

# Confronting the Climate Crisis: Incorporating Climate Change into Legal Research Instruction

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## Abstract

*Climate change and efforts to mitigate or adapt to it will affect every corner of our society, including legal practice. Lawyers in all practice areas will need to develop climate change literacy to contend with the effects of climate change on their clients. This article argues that legal research instructors are uniquely positioned to teach students the critical research and analysis skills they will need to confront novel legal challenges wrought by a changing environment and builds upon previous scholarship to propose ways legal research instructors can incorporate climate change literacy into a legal research course. The appendix provides a sample climate change legal research course that focuses on building critical research skills and climate change literacy.*

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“As for the so-called “greenhouse effect” of carbon dioxide buildup, I recognize that this too may become a serious issue for the future”

*-Rawleigh Warner, Jr. Chairman Mobil Corp., 1982<sup>2</sup>*

“You are all climate lawyers now, whether you want to be or not.”

*-John Kerry, U.S. Special Presidential Envoy for Climate, addressing the general assembly of the American Bar Association, August 2021<sup>3</sup>*

### **Part I: Introduction**

In an interview with the Boston Globe, Amelia Keyes, at the time a second-year law student at Harvard and now an organizational chair for Law Students for Climate Accountability, noted that “[m]ost of my classmates would pause at taking a job at Exxon, but they will go and work for law firms that help Exxon or similar companies avoid regulations and accountability... There is a big disconnect there. Law firms are the enablers and supporters of that harm.”<sup>4</sup> This disconnect between our professional lives and our values, fears, and hopes when it comes to climate change is jarring when outside the classroom, we are inundated - at times literally<sup>5</sup> - with the grim effects of climate change, but in the classroom (or law firm) we

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<sup>2</sup> Rawleigh Warner, Jr., *Energy and the environment: the next decade*, 3 UNEP INDUS. AND ENV'T. 58, 60 (1982), <https://perma.cc/HP73-KRQ4>.

<sup>3</sup> Karen Sloan, *'You are all climate lawyers now,' John Kerry tells ABA*, REUTERS, Aug. 5, 2021, <https://perma.cc/8PY6-HWHA>.

<sup>4</sup> David Abel, *Law firms under pressure to stop representing fossil fuel interests*, BOSTON GLOBE, Feb. 18, 2022, <https://www.bostonglobe.com/2022/02/18/science/law-firms-under-pressure-stop-representing-fossil-fuel-interests/>.

<sup>5</sup> For example, in the aftermath of Hurricane Ida in NYC, my home and 1,000s of my neighbors' homes were flooded. *Flooding From Ida Kills Dozens of People in Four States*, N.Y. TIMES, Sept. 2, 2021, <https://www.nytimes.com/live/2021/09/02/nyregion/nyc-storm>.

address legal issues in a vacuum and treat climate change as a specialized field of study instead of a crisis that envelops our entire planet and everything on it.

In this article, I propose ways that law librarians and legal research instructors can integrate climate change literacy and critical analysis into a legal research course. Parts I and II provide a background to the climate crisis. Part III argues that lawyers have an ethical and practical obligation to understand the scope of the challenge presented by climate change and efforts to mitigate and adapt to it and puts forth several ideas for addressing climate change in the legal research classroom. Finally, the appendix to this article offers a class plan for a half-semester course focused on climate change research. Instructors can choose any part of this course for a standalone research module, or to incorporate in an introductory or advanced legal research course.

A climate change course would align legal research with the current zeitgeist. Students are demanding that law schools, universities, and firms do more to respond to the climate crisis. Increasingly, we are seeing young people tear down the barrier separating their personal values from their professional or educational lives. In 2019, millions of children and young adults worldwide skipped school to march in climate protests in what is believed to be the biggest climate demonstration in history – these students will soon be our law students.<sup>6</sup> In 2022,

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<sup>6</sup> Kristoffer Tigue, *The Return of the Youth Climate Strike*, INSIDE CLIMATE NEWS, Mar. 25, 2022, <https://insideclimatenews.org/todaysclimate/the-return-of-the-youth-climate-strike/>.

students at Yale, MIT, Princeton, Stanford, and Vanderbilt, following similar lawsuits initiated by students at Cornell and Harvard, filed complaints against their colleges for investing in the fossil fuel companies responsible for the climate emergency.<sup>7</sup> In 2020, Law Students for Climate Accountability (LSCA) published its *Law Firm Climate Change Scorecard* which assigned a letter grade to law firms based on their role in exacerbating the climate crisis.<sup>8</sup> A year later, LSCA launched a boycott of Gibson Dunn for its work derailing climate action and harming indigenous and frontline communities.<sup>9</sup>

The students initiating boycotts against law firms, suing their colleges, and skipping school to march in the streets understand the colossal stakes of the climate crisis. But more profoundly, they understand that it is still not too late to do something about it.<sup>10</sup> While the Intergovernmental Panel on Climate Change (IPCC) reports grow increasingly urgent, our technology continues to improve.<sup>11</sup>

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<sup>7</sup> Chris McGreal, *Yale, Stanford and MIT's fossil fuel investments are illegal, students say*, THE GUARDIAN, Feb. 16, 2022, <https://www.theguardian.com/environment/2022/feb/16/us-universities-fossil-fuel-divestment-students-legal-complaint>.

<sup>8</sup> Tim Hirschel-Burns & Alisa White, *The 2020 Law Firm Climate Change Scorecard*, LAW STUDENTS FOR CLIMATE ACCOUNTABILITY, Oct. 2020, <https://perma.cc/TE73-Q8TB>

<sup>9</sup> LAW STUDENTS FOR CLIMATE ACCOUNTABILITY, #DoneWithDunn FAQs, <https://perma.cc/8798-XNY8>.

<sup>10</sup> Cara Buckley, *'OK Doomer' and the Climate Advocates Who Say It's Not Too Late*, N.Y. TIMES, Mar. 26, 2022, <https://www.nytimes.com/2022/03/22/climate/climate-change-ok-doomer.html>.

<sup>11</sup> See e.g., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS (Apr. 2022) [hereinafter *IPCC, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, SUMMARY*] <https://perma.cc/6KWN-KE4H>; A world powered by renewable energy, unfathomable a few decades ago, is not only attainable, but also now cost-competitive with fossil fuels. Press Release, U.N. Framework Convention on Climate Change, Renewable Power Remains Cost-Competitive amid Fossil Fuel Crisis, Jul. 13, 2022, <https://perma.cc/4XJN-SJ7B>.

The disconnect between climate change and our professional obligations will diminish as the climate crisis intensifies and the transition to renewables becomes ever more feasible and urgent. Climate change will force us to reconsider the economic and legal frameworks that have been taken for granted in a modern, capitalist society. These frameworks assume the potential for unlimited growth and human dominance over nature, that no matter what the problem, technology will offer a solution that allows the extraction of fossil fuels in perpetuity. This in large part is due to the massive public relations campaigns sponsored by the fossil fuel industry that led us to believe first that climate change is debatable, then that the responsibility for climate change falls on individual choices, that we cannot have a modern society without fossil fuels, and finally that the fossil fuel industry is part of the solution.<sup>12</sup> None of this is true.

Though climate science is complex, the bottom line is straightforward: emissions from fossil fuel combustion contributes to atmospheric concentrations of greenhouse gases, which contributes to global warming and climate change.<sup>13</sup> In 1982, the American Petroleum Institute's own scientists accurately predicted that a

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<sup>12</sup> Geoffrey Supran and Naomi Oreskes conducted in-depth studies of ExxonMobil's climate change communications which they found mimics the tobacco industry's propaganda by downplaying the reality and seriousness of climate change, focusing on consumer "demand" and individual choice and responsibility, and carefully using rhetoric such as climate change "risk" to justify the continued use of fossil fuels. Geoffrey Supran and Naomi Oreskes, *Rhetoric and frame analysis of ExxonMobil's climate change communications*, ONEEARTH 696 (May 21, 2021).

<sup>13</sup> See generally, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5, SUMMARY FOR POLICYMAKERS (2018), <https://perma.cc/EN7X-XJER>.

doubling of CO<sub>2</sub> in the atmosphere would lead to a temperature increase of 3°C.<sup>14</sup> A half degree of warming generates a significant increase in severe weather events such as the flooding caused by Hurricane Sandy all along the East Coast, the torrential rains that left a third of Pakistan underwater, the megafires that tore through the West Coast and turned Australia into a hellscape, the megadrought gripping the Southwest, the scorching heatwaves in the Pacific Northwest and Europe, and the record high temperatures in the Arctic.<sup>15</sup> As these climate disasters proliferate, we will be forced to discard 19<sup>th</sup> and 20<sup>th</sup> century notions that fossil fuels and unending economic growth are *sine qua non* to living in a modern society.

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<sup>14</sup>AMERICAN PETROLEUM INSTITUTE, CLIMATE MODELS AND CO<sub>2</sub> WARMING: A SELECTIVE REVIEW AND SUMMARY (Mar. 1982), <https://perma.cc/59JH-MAP7>.

<sup>15</sup> See generally, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5, Ch. 3 (2018), <https://perma.cc/U8HP-P9PD>; See Fiona Harvey, *Pakistan floods 'made up to 50% worse by global heating'*, THE GUARDIAN, Sept. 15, 2022, <https://www.theguardian.com/environment/2022/sep/15/pakistan-floods-made-up-to-50-worse-by-global-heating>; Matthew Cappucci, *Climate change boosted Hurricane Sandy's damage by \$8 billion, study finds*, THE WASH. POST, May 19, 2021, <https://www.washingtonpost.com/weather/2021/05/19/hurricane-sandy-climate-change-damages/>; Anne C. Mulkern, *California's Mega Fires Have Arrived 30 Years Early*, SCIENTIFIC AMERICAN, OCT. 20, 2020, <https://www.scientificamerican.com/article/californias-mega-fires-have-arrived-30-years-early/>; *Australia's forest fires fanned by climate crisis: Study*, AL JAZEERA, Nov. 29, 2021, <https://www.aljazeera.com/news/2021/11/29/australias-forest-fires-fanned-by-climate-crisis-study>; Ian James, *Western megadrought is worst in 1,200 years, intensified by climate change, study finds*, L.A. TIMES, Feb. 14, 2022, <https://www.latimes.com/environment/story/2022-02-14/western-megadrought-driest-in-1200-years>; YCC Team, *2021 Pacific Northwest heat wave 'virtually impossible' without global warming, scientists find*, YALE CLIMATE CONNECTIONS, Nov. 2, 2021, <https://yaleclimateconnections.org/2021/11/2021-pacific-northwest-heat-wave-virtually-impossible-without-global-warming-scientists-find/>; April Reese, *Europe's Heat Waves Offer a Grim Vision of the Future*, WIRED, Sept. 22, 2022, <https://perma.cc/S4XC-TPV3>; Rebecca Hersher, *The Arctic is heating up nearly four times faster than the whole planet, study finds*, NPR, Aug. 11, 2022, <https://perma.cc/JJ8J-JYBV>.

