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Pursuing Climate Justice: Learning the Lessons of the COVID-19 Response

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PURSUING CLIMATE JUSTICE: LEARNING THE LESSONS OF THE COVID-19 RESPONSE

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ABSTRACT

The COVID-19 pandemic and the climate crisis have many parallels. Both are large disruptive events that pose foundational threats to humanity through the capacity to cause substantial harm and death to humans. Both pose complex and multifaceted challenges perpetuated by multiple factors that are difficult to interrupt or mitigate. Both are subject to evolving scientific understandings of their underlying causes and potential interventions. Both are novel challenges not previously faced by most humans alive today that comprise potential threats to human society over an extended time period. These similarities allow scholars and policymakers to extrapolate and understand how the responses to the COVID-19 pandemic could inform responses to the much larger threat presented by the climate crisis.

These two crises differ in substantial ways as well. The COVID-19 pandemic arises from an infectious disease caused by the spread of a novel virus, while the climate crisis stems from the rampant accretion of carbon dioxide from the combustion and release of carbon-based fuels by humans. Addressing these primary causes will require very distinct technologies and strategies. Yet, many of the systemic conditions that need to be navigated for an effective response—particularly legal, political, and social factors that dictate the contours of what is possible in our society—are the same or similar for both crises. These crises also differ in scope and duration. The impact and length of the COVID-19 pandemic likely will be dwarfed by the climate crisis, which will impose severe impacts on human societies for generations to come.

Nevertheless, the lessons from the COVID-19 response can illuminate a path forward to more effectively address the challenges of the climate crisis. Successfully mitigating the future risks of the climate crisis will require learning from, and applying different approaches to, many of the same areas where the legal and political governance of the COVID-19 response faltered. The lessons of the COVID-19 response can act as both a cautionary tale and a roadmap for

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a better future response. This Article identifies areas where important legal and policy reforms can reverse failed approaches used during the COVID-19 response, build on successful COVID-19 response strategies, and yield better outcomes that can help pursue and secure climate justice going forward.

Successful adaptation to a warming climate will require significant changes to our society and the thoughtful, proactive application of law and policy that fosters inclusive governance and health equity. If we heed its lessons, the COVID-19 pandemic may provide us with insights to fortify our social support infrastructure, reorient our priorities, invest in forward-looking technological and social changes, and reinforce our imagination and our solidarity to render our society more adaptable to the risks—both expected and unexpected—that the future holds.

I. INTRODUCTION

The COVID-19 pandemic and the climate crisis represent two intertwined foundational threats to humanity. The parallels between these two ongoing crises are compelling: Both are large disruptive events that have the capacity to cause substantial harm and death to humans;[1] both are complex and multifaceted challenges that are perpetuated by multiple factors, and are therefore difficult to interrupt or mitigate;[2] both are subject to evolving scientific understandings of their underlying causes and potential interventions;[3] both are potential threats to human society over an extended time period;[4] and both are novel challenges not previously faced by most humans alive today.[5] These similarities allow scholars and policymakers to extrapolate and understand how the responses to the COVID-19 pandemic could inform responses to the much larger threat presented by the climate crisis.

These two crises differ in substantial ways as well. Notably, the primary factor causing each crisis differs. An infectious disease caused by the spread of a novel virus resulted in the COVID-19 pandemic, while the rampant accretion of carbon dioxide from the combustion and release of carbon-based fuels by humans has laid the groundwork for the climate crisis.[6] Addressing these primary causes will require very distinct technologies and strategies.[7] Yet, many of the systemic conditions that need to be navigated for an effective response—particularly legal, political, and social factors that dictate the contours of what is possible in our society—are the same or similar for both crises.[8] These crises

1. *See* Rubén D. Manzanedo & Peter Manning, *COVID-19: Lessons for the Climate Change Emergency,* SCI. TOTAL ENV'T, Nov. 10, 2020, at 1–2, Elsevier, 140563.

2. *Id.* at 2.

3. *See* Mike Hulme et al., *Social Scientific Knowledge in Times of Crisis: What Climate Change Can Learn from Coronavirus (And Vice Versa),* WIREs CLIMATE CHANGE, July/Aug. 2020, at 1, e656 (noting how understanding both technical and social scientific considerations are important in understanding both crises).

4. Indranil Chakraborty & Prasenjit Maity, *COVID-19 Outbreak: Migration, Effects on Society, Global Environment and Prevention*, SCI. TOTAL ENV'T, Aug. 1, 2020, at 2, Elsevier, 138882.

5. Daniel Rosenbloom & Jochen Markand, *A COVID-19 Recovery for Climate*, 368 SCIENCE 447, 447 (2020).

6. *See generally* Michelle L. Holshue et al., *First Case of 2019 Novel Coronavirus in the United States*, 382 NEW ENG. J. MED. 929 (2020) (describing the etiology of the SARS-CoV-2 virus); RICHARD P. ALLAN ET AL., INTERGOV'T PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS SUMMARY FOR POLICYMAKERS 4–6 (2021) (providing the scientific basis for the impacts of human-generated fossil fuels on raising global temperature).

7. Song Jin, *COVID-19, Climate Change, and Renewable Energy Research: We Are All in This Together, and the Time to Act Is Now*, 5 ACS ENERGY LETTERS 1709, 1710 (2020).

8. *See* Shilu Tong et al., *Infectious Disease, the Climate, and the Future*, ENV'T EPIDEMIOLOGY, Apr. 2021, at 3, PMID 33870009 (noting "[a] planetary health perspective that cuts across different domains of knowledge, disciplines, governance, and socioeconomic factors is needed to properly address the dual challenge proposed by climate change and COVID-19").

also differ in scope and duration. The COVID-19 pandemic, for all of its ongoing death and disruption, will likely be brought under control in the next few years, rendering COVID-19 a problematic endemic disease in human populations, but not the urgent societal emergency it has been since its onset in 2020.[9] By contrast, the climate crisis will pose a much longer-term problem, with impacts extending for generations and with more dire worst case scenarios than the current pandemic.[10]

Importantly, while the impacts of the climate crisis will ultimately dwarf the impacts of the COVID-19 pandemic, the lessons from the COVID-19 response can illuminate a path forward to more effectively address the challenges of the climate crisis. Successfully mitigating the future risks of the climate crisis will require learning from, and applying different approaches to, many of the same areas where the legal and political governance of the COVID-19 response faltered. Thus, the lessons of the COVID-19 response can act as both a cautionary tale and a roadmap for a better future response. This Article will identify areas where important legal and policy reforms can reverse failed approaches used during the COVID-19 response, build on successful COVID-19 response strategies, and yield better outcomes that can help pursue and secure climate justice going forward.

II. THE FAILURES AND SUCCESSES OF THE COVID-19 RESPONSE

The COVID-19 pandemic is the most damaging health crisis in living memory, and the most significant global pandemic since the dreaded 1918 influenza pandemic which killed approximately fifty million people a century ago.[11] The coronavirus has caused over one million deaths in the United States[12] and an estimated fifteen million deaths globally,[13] while infecting and disrupting

9. A.C.K. Lee & J.R. Morling, *Living with Endemic COVID-19*, 205 PUB. HEALTH 26, 26 (2022).

10. ALLAN ET AL., *supra* note 6, at 14–16. Laura Robinson, *Canaries in the Climate Coal Mine: Climate Change and COVID-19 as Meta-Crisis,* FIRST MONDAY (Nov. 1, 2021), https://journals.uic.edu/ojs/index.php/fm/article/view/12356/10518.

11. *See generally* JOHN BARRY, THE GREAT INFLUENZA: THE EPIC STORY OF THE DEADLIEST PLAGUE IN HISTORY (2004); ALFRED W. CROSBY, AMERICA'S FORGOTTEN PANDEMIC: THE INFLUENZA OF 1918 (1989).

12. *See Coronavirus Resource Center*, JOHNS HOPKINS UNIV., https://coronavirus.jhu.edu/ (last visited August 18, 2022).

13. *Global Excess Deaths Associated With COVID-19, January 2020 – December 2021*, WORLD HEALTH ORG. (May 2022), https://www.who.int/data/stories/global-excess-deaths-associated-with-covid-19-january-2020-december-2021 (estimating 14.91 million excess deaths worldwide associated with COVID-19 between January 1, 2020 and December 31, 2021). Other estimates of excess COVID-19 mortality are even higher. *See* Haidong Wang et al., *Estimating Excess Mortality Due to the COVID-19 Pandemic: A Systematic Analysis of COVID-19-Related Mortality, 2020-21*, 399 LANCET 1513, 1531 (2022) (estimating 18.2 million excess deaths worldwide between January 1, 2020 and December 31, 2021).

the lives of hundreds of millions of people.[14] The pandemic has stretched health care and public health capacity to its limits, as successive waves of infection have filled hospitals and decimated nursing homes.[15] The long-term health consequences of COVID-19 are as of yet unknown, but widespread and repeated infections with SARS-CoV-2 may result in a mass disabling event that imperils and impacts human populations for years to come.[16]

The COVID-19 pandemic starkly revealed the inequities built into our health care and public health systems in the United States, as well as the fragility and inadequacy of much of our social infrastructure.[17] The resulting health disparities are a perpetual problem in the United States with people of color, indigenous people, people living in poverty, and people with disabilities experiencing disparately worse health outcomes.[18] Many of these disparities arise from structural and spatial racism, which are the legacy of decades of

14. *See* Kim Tingley, *Counting Covid-19 Cases Doesn't Capture the Pandemic's Impact*, N.Y. TIMES (Jan. 26, 2022), https://www.nytimes.com/2022/01/26/magazine/covid-19-data-public-health.html (noting how the COVID-19 pandemic has impacted virtually every aspect of people's lives).

15. *See* OFF. OF THE ASSISTANT SEC'Y FOR PLAN. & EVALUATION, IMPACT OF THE COVID-19 PANDEMIC ON THE HOSPITAL AND OUTPATIENT CLINICIAN WORKFORCE 1 (2022); Dana-Claudia Thompson et al., *The Impact of COVID-19 Pandemic on Long-Term Care Facilities Worldwide: An Overview on International Issues*, BIOMED RSCH. INT'L, Nov. 4, 2020, at 4, PMID 33204723; CHRISTI A. GRIMM, U.S. DEP'T HEALTH & HUM. SERVS., HOSPITALS REPORTED THAT THE COVID-19 PANDEMIC HAS SIGNIFICANTLY STRAINED HEALTH CARE DELIVERY 2 (2021).

