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**SCIENCE UNDER ASSAULT — REFLECTIONS ON
THE WAR ON THE EPA: AMERICA'S ENDANGERED
ENVIRONMENTAL PROTECTIONS**

Sara A. Colangelo*

*THE WAR ON THE EPA: AMERICA'S ENDANGERED ENVIRONMENTAL
PROTECTIONS* by Dr. William M. Alley and Rosemarie Alley.
Lanham, Maryland: Rowman & Littlefield. 2020.

INTRODUCTION

Headlines about agency decision-making involving scientific assessment were laced with a militarized tone for the last four years: the Environmental Protection Agency and its technocrats were *embattled*, *besieged*, or *under attack* from the beneficiaries of anti-science agendas and attitudes.¹ But this is not journalistic hyperbole according to a growing chorus of legal scholars.² In recent years, literature examining the escalating assault on data-driven, expert-informed agency decisions

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1. See, e.g., Hiroko Tabuchi, *A Trump Insider Embeds Climate Denial in Scientific Research*, N.Y. TIMES (Mar. 2, 2020), <https://www.nytimes.com/2020/03/02/climate/goks-uncertainty-language-interior.html> (referencing “the Trump administration’s widespread attacks on government scientific work”); Michael Hiltzik, *Trump’s Trashing of NOAA’s Scientific Reputation is Part of his War on Science*, L.A. TIMES (Sept. 9, 2019), <https://www.latimes.com/business/story/2019-09-09/hiltzik-noaa-management-trashed>.

2. The language of embattled agencies and science-based decision-making is echoed in scholarship. E.g., Carol J. Miller, *For A Lump of Coal & A Drop of Oil: An Environmentalist’s Critique of the Trump Administration’s First Year of Energy Policies*, 36 VA. ENVTL. L.J. 185, 266–67 (2018) (discussing the Trump administration’s “assault on the EPA”); Brie D. Sherwin, *The Upside Down: A New Reality for Science at the EPA and Its Impact on Environmental Justice*, 27 N.Y.U. ENVTL. L.J. 57 (2019) (noting that “under . . . Administrator Pruitt, many career scientists are arguing that science is increasingly under attack.”); Madeline June Kass, *Presidentially Appointed Environmental Agency Saboteurs*, 87 UMKC L. REV. 697, 710–11 (2019) (arguing President Trump’s political appointees to EPA are “assaulting” the agency’s scientific capacity).

exploded in response to overt anti-science narratives.³ This scholarship traces attacks from both political and industrial cohorts; manipulation of scientific inputs for regulatory decisions; suppression of impartial expert opinions; and most perniciously, to agency political appointees with an affinity for, or former employment with, regulated industries.

Ignoring scientific expertise in agency decision-making contravenes a basic principle undergirding administrative law—that Congress delegates regulatory nuance to those in a more knowledgeable technical position.⁴ And worse, it puts public health at risk by distorting the procedural quality controls for agency decisions. In the simplest terms, agencies make decisions by considering (and sometimes generating) technical information to determine “the best regulatory means to address a social challenge,”⁵ or to abstain from action. They then seek public and inter-governmental input through multiple channels. Next, they must “grapple with all salient comments, including often dense business, data, [and] science . . . submitted by clashing stakeholders . . . and justify [action] with abundant and often massive written materials.”⁶

Yet, science as a foundation of these decisions, and the scientists who inform regulatory design are besieged. In response, legal scholars and environmental science experts attempt to highlight the vulnerability of the agency decision-making process to political manipulation and propose ways to combat or reverse the damage.⁷ I term these authors the “Science

3. Such concerns, of course, are not new. *See, e.g.*, DAVID MICHAELS, DOUBT IS THEIR PRODUCT (2008); THOMAS O. MCGARITY & WENDY E. WAGNER, BENDING SCIENCE: HOW SPECIAL INTERESTS CORRUPT PUBLIC HEALTH RESEARCH (2008).