As Naomi Klein warned, climate change will, whether we acknowledge it or not, change everything.<sup>16</sup>

As teachers, we have a duty to provide our students with the tools they need to succeed as attorneys and contribute to the development of laws and policies that propel our society forward. Our students are more than future attorneys - they are future voters, influencers, policymakers, and leaders whose decisions will be informed by their ability to perform legal research and critical analysis. In a world where the power and influence of fossil fuel companies and corporate interests dwarf all other voices, legal research instructors can show students how to navigate the morass of mis- and disinformation, find reliable sources to learn about climate change, and conceive novel and creative approaches to unprecedented climate fueled problems using the vast array of research tools available to them.

Furthermore, effective legal research goes hand-in-glove with critical analysis and legal research courses offer a unique opportunity for students to stretch their curiosity and exercise their investigative, critical, and analytical skills. Much as critical race theory challenges students and teachers to consider the bias and racism built into our legal institutions and structures, we can challenge ourselves and our students to consider how the prioritization of fossil fuel extraction, unfettered capitalism, and deregulation shaped our policies and legislation and

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<sup>16</sup> NAOMI KLEIN, *THIS CHANGES EVERYTHING: CAPITALISM VS. THE CLIMATE* (2014).

hamstrings our transition to cleaner and safer energy sources. In doing so, students can see beyond legal and policy frameworks designed to protect economic growth at all costs, including irreparably harming our environment and inducing irreversible climate change.

Climate change is a daunting topic to tackle in any class. Some legal research instructors may feel apprehensive about the complexity of the issue or nervous that they are wading into a political minefield. As for the former concern, the ideas set forth in Part III to develop critical analysis skills and foster creative legal research to tackle novel challenges presented by climate change do not require a deep technical understanding of climate science or policy. Regarding concerns about political resistance, several polls indicate that climate change is a significant concern for younger Republicans as well as those who identify as Democrat.<sup>17</sup> Climate change does not discriminate between “red” and “blue” states. Whether Republican or Democrat or neither, young lawyers will have to contend with the challenges posed by climate change in their practice and in their personal lives and

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<sup>17</sup> In a recent Gallup poll, 69% of Republicans age 18-34 worry “a great deal” or a “fair amount” about the quality of the environment (compared to 52% age 35-54 and 46% 55 and older); 44% of Republicans age 18-34 believe global warming has already begun (compared to 29% of those who are 55 and older). Megan Brenan, *Republicans' Environmental Worry Varies by Age*, Gallup, Jul. 25, 2022, <https://news.gallup.com/poll/394955/republicans-environmental-worry-varies-age.aspx>. In another 2019 survey, 52% of millennials or younger who identified as Republican believed the federal government is not doing enough to limit global warming, compared to 41% of Republican Gen Xers and 31% of Republican boomers. Umair, Irfan, *Poll: Most millennial and Gen Z Republicans want more government climate action. Most boomer Republicans don't*, VOX, Nov. 25, 2019, <https://www.vox.com/2019/11/25/20981768/climate-change-pew-opinion-poll-republicans-ok-boomer>;

can benefit from developing the climate change literacy and analysis skills suggested in this article.

This article is meant to start a discussion, not end it. There are no doubt different and better ways of addressing climate change in legal research in different academic environments. My hope is this article will inspire others to consider how to confront these issues in their own institutions.

## **Part II: The Breadth of the Climate Crisis**

Thanks to a longer, dryer, sunnier climate in Burgundy, the region is producing some of its best vintages, once outliers in the erstwhile cooler climate that defined Burgundy viticulture.<sup>18</sup> But a few hundred miles to the south in Italy, where average temperatures have *risen* 1.4° C above pre-industrial levels, there was a 57% plunge in the olive harvest.<sup>19</sup> On the other side of the world, Aspen's ski season is one month shorter as temperatures in the Colorado Rockies have risen 1.7° C since 1980.<sup>20</sup> And across the country, the Gulf of Maine has warmed faster than 99% of the world's oceans, creating the ideal temperature for lobsters. Any benefit to the lobstering industry however will be short-lived as continued warming

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<sup>18</sup> Anna Lee C. Iijima, *How Climate Change is Altering Burgundy's Wine Identity*, WINE ENTHUSIAST, Apr. 7, 2022, <https://www.winemag.com/2022/04/07/climate-change-burgundy/>.

<sup>19</sup> Arthur Neslen, *Italy sees 57% drop in olive harvest as result of climate change, scientist says*, THE GUARDIAN, Mar. 5, 2019, <https://www.theguardian.com/world/2019/mar/05/italy-may-depend-on-olive-imports-from-april-scientist-says>.

<sup>20</sup> Kirk Siegler, *Will skiing survive? Resorts struggle through a winter of climate and housing woes*, NAT'L PUBLIC RADIO, Mar. 31, 2022, <https://perma.cc/478D-S42D>.

is expected to cut lobster populations up to 62%.<sup>21</sup> Business owners in each of these situations will need to reexamine the products they offer, overhead costs, risks, and investments in equipment and resources to adapt to new and unpredictable weather patterns. Legal advisors would be remiss to ignore the effects climate change will have on their clients' businesses.

But climate change will of course affect more than just viticulture and lobsters, and it is not merely its effect on businesses that should concern the legal field. The enormity of the impact of climate change on all aspects of human society cannot be overstated. At 1° C above preindustrial levels, we are struggling through unprecedented flooding, deadly heat waves, gargantuan hurricanes and typhoons, and historic droughts and wildfires.<sup>22</sup> Climate change reduces food and water security, increases human morbidity, and catalyzes the proliferation of food and water-borne diseases, as well as cardiovascular and respiratory distress.<sup>23</sup> Climate and weather extremes also drive displacement, especially in small island states, leading to unprecedented humanitarian crises.<sup>24</sup> To understand the crisis, it helps to have a basic understanding of the scientific discourse.

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<sup>21</sup> Livia Albeck-Ripka, *Climate Change Brought a Lobster Boom. Now It Could Cause a Bust*, N.Y. TIMES, Jun. 21, 2018, [nytimes.com/2018/06/21/climate/maine-lobsters.html](https://www.nytimes.com/2018/06/21/climate/maine-lobsters.html).

<sup>22</sup> INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FAQ CHAPTER 1, <https://perma.cc/73TB-4M6H>. See also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY, SUMMARY FOR POLICYMAKERS at 6-7 (Feb. 27, 2022) [hereinafter *IPCC, IMPACTS, ADAPTATION AND VULNERABILITY, SUMMARY*], <https://perma.cc/D33R-44P5>.

<sup>23</sup> IPCC, IMPACTS, ADAPTATION AND VULNERABILITY, SUMMARY, *supra* note \_\_, at 10.

<sup>24</sup> *Id.* at 11.

Climate change is an intricate, complicated phenomenon replete with variables, probabilities, feedback loops, tipping points, and biological, chemical, geological, and atmospheric processes whose responsiveness to climatic and systemic variations are not fully understood. Thus, the scientists who contribute to the Intergovernmental Panel on Climate Change reports utilize probabilities when assessing our likelihood of keeping temperature increase to 1.5°C, 2°C, and higher. To have a 50-50 chance of limiting warming to 1.5 °C, we must limit total cumulative carbon emissions to 500 GtCO<sub>2</sub> from 2020 onwards.<sup>25</sup> To put this in perspective, in 2019 alone, global net anthropogenic GHG emissions were approximately 59 GtCO<sub>2</sub>.<sup>26</sup> In August 2021, ahead of the Glasgow COP26, the IPCC issued an urgent warning:

Global warming of 1.5°C and 2°C ***will be exceeded*** during the 21st century unless deep reductions in carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions occur in the coming decades...<sup>27</sup>  
(emphasis added)

The International Energy Agency (IEA) has also sounded the alarm, noting that limiting warming to 1.5 °C “calls for nothing less than a complete

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<sup>25</sup> IPCC, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, SUMMARY, *supra* note \_\_ at B.1.3.

<sup>26</sup> *Id.* at B.1.1.

<sup>27</sup> The IPCC also noted that “it is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.” INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, HEADLINE STATEMENTS FROM THE SUMMARY FOR POLICYMAKERS, A.1, B.1 (Aug. 9, 2021), <https://perma.cc/3AD5-GD9X>.

transformation of how we produce, transport and consume energy.”<sup>28</sup> Yet the commitments made by the parties to the Paris Agreement fall woefully short of the energy transition needed to reduce GHG emissions to sustainable levels and eventually net-zero.<sup>29</sup>

Secretary-General António Guterres put it bluntly in a scathing indictment of the parties to the Paris Agreement:

We are on a pathway to global warming of more than double the 1.5°C limit agreed in Paris. Some Government and business leaders are saying one thing, but doing another. Simply put, they are lying. And the results will be catastrophic. This is a climate emergency.... The science is clear: to keep the 1.5°C limit agreed in Paris within reach, we need to cut global emissions by 45 per cent this decade. But, current climate pledges would mean a 14 per cent increase in emissions. And most major emitters are not taking the steps needed to fulfil even these inadequate promises...<sup>30</sup>

With stakes this high, and a duty that implicates all of humanity, attorneys cannot escape the effects climate change and efforts to mitigate and adapt to it will have on their clients. Attorneys will be expected to provide reliable and ethical

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<sup>28</sup> INTERNATIONAL ENERGY AGENCY, NET ZERO BY 2050 - A ROADMAP FOR THE GLOBAL ENERGY SECTOR, SUMMARY FOR POLICYMAKERS 13 (Oct. 2021), <https://perma.cc/VX4K-V778>.