16. *See* Frances Stead Sellers, *Long COVID Could Change the Way We Think About Disability*, WASH. POST (Jul. 23, 2022, 10:10 AM), https://www.washingtonpost.com/health/2022/06/06/long-covid-disability-advocacy/ ("The coronavirus pandemic has created a mass-disabling event . . . with millions suffering the long-term effects of infection with the virus."); *see also* Justin T. Reese et al., *Generalizable Long COVID Subtypes: Findings from the NIH N3C and RECOVER Programs* (May 25, 2022) (preprint), PMID 35665012 (noting "approximately 10–20% of patients" may experience effects post-infection). *But see* Benjamin Mazer, *Long COVID Could Be a 'Mass Deterioration Event*,' THE ATLANTIC (June 15, 2022), https://www.theatlantic.com/health/archive/2022/06/long-covid-chronic-illness-disability/661285/ (noting that the current available data on disability rates does not support the long-term effects of COVID-19 causing a "mass disabling event" and suggesting that a "mass deterioration event"—an epidemic that "degrades quality of life, incrementally, for millions—is likely unfolding").

17. *See e.g.,* Emily A. Benfer et al., *Health Justice Strategies to Combat the Pandemic: Eliminating Discrimination, Poverty, and Health Disparities During and After COVID-19*, 19 YALE J. HEALTH POL'Y, L. & ETHICS, no. 3, 2020, at 122, 134 (noting how these inequities are "structural determinants of health"); Ruqaiijah Yearby & Seema Mohapatra, *Systemic Racism, the Government's Pandemic Response, and Racial Inequities in COVID-19*, 70 EMORY L.J. 1419, 1426 (2021).

18. *See* Angela P. Harris & Aysha Pamukcu, *The Civil Rights of Health: A New Approach to Challenging Structural Inequality*, 67 UCLA L. REV. 758, 762, 806 (2020) (discussing the social determinants of health and the health justice framework); DAYNA BOWEN MATTHEW, JUST MEDICINE: A CURE FOR RACIAL INEQUALITY IN AMERICAN HEALTH CARE 2 (2015) ("[T]he single most important determinant of health disparities . . . is racial and ethnic discrimination against minority patient populations, an uncontrovertibly significant contributor to health inequality.").

policy and investment decisions grounded in discrimination and marginalization of people in these groups.[19] The COVID-19 pandemic imperiled the health and stability of these already-marginalized communities, exposing the pernicious precarity and disparity that exists in health outcomes across our society.[20] Members of these communities suffer worse health outcomes and greater rates of infection and death.[21] Similarly, members of these communities face more social disruptions during the pandemic in the form of greater job and income loss, reduced access to necessary public services, and greater financial hardship.[22]

Beyond the direct health and social impacts, COVID-19 has shaken the foundations of the legal and political systems in the United States.[23] Despite years of initiatives to develop emergency preparedness capability, the pandemic revealed that emergency response plans—most of them designed to address short-term or localized events—buckled under the pressure of a long-term, evolving, and ubiquitous public health catastrophe like COVID-19.[24] Emergency preparedness planning in the United States has developed inconsistently over the past few decades, as attention and resources available for preparedness have fluctuated.[25] In the aftermath of high-profile disasters such as the 9/11 attacks, Hurricane Katrina, and the West Africa Ebola outbreak of 2014, political support typically coalesces for more robust emergency preparedness efforts, usually in the form of greater funding availability or more ambitious infrastructure to prepare for future emergencies and disasters. But these initiatives often erode after time passes and the political salience of the triggering event fades—a pattern sometimes referred to as the "panic and neglect" cycle.[26]

19. *See generally* EDUARDO BONILLA-SILVA, RACISM WITHOUT RACISTS (5th ed. 2018).

20. Yearby & Mohapatra, *supra* note 17, at 1424–25.

21. *Id.* at 1424.

22. *Id.* at 1423, 1430 (discussing the increased risk of workplace exposure to COVID-19 and the lack of access to testing sites, quality medical care, and vaccine distribution in racial and ethnic minority communities); Benfer et al., *supra* note 17, at 152–53 (discussing disproportionate rates of job loss among Black and Latino households).

23. *See* Wendy E. Parmet et al., *COVID-19: The Promise and Failure of Law in an Inequitable Nation*, 111 AM. J. PUB. HEALTH 47, 47 (2021) (discussing the impact of the COVID-19 pandemic on both the political and legal systems, including politicians' failure to exercise their legal power).

24. Ed Yong, *How the Pandemic Defeated America*, THE ATLANTIC (Aug. 4, 2020, 1:12 PM), https://www.theatlantic.com/magazine/archive/2020/09/coronavirus-american-failure/614191/.

25. *See* Hoag Levins, *Why U.S. Emergency Preparedness is Unlikely to Improve After Pandemic*, Penn LDI (May 2, 2022) https://ldi.upenn.edu/our-work/research-updates/why-u-s-emergency-preparedness-is-unlikely-to-improve-after-pandemic/ (describing funding deficiencies and operating challenges faced by the CDC for emergency preparedness: "[a]s soon as the crisis is over, the money goes away and preparedness is usually the first to suffer").

26. Michael Greenberger*, Better Prepare Than React: Reordering Public Health Priorities 100 Years After the Spanish Flu Epidemic*, 108 AM. J. PUB. HEALTH 1465, 1467 (2018); INT'L WORKING GRP. ON FIN. PREPAREDNESS, WORLD BANK, FROM PANIC AND NEGLECT TO INVESTING IN HEALTH SECURITY: FINANCING PANDEMIC PREPAREDNESS AT A NATIONAL LEVEL

Given the historical rarity of infectious disease pandemics, until recently, pandemic planning has remained a niche endeavor within the larger emergency preparedness infrastructure.[27] Nevertheless, numerous pandemic plans from government agencies, academic experts, and non-governmental organizations have modeled the necessary steps and strategies that could be employed to effectively respond to a pandemic like COVID-19.[28] When the pandemic arrived in early 2020, scientists and emergency planners were ready, but political leaders and the public were not.[29] The Trump Administration famously disbanded the National Security Council's pandemic preparedness unit in 2018 and responded very slowly at the beginning of the pandemic, only reluctantly acknowledging the risks of COVID-19 once the infection rates really began to spike.[30] Thus, despite the existence of resources that should have allowed for rapid intervention to mitigate the risk of a widespread pandemic (e.g., well-developed pandemic plans and the knowledge and capacity to implement them on short notice), inadequate leadership undercut the effectiveness of these resources.[31]

Leadership failures at many levels of government compounded the harm of the pandemic. Ineffective leaders prevented the implementation of effective mitigation measures that would have saved lives and shortened the duration and scale of the outbreak.[32] Many political leaders failed to act with diligence and resolve when faced with this unprecedented pandemic challenge.[33] Leaders at

8–9 (2017); CONG. RSCH. SERV., R43139, FEDERAL DISASTER RELIEF AFTER HURRICANES KATRINA, RITA, WILMA, GUSTAV, AND IKE 1 (2019).

27. *See* INT'L WORKING GRP. ON FIN. PREPAREDNESS, *supra* note 26, at 18 (noting "countries chronically underinvest in preparedness planning, disease and risk monitoring, and primary care").

28. For example, both the George W. Bush Administration and the Obama Administration developed national pandemic plans. *See generally* HOMELAND SEC. COUNCIL, NATIONAL STRATEGY FOR PANDEMIC INFLUENZA (2005); NAT'L SEC. COUNCIL, PLAYBOOK FOR EARLY RESPONSE TO HIGH-CONSEQUENCE EMERGING INFECTIOUS DISEASE THREATS AND BIOLOGICAL INCIDENTS (2016).

29. SYLVIA MATHEWS BURWELL ET AL., COUNCIL ON FOREIGN RELS., IND. TASK FORCE REP. NO. 78, IMPROVING PANDEMIC PREPAREDNESS: LESSONS FROM COVID-19 at 51, 54 (2020); Beth Cameron, *I Ran the White House Pandemic Office. Trump Closed It.*, WASH. POST (Mar. 13, 2020, 9:32 AM), https://www.washingtonpost.com/outlook/nsc-pandemic-office-trump-closed/2020/03/13/a70de09c-6491-11ea-acca-80c22bbee96f_story.html; Dan Diamond & Nahal Toosi, *Trump Team Failed to Follow NSC's Pandemic Playbook*, POLITICO (Mar. 25, 2020, 8:00 PM), https://www.politico.com/news/2020/03/25/trump-coronavirus-national-security-council-149285.

30. Cameron, *supra* note 29; Diamond & Toosi, *supra* note 29.

31. Other countries with more proactive public health responses fared better than the United States, with much lower rates of morbidity and mortality. *See* Benjamin Mueller & Eleanor Lutz, *U.S. Has Far Higher Covid Death Rate Than Other Wealthy Countries*, N.Y. TIMES (Feb. 1, 2022), https://www.nytimes.com/interactive/2022/02/01/science/covid-deaths-united-states.html.

32. BURWELL ET AL., *supra* note 29, at 52.

33. Mari Uyehara, *Our Political Leadership Is Failing Us at Every Level*, GQ (March 28, 2020), https://www.gq.com/story/failing-political-leadership-on-coronavirus; Sumit Ganguly et al., *5 Leaders Who Badly Mishandled the COVID-19 Pandemic*, U.S. NEWS & WORLD REP. (May

the federal, state, and local levels undermined public health responses indirectly, often disregarding and deprioritizing public health advice.[34] In some cases, these leaders directly and intentionally abdicated their public health duties, using their legal powers to explicitly undermine public health initiatives through dubious constitutional challenges to government efforts to protect public health, and preemption or prohibition of pandemic mitigation measures.[35] By prolonging the pandemic, these failures also allowed for the emergence of more easily transmissible variants of COVID-19 and necessitated the extension and periodic resumption of politically-contentious mitigation strategies such as social distancing, closures, and other mandated precautions.[36]

A multitude of factors likely explain leadership failures during the pandemic. Political incentives generally favor short-term outcomes and preserving the status quo, so decision makers may be reluctant to take steps that disrupt routines or challenge the entrenched hierarchies of power.[37] Economic and social incentives are oriented in this way as well; people who need to work to have enough money for essentials (like food, shelter, and medical care) cannot afford to stay home to stop the spread of an infectious disease during a pandemic unless there are policies that provide economic support and protection, which in turn allow people to comply with such stay-at-home orders without financial

18, 2021), https://www.usnews.com/news/best-countries/articles/2021-05-18/5-leaders-who-badly-mishandled-the-covid-19-pandemic.

34. Yasmeen Abutaleg et al., *The U.S. Was Beset By Denial and Dysfunction as the Coronavirus Raged*, WASH. POST (Apr. 4, 2020), https://www.washingtonpost.com/national-security/2020/04/04/coronavirus-government-dysfunction/; Reid Wilson, *Republican Governors Revolt Against CDC Mask Guidance*, THE HILL (July 28, 2021, 11:33 AM), https://thehill.com/homenews/state-watch/565243-republican-governors-revolt-against-cdc-mask-guidance/; Anna Maria Barry-Jester et al., *Pandemic Backlash Jeopardizes Public Health Powers, Leaders*, KAISER HEALTH NEWS (Dec. 15, 2020), https://khn.org/news/article/pandemic-backlash-jeopardizes-public-health-powers-leaders/.