4. *See, e.g.*, Wendy E. Wagner, *A Place for Agency Expertise: Reconciling Agency Expertise with Presidential Power*, 115 COLUM. L. REV. 2019, 2023–32 (2015) (explaining the “concept that the agencies should preside over specialized information is hard-wired into the design of the administrative state”); Sidney Shapiro et al., *The Enlightenment of Administrative Law: Looking Inside the Agency for Legitimacy*, 47 WAKE FOREST L. REV. 463, 465–71 (2012) (describing the paradigm of administrative law as relying “on expertise, deliberation, and reason giving to establish the legitimacy of public administration”); James O. Freedman, *Expertise and the Administrative Process*, 28 ADMIN. L. REV. 363, 364–65 (1976) (arguing the origins of the administrative state reveal the “commitment to expertise as a principal justification for the administrative process”).

5. William W. Buzbee, *Deregulatory Splintering*, 94 CHI.-KENT L. REV. 439, 446 (2019).

6. *Id.* at 448.

7. *See, e.g.*, Albert C. Lin, *President Trump’s War on Regulatory Science*, 43 HARV. ENVTL. L. REV. 247 (2019); Thomas O. McGarity, *Science and Policy in Setting NAAQS: Resolving the Ozone Enigma*, 93 TEX. L. REV. 1783 (2015); Gretchen Goldman et al., *Ensuring scientific integrity in the Age of Trump*, 355

Defenders.” They argue that manipulation of the scientific record, upon which agency decisions are based, produces deregulatory actions that “are much easier to justify” and result in the “substitution of policy preferences for rigorous scientific research.”⁸

In this vein, *The War on the EPA* is a timely and compelling work. Co-authors Dr. William Alley and Rosemarie Alley⁹ present a cogent, intricate march through the Environmental Protection Agency’s (“EPA”) battles in various ecological media: ground and surface water contamination, air pollution, climate change, hazardous wastes, and toxic chemicals. The authors construct a powerful narrative that deregulatory legions threaten to cripple EPA’s authority and moral imperative to protect human health and the environment. While this anthology chronicles EPA’s challenges, regulatory practitioners can translate these tribulations to any agency whose mission chafes regulated entities with political clout.¹⁰ Law students will no doubt find inspiration in the role lawyers play in almost every parable—heroes combating community suffering and fighting for protective action.¹¹

Through the lens of an environmental scientist and experienced author, the Alleys present overwhelming proof of the panoply of forces obstructing impartial agency decision-making and thwarting action on public health. It is both the *quantity* of these examples and the *quality* of their narrative that the Alleys contribute to the Science Defenders literature. Alley and Alley illuminate scientific minutia such as the chemical composition of polyfluoroalkyl substances (“forever chemicals” or PFAS), in concise prose that clarifies the link between chemistry and

SCIENCE 696 (2017); Union of Concerned Scientists, *Abandoning Science Advice* 3 (Jan. 18, 2018), <https://www.ucsusa.org/resources/abandoning-science-advice>.

8. McGarity & Wagner, *Deregulation Using Stealth “Science” Strategies*, 68 DUKE L. J. 1719, 1769 (2019).

9. Dr. William Alley is the Director of Science and Technology for the National Ground Water Association and served as Chief of the Office of Groundwater for the USGS almost two decades. Rosemarie Alley is an environmental writer, and co-author of the Alleys’ three books on environmental science.

10. To take just one example, scholars and scientists make analogous arguments about the United States Department of Agriculture under the Trump administration. See Union of Concerned Scientists, *Betrayal at the USDA: How the Trump Administration Is Sidelining Science and Favoring Industry over Farmers and the Public* (Mar. 30, 2018), <https://www.ucsusa.org/resources/betrayal-usda>.