<sup>29</sup> Dismayingly, even if the parties to the Paris Agreement *keep their commitments* communicated prior to COP26 held in 2021, total global GHG emission levels are still estimated to *increase 13.7%* from 2010 GHG emission levels. Press Release, U.N. Framework Convention on Climate Change, COP26: Update to the NDC Synthesis Report, Nov. 4, 2021, <https://perma.cc/B7BR-JUV8>.

<sup>30</sup> Press Release, U.N., Secretary-General Warns of Climate Emergency, Calling Intergovernmental Panel’s Report ‘a File of Shame’, While Saying Leaders ‘Are Lying’, Fuelling Flames (Apr. 4, 2022), <https://perma.cc/WJ3W-XHLK>.

advice to clients impacted by and who have an impact on climate change. The ethical implications for attorneys is especially profound as the fossil fuel industry continues to invest in fossil fuel infrastructure to an extent that is incompatible with limiting global warming to 2°C.<sup>31</sup> As Secretary General António Guterres lamented, “[i]nvesting in new fossil fuels infrastructure is moral and economic madness.”<sup>32</sup> For attorneys representing investors and beneficiaries of the fossil fuel industry, this begs the question, does their client’s best interest align with the planet’s best interest? Or is their clients’ best interest transforming in light of threatened and actual climate related litigation, regulations, and public outcry? And for those of us teaching future attorneys, we must consider how we can help law students navigate the moral and practical challenges posed by climate change and adaptation to new climate realities.

Given the growing urgency of the climate crisis and the advocacy of groups such as Law Students for Climate Accountability, law firms are not likely to be shielded from public outrage for much longer and will have to face the ethical implications of this work.<sup>33</sup> But even attorneys who do not work on behalf of the fossil fuel industry will have to take climate change into consideration when

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<sup>31</sup> The combined discounted value of *unburned* fossil fuels and stranded fossil fuel infrastructure is projected to be \$4 trillion from 2015-2050. See IPCC, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, SUMMARY, (2022), *supra* note \_\_, at 32, C.4.4.

<sup>32</sup> Press Release, United Nations, *supra* note \_\_.

<sup>33</sup> Abel, *supra* note \_\_.

advising clients. Climate change reaches into all practice areas. From real estate to immigration, finance, and industry, it is difficult to avoid the ramifications of the climate crisis. And even if it does not play into an attorney's professional life, it will be impossible to avoid in daily life. Thus, whether for ethical or practical reasons, it is crucial that law students develop their climate change literacy and incorporate it into their professional decision making when counseling clients. Moreover, attorneys and law students who wish to reform or change the law must not only develop climate change literacy, but must also understand the power structures and limitations in the research process that hinder legal reform.

### **Part III: Climate Change in the Legal Research Classroom**

#### **A. Lawyers and Climate Change**

Climate change is no longer only relevant to environmental law. All areas of legal practice require knowledge about climate change.<sup>34</sup> To this end, the American Bar Association in August 2019 adopted a resolution calling on “federal, state, local, territorial, and tribal governments and the private sector to recognize their obligation to address climate change” and urging lawyers to take a climate

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<sup>34</sup> Warren G. Lavey, *Toolkit for Integrating Climate Change into Ten High-Enrollment Law School Courses*, 49 ENVTL. L. 513, 516-17 (2019).

conscious approach to legal advice, by advising their clients of the risks and opportunities that climate change provides.<sup>35</sup>

As argued by Justice Preston, climate change “places a responsibility on lawyers to adopt a climate conscious rather than a climate blind approach in their daily legal practice.”<sup>36</sup> Justice Preston argues that in advising clients, lawyers ought to be mindful of climate change consequences, along with financial, emotional, social, and ethical consequences of different courses of action. More specifically, attorneys must be cognizant of the direct risk to businesses, beyond merely reputational risks, which he divides into three categories: physical risks to assets or supply routes; transitional risks associated with the process of adjusting to a lower carbon economy; and liability risks associated with the possibility of being held to account for contributing to climate change.<sup>37</sup> As part of an attorney’s duty to their clients, they must advise of potential risks, liabilities, and reputational damage that arise from activities that exacerbate the climate crisis.<sup>38</sup> Moreover, the law related to climate change is rapidly evolving with a significant uptick in climate litigation cases as well as new statutes and regulations placing obligations on companies to

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<sup>35</sup> Hon. Justice Brian J. Preston, *Climate Conscious Lawyering*, 95 AUSTL. LAW J. 51, 52 (2021) (quoting ABA, *Resolution 111, Adopted at the Annual Meeting of the House of Delegates* (2019), <https://perma.cc/A5ZG-NHRS>).

<sup>36</sup> Preston, *supra* note \_\_, at 51.

<sup>37</sup> *Id.* at 53.

<sup>38</sup> *Id.*

consider climate-related risks.<sup>39</sup> In considering how to prepare law students for the challenges that await them in their legal practice, we cannot cling to a lawyering model that ignores the effects climate change will have on all aspects of our society.

As Warren Lavey points out in *Toolkit for Integrating Climate Change into Ten High-Enrollment Law School Courses*, students are unprepared for the climate related demands of their clients because while climate-related laws and cases appear in environmental and natural resources law courses, they rarely appear in other courses such as contracts or torts.<sup>40</sup> And when a climate case does appear in a non-environmental law course, it is presented without context or explanation about climate change or its impacts.<sup>41</sup> This is in part because those teaching the course were trained before climate change became an integral part of practicing law and do not necessarily keep up with climate change developments.<sup>42</sup>

Lavey provides a toolkit for ten doctrinal courses to help train law students in climate change law. Legal research instructors also have an opportunity to train students by teaching them how to navigate propaganda and issue obfuscation to

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<sup>39</sup> *Id.* See Benjamin Franta, *Climate litigation rising: Hot spots to watch*, A.B.A. SEC. ENV., ENERGY, & RES., Dec. 22, 2021, <https://perma.cc/RTC3-T32D>; Jennifer Huang, *Exploring Climate Framework Laws and the Future of Climate Action*, 38 PACE ENV. L. R. 285, 287 (2021) (noting that “every country in the world now has at least one law or policy to address climate change...”); Andrew Ramonas, *SEC Boosts Climate Disclosure Scrutiny Before Reporting Mandate*, BLOOMBERG LAW, Jan. 19, 2022, <https://news.bloomberglaw.com/securities-law/sec-boosts-climate-disclosure-scrutiny-before-reporting-mandate>.

<sup>40</sup> Lavey, *supra* note \_\_\_, at 516.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

find reliable sources on climate change. Further, research classes give students a chance to practice thinking outside the box when addressing novel legal issues that arise within the context of climate change. Climate change will affect the negotiation of contracts, test the reliability of supply chains, factor in business decisions and disclosures, spur litigation and strategies to avoid litigation, influence government regulation and policy, and shape domestic and international law. Lawyers as advisors, counselors, and litigators, will be on the frontline of decision making and advocacy when it comes to climate change and the energy transition. As such, they will need to understand the scope of the climate crisis and the effects it will have on their clients, as well as the effects their clients' acts will have on the climate.

We cannot assume students are literate in climate change. Nor can we assume that the skills we were trained in are adequate for the next generation of attorneys as they face the climate crisis. In the remainder of this article and the Appendix, I build upon the many brilliant ideas put forth by other critical legal scholars to offer suggestions for how legal research instructors can bring climate change into the classroom.

## **B. A Climate Conscious Approach to Legal Research**

A climate conscious approach to lawyering requires climate conscious legal research. Climate conscious legal research invokes both critical information

literacy and creative approaches to novel legal problems presented by climate change.

The goal of legal research is to find the law - regulations, statutes, and caselaw – as well as other sources to support arguments to create or interpret law. Hicks defined legal research as “the inquiry and investigation necessary to be made by legislators, judges, lawyers and legal writers in the performance of their functions.”<sup>43</sup> As Barkan points out, this definition reflects a realist position that “information can be necessary and functionally related to law, without being identifiably legal.”<sup>44</sup> Thus, the legal research task is not necessarily limited to finding statutes, caselaw, and regulations.

Because law is not created or interpreted in a vacuum, effective legal research requires that the researcher understand the social, cultural, and political contexts within which law is created and interpreted. Critical legal scholars argue that legal doctrine is indeterminate, i.e., that “the existing body of legal doctrines - statutes, administrative regulations, and court decisions - permits a judge to justify

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<sup>43</sup> Steven M. Barkan, *Deconstructing Legal Research: A Law Librarian's Commentary on Critical Legal Studies*, LAW LIBR. J. 617, 620 (1987), quoting Frederick C. Hicks, MATERIALS AND METHODS OF LEGAL RESEARCH (2d Ed.1933). Barkan contrasts this definition with that given by Jacobstein and Mersky in *Fundamentals of Legal Research*: “When engaged in legal research (more properly, legal search), lawyers are seeking to find those authorities in the primary sources of the law that are applicable to a particular situation.” *Id.* at 619, quoting J. MYRON JACOBSTEIN & ROY MERSKY, FUNDAMENTALS OF LEGAL RESEARCH (1987 ed.).

<sup>44</sup> Barkan, *supra* note \_\_\_\_, at 621.

any result she desires in any particular case.”<sup>45</sup> As such, “law is simply politics by other means...and...the ultimate basis for a decision is a social and political judgment incorporating a variety of factors, including the context of the case, the parties, and the substance of the issues.”<sup>46</sup>

The fossil fuel industry and its supporters made it their mission to dilute the threat posed by climate change through massive campaigns that shaped policy, legislation, and even caselaw.<sup>47</sup> Its behemoth effort to control the narrative on climate change has paid off when measured by the industry’s return to shareholders<sup>48</sup> and our society’s willingness to remove mountaintops to extract

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<sup>45</sup> Nicholas Mignanelli, *Legal Research and Its Discontents, A Bibliographic Essay on Critical Approaches to Legal Research*, 113 LAW LIBR. J. 101 (2021), (quoting Lawrence B. Solum, *On the Indeterminacy Crisis: Critiquing Critical Dogma*, 54 U. CHI. L. REV. 462, 462 (1987)).