35. *See, e.g.*, Alex Pickett, *Florida Governor Signs Sweeping Laws Against Vaccine, Mask Mandates*, COURTHOUSE NEWS SERV., (Nov. 18, 2021), https://www.courthousenews.com/florida-governor-signs-sweeping-laws-against-vaccine-mandates/ (discussing the Florida law prohibiting or restricting mask and COVID-19 vaccine mandates); Bran Sable-Smith, *How Politics Paralyzed Wisconsin's Pandemic Response – and Left Families to Grieve Their Losses*, WIS. WATCH (Oct. 28, 2020), https://wisconsinwatch.org/2020/10/politics-paralyzed-wisconsin-pandemic-response-families-grieving/ (discussing Wisconsin legislators' actions against mask mandates and public meeting capacity limits).

36. Rob Stein, *More Contagious Version of Omicron Spreads in U.S., Fueling Worries*, NPR (Feb. 21, 2022, 7:00 AM), https://www.npr.org/sections/health-shots/2022/02/21/1081810074/omicron-ba2-variant-spread.

37. *See* Dylan Scott, *Why Have Politicians Stopped Talking About Covid?*, VOX (Jun. 16, 2022, 6:30 AM), https://www.vox.com/coronavirus-covid19/2022/6/16/23167365/covid-19-2022-us-midterm-elections-vaccines-masks (discussing why politicians have been reluctant to discuss the COVID-19 pandemic during the 2022 election cycle).

ruin.[38] Additionally, it is very hard to convince leaders, or anyone else, to take precautions to avert long-term risks that impose burdens on short-term interests.[39] The Trump administration's slow reaction to the COVID-19 pandemic and subsequent efforts to underplay the ongoing risks of the virus exemplified this tendency, with government officials, including the President himself, serially downplaying the severity of the risks of infection and prematurely declaring victory multiple times, only for the virus to resurge each time.[40] The Biden administration has embraced a more rigorous and science-based COVID-19 response but has also implemented policies and guidance that prioritize a return to the status quo and pre-pandemic interaction patterns over public health best practices.[41]

Additionally, many government leaders embraced scientific skepticism, or outright denial, and overtly politicized the COVID-19 response.[42] These leaders actively undermined pandemic mitigation efforts by casting doubt on the severity of the risk, disparaging scientific findings, and attempting to use the crisis for political gain.[43] The effects of this approach were devastating: a

38. *See* Jennifer Valentino-DeVries et al., *Location Data Says It All: Staying at Home During Coronavirus Is A Luxury*, N.Y. TIMES (Apr. 3, 2020), https://www.nytimes.com/interactive/2020/04/03/us/coronavirus-stay-home-rich-poor.html (discussing how lower-income people were less likely to stay home during the height of the COVID-19 pandemic due to "structural disadvantages" including a higher lack of job security and lack of remote work options).

39. *See generally* Alan M. Jacobs, *Policy Making for the Long Term in Advanced Democracies*, 19 ANN. REV. POL. SCI. 433 (2016) (analyzing the implications of short-term versus long-term decision making by political leaders).

40. Charles F. Parker & Eric K. Stern, *The Trump Administration and the COVID-19 Crisis: Exploring the Warning-Response Problems and Missed Opportunities of a Public Health Emergency*, 100 PUB. ADMIN. 616, 617, 619–20 (2022).

41. Thaoi Ngo, *To Slow the Spread of COVID-19, We Need To Bring Back The Swiss Cheese Model Of Pandemic Response*, HEALTH AFFS. FOREFRONT (Dec. 20, 2021), https://www.healthaffairs.org/do/10.1377/forefront.20211217.534343/full/.

42. *See, e.g.*, Charles Piller, *Undermining CDC*, 370 SCIENCE 394, 395 (2020) (discussing the actions of Deborah Birx, President Trump's White House Coronavirus Task Force coordinator); Marilyn W. Thompson & Jenny Deam, *"The Human Psyche Was Not Built for This": How Republicans in Montana Hijacked Public Health and Brought a Hospital to the Brink*, PROPUBLICA (September 6, 2020), https://www.propublica.org/article/montana-covid-response-pushed-hospital-to-brink (chronicling how Republican state officials in Montana intervened to stop ongoing public health efforts by state and local public health officials); Glenn C. Altschuler, *Republicans' Mantra Should Have Been 'Stop the Spread'*, THE HILL (Oct. 17, 2021, 8:30 AM), https://thehill.com/opinion/campaign/577080-republicans-mantra-should-have-been-stop-the-spread/ (discussing several Republican politicians' responses to COVID-19, including South Dakota Governor Kristi Noem and Colorado Representative Lauren Boebert).

43. HOUSE SELECT SUBCOMM. ON THE CORONAVIRUS CRISIS, "IT WAS COMPROMISED": THE TRUMP ADMINISTRATION'S UNPRECEDENTED CAMPAIGN TO CONTROL CDC AND POLITICIZE PUBLIC HEALTH DURING THE CORONAVIRUS CRISIS (Oct. 2022), https://coronavirus.house.gov/sites/democrats.coronavirus.house.gov/files/2022.10.17%20The%20Trump%20Administration%

prolonged pandemic with hundreds of thousands unnecessarily dead, the erosion of trust in scientific and governmental institutions through pernicious misinformation, and the fracturing of social solidarity as frustrations mounted and interventions were politicized.[44] These societal wounds are profoundly damaging and will take time to heal.[45]

The failures of politics, implementation, and imagination that characterized the COVID-19 response do not exist in a vacuum, but rather are the inevitable outcomes of a society that underinvests in public health and social support systems. Despite gains over the past decade in access to health insurance under the Affordable Care Act, many Americans still lack sufficient access to health care.[46] The capacity of public health departments has eroded substantially over this same period, a trend that accelerated during the Trump administration.[47] When the COVID-19 pandemic struck in 2020, these underlying structural limitations were exacerbated by the unnecessary and harmful politicization of the response efforts, which, among other things undermined the trust and solidarity needed to endure the disruptions that come along with a major, long-lasting crisis like a pandemic.[48]

E2%80%99s%20Unprecedented%20Campaign%20to%20Control%20CDC%20and%20Politicize%20Public%20Health%20During%20the%20Coronavirus%20Crisis.pdf.

44. David Axe, *We Learned Nothing From Covid-19*, Rolling Stone (May 5, 2022), https://www.rollingstone.com/culture/culture-features/covid-19-million-dead-americans-1344894/.

45. *See id.* (noting the COVID-19 pandemic is "something that will continue to haunt our country").

46. *See* Kenneth Finegold et al., *Trends in the U.S. Uninsured Population, 2010–2020*, U.S. DEP'T OF HEALTH & HUM. SERVS. 1, 5 (2021), https://aspe.hhs.gov/sites/default/files/migrated_legacy_files//198861/trends-in-the-us-uninsured.pdf.

47. *See, e.g.*, RHEA K. FARBERMAN ET AL., TR. FOR AM.'S HEALTH, THE IMPACT OF CHRONIC UNDERFUNDING ON AMERICA'S PUBLIC HEALTH SYSTEM 16, 25 (2020) (describing the two-decade declines in public health funding and reductions in the public health workforce); Erin Banco, *Inside America's COVID-Reporting Breakdown*, POLITICO (Aug. 15, 2021, 7:00 AM), https://www.politico.com/news/2021/08/15/inside-americas-covid-data-gap-502565 (describing how cuts to public health department capacity have undermined the tracking of COVID-19 outbreaks).

48. *See Covid-19 Pandemic: Countries Urged to Take Stronger Action to Stop Spread of Harmful Information*, WORLD HEALTH ORG. (Sept. 23, 2020), https://www.who.int/news/item/23-09-2020-covid-19-pandemic-countries-urged-to-take-stronger-action-to-stop-spread-of-harmful-information (discussing how disinformation and misinformation affected the pandemic response and undermined public trust); Jonathan Rothwell & Christos Makridis, *Politics is Wrecking America's Pandemic Response*, BROOKINGS (Sept. 17, 2020), https://www.brookings.edu/blog/up-front/2020/09/17/politics-is-wrecking-americas-pandemic-response/ (discussing the effect politics had on the United States' pandemic response).

However, not all COVID-19 response policies were failures.[49] Importantly, the legal infrastructure for a public health emergency response proved to be flexible, adaptive and mostly adequate to the task.[50] During the first serious wave of the the COVID-19 pandemic in March and April of 2020, nearly every state enacted stringent social distancing measures that likely saved thousands of lives and prevented the healthcare system from collapsing.[51] These mitigation measures were accompanied, in many cases, by robust social supports (such as job, income, and housing protections) that allowed people to comply with mitigation measures without sustaining severe economic loss.[52] Many jurisdictions continued to utilize public health mitigation measures (such as masking, distancing, and other related strategies) as successive waves of the pandemic arrived.[53] Although many of these mitigation measures faced both political and legal challenges, courts have mostly upheld the authority of state and local government officials to use public health powers and emergency authority to implement requirements designed to protect public health.[54]

In addition, the rapid development of effective COVID-19 vaccines represents an important scientific triumph, and the rapid deployment of mass vaccination in the United States comprises one of the few truly impressive aspects of the nation's COVID-19 response.[55] This accomplishment was more

49. Mark J. Siedner et al., *Social Distancing to Slow the US COVID-19 Epidemic: Longitudinal Pretest-Posttest Comparison Group Study*, PLOS MED., Aug. 2020, at 7, 9, e1003244 (discussing the success of social distancing measures in slowing the spread of COVID-19).

50. *See* Parmet et al., *supra* note 23.

51. Wei Lyu & George L. Wehby, *Shelter-In-Place Orders Reduced COVID-19 Mortality and Reduced the Rate of Growth in Hospitalizations*, 39 HEALTH AFFS. 1615, 1620 (2020).

52. *See, e.g., Assistance for American Families and Workers*, U.S. DEP'T OF THE TREAS. (2021), https://home.treasury.gov/policy-issues/coronavirus/assistance-for-American-families-and-workers (describing several federal programs which provided social supports to Americans, such as direct relief payments, extended employment assistance under the American Rescue Plan, and the Emergency Rental Assistance program).

53. Lyu & Wehby, *supra* note 51, at 1622. *See also* Brystana G. Kaufman et al., *Comparing Associations of State Reopening Strategies with COVID-19 Burden*, 35 J. GEN. INTERNAL MED. 3627, 3631, 3633 (2020) (comparing states' reopening strategies and mask mandates); Kevin Zhang et al., *The Impact of Mask-Wearing and Shelter-In-Place on COVID-19 Outbreaks in the United States*, 101 INT'L J. INFECTIOUS DISEASES 334, 339–40 (2020); Cowger et al., *Lifting Universal Masking in Schools–Covid-19 Incidence among Students and Staff*, 387 New Eng. J. Med. 1935 (2022) https://www.nejm.org/doi/full/10.1056/NEJMoa2211029.