11. Environmental lawyers and their role in securing relief for beleaguered communities feature prominently in controversies such as the Flint and PFOA DuPont contamination. WILLIAM M. ALLEY AND ROSEMARIE ALLEY, *THE WAR ON THE EPA: AMERICA’S ENDANGERED ENVIRONMENTAL PROTECTIONS* 43–50; 184–86 (2020).

epidemiology for the lay reader in a variety of contexts.¹² Their captivating and accessible narration serves their argument that the American public must be reengaged with the plight of environmental hazards and the essential work of EPA.¹³

Despite this value added, the end of the book feels somewhat like a missed opportunity to deliver detailed proposals to solve their compellingly articulated crises. The book convinces us of the urgency to address the deregulatory multitudes amassed against a process intended to be science-based. Yet, the authors dedicate only five pages to solutions.¹⁴ Notwithstanding the brevity with which the Alleys treat those suggestions, this compendium still contributes to a growing body of scholarship examining the hyper-politicization of science and its devastating impact on the administrative state.

Part I of this Review catalogs the Alleys' anthology of environmental hazards, the roles various segments of society and government play in identifying and reacting to the hazards, and the multifaceted challenges encountered by EPA in its regulatory efforts and responsibilities. Part II examines how the authors attempt to catalyze action to protect EPA and its processes. I assert this project fails to offer an assessment of curative action with the same rigor applied to their historical analysis. Part III of this Review positions the book within the Science Defenders scholarship. The Review concludes that the book is significant because it successfully contextualizes environmental protections for the public and the key role science plays in the development of those protections.

I. THE BATTLEFIELD: ENVIRONMENTAL HAZARDS AND GUARDIANS

Alley and Alley start their text by asserting that anti-science propaganda is deleterious and deep rooted. They advise, “[p]ropaganda is extremely difficult to reverse because of how it morphs with memory and learning.”¹⁵ Correspondingly, they argue that the EPA is “demonized for [alleged] over-regulation” and—more provocatively—that “business, industry and many Americans *want* to hear . . . that EPA is hurting the economy . . . and intruding into people’s private lives.”¹⁶ Their thesis is clear: For an agency whose legitimacy is founded on the integrity of its scientific and technical capacity, nothing could be more dangerous.

12. *Id.* at 183–84.

13. *Id.* at 13, 226.

14. *Id.* at 223–28.

15. *Id.* at IX.

16. *Id.* at X (emphasis added).

The Alleys also immediately emphasize the parallels between Reagan and Trump-era stratagems for deregulation coupled with internal agency demoralization. They caution that “[t]he Trump administration has become the most serious threat to the agency to date, but the war on the EPA can be traced back decades.”¹⁷ Alley and Alley argue a “key tactic of Reagan’s White House was to control regulatory agencies by putting the fox in charge of the hen house. Virtually all EPA appointees . . . came from the very industries that the EPA was charged with overseeing.”¹⁸ This gambit will sound familiar to many readers as the Alleys catalog how the Trump administration borrows from and expands this playbook. And while the authors address instances of scientific manipulation in agencies from other administrations, they focus their ire on Trump administration ploys, as do the Science Defenders.¹⁹

With this stage set, Alley and Alley provide a historical account of the creation of EPA, its evolution through administrations, and its significant undertakings by decade.²⁰ The authors link the development of EPA and statutory regimes bestowing it authority with compelling legal battles over ecological and epidemiological issues.²¹ They also preview how the book functions on a narrative level: Through gut-wrenching environmental calamities, they set the stage for EPA action or inaction.²² The authors then contextualize the enormity of EPA’s regulatory burdens across water, air, climate, and wastes. They detail challenges from potentially or currently regulated industries, governmental agencies, subnational actors, political foes, and/or the public at large.²³

For example, in Chapter Two, they examine the perchlorate water contamination controversy to illustrate challenges that stymie regulatory

17. *Id.*

18. *Id.* at 7.

19. The Alleys discuss other examples, such as the George W. Bush administration “censor[ing] government scientists and alter[ing] their reports when these threatened the administration’s lax environmental agenda in areas such as climate change and the listing of endangered species.” *Id.* at 10. But Science Defenders would agree with the Alleys that the tactics wielded by the Trump administration are the most blunt and most dangerous. *E.g.*, Lin, *supra* note 7, at 300–01; McGarity & Wagner, *supra* note 8, at 1759.

