 (2020).

<sup>295</sup> Weissert & Lemire, *supra* note 293 (“The push back [against masks] has been stoked by President Donald Trump—he didn’t wear a mask during an appearance at a facility making them—and some other Republicans, who have flouted rules and questioned the value of masks.”).

<sup>296</sup> See James Call, *Gadsden Mask Ordinance Upheld, with a Warning for Lawyer-Lawmaker Anthony Sabatini*, TALLAHASSEE DEMOCRAT (Aug. 27, 2020, 12:32 PM), <https://www.tallahassee.com/story/news/politics/2020/08/26/gadsden-mask-ordinance-upheld-warning-plaintiffs-lawyer/3441990001/>.

<sup>297</sup> *Id.*

<sup>298</sup> *Id.*

was nearing 10,000 deaths,<sup>299</sup> the sheriff of Marion County, Florida, issued an order to his deputies to *not* wear masks while on duty and prohibited visitors to the office from wearing them.<sup>300</sup> Sheriff Woods said, “We can debate and argue all day of why and why not . . . . The fact is, the amount of professionals that give the reason why we should, I can find the exact same amount of professionals that say why we shouldn’t.”<sup>301</sup> The county’s largest city, Ocala, enacted a mask ordinance that was vetoed by the city’s mayor, Kent Guinn.<sup>302</sup> The veto was overridden by the City Council, but the mayor was defiant: “We will never write a fine. We’re just not going to do it.”<sup>303</sup>

Speaking on the third night of the Republican National Convention, South Dakota governor Kristi Noem was similarly defiant: “We are not—and will not be—the subjects of an elite class of so-called experts.”<sup>304</sup> “So-called” experts? Seriously? Noem remains unbowed by criticism for not wearing a mask in public and for welcoming a crowded motorcycle rally and a crowded fireworks event in her state.<sup>305</sup> Described by several as a “rising star” in the Republican Party,<sup>306</sup> it is striking how she perceives political benefit in attacking scientists. It is also striking, in the Republican Party now controlled by Trump and the likes of Governor Noem, how their stridency seems proportional to the size of the mountain of evidence amassed against them. It is as if they believe chutzpah can trump

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<sup>299</sup> Michelle Marchante & Devoun Cetoute, *Florida Passes 500,000 Mark as the State Adds More than 5,400 New Coronavirus Cases*, MIA. HERALD (Aug. 6, 2020, 10:11 AM), <https://www.miamiherald.com/news/coronavirus/article244736962.html>.

<sup>300</sup> Guilia McDonnell Nieto del Rio, *A Florida Sheriff Has Ordered His Deputies Not to Wear Masks*, N.Y. TIMES (Aug. 12, 2020), <https://www.nytimes.com/2020/08/12/us/fl-sheriff-billy-woods-bans-masks.html>.

<sup>301</sup> *Id.*

<sup>302</sup> *Id.*

<sup>303</sup> *Id.*

<sup>304</sup> Stephen Groves, *South Dakota’s Noem Speaks at RNC as State Virus Cases Rise*, ASSOCIATED PRESS (Aug. 26, 2020), <https://apnews.com/article/cbcc0233d22afd899d8a07c67ad859bd>.

<sup>305</sup> *See id.*

<sup>306</sup> *GOP Rising Star Kristi Noem Addresses Republican Convention*, NPR (Aug. 27, 2020, 7:22 AM), <https://www.npr.org/2020/08/27/906592669/gop-rising-star-kristi-noem-addresses-republican-convention>.

facts, that outrage can trump science. They may unfortunately be right.

### CONCLUSION

Some attacks on the conduct of science in the federal government can be parried by actions brought under the Administrative Procedure Act. Thirty-four times out of the first thirty-six, environmental organizations have succeeded in stopping a Trump initiative or a Trump rollback of an Obama-era rule.<sup>307</sup> But the attacks are broader than the several dozen lawsuits that can be feasibly brought. There is no longer a remedy for the ERS relocation to Kansas City. The precedent is chilling: that an administration got away with shedding more than seventy-five percent of the employees of a rogue agency unit will surely loom in the minds of federal government researchers in every agency, not just the USDA. That will affect the quality of science writ large, including federally-funded, non-governmental research. Congress may have been able to stop the move, had it been less partisan, but that prospect seems impossibly distant.