54. *See, e.g.,* Casey v. Lamont, 258 A.3d 647, 673 (Conn. 2021) (holding the state governor had broad statutory and constitutional authority to make policy decisions during times of medical and scientific uncertainty); 4 Aces Enters., LLC v. Edwards, 479 F. Supp. 3d 311, 329-30 (E.D. La. 2020) (concluding that banning on-site consumption of food or drinks at "bars" was a permissible public health measure within the governor's authority); Grisham v. Romero, 483 P.3d 545, 565–66 (N.M. 2021) (finding the executive action taken by the state governor and state secretary of the department of health within their authority during the state emergency).

55. *See* U.S. DEP'T OF HEALTH & HUM. SERVS., FROM THE FACTORY TO THE FRONTLINES: THE OPERATION WARP SPEED STRATEGY FOR DISTRIBUTING A COVID-19 VACCINE 1 (2020)

than just a scientific achievement, it also relied on the use of legal and procedural measures that allowed for COVID-19 vaccines and medications to be rapidly vetted and approved by government regulatory agencies through the Emergency Use Authorization process.[56]

The COVID-19 pandemic also prompted a significant, albeit temporary, expansion of social support resources from the federal government, unprecedented since the Great Depression.[57] Federal legislation, supplemented by state resources, extended and increased unemployment benefits, expanded eligibility for health insurance through Medicaid and the Affordable Care Act, allowed for more extensive use of telemedicine to expand access to medical care, and authorized direct support payments, which helped to cushion the economic impact associated with the pandemic and allowed people to comply with pandemic mitigation measures that required them to stay at home.[58] Federal and state governments enacted eviction moratoria and expanded access to sick leave, which similarly provided protection and support for people impacted by the onset of the pandemic.[59]

Efforts to combat the disparate effects felt by racial and ethnic minorities during the COVID-19 pandemic, as well as to reduce longstanding inequities in

(discussing the strategy to develop a safe and effective COVID-19 vaccine and deliver doses to everyone in the United States). *But see* Somini Sengupta, *Global Vaccine Crisis Sends Ominous Signal for Fighting Climate Change*, N.Y. TIMES (May 4, 2021), https://www.nytimes.com/2021/05/04/climate/vaccine-shortage-india-climate-change.html (exhibiting the shortcomings of global vaccine distribution and the implications for future global collaboration during the climate crisis); Adam Taylor, *Why Covax, the Best Hope for Vaccinating the World, Was Doomed to Fall Short*, WASH. POST (Mar. 22, 2022, 8:00 AM), https://www.washingtonpost.com/world/2022/03/22/covax-problems-coronavirus-vaccines-next-pandemic/ (describing the failures of COVAX to deliver vaccines on a global scale).

56. *See Emergency Use Authorization for Vaccines Explained*, U.S. FOOD & DRUG ADMIN. (Nov. 11, 2020), https://www.fda.gov/vaccines-blood-biologics/vaccines/emergency-use-authorization-vaccines-explained (defining and describing the emergency use authorization process).

57. *See Robust COVID Relief Achieved Historic Gains Against Poverty and Hardship, Bolstered Economy*, CTR. ON BUDGET & POL'Y PRIORITIES 4, 24 (June 14, 2022), https://www.cbpp.org/sites/default/files/6-14-22pov-testimony.pdf (discussing how the fiscal policy responses to the COVID-19 pandemic were unprecedented, greater than those employed even during the Great Recession of 2008–2010).

58. *See generally* CARES Act, Pub. L. No. 116-136, §§ 2102(c)(1)–(2), 2201(a), 3212, 3703, 3704, 20004, 134 Stat. 314–15, 335–37, 368–70, 416–17, 585–86 (2020); Families First Coronavirus Response Act, Pub. L. No. 116-127, §§ 4102, 5102(a)(1)–(4), 134 Stat. 182, 193, 195 (2020); American Rescue Plan Act of 2021, Pub. L. No. 117-2, §§ 9011(c), 9012(a), 9013, 9014(a), 9601, 135 Stat. 118–19, 138.

59. Temporary Halt in Residential Evictions in Communities with Substantial Levels of Transmission of COVID-19 To Prevent the Spread, 86 Fed. Reg. 43244, 43245, 43246 (Aug. 26, 2021) (eviction moratorium order issued by the CDC); Emily A. Benfer et al., *COVID-19 Housing Policy: State and Federal Eviction Moritoria and Supportive Measures in the United States During the Pandemic*, HOUS. POL'Y DEBATE, June 10, 2022, at 1.

access to health care and health outcomes, have had mixed results.[60] Unlike many previous health crises, there were explicit and concerted attempts to recognize historical discrimination, and to take steps to avoid perpetuating these inequities.[61] Several states, for example, implemented policies to allocate resources designed to reduce health disparities by using tools like the United States' Centers for Disease Control and Prevention's ("CDC") Social Vulnerability Index.[62] These isolated efforts did not result in meaningful advancement of health justice and equity for populations facing health disparities; members of these communities still faced more severe health and economic consequences from COVID-19.[63]

The limited but tangible triumph of these policies and others like them were to recognize that a large, societally-disruptive threat like a pandemic is not only a threat to health.[64] Rather, it is a threat to all aspects of our society. Protecting societal functioning and the well-being of people across diverse and disparate communities demands supportive policies, robust infrastructure that is widely accessible, and political will to sustain these efforts.[65] Good pandemic response policies require attention to the social and political determinants of health, as well as a strong focus on the equity implications of policy choices.[66]

As the COVID-19 pandemic stubbornly marches on, it is vital to continue to pursue a path forward that addresses these problems through changes to our

60. *Unintended Consequences of COVID-19 Mitigation Strategies*, CTRS. FOR DISEASE CONTROL & PREVENT. (Dec. 10, 2020), https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/disparities-impact.html.

61. SHARODA DASGUPTA ET AL., CTRS. FOR DISEASE CONTROL & PREVENT., ASSOCIATION BETWEEN SOCIAL VULNERABILITY AND A COUNTY'S RISK FOR BECOMING A COVID-19 HOTSPOT 1535, 1536 (2020), https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6942a3-H.pdf; *CDC COVID-19 Response Health Equity Strategy: Accelerating Progress Towards Reducing COVID-19 Disparities and Achieving Health Equity*, CTRS. FOR DISEASE CONTROL & PREVENT. (May 18, 2022), https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/cdc-strategy.html.

62. *Health Disparities Overview*, NAT'L CONF. OF STATE LEGS. (May 10, 2021), https://www.ncsl.org/research/health/health-disparities-overview.aspx; DASGUPTA ET AL., *supra* note 61, at 1535.

63. *See* CTRS. FOR DISEASE CONTROL & PREVENT., *supra* note 60 (noting additional work is needed "to address inequities in the social determinants of health").

64. *See The Social Impact of COVID-19*, UNITED NATIONS DEP'T OF ECON. & SOC. AFFS., (Apr. 6, 2020), https://www.un.org/development/desa/dspd/2020/04/social-impact-of-covid-19/ (noting the pandemic was "much more than a health crisis" and was "a human, economic and social crisis").

65. *See id.* (noting the collaborative and large-scale response required to address the pandemic).

66. Lauren Paremoer et al., *Covid-19 Pandemic and the Social Determinants of Health*, BMJ 2 (Jan. 29, 2021), https://www.bmj.com/content/bmj/372/bmj.n129.full.pdf; *Political Determinants of Health*, AM. MED. ASS'N (Aug. 21, 2020), https://www.ama-assn.org/delivering-care/health-equity/prioritizing-equity-video-series-political-determinants-health.

legal, political, and social infrastructure; clarifies the scope of government powers to protect public health; utilizes science and compassion as guides to policy decision-making; and protects vulnerable populations from the most serious health, economic, and social consequences of the ongoing pandemic.[67]

III. THE CHALLENGE OF THE CLIMATE CRISIS

The climate crisis represents both a civilizational threat and an impending public health disaster, as global systems, habitats, and societies strain to adapt to rapidly-altering and unpredictable circumstances brought on by human-induced warming of the atmosphere.[68] As of January 2023, the rate of atmospheric carbon dioxide in the Earth's atmosphere is 419.47 parts per million, which is a higher level than at any point in the last 800,000 years.[69] In many countries, including the United States, the glacial pace at which leaders have responded to these threats presents a difficult challenge for scientists, lawyers, and advocates, who clearly see the risks ahead.[70] Much like the pandemic, the threat from human-induced climate change has been well-known and understood among scientists and experts for decades.[71] The scientific consensus for planetary warming is robust and dire.[72] Despite this scientific consensus and increasing political support for climate action, the United States has moved slowly to enact legislation and regulations to combat the climate crisis.[73]

67. For extensive discussions of legal and policy ideas to respond to COVID-19 in the United States, *see generally* SCOTT BURRIS ET AL., PUB. HEALTH L. WATCH, ASSESSING LEGAL RESPONSES TO COVID-19 (2020); SCOTT BURRIS ET AL., PUB. HEALTH L. WATCH, COVID-19 POL'Y PLAYBOOK: LEGAL RECOMMENDATIONS FOR A SAFER, MORE EQUITABLE FUTURE (2021).

68. HANS-O. PÖRTNER ET AL., INTERGOV'T PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY SUMMARY FOR POLICYMAKERS 6, 18–19, 33 (2022).

69. *See Trends in Atmospheric Carbon Dioxide*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., U.S. DEP'T OF COM., https://gml.noaa.gov/ccgg/trends/ (last visited Feb. 13, 2023) (based on the monthly mean carbon dioxide measured at Maunakea Observatories as of January 2023).

70. *See The Uneven Global Response to Climate Change*, WORLD POL. REV. (Aug. 9, 2022), https://www.worldpoliticsreview.com/the-uneven-global-response-to-climate-change/ (noting "[p]ersistent climate skepticism" among global leaders); Dinah Voyles Pulver, *Reversing Climate Change? What Scientists And Activists Are Saying About UN's 'Code Red' Report*, USA TODAY (Aug. 9, 2021, 11:04 PM), https://www.usatoday.com/story/news/world/2021/08/09/climate-change-un-ipcc-report-scientists-activists-reaction/5541070001/ (summarizing the reactions of global experts and advocates to the 2022 IPCC report and their thoughts on how the threat of climate change will require an international, interdisciplinary, collaborative response).

71. NATHANIEL RICH, LOSING EARTH: A RECENT HISTORY 8 (2019).

72. JIM SKEA ET AL., INTERGOV'T PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE SUMMARY FOR POLICYMAKERS 44 (2022).

73. The U.S. Supreme Court recently called into question the authority of the Environment Protection Agency to enact broad regulations governing carbon emissions from regulated power plants under the Clean Air Act. *See* West Virginia v. Environmental Protection Agency, 597 U.S.