20. Alley and Alley, *supra* note 11, at 1–17.

21. *Id.* at 6–13.

22. The authors do not shy from offering examples in which EPA’s absence is conspicuous, such as their discussion of environmental justice issues around safe drinking water in the San Joaquin Valley. *Id.* at 51.

23. “Virtually everything that the EPA has accomplished has come out of the crucible of intense controversy, with significant economic, health, and social consequences at stake Even in the best of times, it’s remarkable that anything gets done.” *Id.* at 16–17.

efforts despite scientific evidence.²⁴ Perchlorate helps oxidize rocket fuel, and defense contractors, the Department of Defense (“DoD”) and NASA used, and still use it.²⁵ Perchlorate was “dumped into unlined pits” and spilled at many DoD sites.²⁶ It is most devastating to the “central nervous system in fetuses and infants” but even in healthy adults, exposure “interferes with the uptake of iodine by the thyroid.”²⁷ Many key players in environmental dramas appear in this analysis: states, municipalities, and public water works; powerful federal agencies with potential liability; angry politicians; and chemical companies. This salient example culminates in an alarming assessment of the impact of anti-regulatory administrations. The Alleys discuss the ‘study but don’t act’ strategy of George W. Bush’s EPA²⁸ and the ‘ignore the weight of science altogether and see if we can get away with its strategy of Trump’s EPA.’²⁹

The authors also underscore tensions inherent in our administrative state’s competing ideals of state autonomy versus nationwide environmental safeguards.³⁰ In addition, they tease out the web of overt and subtle forces at odds with EPA’s regulatory efficacy. They offer these nuanced observations in contexts ranging from ozone regulation to acid rain mitigation.³¹ On the topic of drinking water standards for instance, the Alleys observe, “Virtually every contaminant . . . has powerful forces aligned against regulation. Drinking water standards often become minimum clean-up standards for Superfund sites, which means that companies and government agencies...are on the hook for

24. *Id.* at 21–41.

25. *Id.* at 21–26.

26. *Id.* at 26. Documenting the multi-state plume of perchlorate and health consequences, particularly for sensitive populations.

27. *Id.* at 21.

28. The George W. Bush administration enlisted the “National Academy of Sciences to study the problem,” but in 2008, “against the objections of its own scientists, . . . opted not to regulate perchlorate, citing the need for more research.” *Id.* at 24. After the Obama administration reversed that decision, it ultimately did not propose a drinking water standard either. *Id.* at 26.

29. The Trump EPA proposed a drinking water standard, pursuant to a Consent Decree following a suit from the Natural Resources Defense Council to force promulgation of such a standard, “several times higher than the earlier health advisory of fifteen parts per billion.” *Id.* at 26.

30. *Id.* at 49, 224 (“The disaster in Flint, Michigan, is a failure of a fundamental precept upon which the EPA was formed. The entire EPA system is dependent upon the regional offices maintaining sufficient independence from the states they oversee.”).

31. *Id.* at 113–24.

cleaning it up . . . [But] . . . regulating a chemical may [also] translate into a huge cost for water utilities that they pass off to the ratepayers.”³²

For most of the book this strategy works quite convincingly, engrossing the reader in a world of regulatory law. The Alleys are, after all, professional storytellers and their ability to communicate the most complex of regulatory regimes is commendable. They identify legal and technology standards embodied in statutes with clarity enviable for any environmental law hornbook. Of particular note, they elucidate: the technology control standards from the Clean Water Act;³³ the jurisprudential quagmire regarding the meaning of “waters of the United States;”³⁴ the dizzying regulatory regimes under the Clean Air Act;³⁵ and the Resource Conservation and Recovery Act maze for “determining what’s hazardous and what is not.”³⁶