<sup>46</sup> Steve N. Barkan, *Deconstructing Legal Research: A Law Librarian’s Commentary on Critical Legal Studies*, 79 LAW. LIBR. J. 617, 625 (1987)(quoting Kairys, *Legal Reasoning in THE POLITICS OF LAW; A PROGRESSIVE CRITIQUE* 17 (D. Kairys ed. 1982)).

<sup>47</sup> It is well documented that not only did the fossil fuel industry know about climate change since the 1970s, it studied it extensively, predicting that a doubling of CO<sub>2</sub> in the atmosphere would lead to a temperature increase of around 3° C. *See generally* Neela Banerjee, John H. Cusman, Jr., David Hasemyer, & Lisa Song, *Exxon: The Road Not Taken*, INSIDE CLIMATE NEWS (2015). As reported in an investigation by Inside Climate News, the industry was mainly concerned with the effect global warming would have on its business since reining in the “greenhouse effect” would “require major reductions in fossil fuel combustion.” *Id.* at 24. Despite its own scientific findings on the buildup of CO<sub>2</sub> in the atmosphere, Exxon chose to publicly undermine its own scientists, employing lobbyists to pressure government officials against passing any meaningful legislation mitigating climate change and pull out of the Kyoto Protocol and instituting a massive public relations campaign to sow climate skepticism in the American public. *Id.*; *See also* Supran and Oreskes, *supra* note \_\_; For a collection of Exxon’s, Mobil’s, ExxonMobil’s and other fossil fuel companies’ misleading advertisements and advertorials up to 2021, *see* Geoffrey Supran and Naomi Oreskes, *The forgotten oil ads that told us climate change was nothing*, THE GUARDIAN, Nov. 18, 2021, <https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing>.

<sup>48</sup> *Can big oil’s bounce-back last?*, THE ECONOMIST, Jan. 12, 2022 (noting that “As economies reopened last year...energy became the best performing sector in the S&P 500 index of large American firms...It left environmentally friendly stock picks in the dust...”).

every drop of fossilized carbon even when cleaner alternatives exist.<sup>49</sup> In a climate conscious approach to legal research, all “information necessary and functionally related to law” includes information about climate change and the economic and political factors that impair or delay our transition away from fossil fuels when we consider legal issues impacted by or impacting climate change. Reform-minded students can benefit from learning how to critically analyze information, navigate political realities, and pursue creative approaches to legal research. If law is simply politics by other means, then it follows that legal research should be a holistic, interdisciplinary exercise that encompasses current events, relevant history, and an understanding of the power structures and politics that create and interpret the law.

### C. Developing Climate Change Literacy

To be “climate change literate,” students must recognize that headlines often distort the full picture and be able to differentiate between positive action and greenwashing. Even an environmentally savvy reader may be surprised to learn certain technologies are not what they seem – for example, that algal biofuels which are trumpeted by fossil fuel industries in glossy blue and green ads - are not a commercially feasible option on a large scale.<sup>50</sup> Climate change literacy thus

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<sup>49</sup> James Bruggers, *Mountaintop Mining Is Destroying More Land for Less Coal, Study Finds*, INSIDE CLIMATE NEWS, Jul. 26, 2018, <https://insideclimatenews.org/news/26072018/appalachia-mountaintop-removal-coal-strip-mining-satellite-maps-environmental-impacts-data/>.

<sup>50</sup> Christopher M. Matthews, *Exxon Sees Green Gold in Algae-Based Fuels. Skeptics See Greenwashing*, THE WALL ST. J., Oct. 3, 2021.

requires critical analysis, a skill which can be honed in a legal research class through problem-posing and in-class questioning.<sup>51</sup>

**i. Using Metacognition to Develop Critical Analysis Skills**

Unsurprisingly, given everyone has experienced the effects of climate change, consumers are demanding sustainable, eco-friendly options and alternatives to fossil fuels. Companies have responded by marketing themselves as partners and leaders in developing alternative resources.<sup>52</sup> Often however, this marketing is merely a change in appearance, rather than an effective change in the company's practices. Such "greenwashing," defined as the "practice of misleading people to believe that a company is engaging in virtuous practices to cover up poor practices",<sup>53</sup> is difficult to avoid as it bleeds into media coverage and political discourse.<sup>54</sup> If attorneys are expected to advise and educate their clients on

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<sup>51</sup> Yasmin Sokkar Harker, *Critical Legal Information Literacy: Legal Information as a Social Construct* in INFORMATION LITERACY AND SOCIAL JUSTICE: RADICAL PROFESSIONAL PRAXIS 206 (Lua Gregory & Shana Higgins, eds. 2013) ("Problem-posing' education presents material for student consideration, and encourages them to critically perceive how they themselves exist in relation to it.").

<sup>52</sup> Caesaria Kim, Note, *Is an Injunction the Right Vehicle to Combat Climate Change?: Greenwashing and the Importance of Increasing Consumer Choice in Fossil Fuel Alternatives*, 13 GOLDEN GATE U. ENV'T L. J. 87, 88 (2021).

<sup>53</sup> *Id.* at 88.

<sup>54</sup> As noted in *Smoke, Mirrors & Hot Air*, "ExxonMobil and its public relations partners 'develop and implement a national media relations program to inform the media about uncertainties in climate science.' In the years that followed, ExxonMobil executed the strategy as planned underwriting a wide array of front organizations to publish in-house articles by select scientists and other like-minded individuals to raise objections about legitimate climate science research that has withstood rigorous peer review and has been replicated in multiple independent peer-reviewed studies—in other words, to attack research findings that were well established in the scientific community. The network ExxonMobil created masqueraded as a credible scientific alternative, but it publicized discredited studies and cherry-picked information to present misleading conclusions." UNION OF

sustainable business models and potential liabilities and reputational damage arising from activities that exacerbate the climate crisis (as well as encourage their clients to avoid exacerbating the crisis), they must be able to identify greenwashing and critically assess information sources about climate change.

Yasmin Sokkar Harker argues that law librarians should teach critical analysis skills, specifically, “[t]he ability to analyze and synthesize; to think in concepts and analogies; to reflect on the information found; and to move through an iterative, analytical process of problem solving...”<sup>55</sup> As Sokkar Harker points out, these skills are subordinated to the substantive topic or other lawyering skills such as legal writing in other law school courses, whereas in a legal research class, these skills are the focus of the class.<sup>56</sup> Sokkar Harker suggests building these skills into legal research instruction by drawing from research on cognition and metacognition.<sup>57</sup> Metacognition is the “ability to assess, not only the result, but the

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CONCERNED SCIENTISTS, SMOKE, MIRRORS & HOT AIR: HOW EXXONMOBIL USES BIG TOBACCO’S TACTICS TO MANUFACTURE UNCERTAINTY ON CLIMATE SCIENCE 9 (Jan. 2007), <https://perma.cc/64RJ-8SBZ>; See also Riley E. Dunlap & Aaron M. McCright, *Organized climate change denial*, THE OXFORD HANDBOOK OF CLIMATE CHANGE AND SOCIETY (2011)(discussing how the fossil fuel industry, conservative groups, and corporate groups including the U.S. Chamber of Commerce, collaborated to pursue an organized strategy of climate change denial, including by manufacturing uncertainty and criticizing peer review, refereed journals, governmental grant making, scientific institutions, and the expertise and ethics of scientists.)

<sup>55</sup> Yasmin Sokkar Harker, “*Information Is Cheap, but Meaning Is Expensive*”: *Building Analytical Skill into Legal Research Instruction*, 105 L. LIBR. J. 79, 88 (2013).

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* at 89.

schemata, including the processes leading to the result. It is a kind of self-awareness and reflection of the research experience.”<sup>58</sup>

Metacognitive skills can be employed to improve critical analysis of any source of information, including information about climate change. Students are awash in news articles, opinion pieces, social media posts, press releases, and advertisements addressing the challenges of climate change.<sup>59</sup> When teaching students about secondary sources, free resources, and Google searching, legal research instructors can encourage students to evaluate the sources they find by asking them to reflect upon their decision-making process in using a source - why did they select a particular article to learn more about an issue, and how does that article fit into a larger narrative about climate change? Does the article clash with or support what the student thought they knew about climate change? Does it change the way the student views the issue and if so, how and why? Does the student feel satisfied with the information provided in the article or do they need to research the issue more deeply and why is the student satisfied or not satisfied with the article?

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<sup>58</sup> Paul Callister, *Time to Blossom: An Inquiry into Bloom's Taxonomy as a Hierarchy and Means for Teaching Legal Research Skills*, 102 Law Libr. J. 191, 210 (2010).

<sup>59</sup> Because of this flood of information, critical information scholars argue critical information literacy should “not solely focus on knowledge circulated through subscription databases, but also on a larger metacritical awareness of how all information circulates across networks, inside and outside the academy.” Andrew Battista, *From “A Crusade against Ignorance” to a “Crisis of Authenticity”*: *Curating Information for a Participatory Democracy* in INFORMATION LITERACY AND SOCIAL JUSTICE: RADICAL PROFESSIONAL PRAXIS 90 (Lia Gregory & Shana Higgins, eds. 2013).

In answering these questions, the student should take into consideration who wrote or published the article and ask why the article was written and what is the author's or publisher's primary objective. Is the author an expert in climate science? A journalist, and if so, what type of journalist? Who do they work for? Finally, does the student believe this is a reliable source of information about climate change and why or why not? In reflecting upon why they decided to use a source, how that source impacts the student's understanding of the issue, and then analyzing who created that source, the student becomes an active instead passive consumer of information.