The climate crisis threatens the health and safety of human populations globally,[74] but people living in less economically-developed countries—particularly those in the Global South—will bear the brunt of the climate crisis as they face dwindling resources, uninhabitable living conditions, and forced displacement and migration over the next few decades and beyond.[75] Even within the United States, the most vulnerable communities will likely face disproportionate impacts from climate-related disasters and disruptions.[76]

Recognizing this threat, 193 national governments have accepted the Paris Climate Agreement, which outlines a series of broad goals, including limiting global levels of warming to below two degrees Celsius—and preferably below 1.5 degrees Celsius—above pre-industrial levels.[77] Recent projections from the Intergovernmental Panel on Climate Change ("IPCC") conclude that these goals may not be feasible under current policies. Indeed, warming and the effects of climate change are accelerating even faster than experts had previously predicted, creating more dangerous weather, displacing people, interfering with food and water supplies, and increasing risks to physical and mental health.[78] Warming is not only a future threat; it is here now and has likely already led to some "irreversible impacts."[79]

Despite these ominous trends, experts agree that there is still time to act and forestall the worst potential effects of the climate crisis.[80] Notably, a recent IPCC report highlights that despite the rapidly progressing effects of warming, much can still be done to improve long-term outcomes and reduce temperature increases, especially with aggressive short-term interventions designed to

___ (2022) (slip op. at 32); *See also* WORLD POL. REV. *supra* note 70 (discussing the United States' reluctance to adopt climate change legislation and also noting the roles China and India play in contributing to climate change and carbon emissions). However, the recently-passed Inflation Reduction Act represents a substantial legislative initiative to reduce carbon emissions in the United States. *See generally* Inflation Reduction Act of 2022, H.R. 5736, 117th Cong.

74. *See* PÖRTNER ET AL., *supra* note 68, at 12 (noting "[a]pproximately 3.3 to 3.6 billion people" around the globe "are highly vulnerable to climate change").

75. *Id.*; *FROM THE FIELD: Poor and Vulnerable Bear the Brunt of Climate Change*, UN NEWS (Feb. 23, 2021), https://news.un.org/en/story/2021/02/1085272; Saleemul Huq & Mohamed Adow, *Climate Change is Devastating the Global South*, AL JAZEERA (May 11, 2022), https://www.aljazeera.com/opinions/2022/5/11/climate-change-is-devastating-the-global-south.

76. The IPCC concurs that "across sectors and regions the most vulnerable people and systems are observed to be disproportionately affected." PÖRTNER ET AL., *supra* note 68, at 9.

77. Paris Agreement to the United Nations Framework Convention on Climate Change art. 2 ¶ 1(a), Dec. 12, 2015, T.I.A.S. No. 16-1104.

78. *See* PÖRTNER ET AL., s*upra* note 68, at 9 (noting with high confidence climate change's effects on, among other things, extreme weather and food and water security).

79. *Id.* at 13.

80. *Climate Change Widespread, Rapid, and Intensifying*, INTERGOV'T PANEL ON CLIMATE CHANGE 3 (Aug. 9, 2022), https://www.ipcc.ch/site/assets/uploads/2021/08/IPCC_WGI-AR6-Press-Release_en.pdf.

significantly reduce carbon emissions.[81] The longer current levels of carbon emissions continue, the harder it will become to reverse the negative effects of warming trends and the calamitous health and environmental consequences stemming from these trends.[82] Moreover, delays in acting to reduce carbon emissions create cascading and compounding environmental effects, particularly if these initiatives are only short-term, limited initiatives, rather than transformational changes.[83]

Similar to the pandemic, inequities and disparities in the distribution of impact are fundamental aspects of the climate crisis.[84] The IPCC concludes that warming trends and carbon emissions are "driven by patterns of intersecting socio-economic development, unsustainable ocean and land use, inequity, marginalization, historical and ongoing patterns of inequity such as colonialism, and governance."[85] These dynamics tend to deeply entrenched in our society, and therefore are very challenging to address.[86] The IPCC acknowledges that changes to these systems require multiple, ongoing intersectional initiatives and policies that must center equity, finding that "[i]ntegrated, multi-sectoral solutions [] address social inequities, differentiate responses based on climate risk[,] cut across systems, [and] increase the feasibility and effectiveness of adaptation in multiple sectors."[87]

The importance of an all-sectors, multi-level approach to respond to the climate crisis mirrors similar imperatives inherent to the COVID-19 pandemic. The IPCC's statement on pursuing climate resilience through a set of society-wide interlocking and overlapping initiatives imbued with a focus on participation and health equity is worth quoting in full:

> Climate resilient development is enabled when governments, civil society and the private sector make inclusive development choices that prioritise risk reduction, equity and justice, and when decision-making processes, finance and actions are integrated across governance levels, sectors and timeframes []. Climate resilient development is facilitated by international cooperation and by governments at all levels working with communities, civil society, educational bodies, scientific and other institutions, media, investors, and businesses; and by developing partnerships with traditionally marginalised groups, including

81. *See* PÖRTNER ET AL., *supra* note 68, at 20 (noting, with high confidence, "[p]rogress in adaptation planning and implementation has been observed across all sectors and regions, generating multiple benefits").

82. *Id.* at 20.

83. *Id.* at 18, 20.

84. *Id.* at 26.

85. *Id.* at 12.

86. *See* PÖRTNER ET AL., *supra* note 68 at 12, 29 (noting that these patterns are driven by a society's context and that the solutions to these issues/ways they are addressed "result[] from different societal choices influenced by different contexts and opportunities and constraints on system transitions").

87. *Id.* at 20.

> women, youth, Indigenous Peoples, local communities and ethnic minorities []. These partnerships are most effective when supported by enabling political leadership, institutions, resources, including finance, as well as climate services, information and decision support tools.[88]

Thus, leaders and policymakers should consider how to best approach the current and future challenges of the climate crisis by drawing from our recent experience responding to the parallel threat of COVID-19. The insights gained from the successes and failures of the COVID-19 response provide an opportunity to develop a more resilient, robust, and equitable society that we need in order to confront and respond to the larger future challenge posed by the climate crisis.

IV. PREPARING TO FACE THE (PREVIOUSLY) UNTHINKABLE

One set of broad lessons that can be taken from the COVID-19 response involve understanding when and how to respond to a novel and significant public health crisis, and how to sustain or adapt that response over time. Many of the plans and systems in place for pandemic response were used belatedly and too sparingly during the COVID-19 response, with key decision-makers expressing reluctance—and even disbelief—that major interventions were needed and the risks were real.[89] Even after legal powers were widely used to stop the spread of the first COVID-19 wave in the United States, political pressure was immediately applied to roll back pandemic mitigation measures and restore "normalcy," even when public health experts cautioned against this retrenchment.[90] Prompting and supporting an urgency to act, not just to plan, will be an ongoing challenge in responding to the climate crisis, as will sustaining the necessary efforts over time.[91]

An important initial consideration will be overcoming denial and status quo inertia about the risks posed by the climate crisis. Members of the public and leaders alike must be educated, informed, and incentivized to appreciate the severity of future risks from pandemics, the climate crisis, and other potential threats, so that political will can be amassed for proactive and preemptive action to forestall the worst outcomes of these future threats.

88. PÖRTNER ET AL., *supra* note 68, at 29.

89. *See, e.g.*, Parker & Stern, *supra* note 40; Altschuler, *supra* note 42.

90. Colleen Long et al., *Some US Producers, States Reopening Amid Political Pressure*, AP NEWS (Apr. 20, 2020), https://apnews.com/article/health-us-news-ap-top-news-international-news-virus-outbreak-34b48ffba057099eaee794342bce448e.

91. Mario Herrero & Philip Thornton, *What Can COVID-19 Teach Us About Responding to Climate Change?*, 4 LANCET PLANETARY HEALTH e174, e174 (2020) (urging quick action on climate change by international and national leaders similar to the COVID-19 response); PÖRTNER ET AL., *supra* note 68, at 20 ("Most observed adaptation is fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and focused more on planning rather than implementation.").

Prior to 2020, both a global pandemic and the climate crisis were unfathomable to most people.[92] Pandemics are not a new human experience, but most people currently alive have not had to contemplate or rapidly adapt to the kinds of life-altering changes and risks that have enveloped our society during the COVID-19 pandemic.[93] It may be a difficult task to convince people to focus on or prepare for threats that both fall outside their experience, and that they deem unlikely will occur. It remains to be seen whether the experience of facing the death and disruption of a pandemic fundamentally changes the willingness of political leaders or the general public to take more proactive steps to mitigate the climate crisis. The experience of living through the COVID-19 pandemic, combined with the numerous examples of a changing climate (e.g., stronger hurricanes, larger and more destructive wildfires, and longer and more severe droughts) could render the possibility of a societal-level threat emerging and disrupting our lives more salient, and thus prompt a greater willingness to plan and act.[94] On the other hand, many people in the United States continue to deny or dismiss the ongoing threat from COVID-19, even as it continues to spread in communities across the country.[95] And, troublingly, the violent and unpredictable weather events that signify the climate crisis are more widely distributed over time and space, compared with the more concentrated onset of the COVID-19 pandemic. Rather than seeing these events as connected—i.e., strong and visceral evidence that the climate crisis is here—many will view these events as anomalous outliers disconnected from the larger trend, making it harder to generate political support for substantial action.[96]

Crisis responses must address another confounding force: the power of misinformation and disinformation.[97] The COVID-19 response revealed that

92. *See* Rothwell & Makridis, *supra* note 48 (noting "pandemic preparedness and response was not a hot political topic"); Lauren Parker, *For Young People, Two Defining Events: COVID-19 and Climate Change*, NAT'L GEOGRAPHIC (Apr. 28, 2020), https://www.nationalgeographic.com/science/article/gen-z-pandemic-will-define-formative-years-coronavirus-climate-change ("Climate and COVID-19 is an unfathomable pairing of catastrophes.").

93. *See generally* BARRY, *supra* note 11; CROSBY, *supra* note 11.

94. *See* Adil Mohammed & Evgenia Pugacheva, *Impact of COVID-19 on Attitudes to Climate Change and Support for Climate Policies* 3 (Int'l Monetary Fund, Working Paper No. 2022/23, Feb. 2021) (finding that the pandemic experience increases public concern about climate change).

95. Cary Funk et al., *Americans Reflect on COVID-19 Response,* PEW RSCH. CTR. 8, 21 (July 7, 2022), https://www.pewresearch.org/science/wp-content/uploads/sites/16/2022/07/PP_2022.07.06_Roe-v-Wade_REPORT.pdf. *See also* JOHNS HOPKINS UNIV., *supra* note 12 (continuing to record the numbers which COVID-19 has continued to spread in the United States).

96. *See* Jennifer R. Marlon et al., *Hot Dry Days Increase Perceived Experience with Global Warming*, 68 GLOB. ENV'T CHANGE, May 2021, Elsevier 102247 (noting people can come to different conclusions on the issue of climate change).