With their fluency in science, the Alleys also frame key issues, such as toxic chemicals, with colloquial but accurate formulations. “It’s almost instinctive to bash chemical companies, yet many chemicals make it possible for us to live longer, more comfortably, and safely. Exposure to chemicals is a price we pay for the conveniences of modern life,” note the Alleys.³⁷ They directly explain that “[n]o chemical is totally innocuous, but some come with a sufficient downside that they should be restricted in their use. Others are so bad that, no matter what benefits they may bestow, you just can’t have them around.”³⁸ Some might read the authors’ departures from their thesis as a loss of focus. There are, perhaps, overly nuanced explanations of groundwater remediation technologies³⁹ and the chemical reactions and dangerous byproducts of chlorinating water supplies.⁴⁰ But these dalliances of detail add context to the case studies and a sense of expertise from the authors.

Overall, the Alleys use their mini case studies to effectively convey the enormity of EPA’s task in tackling multi-dimensional problems ranging from defining the jurisdictional limits of the Clean Water Act⁴¹ to dealing with the regulatory morass surrounding PFAS.⁴² These tales typically culminate in reiterating the thesis that EPA continues

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32. *Id.* at 41.
 33. *Id.* at 65.
 34. *Id.* at 90–97.
 35. *Id.* at 117.
 36. *Id.* at 216–17.
 37. *Id.* at 157.
 38. *Id.*
 39. *Id.* at 208–11.
 40. *Id.* at 32, 208–11.
 41. *Id.* at 89–97.
 42. *Id.* at 184–94.

to battle campaigns of misinformation and complex politics against perpetrators both external and internal. However, in the face of this consistent aggression, the Agency has enjoyed critical successes, as mentioned in the final chapter.⁴³ The Alleys ultimately emphasize that rehabilitation of environmental protections requires a multi-faceted regulatory design accounting for evolving science, regional and national politics, and human nature.⁴⁴

II. REBUILDING THE EPA AND REINFORCING THE INTEGRITY OF ITS SCIENTIFIC PROCESS

In The War on the EPA, Alley and Alley advocate for a persistently strong EPA, a restoration of its scientific integrity, and a more overt connection of EPA's mission "to people's daily lives."⁴⁵ Each chapter reaches a compelling crescendo for remedial or punitive action, buoyed by the Alleys' well-researched examples. Yet, most chapters only conclude with a summary sentence acknowledging how difficult EPA's mission is or that massive problems remain.⁴⁶ Consider the end of the Alleys' chapter on regulation of pollutants under the Clean Air Act. It offers only that "[t]he need to address air pollution from numerous sources remains a never-ending imperative."⁴⁷

Most acutely, the final chapter advances the proposition that when EPA reboots it should use the reset to implement changes aimed both at public opinion and efficacy. But the authors only gesture at how the Agency might accomplish such feats. We are left yearning for a thorough delineation of their prescriptions. Instead we receive something akin to a robust laundry list of suggestions: installing "new leadership dedicated to the agency's mission;"⁴⁸ "restor[ing EPA's] scientific capabilities and faith in its scientific integrity;"⁴⁹ "[r]eversing corporate capture of the EPA, eliminating efforts to control scientists and their outputs, and undoing the damage to science-based rule-makings;"⁵⁰ increasing

43. *E.g., id.* at 131 (touting EPA victories in eliminating lead from gasoline and addressing stratospheric ozone depletion).

44. *E.g., id.* at 41.

45. *Id.* at 226.

46. *E.g., id.* at 224 ("the need for a strong EPA continues"); *id.* at 224 ("The imperative for a strong EPA is no less today than it was fifty years ago."); *id.* at 224 ("The result [on TSCA reforms] is far from reassuring.").

47. *Id.* at 132.

48. *Id.* at 225.

49. *Id.*

50. *Id.* at 226.

“funding and creating a “favorable work environment;”⁵¹ simplifying regulations, permitting processes, and lowering compliance costs;⁵² developing “[m]arket-based incentives, and public-private partnerships,”⁵³ and avoiding regulatory whiplash between administrations.⁵⁴ To be sure, this is a diverse range of ideas. But it lacks specificity and depth. Spinning out details on each idea, or perhaps delving into one particular suggestion by way of illustration would fortify the text.