## ii. Examining Underlying Power Structures

Maura Seale argues “[p]ower works not only by prohibiting certain forms of discourse, but also through the production of discourses. In essence, power operates through knowledge production.”<sup>60</sup> This rings especially true in evaluating climate change discourse where powerful actors in the energy industry have invested considerable resources to controlling the climate change narrative.<sup>61</sup> Critical pedagogy centers social power relationships as the paradigm within which social reality is constructed. This paradigm “limit[s] the parameters of debate and prevent[s] certain questions from being raised.”<sup>62</sup> Critical information literacy thus

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<sup>60</sup> Maura Seale, *The Neoliberal Library* in INFORMATION LITERACY AND SOCIAL JUSTICE: RADICAL PROFESSIONAL PRAXIS 41 (Lia Gregory & Shana Higgins, eds. 2013).

<sup>61</sup> See *Smoke, Mirrors, and Hot Air*, *supra* note \_\_\_\_.

<sup>62</sup> Jonathan Cope, *Information Literacy as Social Power*, in CRITICAL LIBRARY INSTRUCTION: THEORIES & METHODS 13 (Maria T. Accardi, Emily Drabinski, & Alana Kumbier eds.)

“embrace[s] a collective questioning of how information is constructed, disseminated, and understood.”<sup>63</sup> In the context of climate change, this means closely investigating the stakeholders, including their motivations and interests, that shape the climate discourse.

Thus, in addition to the metacognitive questions about where an article fits into the student’s understanding of the issue, the student should drill into the contents of the article and examine how the information conveyed might affect climate policy, who the stakeholders are and how the information conveyed affects those stakeholders’ material interests. Instead of taking in information at face value, this analysis will help students explore the issue they are researching more deeply and fit it into a larger climate-conscious context, with a better understanding of how policy is made.

For example, in a research class focused analyzing news articles and background sources for international law, I had students examine a portion of the minutes taken of the negotiations on the final language for the IPCC’s Summary for Policymakers, which had somewhat surprisingly, noted that “CCS [carbon capture and storage] could allow fossil fuels to be used longer, reducing stranded assets.”<sup>64</sup> In the minutes that the students examined, it was noted that Saudi Arabia

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<sup>63</sup> *Id.* at 25.

<sup>64</sup> IPCC, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, SUMMARY, *supra* note \_\_, at 30, C.4.4.

(whose representative worked for Saudi Aramco, the state-owned oil company) strongly advocated for references to CCS in the final Summary for Policymakers.<sup>65</sup> The students then read an article on stranded assets, and the \$900 billion dollars that the fossil fuel industry would lose if governments aggressively pursued policies that restrict the rise in temperature to 1.5 C°.<sup>66</sup> I asked students to consider the effect powerful actors such as Saudi Arabia and other fossil fuel interests have on climate policy and law, and whether these interests might have anything to do with the focus on CCS as a potential solution to the climate crisis, despite doubts about its scalability and concerns about storage.<sup>67</sup> Expanding on this, I then asked students to think about the way in which they read and process information more broadly: when reading a report or news article do they consider what influence each of the stakeholders, including the author, has on which information is presented and how

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<sup>65</sup> The minutes noted that “On unburned fossil fuel resources, SAUDI ARABIA insisted that the estimated value of stranded assets only reflects the unabated part of fossil fuels, saying new technologies will make fossil fuels low carbon. The BAHAMAS said findings on limiting warming must reflect the 1.5°C level here and throughout the SPM. Delegates agreed to indicate that “Depending on its availability, CCS could allow fossil fuels to be used longer, reducing stranded assets.” The term “stranded assets” was further explained, and the difference between pursuing a pathway to 1.5°C, or to 2°C, for fossil fuel use was specified.” Summary Report, 21 March – 4 April, 2022, 56<sup>th</sup> Session of the IPCC and 14<sup>th</sup> Session of Working Group III, <https://enb.iisd.org/56th-session-intergovernmental-panel-climate-change-ipcc-56-14th-session-working-group-III-summary>.

<sup>66</sup> Alan Livsey, *Lex in depth: the \$900bn cost of ‘stranded energy assets’*, FIN. TIMES, Feb. 4, 2020, <https://www.ft.com/content/95efca74-4299-11ea-a43a-c4b328d9061c>.

<sup>67</sup> As stated in the CIEL report: “By design, CCS enables an underlying emissions-generating activity to continue - by capturing some of the CO<sub>2</sub> it would otherwise emit. The promise of CCS is being used to rationalize - and subsidize - continued investment in fossil fuel infrastructure that would lock in emissions of CO<sub>2</sub> for decades to come.” CENTER FOR INTERNATIONAL ENVIRONMENTAL LAW, CONFRONTING THE MYTH OF CARBON-FREE FOSSIL FUELS: WHY CARBON CAPTURE IS NOT A CLIMATE SOLUTION, Jul. 2021, <https://perma.cc/84HU-3XPJ>.

it is presented? Through this exercise, students develop an understanding of the complex negotiations and power struggles behind climate change policies.

In this section, I offered suggestions for improving law students' climate change literacy using exercises in metacognition and critical analysis. But legal research instructors can do more than help students develop their climate change literacy. We can also encourage students to think holistically about legal issues and conduct their research in a way that fosters the creativity needed to develop innovative solutions to unprecedented challenges by helping students break free of assumptions ingrained into our legal and societal frameworks.

#### **D. Fostering Creative Legal Research - Thinking Outside the Box**

In addition to developing climate change literacy, climate conscious legal research requires new ideas and creative approaches to legal problems. Climate change disrupts many assumptions underlying modern legislation and policy. An integral component of critical thinking is “recognizing and researching the assumptions that undergird our thoughts and actions.”<sup>68</sup> “Assumptions are the taken for granted beliefs about the world, and our place within it, that seem so obvious to us as not to need to be stated explicitly.”<sup>69</sup> Climate change disrupts several assumptions we have about our world and reform-minded students who wish to

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<sup>68</sup> Stephen Brookfield, *Critical Thinking and Learning in Adults: A Case Study in Transformative Learning on White Supremacy and White Racial Identity* in *CRITICAL THINKING AND REASONING: THEORY, DEVELOPMENT, INSTRUCTION, AND ASSESSMENT* 116 (Daniel Fasko, Jr. & Frank Fair, eds. 2021).

<sup>69</sup> *Id.*

explore novel solutions need to break free of these assumptions. In this section, I first provide an overview of one of the assumptions that underlies much of our political and legal framework that climate change is undermining: the prioritization of economic growth actualized through cost-benefit analysis.<sup>70</sup> I then summarize several methods proposed by other legal information scholars for fostering creative legal research to think outside of the 19<sup>th</sup> and 20<sup>th</sup> century frameworks.

### **i. The Conceptual Limits of Cost-Benefit Analysis and Prioritizing Economic Growth**

Environmental and energy law in the United States is committed above all else to economic development and growth, not environmental protection. Indeed, the modern “administrative state is geared almost entirely to the legalization of natural resource damage ..., the majority of agencies spend nearly all of their resources to permit, rather than prohibit, environmental destruction.”<sup>71</sup> Federal environmental policy utilizes an economic cost-benefit analysis - economic costs are weighed against its economic benefits.<sup>72</sup> Such an analysis inhibits any truly ambitious environmental policy, since while costs are easily quantifiable, it is

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<sup>70</sup> As Carmen Gonzalez argues, infinite growth is impossible on a finite planet. Carmen Gonzalez, *Sustainability Will Require Economic Degrowth*, 37 ENV. L. F.43 (2020).

<sup>71</sup> Michael M’Gonicle & Louise Takeda, *The Liberal Limits of Environmental Law: A Green Legal Critique*, 30 PACE ENVTL. L. REV. 1005, 1007 (2013)(citing Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part I): Ecological Realism and the Need for a Paradigm Shift*, 39 ENVTL. L. 43, 55 (2009)).

<sup>72</sup> Heinzerling provides an excellent history of how cost-benefit analysis came to dominate environmental policy through executive action and the Supreme Court, even though cost-benefit analysis is not mentioned in environmental statutes passed by Congress. Lisa Heinzerling, *Cost-Nothing Analysis: Environmental Economics in the Age of Trump* 30 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 287, 292 (2019).

exceedingly difficult to quantify the benefits to human health and the environment.<sup>73</sup> As Lisa Heinzerling points out,

[T]he benefits of environmental protection span an enormous range from protecting human life and health, to protecting ecosystems and species, to protecting crops and property, to protecting values like freedom, fairness, and community.<sup>74</sup>

Furthermore, that a project might perpetuate our dependence on fossil fuels or contribute to global climate change is not a cost that is taken into consideration. Under this cost-benefit framework, where interference with ecosystems is quantified in dollars, there is no inherent monetary value in the environment itself.<sup>75</sup> For example, Heinzerling describes a Clinton-era rule protecting roadless areas in national forests. The government estimated that the benefit of this rule would be \$219,000 which reflected the costs that would be saved because the roads that would otherwise have been built would not need to be maintained. While the government acknowledged the rule would protect air and water quality, recreational opportunities, wildlife habitat, and livestock grazing, it could not quantify these benefits. Yet, as Heizerling points out, what could not be quantified in the cost-benefit analysis was the whole point of the rule! Cost-benefit analysis also discounts future benefits so that potentially huge benefits that would be realized

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<sup>73</sup> *Id.* at 293.

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

years or decades in the future - as would be the case in any policy aimed at combating climate change - are minimized.<sup>76</sup>

Changing this paradigm requires activists to recognize it in the first place. To effectuate real change, students must understand the larger context of environmental law and policy and how the law advances and limits progress on climate action. In prioritizing economic growth over, policymakers placed limits on environmental law's ability to protect the natural environment.