97. Wendy E. Parmet & Jeremy Paul, *COVID-19: The First Posttruth Pandemic*, 100 AM. J. PUB. HEALTH 945, 945 (2020). *See also Transparency, Communication, and Trust: The Role of Public Communication in Responding to the Wave of Disinformation About the New Coronavirus*, ORG. FOR ECON. COOP. & DEV. 2 (July 3, 2020), https://read.oecd-ilibrary.org/view/?ref=135_13

social and political support for efforts to reduce the impact of a major threat like a pandemic can be effectively undermined if science is cynically politicized, allowing misinformation to flourish and trust to erode.[98] Maintaining public trust in experts can be challenging in a situation of high stress and scientific uncertainty, particularly when vocal detractors are intent on damaging the credibility of experts and institutions, sometimes for their own political or financial gain.[99] Anti-vax misinformation and other dubious medical advice continues to undermine the COVID-19 response.[100]

Securing political support and social buy-in for major changes in activity, regulation, or behavior requires the establishment of trust in the decision makers and experts that are guiding these changes.[101] The damage caused to the reputation of expert public health agencies by targeted misinformation, as well as self-inflicted communication missteps, has undermined some aspects of the COVID-19 response.[102] The CDC has received widespread criticism for its handling of the COVID-19 outbreak from across the political continuum.[103] A credibility crisis in public health expertise can undermine an effective response, especially in a long-lasting crisis, when ongoing trust in experts is essential to sustained cooperation from the public.[104]

In the past, climate crisis denialism has contributed to reluctance to take robust action to prevent climate change.[105] Even as the more obvious impacts of the climate crisis occur and become more evident, some level of climate denial is likely to persist, morphing from outright skepticism to resistance against making major changes to energy use and infrastructure design to combat the climate crisis.[106]

5220-cvba4lq3ru&title=Transparency-communication-and-trust-The-role-of-public-communication-in-responding-to-the-wave-of-disinformation-about-the-new-coronavirus (discussing the effect of disinformation on responses to the COVID-19 pandemic).

98. Parmet & Paul, *supra* note 97.

99. *See id.* (noting "demagogues and snake oil salesmen" as examples of people who "exploited plagues to spread falsehoods, maintain power, or make money").

100. *Id.* at 946.

101. Molly A. Sauer et al., *A Failure to Communicate? How Public Messaging Has Strained the COVID-19 Response in the United States*, 65 HEALTH SEC. 65, 68–69 (2021).

102. *Id.*

103. Alice Park, *Dr. Rochelle Walensky Knows the CDC Made 'Dramatic Mistakes.' Now She's Trying to Fix Them*, TIME (Aug. 23, 2022, 2:33 PM), https://time.com/6207887/cdc-covid-19-revamp-rochelle-walensky-interview/.

104. Talya Porat et al., *Public Health and Risk Communication During COVID-19—Enhancing Psychological Needs to Promote Sustainable Behavior Change*, 8 FRONTIERS IN PUB. HEALTH, Oct. 27, 2020, at 9–10, Art. No. 573397.

105. Robert J. Brulle & Riley E. Dunlap, *A Sociological View of the Effort to Obstruct Action on Climate Change*, 49 FOOTNOTES: A MAG. OF THE AM. SOCIO. ASS'N, July 7, 2021, https://www.asanet.org/sociological-view-effort-obstruct-action-climate-change.

106. *See* KARI M. NORGAARD, LIVING IN DENIAL: CLIMATE CHANGE, EMOTIONS, AND EVERYDAY LIFE 10–11 (2011) (recognizing that literal denial of climate change has become instead

Successful responses to large crises also must overcome this inertia of normalcy. The strongly contested, aggressive social distancing measures taken to reduce the spread of COVID-19 were temporary but created a substantial disruption to many activities and interactions across our society.[107] Nevertheless, these interventions were necessary and effective in reducing the negative health consequences of the pandemic. Moreover, these efforts preserved societal functions during a fragile moment when crucial health and social systems could have collapsed.[108] Federal and state courts extensively evaluated the legality of pandemic mitigation measures.[109] While the legal powers underlying these measures were largely upheld, several important decisions by the United States Supreme Court have questioned the parameters of government use of emergency powers and other public health authority to implement mandatory mitigation measures when a crisis lasts for an extended period of time.[110] These legal uncertainties, as well as the Court's growing skepticism of delegation of authority to the Executive Branch, may impose more significant legal barriers to governmental climate change mitigation efforts.[111]

The climate crisis likely will require even larger systemic changes than the pandemic, but these changes may be less disruptive to status quo behaviors and practices, and will be implemented less rapidly—and consequently, more permanently. Changes to the energy grid, transition from carbon-based fuel sources to renewable energy sources, and implementation of new eco-friendly technologies and behaviors may not implicate the same voluble public opposition that followed the implementation of COVID-19 mitigation strategies.

Unlike COVID-19, however, the climate crisis must overcome entrenched interests that have economic and political incentives to cement the status quo. Coal, oil and energy companies have waged a decades-long campaign to

"not . . . a rejection of information per se, but the failure to integrate this knowledge into everyday life or to transform it into social action").

107. See Lindsay F. Wiley, *Democratizing the Law of Social Distancing*, 19 YALE J. HEALTH POL'Y, L. & ETHICS 50, 73–74, 79 (2020) (describing social distancing efforts and the responses to them).

108. *Id.* at 76.

109. *See id.* at 82 (discussing the lawsuits related to the COVID-19 mitigation strategies).

110. These court decisions have largely followed the precedent established by the US Supreme Court in Jacobson v. Massachusetts, 197 U.S. 11, 11–12 (1905), which affirmed that state interest in protecting public health was broad enough to justify vaccination requirements. *But see*, Roman Catholic Diocese of Brooklyn v. Cuomo 592 U.S. ___ (2021) (slip op. at 7) (granting injunctive relief to a religious organization against a state executive order that limited the size of religious gatherings during the COVID-19 pandemic); S. Bay United Pentecostal Church v. Newsom, 592 U.S. ___ (2021) (slip op. at 1) (the majority of the Court granting injunctive relief); Tandon v. Newsom, 593 U.S. ___ (2021) (slip op. at 1) (same).

111. *See* West Virginia v. Environmental Protection Agency, 597 U.S. ___ (2022) (slip op. at 19) (noting the Court's reluctance to read "ambiguous statutory text" as granting a delegation of power to an agency).

downplay the contribution of carbon-based energy to global warming, with the concurrent support of much of the political establishment to protect these industries and entrench their power.[112] A combination of legislative and regulatory action and targeted litigation is likely the best path to dislodge the influence of these industries, but these efforts will be strenuously resisted by interests who have profited from carbon-based energy production.[113] Further, the reliance on carbon-based fuels perpetuates the political power and influence of countries with large supplies of oil and gas, such as Russia and Saudi Arabia.[114] A key aspect of the decarbonizing transition will be incentivizing renewable energy technologies and sources, while removing the preferential treatment that carbon-based energy sources currently receive.[115] The Inflation Reduction Act, passed by Congress in August 2022, takes some initial steps in this direction, but more extensive and concerted legislative action will be needed to sufficiently advance decarbonization initiatives to meet the goals of the Paris Agreement.[116]

Another vital lesson that can be learned from the COVID-19 response is that thorough and thoughtful planning and infrastructure are necessary to prepare for and address future large-scale crises, but they are not sufficient to ensure an effective response.[117] Competent leadership, is essential. Leaders who do not take seriously the threat of a pandemic or the climate crisis—whether due to incompetence, inattention, or malfeasance—can quickly undermine the effectiveness of a response.[118] This issue presents a particularly thorny problem

112. RICH, *supra* note 71, at 11.

113. Christian Downie, *Business Actors, Political Resistance, and Strategies For Policymakers*, 108 ENERGY POL'Y 583, 583, 590 (2017). There may be additional insights to be learned by examining the long-term and ultimately successful efforts to protect public health from the entrenched tobacco industry. Admittedly, the tobacco and energy industries are not a perfect analogy, and the health, social, and political dynamics are different. *See* Ruth E. Malone, *Tobacco Control and the Climate Emergency,* 31 BMJ 395, 395 (2022) (noting the similarities and differences among tobacco and climate change, but noting that in order to address both problems, "structural, political, and social dynamics" must be challenged).

114. Jun Ukita Shepard & Lincoln F. Pratson, *The Myth of US Energy Independence,* 7 NATURE ENERGY 462, 462 (2022).

115. *See* Jocelyn Timperley, *The Fight to End Fossil Fuel Subsidies*, 598 NATURE 403, 403–405 (2021) (discussing the impact reducing fossil-fuel subsidies will have on climate change).

116. *See generally* Inflation Reduction Act of 2022, H.R. 5736, 117th Cong. *See also* Alice C. Hill & Madeline Babin, *What the Historic U.S. Climate Bill Gets Right and Gets Wrong*, COUNC. ON FOREIGN RELS. (Aug. 17, 2022, 4:50 PM), https://www.cfr.org/in-brief/us-climate-bill-inflation-reduction-act-gets-right-wrong-emissions (discussing the impact of the Inflation Reduction Act on climate goals).

117. George Packer, *We Are Living in a Failed State*, THE ATLANTIC, https://www.theatlantic.com/magazine/archive/2020/06/underlying-conditions/610261/ (last visited Aug. 31, 2022).

118. Alex Ward, *World Leaders Who Denied the Coronavirus's Danger Made Us All Less Safe*, VOX (Mar. 30, 2020, 3:40 PM), https://www.vox.com/2020/3/30/21195469/coronavirus-usa-china-brazil-mexico-spain-italy-iran.

in the context of the climate crisis, since an effective response will need to be sustained and adapted for decades. Policymakers should explore structural changes to various aspects of emergency response systems and regulatory governance that could encourage redundancy. A redundant emergency response system could allow for multiple, overlapping mechanisms of response across federal, state, and local levels of government, and between both public and private sectors. While resource-intensive, this approach could strike an appropriate balance between giving a president or governor singular discretion over emergency response decisions and maintaining the capacity for a rapid and coherent emergency response, even when the designated executive official falters.[119] The development of ambitious federal legislation that sets policy goals and provides adequate long-term funding for climate change mitigation would also help entrench climate change mitigation measures, and insulate these efforts from the whims of transitory leaders who may seek to abandon mitigation measures. There is no end date for the climate crisis, and mitigation measures must endure to stand the test of time.

Some opponents of strict COVID-19 mitigation efforts cited the economic harm that measures like closures and gathering limitations imposed on individuals and businesses as a reason to revoke or avoid these measures, despite their public health efficacy.[120] This logic often presumed (perhaps cynically) that COVID-19 response efforts were an all-or-nothing dichotomy; either everyone and everything must be shut down, or business as usual must be sustained with no restrictions at all. However, in reality, the economy and public health are not in opposition when it comes to a pandemic response.[121] Stopping the spread of a pandemic disease allows for the safe and sustained resumption of economic and social activities and reduces the likelihood that there will be a strong resurgence of the disease that will require subsequent restrictions in the

119. *See generally, e.g.*, Lance Gable, *Evading Emergency: Strengthening Emergency Response Through Integrated Pluralistic Governance*, 91 OR. L. REV. 375, 388, 400 (2012).