Consider the Alleys’ proposition to strengthen collaborative relationships, including public-private partnerships to increase the EPA’s success in certain intractable areas. They present ample evidence for this suggestion, from successful joint federal-state task forces on water quality to collaborations aimed at educating industries on how to comply with regulations,⁵⁵ to voluntary local programs offering confidential expert environmental compliance assessments.⁵⁶ For these cited successes though, there is no proposal for *how* EPA might coordinate with such groups besides acknowledging it will require “a joint effort.”⁵⁷ Their exhortation also fails to distill characteristics of successful partnerships or to draw broadly applicable lessons as to how EPA could replicate the best programs in the future.

After marshaling such compelling evidence for 12 chapters, this finale misses a chance to magnify their message and offer detailed prescriptions for repairing the damage wrought on the agency and reinforcing the integrity of its decision-making process.

51. *Id.*

52. *Id.*

53. *Id.* at 227.

54. *Id.*

55. *Id.* at 64, 68–69, 78–79. The Alleys numerous examples include “a joint federal-state Hypoxia Task Force led by the EPA . . . to reduce the areal extent of the Gulf [of Mexico]’s dead zone by about two-thirds[;]” “the EPA, and the Natural Resources Conservation Service [creating] the Minnesota Agricultural Water Quality Certification Program” to provide farmers technical assistance for environmental compliance and “cost-share dollars[;]” and a collaboration between dairy producers, government officials, and university specialists to “deliver[] science-based workshops on food safety, animal welfare, and environmental stewardship, along with practical guidance for California dairy producers to help meet regulations.”

56. *Id.* at 38 (teeing up examples of local volunteer programs such as the Marion County Wellfield Education Corporation, “a not-for-profit group funded, in part, by water use fees,” offering “free (and strictly confidential) business assessment by a trained environmental consultant”).

57. *Id.* at 41.

III. A CONTRIBUTION TO THE CRUSADE OF THE SCIENCE DEFENDERS

The Alleys' well-constructed, accessible narrative highlights the role EPA plays in facilitating, developing, and carrying out responsibilities intimately tied to human health and the human experience. The text serves as a tool for both education and outreach. That combination is the authors' key contribution to the Science Defenders' scholarship.

From the outset of their book, Alley and Alley advance a dire warning about efforts to corrode science in the public view and its impact on policy making. As then-Professor Kagan warned, interfering with the science used by agencies "threaten[s] a kind of impartiality and objectivity in decision-making that conduces to both the effectiveness and the legitimacy of the administrative process."⁵⁸ Indeed, the Alleys' opening quote for the foundational chapter orients the reader that "[i]ndependent, honest science is the backbone of environmental regulation."⁵⁹

Alley and Alley focus on the Trump administration's attacks as particularly dangerous in this vein, asserting "[the] administration carried out an unprecedented effort to undermine the way in which science is used by government agencies."⁶⁰ The complete title of this work suggests the full scope of the Alleys' concern: The War on the EPA: America's Endangered Environmental Protections. For the Alleys, "endangered environmental protections" encompasses environmental laws, regulations, political will, agency resources and staff, and the very procedural mandates followed by EPA to reach technical determinations. These issues addressed and positions espoused add to the bulwark of scholarship built by the Science Defenders.

The Science Defenders' literature focuses on exposing willful maneuvers to restrict the quantity and perspectives of scientific material informing the exercise of agency discretion.⁶¹ They examine manipulation of science to ultimately cloak deregulatory initiatives with the air of technical and procedural legitimacy. Consider, for example, Albert Lin's argument that the Trump administration "view[s] the provision of scientific advice [a]s just another target for political

58. Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2356–58 (2001) (arguing for a limited role for the White House concerning scientific rulemaking).

59. Alley and Alley, *supra* note 11, at 1 (quoting former staff director of the U.S. EPA Science Advisory Board).

60. *Id.* at 12.