## **ii. How Electronic Legal Research Databases Ingrain Twentieth Century Paradigms and Assumptions**

The economic and legal structures that prioritize cost-benefit analysis and economic growth in our society are ingrained into our legal research framework. Electronic databases such as Lexis and Westlaw reflect, reify, and ingrain the assumptions, biases, and paradigms which undergird and frame our society. These biases, assumptions, and paradigms are “built into the systems” through algorithms which, as Susan Nevelow Mart reminds us, are created by humans who “make

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<sup>76</sup> *Id.* at 297. The Biden administration has instituted a new indicator to read side-by-side with GDP, Change in Natural Asset Wealth (CNAW), which will quantify ecological changes to demonstrate how the country's resources are faring and draw attention to the trade-offs between growth and sustainability. To determine the CNAW scientists will measure ecological changes such as water pollution, soil erosion, and degradation of wetlands, and economists will apply a price tag to this. *The Biden administration aims to quantify the costs of ecological decay*, THE ECONOMIST, Sept. 15, 2022, <https://www.economist.com/united-states/2022/09/15/the-biden-administration-aims-to-quantify-the-costs-of-ecological-decay>. While still operating in the cost-benefit paradigm that requires nature to be quantified, this will at least bring environmental destruction more fully into the equation.

choices about how the algorithm would work.”<sup>77</sup> These algorithms control and set limits on what information the legal researcher finds. A researcher may thus find no helpful results if the list of documents retrieved are “generated by a legal worldview that opposes the path the researcher is trying to forge.”<sup>78</sup> If this worldview is a reflection of the “taken for granted beliefs about the world”<sup>79</sup> then a researcher seeking creative approaches to unprecedented challenges in a world upended by climate change, will be confined to twentieth century paradigms, restricting their ability to imagine new solutions.

Moreover, as Nicholas Stump describes in his article, *Following New Lights: Critical Legal Research Strategies as a Spark for Law Reform in Appalachia*, legal taxonomies and hierarchies such as Key Numbers, Topics, and headnotes, are a powerful influence on how the law is organized and how legal research is conducted.<sup>80</sup> A researcher can find a factually similar case that addresses their legal issue, choose the most relevant headnote, and follow its lead to additional cases with similar facts that fall under the same legal theory propounded in the headnote, Topic, or Key Number. While this has improved efficiency, it has also restricted creative thought process and brainstorming by directing researchers to

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<sup>77</sup> Susan Nevelow Mart, *The Algorithm as Human Artifact: Implications for Legal [Re]Search*, 109 LAW LIBR. J. 387, 388 (2017).

<sup>78</sup> *Id.* at 391.

<sup>79</sup> Brookfield, *supra* note \_\_\_\_.

<sup>80</sup> Nicholas Stump, *Following New Lights: Critical Legal Research Strategies as a Spark for Law Reform in Appalachia*, 23 AM. U. J. GENDER SOC. POL'Y & L. 573 (2015).

predetermined paths.<sup>81</sup> This type of research reifies preexisting structures and discourages innovative approaches and theories by effectively framing the issue for the researcher.<sup>82</sup> It is research that focuses on the trees while losing sight of the forest. While this is a powerful research tool for addressing prosaic legal problems, this structure stifles imaginative approaches and new perspectives on law.

For example, Stump points out that one of the sub-topics that comes under Environmental Law is “Persons entitled to sue” and as Stump states, “internalizing this explicit category” constrains legal thought.<sup>83</sup> In fact, there is a growing movement to recognize non-traditional plaintiffs, such as future generations, animals, and inanimate or indeterminate plaintiffs none of whom fit neatly under the category of “persons.”<sup>84</sup> A researcher will not likely find these arguments however through the Key Number and Topic system, and worse might presume that

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<sup>81</sup> See Robert C. Berring, *Full-Text Databases and Legal Research: Backing into the Future*, 1 HIGH TECH. L. J. 27, 32-33 (1986) (“For when West Publishing created the Key Number System, it not only enabled lawyers to research cases by subject, it also allowed and encouraged lawyers to fit every legal issue into a certain conceptual framework...the Key Number System provided a paradigm for thinking about the law itself. Lawyers began thinking according to the West categories.”).

<sup>82</sup> See Nicholas Stump, *Following New Lights: Critical Legal Research Strategies as a Spark for Law Reform in Appalachia*, 23 AM. U. J. GENDER SOC. POL'Y & L. 573 (2015).

<sup>83</sup> *Id.* at 638.

<sup>84</sup> *Id.* See also Sanja Bogojević, *Human rights of minors and future generations: Global trends and EU environmental law particularities*, REV. OF EUR. COMP. & INT'L ENVT. L. 191 (Jul. 1, 2020); Tiffany Challe, *The Rights of Nature — Can an Ecosystem Bear Legal Rights?*, COLUMBIA CLIMATE SCHOOL, CLIMATE, EARTH AND SOCIETY: STATE OF THE PLANET, Apr. 22, 2021, (describing the “Rights of Nature” movement in which ecosystems such as rivers, lakes, and mountains bear legal rights), <https://news.climate.columbia.edu/2021/04/22/rights-of-nature-lawsuits/>.

such arguments are foreclosed, or not consider their possibility. These innovative arguments are excluded from the “world of thinkable thoughts.”<sup>85</sup>

Fundamentally, the algorithms and legal categories on electronic databases curate the law as it is, not the law as it could be. It is important to emphasize to students that the purpose of these tools is to assist the researcher in finding the law, not in changing it. As of the time of this writing, there is no Key Number or Topic for climate change, global warming, or obligations to reduce GHG emissions and there is no categorical way to browse the explosion of climate litigation cases, domestically and globally, to explore the strategies utilized by pioneering plaintiffs. Nor is there a Key Number or Topic that addresses the intersection of human rights and climate change, or environmental racism, inequity, or indigenous movements to protect their land and environment. The Topics and Key Numbers categorize preexisting legal structures, but do not illuminate strategies for challenging those structures.<sup>86</sup> Similarly, algorithms reflect the decisions made by those who created them, including their biases and assumptions.<sup>87</sup>

Students and attorneys who wish to reform economic and environmental policy must break free of well-worn research paths paved by predictive algorithms and increasingly efficient, but also stifling, means of electronic research. The

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<sup>85</sup> Stump, *supra* note \_\_\_\_, at 637.

<sup>86</sup> Lexis Plus does have a sub-topic under Environmental Law for climate change which covers green buildings, legislation, and greenhouse gas regulations.

<sup>87</sup> Nevelow Mart, *supra* note \_\_\_\_.

following sections summarize several ideas put forward by critical information scholars for how we can foster creativity and innovation in legal research by addressing the downsides and limitations to online research.

**iii. Alternative Sources for Climate Change Research**

Stump makes several recommendations for alternatives to West and Lexis to avoid the “channeling” inherent in those databases.<sup>88</sup> In addition, I propose two additional databases specific to climate change - the Sabin Center for Climate Change Law and the Chancery Lane Project - as well as international and foreign law.

**(a) Sabin Center for Climate Change Law and Chancery Lane Project**

The climate change litigation database hosted by the Sabin Center for Climate Change Law provides a platform for browsing or searching climate change cases in the U.S. and internationally by issue.<sup>89</sup> For example, the researcher can navigate to U.S. Litigation, choose a category such as the Clean Air Act or Freedom of Information Act and then browse summaries of cases brought under these statutes. The Sabin Center’s climate change litigation database facilitates brainstorming by allowing researchers to browse cases by category and explore

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<sup>88</sup> Stump, *supra* note \_\_\_, at 639-41.

<sup>89</sup>SABIN CENTER FOR CLIMATE CHANGE LAW, CLIMATE CHANGE LITIGATION, <https://climate.law.columbia.edu/content/climate-change-litigation>.

climate change news and updates without the intellectually limiting biases of West's Topics and headnotes.<sup>90</sup>

The Chancery Lane Project is another climate change database that provides climate clauses to incorporate in commercial agreements. Here, the researcher can search or browse clauses by practice area or download a Net Zero toolkit that includes resources to help attorneys align their work with a decarbonized economy.<sup>91</sup> An attorney representing a corporation that is concerned about its carbon footprint, for example, may choose to include a “choice of green governing law clause” requiring that the governing law is interpreted in a manner consistent with the objectives of the UNFCCC and the Paris Agreement.<sup>92</sup> Browsing a database such as the Chancery Lane Project encourages attorneys to consider the possibility of climate-friendly business transactions.

**(b) International and Foreign Law**

It might be cliché to point out that in today's globalized world, international and foreign law are relevant even to domestic attorneys, but within the context of climate change, international and foreign law are not only relevant, they can also be sources of inspiration.

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<sup>90</sup> Stump, *supra* note \_\_\_\_.

<sup>91</sup> THE CHANCERY LANE PROJECT, <https://chancerylaneproject.org>.

<sup>92</sup> See Green Governing Law, <https://chancerylaneproject.org/climate-clauses/choice-of-green-governing-law-clause/>.

For example, some countries have adopted rights of nature laws or recognized the rights of nature in judicial decisions. Under a “Rights of Nature” doctrine, an ecosystem is entitled to legal personhood status and as such, has the right to defend itself in a court of law against harms, including environmental degradation caused by a specific development project or even by climate change.<sup>93</sup> Article 71 of Ecuador’s Constitution states: “Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.”<sup>94</sup> Similarly, Bolivia adopted a Law on the Rights of Mother Earth (2010).<sup>95</sup> In addition, Mexico City adopted the rights of nature in its city constitution, Colombia’s Supreme Court recognized the rights of the Amazon River, the Municipality of Paudalho in Brazil enacted a rights of nature law, Uganda recognizes the fundamental right of nature to be, evolve and regenerate, in Bangladesh all rivers are under legal protection, and in New Zealand the Māori tribes have given the Whanganui River and other areas legal personhood.<sup>96</sup> And finally, Italy recently approved a change to its constitution mandating that the state

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<sup>93</sup> Tiffany Challe, *The Rights of Nature — Can an Ecosystem Bear Legal Rights?*, COLUMBIA CLIMATE SCHOOL, STATE OF THE PLANET, Apr. 22, 2021, <https://perma.cc/8QYV-RYC2>.

<sup>94</sup> Kristen Stilt, *Rights of Nature, Rights of Animals*, 134 HARV. L. REV. F. 276 (Mar. 20, 2021), <https://harvardlawreview.org/2021/03/rights-of-nature-rights-of-animals/>.