120. *See* JONAS HERBY ET AL., A LITERATURE REVIEW AND META-ANALYSIS OF THE EFFECTS OF LOCKDOWNS ON COVID-19 MORTALITY, STUD. APPLIED ECON. 43 (Jan. 2022), https://sites.krieger.jhu.edu/iae/files/2022/01/A-Literature-Review-and-Meta-Analysis-of-the-Effects-of-Lockdowns-on-COVID-19-Mortality.pdf (noting the devastating effects of closures/lockdowns as part of a meta-analysis study of the effects of COVID-19 lockdowns). This study ultimately "conclude[d] that lockdowns have had little to no public health effects, they have imposed enormous economic and social costs where they have been adopted. In consequence, lockdown policies are ill-founded and should be rejected as a pandemic policy instrument." *Id.* at 2.

121. *See* George J. Borjas, *Business Closures, Stay-at-Home Restrictions, and COVID-19 Testing Outcomes in New York City*, 17 PREVENTING CHRONIC DISEASE, (2020) at 5 (discussing the relationship between the economy and public health regarding mandated business closures and noting that while closures can be damaging to the economy, they can also have benefits such as fewer serious illnesses, fatalities, and potentially reduced health care costs).

community.[122] Moreover, there are gradations of responses that can achieve some level of mitigation without severe restrictions, and finding a reasonable middle-ground that balances precaution and risk should be possible with good faith dialogue.[123] These concepts will be particularly relevant in responding to the climate crisis. Recent IPCC reports indicating that 1.5 degrees Celsius of global warming will be difficult to avoid under current trends resulted in many commentators despairing that it was too late to prevent climate catastrophe.[124] Importantly, though, the climate crisis worsens along a continuum, just like a pandemic. Even if all harm cannot be avoided, it is still worthwhile to pursue mitigation efforts that will alleviate the possibility of worse outcomes over the longer term.[125]

V. RESPONDING TO PUBLIC HEALTH CRISES REQUIRES COMPLEX, EQUITABLE APPROACHES

The breadth, scope, and complexity of large-scale crises, like the COVID-19 pandemic and the climate crisis, present major challenges in formulating and implementing an effective response. Further lessons from the COVID-19 response may apply in designing effective and equitable responses to the climate crisis.

Both COVID-19 and the climate crisis comprise population-level threats, and therefore require population-level interventions. The United States has a well-entrenched culture of individualism that strongly influences law and policy approaches to health threats.[126] Consequently, federal, state, and local legislators and regulators need to appropriately target and tailor their interventions to

122. *See* Robert B. Doherty et al., *Partial Resumption of Economic, Health Care and Other Activities While Mitigating COVID-19 Risk and Expanding System Capacity*, AM. COLL. OF PHYSICIANS 10 (2020), https://www.acponline.org/acp_policy/policies/acp_guidance_on_resuming_economic_and_social_activities_2020.pdf ("Widespread adoption of social distancing and other evidence-based practices are showing signs of beginning to reduce the spread of the [COVID-19] virus, yet there is little evidence that most communities have turned the page and achieved the progress needed to resume economic and social activities on a broad scale. Premature discontinuation of such practices can create great harm and could lead to a subsequent resurgence of the virus, requiring resumption of strict lockdown, closure, and stay-at-home orders.").

123. *See* Wiley, *supra* note 107, at 113; Ngo, *supra* note 41.

124. PAOLA A. ARIAS ET AL., INTERGOV'T PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS, TECHNICAL SUMMARY 82 (2022).

125. *See* Mary Annaïse Heglar, *Home is Always Worth It*, MEDIUM (Sept. 12, 2019), https://medium.com/@maryheglar/home-is-always-worth-it-d2821634dcd9 ("I'm willing to fight for [the planet], with everything I have, because it *is* everything I have.").

126. *See* Cecilia Tomori et al., *Your Health Is In Your Hands? US CDC COVID-19 Mask Guidance Reveals the Moral Foundations of Public Health*, ECLINICALMEDICINE, Aug. 9, 2021 (noting "[i]ndividualistic approaches to health, exemplified by the CDC's May 2021 mask guidance, ignore the impacts of health inequities").

withstand legal scrutiny.[127] When individuals have challenged government public health orders during the COVID-19 pandemic, courts have generally deferred to government discretion in implementing orders to protect public health.[128] However, despite this judicial deference, many federal and state leaders moved away from population-level interventions as the pandemic continued into its third year.[129] As government orders became more politically contentious and individuals became less willing to adhere to mitigation strategies, government officials rescinded most pandemic restrictions. Instead these officials offered voluntary guidance that framed public health goals as individual responsibilities and left individuals or businesses to make their own decisions about taking precautions (although in some cases certain precautions—such as mask or vaccine requirements—were prohibited by government orders)."[130] This individualized and medicalized approach to public health is much less effective, and insufficient to address a population-level problem like a pandemic.[131] The climate crisis, similarly, will need to utilize population-level strategies. Individual actions cannot significantly impact carbon emissions; rather, it will take stringent regulation of carbon-emitting industries, deliberate and prescribed reductions in emissions, and investments to revamp our energy sector and infrastructure to alter the trends that are warming our planet.[132]

Technological advancements can play a vital role in responding to pandemics and the climate crisis as well, but technology alone is not sufficient to "solve" these problems. The rapidly-developed and -produced COVID-19 vaccines are a miracle of scientific innovation and have saved countless lives. Yet, the complexities of distributing the vaccines and encouraging people to get vaccinated have proved challenging, even in the United States where vaccine supply is abundant.[133] With a highly transmissible virus, vaccination alone is

127. *See* Michelle M. Mello & Wendy E. Parmet, *Public Health Law After COVID-19*, 385 NEW ENG. J. MED. 1153, 1154–55 (2021); Wiley, *supra* note 107, at 104–05.

128. *See* Michelle M. Mello & Wendy E. Parmet, *U.S. Public Health Law—Foundations and Emerging Shifts*, 386 NEW ENG. J. MED. 805, 805–06 (2022).

129. Will Stone & Pien Huang, *With New Guidance, CDC Ends Test-to-Stay for Schools and Relaxes COVID Rules*, NPR (Aug. 11, 2022, 7:19 PM), https://www.npr.org/sections/health-shots/2022/08/11/1116991600/with-new-guidance-cdc-ends-test-to-stay-for-schools-and-relaxes-covid-rules.

130. Tomori, *supra* note 126.

131. *Id.*

132. *See Financing Climate Action*, UNITED NATIONS CLIMATE ACTION, https://www.un.org/en/climatechange/raising-ambition/climate-finance (last visited Sept. 3, 2022); *Controlling Industrial Greenhouse Gas Emissions*, CTR. FOR CLIMATE & ENERGY SOLS., https://www.c2es.org/content/regulating-industrial-sector-carbon-emissions/ (last visited Sept. 4, 2022) (discussing the potentially large impact EPA regulations could have).

133. Claire Klobuscista, *The COVID-19 Vaccination Challenge: Lessons From History*, COUNCIL ON FOREIGN RELS. (July 28, 2021, 1:20 PM) https://www.cfr.org/in-brief/covid-19-vacci

unlikely to stop the outbreak.[134] Additional intervention strategies—masking, distancing, and ventilation—must also be employed for a truly effective response.[135] The climate crisis also demands a multi-faceted strategy to achieve successful mitigation. Future technological interventions, such as carbon capture, may or may not come to fruition. But retroactive technological fixes alone cannot solve the climate crisis; proactive changes to regulations and the energy infrastructure must also be vigorously pursued in tandem with technological efforts.[136]

Finally, and perhaps most importantly, efforts to reduce precarity and enhance social support in the United States are necessary to achieve greater resilience and equity in efforts to respond to the COVID-19 pandemic and the climate crisis. The United States has deeply entrenched health disparities, a hollowed-out public health infrastructure, and a meager social support system compared to most other wealthy democracies.[137] The COVID-19 pandemic exacerbated these existing health and economic disparities.[138] Without action, the climate crisis will make these disparities immeasurably worse.[139]

Efforts to pursue health justice must address health disparities, particularly those perpetuated by racial, ethnic, and socio-economic injustice. Just as people of color were most negatively affected by COVID-19, the effects of the climate crisis will also be disproportionately felt by people of color, as well as indigenous people, people with disabilities, and the poor.[140] Achieving equity

nation-challenge-lessons-history; Lawrence O. Gostin et al., *Facilitating Access to a COVID-19 Vaccine through Global Health Law*, 48 J.L. MED. & ETHICS 622, 622 (2020); Harald Schmidt et al., *Equitable Allocation of COVID-19 Vaccines in the United States*, 27 NATURE MED. 1298, 1298 (2021).

134. Greta Massetti et al., *Summary of Guidance for Minimizing the Impact of COVID-19 on Individual Persons, Communities, and Health Care Sys.*, 71 MORBIDITY & MORTALITY WKLY. REP. 1057–58 (2022).

135. *Id.* at 1057.

136. PÖRTNER ET AL., *supra* note 68, at 22–23 (outlining the many climate adaptation options available and necessary beyond technological interventions).

137. Marquisha Johns & Jill Rosenthal, *How Investing in Public Health Will Strengthen America's Health,* CTR. FOR AM. PROGRESS (May 17, 2022), https://www.americanprogress.org/article/how-investing-in-public-health-will-strengthen-americas-health/; TRUST FOR AM.'S HEALTH, READY OR NOT: PROTECTING THE PUBLIC'S HEALTH FROM DISEASES, DISASTERS AND BIOTERRORISM (2019) (describing the hollowing out of public health infrastructure in the United States).

138. Nancy Krieger, *ENOUGH: COVID-19, Structural Racism, Police Brutality, Plutocracy, Climate Change—and Time for Health Justice, Democratic Governance, and an Equitable, Sustainable Future*, 110 AM. J. PUB. HEALTH 1620, 1621 (2020) (noting inequities such as income inequality, lower-income jobs, and incarceration—which all disproportionately affect people of color—were exacerbated the COVID-19 pandemic).

139. *Id.* (noting everyone will be threatened by the climate crisis).