61. For example, the Alleys discuss the disturbing and emerging "[p]attern of discounting co-benefits of regulation to diminish their perceived value" in the air pollution context. *Id.* at 124–28.

maneuvering, rather than a source of objective expertise.”⁶² Lin advises that “[r]esulting agency decisions are likely to be poorly informed, effective, or even harmful.”⁶³ Consider also Thomas McGarity and Wendy Wager, who offer the most comprehensive analysis of the modes of scientific interference for deregulatory purposes, including “manipulation [of] individual studies, model algorithms, or other basic features of the scientific record[;] . . . attempt[s] to deplete the scientific staff and its funding and adjust the lines of authority so that the administration makes the calls on developing the scientific record itself[;] . . . and lay[ing] down new ground rules for how science is used in agency decision making [for] . . . biased outcomes.”⁶⁴

By way of illustration, the Science Transparency Rule is one of the most pernicious examples of the scientific interference denounced by the Science Defenders and the Alleys. The moniker implying integrity belies the Rule’s purpose and impact. In 2018, EPA first published this proposed rule that would require EPA to ensure the data underlying studies relied upon for its regulations are “publicly available in a manner sufficient for independent validation” including all dose response data and modeling.⁶⁵ The proposal resulted in controversy and condemnation because it restricts the quantity of and top-quality scientific data informing public health decisions. EPA received nearly 600,000 public comments.⁶⁶ The majority of comments opposed the proposal,⁶⁷ including leading health and scientific organizations, editors of four major scientific journals in a rare joint statement, and nearly 1,000 administrators and researchers.⁶⁸ This rule is highlighted as particularly worrisome by most Science

62. Lin, *supra* note 7, at 299–330.

63. *Id.* at 300–01.

64. McGarity & Wagner, *supra* note 8, at 1723.

65. Strengthening Transparency in Regulatory Science, 83 Fed. Reg. 18,768, 18,773 (proposed Apr. 30, 2018), <https://www.govinfo.gov/content/pkg/FR-2018-04-30/pdf/2018-09078.pdf>.

66. Lisa Friedman, *The E.P.A. Says It Wants Research Transparency. Scientists See an Attack on Science*, THE NEW YORK TIMES (Mar. 26, 2018), <https://www.nytimes.com/2018/03/26/climate/epa-scientific-transparency-honest-act.html>.

67. *Id.*

68. See Marianne Lavelle, *EPA’s ‘Secret Science’ Rule Meets with an Outpouring of Protest on Last Day for Public Comment*, INSIDE CLIMATE NEWS (May 19, 2020), <https://insideclimatenews.org/news/18052020/secret-science-epa-transparency-rule-wheeler-pollution-environment>; Friedman, *Attack on Science*, *supra* note 66; see also Editorial, Editorial Board, *The Sustained Undermining of Science by the EPA’s Leaders is a Travesty*, NATURE (May 5, 2020), <https://www.nature.com/articles/d41586-020-01310-y>.

Defenders⁶⁹ and is given robust treatment by the Alleys.⁷⁰ It typifies the subterfuge that Science Defenders worry will infect EPA's decision-making process at its root, while permitting the Agency administrators to later claim they reached decisions based on sound science.

The Alleys translate these concerns into clear, actionable information for lawyers and laypeople alike. Despite a lack of specifics on how to ameliorate the damage done to EPA or the alleged flagging public appreciation for its mission, the breadth and accessibility of the Alleys' analysis contribute to the canon of Science Defenders literature. For instance, they provide numerous examples of damage that can be wrought by inter-agency forces, especially political appointees. They warn that "Americans have been subjected to a systematic propaganda campaign to discredit science . . . by elevating people who don't have a clue . . . to the same level as scientists."⁷¹ The Alleys gather evidence on this point across administrations, statutes, and pollutants, and the depth of their proof is crushing.⁷² Power wielded by agency officials can be a sword or a shield to undermine the scientific integrity of the agency, including setting risk-based pollution control standards. The Alleys cite the Clean Water Act by way of example: "Congress's exact wording is: 'in the sole judgment of the Administrator' there is 'a meaningful opportunity for health risk reduction.' Putting the onus on the administrator makes sense when the person at the helm is dedicated to the agency's mission. In the case of someone like Scott Pruitt, it's open to tremendous abuse."⁷³