<sup>95</sup> *Id.*

<sup>96</sup> Katie Surma, *Does Nature Have Rights? A Burgeoning Legal Movement Says Rivers, Forests and Wildlife Have Standing, Too*, INSIDE CLIMATE NEWS, Sept. 19, 2021, <https://insideclimatenews.org/news/19092021/rights-of-nature-legal-movement/>.

must safeguard the environment, biodiversity and natural ecosystems “in the interest of future generations.”<sup>97</sup>

Even in the United States, more than 30 localities, including Ohio, Colorado, Pennsylvania, Minnesota, and Florida, are in varying stages of developing their own rights of nature ordinances.<sup>98</sup> While it remains to be seen whether these ordinances are upheld in court, there is no denying the ascendancy of this legal doctrine which a student can only learn about through secondary sources. In advocating for these laws either in court or in local hearings, attorneys could find inspiration and ideas from the arguments used to support these laws in foreign jurisdictions. In Colombia, the Supreme Court found that “for the sake of protecting this vital ecosystem for the future of the planet,” it would “recognize the Colombian Amazon as an entity, subject of rights, and beneficiary of the protection, conservation, maintenance and restoration” that national and local governments are obligated to provide under Colombia’s Constitution. In its opinion, the court examined the doctrine of intergenerational equity and the precautionary principle, which enables decision-makers to adopt precautionary measures when scientific evidence about an environmental hazard is uncertain and the stakes are high.<sup>99</sup>

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<sup>97</sup> Olivia Lai, *Italy Makes Protecting the Environment Part of its Constitution*, EARTH ORG, Feb. 10, 2022, <https://earth.org/italy-makes-protecting-the-environment-part-of-its-constitution/>.

<sup>98</sup> Surma, *supra* note \_\_\_\_.

<sup>99</sup> IUCN, *Colombian Supreme Court Recognizes Rights of the Amazon River Ecosystem*, Apr. 20, 2018, <https://perma.cc/X88L-AL3S>; EUR. PARLIAMENT THINK TANK, *The precautionary principle: Definitions, applications and governance*, Sept. 12, 2015, <https://perma.cc/QE8K-VNCD>.

While there may not be time in a non-FCIL research course to teach FCIL research, law librarians and legal research instructors could still introduce students to the idea of consulting international and foreign sources for ideas and inspiration. Climate change is a global problem and ideas for how to address this crisis may come from anywhere in the world.

#### iv. Reading Dissents

A researcher might also fence themselves in by ignoring dissents. Justices write dissents with the hope that their views will one day become law and sometimes their views are in fact vindicated.<sup>100</sup> For example, Justice Kennedy's majority opinion in *Lawrence v. Texas* cited approvingly Justice Stevens's dissent in *Bowers v. Hardwick*, noting that "Justice Stevens' analysis, in our view, should have been controlling in *Bowers* and should control here."<sup>101</sup>

Thus, researchers should never dismiss a powerful dissent, especially when the world is rapidly changing and the context within which a Supreme Court decision was issued may soon change. For example, in *Michigan v. EPA*, a 5-4 decision issued in 2015, the Supreme Court found that the EPA acted unreasonably by declining to interpret the term "appropriate" in the Clean Air Act as requiring a cost-benefit analysis when deciding whether to regulate toxic air emissions from

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<sup>100</sup> Pamela Corley & Artemus Ward, *Intracourt Dialogue: The Impact of U.S. Supreme Court Dissents*, J. OF L. AND COURTS 27, 28 (Spring 2020).

<sup>101</sup> *Id.* *Lawrence v. Texas*, 539 U.S. 558, 578 (2003).

power plants.<sup>102</sup> The dissent in *Michigan v. EPA* is well-worth the read as it points out that determining whether or not a regulation is “appropriate and necessary” is only the first step in the EPA’s rulemaking process under the Clean Air Act. The EPA determined that it would be “appropriate and necessary” to regulate power plants’ hazardous emissions given the harm they cause.<sup>103</sup> The EPA *then* took costs into account when developing specific emissions standards.<sup>104</sup> It conducted a final cost-benefit analysis in which it determined that quantifiable benefits, which included as many as 11,000 fewer premature deaths annually, along with a far greater number of avoided illnesses, would exceed the costs up to nine times over—by as much as \$80 billion each year.<sup>105</sup>

A researcher who only reads the headnotes and then skims *Michigan v. EPA*, ignoring the dissent, will accept that Scalia’s interpretation is the final word on the matter and the EPA, before even deciding to regulate an industry under the Clean Air Act, must consider the costs to the industry. However, if the researcher reads the full opinion, including the dissent, they may find that Scalia’s ruling is on shaky ground. Environmental advocates should not limit their arguments by internalizing Scalia’s problematic opinion which arguably mischaracterizes the

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<sup>102</sup> *Mich. v. E.P.A.*, 576 U.S. 743 (2015).

<sup>103</sup> *Id.* at 764 (Kagan, J., dissenting).

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

<sup>105</sup> *Id.*

EPA's process. This is especially true if, as critical theorists argue, legal doctrine is inherently political and "indeterminate".<sup>106</sup>

**v. Interdisciplinary Sources**

Doctrinal, black-letter legal research draws upon a closed universe of statutes, regulations and caselaw to ascertain and understand the law.<sup>107</sup> As such, the law is treated as a "sealed system" and "legal developments can be interpreted, critiqued, and validated by reference to the internal logic of this sealed system."<sup>108</sup> Over the past several decades, interdisciplinary approaches have broadened and enriched legal studies. As summarized by Vick, in the 1960s and 70s, law and society drew upon sociology, political science, and anthropology; in the 1980s, critical legal studies drew heavily on ideas from sociology, anthropology, and literary theory; and the law and economics movement combined rational actor models, mathematical theories, and statistical techniques with more traditional methods of legal analysis.<sup>109</sup> More recently, cultural legal studies contextualizes the law and draws upon a multitude of disciplines to understand "law as culture and culture as law."<sup>110</sup>

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<sup>106</sup> See Barkan, *supra* note \_\_\_\_.

<sup>107</sup> Douglas W. Vick, *Interdisciplinarity and the Discipline of Law*, 31 J. OF L. AND SOC'Y 163, 178 (2004).

<sup>108</sup> *Id.* at 178-79.

<sup>109</sup> *Id.* at 183-84.

<sup>110</sup> Jennifer Schulz, *What is Cultural Legal Studies?*, 44 MANITOBA L. J. 143, 145 (2021).

When confronting the threat of climate change, legal research conducted entirely in a hermetically sealed legal database merely reinforces the power structures and legal paradigms that have evolved to serve corporate interests and protect individualistic deregulated capitalism at the expense of the natural environment. To dislodge presumptions and underlying theories in law that favor capitalism at all costs, researchers need to turn to other disciplines. For example, Stump demonstrated how feminist theory could shape and strengthen environmental arguments against mountaintop removal mining.<sup>111</sup>

Students should thus be encouraged to draw upon their diverse academic and professional backgrounds and interests. In teaching legal research, instructors could remind students through hypotheticals and examples – such as Stump’s use of feminist theory in crafting a legal argument against mountaintop removal mining - that law is a reflection of our society and is informed by non-legal ideas and motivations. Legal research instructors can also highlight non-legal databases such as SSRN, Bepress, and Google Scholar where students can explore scholarly work from other disciplines on a particular topic. By taking a multi-disciplinary approach to examining a legal problem, as Stump suggests, students might find multiple legal and non-legal theories that can strengthen their legal arguments and strategies.<sup>112</sup>

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<sup>111</sup> Stump, *supra* note \_\_, at 650-56.

<sup>112</sup> *Id.* at 640-657.

## E. Supporting and Inspiring Students

There is an irony to the fossil fuel industry's cynical public relations campaign which shifted focus away from their culpability to individual responsibility,<sup>113</sup> in that today it is individuals who have sparked the most successful climate action against fossil fuels. From Greta Thunberg to the activists who shut down the Keystone pipeline, from the web of protests against localized oil and gas extraction that Naomi Klein dubbed "Blockadia" to consumers demanding electric vehicles, from pensions divesting from fossil fuels, to voters in local elections choosing leaders who advocate for greener cities, and finally intrepid attorneys bringing lawsuits against governments and the fossil fuel industry, it is individuals speaking up and taking matters into their own hands who now present the greatest threat to fossil fuels.<sup>114</sup>

In this article, I put forth proposals to align legal research instruction with the imperatives imposed on teachers and students alike by the climate crisis. While these proposals address formal legal research instruction, law librarians can also act

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<sup>113</sup> Supran & Oreskes, *supra* note \_\_\_\_.

<sup>114</sup> See Rachel Frazin, *Keystone defeat energizes anti-pipeline activists*, THE HILL, Jun. 11, 2021, <https://thehill.com/policy/energy-environment/557912-keystone-defeat-energizes-anti-pipeline-activists/>; Klein, *supra* note 15, at 293-336; Maximilian Fischer et al., *A turning point for US auto dealers: The unstoppable electric car*, MCKINSEY & CO., Sept. 23, 2021, <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/a-turning-point-for-us-auto-dealers-the-unstoppable-electric-car>; Daniel Boffey, *One of world's biggest pension funds to stop investing in fossil fuels*, THE GUARDIAN, Oct. 26, 2021, <https://www.theguardian.com/environment/2021/oct/26/abp-pension-fund-to-stop-investing-in-fossil-fuels-amid-climate-fears>; Rupa Shenoy and Stevee Chapman, *Boston appoints its first-ever Green New Deal director. These are his priorities*, WBUR, Aug. 16, 2022, <https://www.wbur.org/news/2022/08/16/boston-green-new-deal-director>.

as informal mentors and sources of information for students who want to take concrete action against climate change. Law librarians can raise awareness of the climate crisis by creating research guides with climate change resources, highlighting climate change books in the library's collection on social media and in displays, offering short presentations on how to research climate change issues, and providing research support to student groups such as Law Students for Climate Accountability. Law librarians can also examine their own institution's contributions to the climate crisis and develop relationships with local organizations to pursue climate conscious initiatives in their own communities.<sup>115</sup>

#### **Part IV: Conclusion**

Law Students for Climate Accountability (LSCA), started with a group of law students asking “[w]hat does it mean to be a lawyer during the climate crisis? What is the role of the legal industry in this crisis?”<sup>116</sup> We should be asking ourselves the same question: what does it mean to be a legal instructor during the climate crisis? What is our role in this crisis? Do we continue with business as usual

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<sup>115</sup> Olivia Warren, *Students protest Tulane fossil fuel dependency*, THE TULANE HULLABALOO, Apr. 27, 2022, <https://tulanehullabaloo.com/60304/news/students-protest-tulane-fossil-fuel-dependency/>; Grady Trexler, *Students at Sit-in Protest Princeton's Investment in Fossil Fuels*, PRINCETON ALUMNI WEEKLY, Sept. 30, 2021, <https://paw.princeton.edu/article/students-sit-protest-princetons-investment-fossil-fuels>; Fiza Dahra and Aidan Sadovi, *Students protest in climate strike demanding UI fossil fuel divestment*, THE DAILY ILLINI, Sept. 26, 2022, <https://dailyillini.com/news-stories/campus-life/2022/09/26/climate-strike-uiuc/>; Sabrina Hernandez, *UAZ Divest holds rally encouraging University of Arizona to stop investing in fossil fuels*, THE DAILY WILDCAT, Sept. 26, 2022, <https://www.wildcat.arizona.edu/article/2022/09/n-uaz-divest-sept-23>.