140. *See* CAROL BERKOWER ET AL., NAT'L ACADS. OF SCIS., ENG'G & MED., COMMUNITIES, CLIMATE CHANGE, AND HEALTH EQUITY (2022), https://nap.nationalacademies.org/download

for racial and ethnic minority groups requires concerted and deliberate efforts, supported by antidiscrimination laws and explicit policies.[141] Also, as climate refugees and resource scarcity become common in a warming world, the demonization of poor immigrants predicated on climate survival will mirror the pretextual use of public health justifications to exclude immigrants during the COVID-19 pandemic.[142]

This pattern of impact highlights the stratification in our society, with wealthier and more privileged people being able to effortlessly ride out the pandemic while poorer people face much greater health and economic risks.[143] The climate crisis will exacerbate this underlying social and economic precarity, and will place wealthy nations and communities in opposition to everyone else.[144] Many of the most wealthy, powerful, and privileged segments of our society will not feel urgency to make changes to address the climate crisis, since they perceive—perhaps not inaccurately—that they will not bear the costs of

/26435; Sebastian D. Romano et al., *Trends in Racial and Ethnic Disparities in COVID-19 Hospitalizations by Region—United States, March-December 2020*, 70 MORBIDITY & MORTALITY WKLY. REP. 560, 561 (2021); Kristen Soares, *An Inequitable Pandemic: How Environmental Racism Has Worsened COVID-19 in Communities of Color,* CLIMATE XCHANGE (Sept. 23, 2021), https://climate-xchange.org/2021/09/23/an-inequitable-pandemic-how-environmental-racism-has-worsened-covid-19-in-communities-of-color/ (discussing environmental injustice and noting "[t]here's no question that [Black, Indigenous, and people of color (BIPOC) communities] have a disproportionate burden of environmental harms and their associated health risks"); Xiauo Wu et al., *Air Pollution and COVID-19 Mortality in the United States: Strengths and Limitations of an Ecological Regression Analysis*, 6 SCI. ADVANCES, Nov. 4, 2020, eabd4049 (also discussing the disparate impact of COVID-19 and pollution exposure on communities of color, lower-income people, and people with chronic health conditions).

141. RUQAIIJAH YEARBY ET AL., INST. FOR HEALING JUST. & EQUITY & ST. LOUIS UNIV. CTR. FOR HEALTH L. STUD., GOVERNMENT USE OF RACIAL EQUITY TOOLS TO ADDRESS SYSTEMIC RACISM AND THE SOCIAL DETERMINANTS OF HEALTH 8 (2021); John M. Balbus et al., *After COP26—Putting Health and Equity at the Center of the Climate Crisis*, 385 NEW ENG. J. MED. 1295, 1296 (2022).

142. *See* Elodie Hut et al., *COVID-19 Climate Change and Migration: Constructing Crises, Reinforcing Borders*, INT'L ORG. FOR MIGRATION (Mar. 6, 2021), https://environmentalmigration.iom.int/blogs/covid-19-climate-change-and-migration-constructing-crises-reinforcing-borders (discussing the impact of the COVID-19 pandemic on borders and immigration, including "the plight of 'trapped' or 'immobile' populations").

143. ESMÉ BERKHOUT ET AL., THE INEQUALITY VIRUS 20–25 (2021), https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621149/bp-the-inequality-virus-250121-en.pdf (discussing the widening gap between rich and poor during the COVID-19 pandemic).

144. JEDIDIAH PURDY, THIS LAND IS OUR LAND: THE STRUGGLE FOR A NEW COMMONWEALTH 73 (2019). ("Catastrophe will be manageable enough for the wealthy that it will not really feel like catastrophe, anyway not for a while . . . [F]or them this bet seems better than the risk of opening up economic life and global order to the challenges that would come from an honest confrontation with climate change. As long as enough voters identify with this willed complacency, it will be true, for all relevant purposes, that you can build a wall high enough to keep out climate change.").

inaction.[145] Rather, their affluence and power will shield them from the worst effects of climate change.[146] Wealthy people around the world will retreat to their privileged enclaves, distanced from the real effects of the climate crisis, while poorer people will suffer the terrible consequences of their inaction and disregard.[147] Avoiding this will require a concerted effort grounded in law and policy, as well as international cooperation, possibly effectuated through international treaty obligations.

The most direct strategy to improve health justice and support more equitable health outcomes in the face of long-term crises is to bolster the legal and social support systems available to people facing the effects of these crises.[148] During the COVID-19 response in the United States, Congress and state governments acted quickly to expand social support for people who lost jobs or were compelled to stay at home due to government orders during the initial stages of the response.[149] These efforts, including unemployment insurance extensions, job protections, cash support, moratoria on evictions and utility shutoffs, rent and mortgage forbearance, and others, were essential to keeping people from suffering even worse health, financial, and social outcomes.[150] However, these efforts were limited, temporary in scope, and not generous enough to avoid long-term economic, social, and health precarity.[151] One very positive lesson from the COVID-19 response could be recognizing that the development and entrenchment of a much more robust system of social support has multiple positive social and economic effects and that these support systems need not be contingent on emergency circumstances.[152] Proposals

145. *Id.*

146. *Id.*

147. *Id.*

148. See Emily A. Benfer, *Health Justice: A Framework (and Call to Action) for the Elimination of Health Inequity and Social Justice*, 65 AM. U. L. REV. 275, 337 (2015); Yearby & Mohapatra, *supra* note 17.

149. Erica Werner et al., *Senate Approves $2.2 Trillion Coronavirus Bill Aimed at Slowing Economic Free Fall*, N.Y. TIMES (Mar. 25, 2020, 11:48 PM), https://www.washingtonpost.com /business/2020/03/25/trump-senate-coronavirus-economic-stimulus-2-trillion/.

150. The Coronavirus Aid, Relief, and Economic Security (CARES) Act and the Families First Coronavirus Response Act passed by Congress in March 2020 provided initial support. Neil Bhutta et al., *COVID-19, the CARES Act, and Families' Financial Security*, 73 NAT'L TAX J. 645, 645–48 (2020); Families First Coronavirus Response Act, Pub. L. No. 116-127, §§ 4102, 5102, 134 Stat. 178, 193, 195 (2020);

151. Bhutta et al., *supra* note 150, at 648–49.

152. Brian G. Field, *COVID-19 Lessons for Climate Change*, 1 J. MEGA INFRASTRUCTURE & SUSTAINABLE DEV. 303, 308 (2021) ("The COVID-19 pandemic has exposed key vulnerabilities in an economic system that focuses on the short-term and extols the virtues of maximising financial returns and other immediate benefits at the expense of building more long-term resilience in anticipation of unforeseen emergencies."). The Biden Administration expanded and extended these initiatives through executive orders and the American Rescue Plan Act, but by summer 2022, most of these initiatives have been allowed to lapse. Press Release, The White House, Fact Sheet:

advanced by the Democratic Party for expanding social spending—such as the Green New Deal and the Biden administration's Build Back Better legislation—have been moribund in the U.S. Congress, but the passage of the Inflation Reduction Act in August 2022 may signal a breakthrough, combining expansions of economic and social support in the pursuit of climate change mitigation.[153]

Similarly, adopting parallel and mutually-reinforcing global and local approaches to bolster national and state-level initiatives can help cultivate a robust and equitable crisis response. International coordination is essential to address complex global problems, but global governance structures are complex, politically fraught, and inconsistent in their level of effectiveness.[154] A cohesive global governance model for public health did not coalesce during the COVID-19 response, but a renewed and focused global governance model could contribute to or supplement the existing global environmental governance regime, built around United Nations agencies and the Paris Agreement.[155] Local government empowerment related to climate change, in tandem with state, national, and international efforts, may amplify and reinvigorate efforts to combat the climate crisis, just as local actions can be vital to protecting public

President Biden's New Executive Actions Deliver Economic Relief for American Families and Businesses Amid the COVID-19 Crises (Jan. 22, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/22/fact-sheet-president-bidens-new-executive-actions-deliver-economic-relief-for-american-families-and-businesses-amid-the-covid-19-crises/ (discussing the importance of the American Rescue Plan and President Biden's January 22, 2021 executive order to provide emergency economic relief); Deanna Cuadra, *The CARES and American Rescue Plan Act Will Not Be Offering the Same Flexibility in 2022*, EBN, (Jan. 11, 2022, 4:18 PM) https://www.benefitnews.com/news/cares-act-and-american-rescue-plan-act-provisions-expired (noting, for example, programs in the American Rescue Plan Act related to employee benefits expired in 2022); Jessica Banthin & Andrew Green, *Allowing the American Rescue Plan Premium Tax Credits to Expire Would Reverse Recent Progress in Reducing the Rate of Uninsured Americans*, URB. INST. (May 25, 2022), https://www.urban.org/urban-wire/allowing-american-rescue-plan-premium-tax-credits-expire-would-reverse-recent-progress (noting the premium tax credits for Marketplace coverage are set to end in 2022).

153. The passage of the Inflation Reduction Act in August 2022 represents an attempt to implement significant incentives to promote renewable energy development in the United States. However, many of the social support programs initially proposed in the Green New Deal legislation and Build Back Better legislation have been removed from the Inflation Reduction Act. *See generally* Inflation Reduction Act of 2022, H.R. 5736, 117th Cong.; Green New Deal, H.R. Res. 322, 117th Cong. (2021). *See also* Parrish Bergquist et al., *Combining Climate, Economic, and Social Policy Builds Public Support for Climate Action in the US*, 15 ENV'T RSCH. LETTERS, no. 5, 2020, at 1–2 ("Prior research suggests that emphasizing co-benefits such as economic development and public health can expand support for climate policy."); Aatish Bhatia, Francesca Paris, & Margot Sanger-Katz, *See Everything the White House Wanted, and Everything It Got*, N.Y. TIMES (Oct. 20, 2022), https://www.nytimes.com/interactive/2022/10/20/upshot/biden-budget-before-after-animation.html.

154. Field, *supra* note 152, at 306–07.

155. *Id.*

health during pandemics.[156] Local initiatives are potentially politically more feasible and scalable, allow for multiple reinforcing initiatives, and do not preclude higher-level efforts.[157]

VI. CONCLUSION

The COVID-19 pandemic can be viewed as a harbinger of threats to come; a window into the future in the form of a sped-up demonstration of the types of societal and systemic risks posed by the climate crisis. Many of the same laws, norms, and infrastructure necessary to combat a pandemic are also needed to mitigate climate change: a legal and political system that prioritizes cooperative democracy over neoliberal capitalism; a society that seeks to protect people from public health harms, rather than maximizing profit; a social support system that distributes power and demands equity; and a culture grounded in the ethics of care and solidarity. At present, with the COVID-19 pandemic moving into its fourth year, and the resolve and capacity of our systems and ourselves continuing to fray, these lofty goals seem politically and practically elusive—if not impossible—to accomplish.

Ultimately, successfully adapting to a warming climate will require significant changes to our society and the thoughtful, proactive application of law and policy that fosters inclusive governance and health equity. If we heed its lessons, the COVID-19 pandemic may provide us with the insights we need to fortify our social support infrastructure, reorient our priorities, invest in forward-looking technological and social changes, and reinforce our imagination and our solidarity to render our society more adaptable to the risks—both expected and unexpected—that the future holds. As a society, taking these steps is imperative. Our leaders have an ethical obligation to plan and pursue strategies to ensure that the future is both inhabitable and equitable.

156. *See* Gable, *supra* note 119, at 442 (discussing the role of local governance under New Governance theories).

157. *Id.* at 443.