Further, for all the scholars examining the overt legal flaws with EPA's deregulatory spree under the Trump administration, the scholarship generally does not grapple with the potential waning public interest in EPA or the dangers posed by misinformation campaigns derailing EPA regulatory efforts.⁷⁴ The Alleys contend—perhaps brazenly or perhaps baldly—that "the American public is largely apathetic and silent [because]

69. McGarity & Wagner, *supra* note 8, at 1767–69; Lin, *supra* note 7, at 255–57, 296.

70. Alley & Alley, *supra* note 11, at 128–32.

71. *Id.* at IX.

72. *Id.* at 123, 128–31, 223 (including examples such as ozone regulations, the Science Transparency Rule, and quoting a former Republican staffer, "the Trump administration's return to basics [as articulated by Scott Pruitt] is 'a smokescreen to their real intention to restore the dependence of the United States energy system on fossil fuels'").

73. *Id.* at 35.

74. One of the Alleys' best examples of this phenomenon is their treatment of the "Ditch the Rule" campaign and the efficacy of what they term "bumper sticker" campaigns against regulations. *Id.* at 94.

[o]verall, the environment looks like it's doing just fine."⁷⁵ One cannot determine which data or even anecdotal evidence animates this particular allegation. Does it offer too pessimistic a vision of public opinion? But regardless of the empirical basis for this assertion, the growing political polarization over environmental issues is obvious.⁷⁶ Accordingly, one of the chief benefits of this text is the authors' ability to contextualize the vulnerability of our ecosystem and human condition to environmental contamination. Consider the Alleys' elucidation of temporal tensions at play in complex scenarios such as hazardous waste cleanups under the Superfund statute. The Agency has "limited funding and staff" while "address[ing] myriad public concerns in an intense and emotional environment."⁷⁷ EPA also faces "foot-dragging by companies deemed responsible for contamination, and a basic lack of data about some sites and the health hazards they pose. Meanwhile, those affected by contamination—as well as those undertaking cleanup—want certainty and timely decisions."⁷⁸

Beyond this clear prose, their storytelling ultimately serves their goal of explaining *why* the mission of EPA is so important. They draw the reader in with pithy syntax and indelible quips. Introducing the ecological disaster in the Chesapeake Bay, for example, they explain the intricacy of the shoreline by reference to a restaurant outside Annapolis that one needs "explicit directions (and some luck) to find."⁷⁹ But what awaits are "huge sheets of butcher paper . . . covered with heaped baskets of crabs and oysters fresh off the boat," "cold steins of beer," and a "weather-scarred waterman."⁸⁰ When their paragraph concludes with a reflection, "God love those summer days when you can work your trap lines under a blue sky, the sun warming your back," the reverence is both palpable and infectious for this waterway and the countless natural resources, jobs, and culture it spawns.⁸¹

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75. *Id.* at 13.

76. *See, e.g.*, Pew Research Center, *The Politics of Climate* (Oct. 4, 2016), <https://www.pewresearch.org/science/2016/10/04/the-politics-of-climate/> (providing data visualization and analysis on the hyper politicization of public views and voting regarding an archetypal environmental issue, climate change).

77. Alley & Alley, *supra* note 11, at 207.

78. *Id.*

79. *Id.* at 71.

80. *Id.*

81. *Id.*

The authors' chief weapons in the "war" they tee up in this book are their analytical nuance and gift for bringing scientific minutia to life. While work remains to generate concrete solutions based on their analysis, educating, and connecting the public with the mission of EPA and science itself is a first step in the battle to save the Agency and indeed all our environmental protections.