Social media certainly feeds oxygen to crackpot science and conspiracy theories. Ironically, President Trump has threatened action against social media firms for tagging his tweets as “glorifying violence”<sup>308</sup> and worthy of fact-checking.<sup>309</sup> Social media firms are insulated from almost all forms of tort liability by section 230 of the Communications Decency Act.<sup>310</sup> While section 230 seems odiously broad and has absolved Facebook from responsibility for numerous heinous crimes against humanity carried out with its aid,<sup>311</sup> a solution is elusive. In the social media sphere, how to draw a line

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<sup>307</sup> Revesz, *Institutional Pathologies in the Regulatory State*, *supra* note 172172.

<sup>308</sup> Isobel Asher Hamilton, *Twitter Slapped a ‘Glorifying Violence’ Label on a Trump Tweet that Threatened George Floyd Protesters in Minneapolis with Getting Shot*, BUS. INSIDER (May 29, 2020, 9:46 AM), <https://www.businessinsider.com/twitter-warning-trump-tweet-george-floyd-glorifying-violence-2020-5>.

<sup>309</sup> *Twitter Tags Trump Tweet with Fact-Checking Warning*, BBC NEWS (May 27, 2020), <https://www.bbc.com/news/technology-52815552>.

<sup>310</sup> Communications Decency Act of 1996, 47 U.S.C. § 230 (1996).

<sup>311</sup> See David Sloss, *Section 230 and the Duty to Prevent Mass Atrocities*, 52 CASE W. RESV. J. INT’L L. 199–200 (2020).

between aiding and abetting violence and propagating legitimate dissent remains unclear.<sup>312</sup> And yet, yielding to first amendment absolutism, as Facebook CEO Mark Zuckerberg seems determined to do,<sup>313</sup> is clearly unsatisfactory. Some further intrusions into the broad insulation of liability provided by section 230, although beyond the scope of this Article, seem essential, as Zuckerberg's free speech nihilism is having measurably harmful effects on science and public health.

It could be, given the long and somewhat cyclical nature of anti-intellectualism, that a wave of hostility to science simply needs to run its course. But it is hard to imagine what could cause the pendulum to reverse direction, if the death of hundreds of thousands of Americans and millions of people worldwide due to COVID-19<sup>314</sup> still sends South Dakota governors<sup>315</sup> and Florida sheriffs<sup>316</sup> rushing off to defend their partisan mask aversions. It is hard not to see how things will get better until they get much, *much* worse.

Some progress in understanding may be made by researchers—experts—working in the intersection of social psychology, political science, economics, and perhaps sociology. Each of those fields have uncovered important pieces of the puzzle of how virulent, and sometimes violent, objections to science have come to pass in a continuing populist movement. The conditions under which this kind of anti-science populism have thrived, how those conditions might be removed, and communications strategies to counter the propagation of dangerous nonsense are all important research questions, and they provide precedents for an effective response, public or private. Handing the keys to any single one field of experts would be dangerous; the naïve and undistilled uptake of free-trade fetishism is evidence enough that even good ideas driven by good research have

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<sup>312</sup> See, e.g., Michael A. Cheah, *Section 230 and the Twitter Presidency*, 115 NW. U. L. REV. ONLINE 192 (2020).

<sup>313</sup> See, e.g., Tony Romm, *Zuckerberg: Standing for Voice and Free Expression*, WASH. POST (Oct. 17, 2019, 4:22 PM), <https://www.washingtonpost.com/technology/2019/10/17/zuckerberg-standing-voice-free-expression/>.

<sup>314</sup> Caroline Kantis et al., *UPDATED: Timeline of the Coronavirus*, THINK GLOB. HEALTH (Oct. 9, 2020), <https://www.thinkglobalhealth.org/article/updated-timeline-coronavirus>.

<sup>315</sup> See Groves, *supra* note 304.

<sup>316</sup> See McDonnell Nieto del Rio, *supra* note 300.

to be placed in a broader context.<sup>317</sup> This effort must be interdisciplinary.

Before a discussion of legal reforms can be undertaken, a fundamental question must be addressed: the role of science in public policy. All of this anti-science nonsense has arisen because there has never been much consideration, let alone consensus, about the influence of science in public policy. Economic growth worldwide has exploded, but the growth has been so uneven as to cast doubt on the value of social and economic progress itself. The value of those responsible for progress—scientists, of many fields—now seems doubtful to some. Addressing these doubts will require the interdisciplinary effort of social scientists, but it will also require grappling with a more abstract and probably more difficult question of how to integrate science with values. The answers to those questions, in my view, are out there, scattered about, and finding them will require resourcefulness and resolve from the very people that are under attack. Working together, however, it is likely that a more structural, lasting, and humane set of policy solutions can be developed to remedy the root causes of this rush toward anti-science authoritarianism.

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<sup>317</sup> See Fairbrother, *supra* note 245.