<sup>116</sup> LAW STUDENTS FOR CLIMATE ACCOUNTABILITY, *Our Mission*, <https://www.ls4ca.org/our-mission>.

in the face of unprecedented climate-fueled catastrophes? And what do we owe our students, most of whom are in their twenties and will face increasingly dangerous climate outcomes in the decades ahead? Within the law school community, legal research instructors are best equipped to teach students the critical analysis skills needed to navigate the deluge of information (and misinformation) about climate change and the research skills attorneys need to transcend outdated legal doctrine and policy shaped by fossil fuel interests that fail to account for climate change. When climate change threatens every person and corner of the planet, we do not each have to be an expert in climate science or technology to play a role in mitigating the crisis; rather we must use our own specialized knowledge and expertise to contribute towards a solution.

## Appendix

### Blueprint for a 1-credit (7-8 classes) Climate Change and Legal Research Course

*This is a proposed blueprint for a 1-credit advanced legal research course focused on climate change. The classes are split between learning about various resources and using and analyzing those resources with group exercises and class discussions. Instructors who do not wish to teach a full course can modify part(s) of the classes below to turn them into a standalone module.*

#### CLASS 1: NEWS AND ANALYSIS

**Learning Objectives:** Introduce students to reliable sources of information about climate change. Develop critical analysis skills by asking questions about the article, author, and organization behind the article.

**Sample Exercise:** Divide students into groups to research climate change issues covered in sources such as ProPublica, Inside Climate News, the Washington Post, L.A. Times, N.Y. Times, Financial Times or other local papers and supplement with reports from the IPCC. Prepare a series of questions about the content of the articles for students to present on in Class 2.

**Example 1:** Jon Hurdle, *New Jersey Joins Other States in Suing the Fossil Fuel Industry, Claiming Links to Climate Change*, Inside Climate News, Oct. 18, 2022, <https://insideclimatenews.org/news/18102022/new-jersey-big-oil-lawsuit/>

#### Questions:

1. Who are the authors? What is Inside Climate Change and how is it funded? What is its mission?
2. Summarize the lawsuit brought by New Jersey against the fossil fuel industry. Who are the defendants and what claims are being made against them? What is their defense?

**Example 2:** Marlies Hesselman, *Guest Commentary: A New Frontier in (Dutch) Climate Litigation: Greenwashing Advertisements on CO2 Compensation*, Jul. 12, 2022.

**Questions:**

1. What is the “new” set of climate litigation cases described in the article?
2. What are the potential consequences of this case and the decision by the Dutch Advertising Code Commission for fossil fuel companies that attempt to portray themselves as “green”?
3. Who is Marlies Hesselman?
4. What is the Sabin Center for Climate Change Law? Where is it based? What is its mission?

**Example 3: Go to: [ipcc.ch](http://ipcc.ch)** and find the IPCC’s report, Climate Change 2022: Mitigation of Climate Change, released April 2022. Click on **the Summary for Policymakers**.

**Questions:**

1. See B.6 on page 18. According to the report, what will be the likely outcome if countries implement the NDCs announced prior to the COP26 held \_\_\_\_\_ in \_\_\_\_\_ 2021?

*NDC = Nationally Determined Contribution = climate action plan to cut emissions and adapt to climate impacts. Each party to the Paris Agreement is required to establish an NDC and update it every 5 years. 151 Parties communicated a new or updated NDC as of November 2, 2021.*

*COP = Conference of the Parties = global climate summit*

2. See C.1 on page 21. To have a greater than 50% likelihood of limiting warming to 1.5°C - 2°C, when must GHG emissions peak? How much are temperatures likely to rise if policies are not strengthened and GHG emissions continue to rise beyond 2025?

3. See C.3 on page 28 & C4 on page 32. What needs to be done to maximize the chances of limiting warming to 1.5°C - 2°C?
4. How might this report affect the way you advise clients in the energy, manufacturing, or construction sectors?

## **CLASS 2: NEWS AND ANALYSIS PRESENTATIONS/INTRODUCTION TO RESEARCHING U.S. ENVIRONMENTAL LAW AND POLICY**

**Learning Objectives:** Students will share what they found in their Class 1 research assignment with the rest of the class. Students will then learn about resources for researching domestic policy and legislation.

**Background Reading:** Congressional Research Service Report on U.S. Climate Change Policy (for overview of U.S. Climate Change Policy)

### **Resources for Researching U.S. Environmental Law & Policy:**

#### **Federal Resources**

- **Library of Congress: Summary of Federal Environmental Laws**  
(<https://guides.loc.gov/environmental-law/federal-laws>)

The Library of Congress's Research Guide on U.S. Environmental Law provides an excellent summary of the major federal acts, including citations with direct links to the acts and relevant agency pages.

- **Library of Congress: Federal Agencies and Regulations**  
(<https://guides.loc.gov/environmental-law/agencies-and-regulations>)
- **U.S. EPA - Laws and Executive Orders**  
(<https://www.epa.gov/laws-regulations/laws-and-executive-orders>)
- **Federal Register, Proposed Environmental Regulations**  
(<https://www.federalregister.gov/environment>)

#### **State Resources**

- **Library of Congress, Guide to Law Online: U.S. States and Territories** (<https://guides.loc.gov/us-states-territories>)
- **National Conference of State Legislatures - Environment and Natural Resources** (<https://www.ncsl.org/research/environment-and-natural-resources.aspx>)  
Includes an environmental bill tracking database.
- **U.S. EPA - Health and Environmental Agencies of U.S. States and Territories** (<https://www.epa.gov/aboutepa/health-and-environmental-agencies-us-states-and-territories>)

### **Government Reports**

- **NOAA Climate Monitoring Reports**  
(<https://www.ncei.noaa.gov/access/monitoring/products/>)  
Includes reports such as monthly climate reports and extreme climate events, e.g., drought reports, wildfire reports, storm reports etc.
- **Congressional Research Service - Climate Change**  
(<https://crsreports.congress.gov/search/#/?termsToSearch=%22climate%20change%22&orderBy=Relevance>)
- **GlobalChange.gov**  
The U.S. Global Change Research Program (USGCRP) is a federal program mandated by Congress to coordinate federal research and investments in understanding the forces shaping the global environment, both human and natural, and their impacts on society. USGCRP facilitates collaboration and cooperation across its 13 federal member agencies to advance understanding of the changing Earth system and maximize efficiencies in federal global change research.

*In-Class Exercises to help students become familiar with these sources.*

### CLASS 3 & 4: RESEARCHING & ANALYZING U.S. LAW & POLICY

**Learning Objectives:** Students will work in groups to read and analyze major Supreme Court Opinions on the Clean Air Act, as well as news articles on “sacrifice zones” and the Clean Air Act.

**Background Reading:** Pages 27-30 of Pamela Corley & Artemus Ward, *Intracourt Dialogue: The Impact of U.S. Supreme Court Dissents*, J. of L. and Courts (Spring 2020); David Cole, *The power of a Supreme Court dissent*, The Wash. Post, Oct. 29, 2015.

#### Example Research & Discussion Questions:

1. Read *Michigan v. EPA* and *West Virginia v. EPA* and answer the following questions:
  - 1) Compare the majority opinions with the dissents. Which did you find more convincing? Why?
  - 2) What is the purpose of a dissent? Why do you think Kagan wrote such a long and detailed dissent in each case?
  - 3) Are you satisfied with Scalia’s and Roberts’ responses to the dissents in their opinions?
  - 4) How might you use the dissents to further environmental objectives?
  - 5) How might you use the majority opinions to further environmental objectives?
  
2. **Read the following articles from ProPublica:**

Lylla Younes, et al., *Poison in the Air*, ProPublica (Nov. 2, 2021), <https://www.propublica.org/article/toxmap-poison-in-the-air>

Al Shaw et al., *The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S.*, ProPublica (Originally published Nov. 2, 2021) <https://projects.propublica.org/toxmap/>

Lisa Song & Alexandra Zayas, *New Air Monitors Among Major Impacts of ProPublica Toxic Air Pollution Reporting*, ProPublica (Sept. 29, 2022) <https://www.propublica.org/article/missouri-epa-air-monitors-louisiana-cancer-alley>

#### Questions:

- 1) What surprised you about these articles?
- 2) What legal strategy did the plaintiffs in the latest article adopt to stop the construction of the industrial plant?
- 3) What additional legal research might you want to do to learn more about the regulation and legality of “sacrifice zones”, such as those described in the articles?
- 4) Do you think the Clean Air Act as written is sufficient to protect against pollution in “sacrifice zones”?
  - a) If not, what additional legislation or agency action is necessary?
  - b) What are the obstacles (legal, political, structural, and cultural) to successfully passing that legislation or regulations? To answer these questions what additional research do you have to do? What sources might you use?
- 5) Might other legal or social theories (e.g., feminist studies, critical race theory) be useful in devising legal or policy arguments against the construction of highly polluting industries in marginalized communities?
  - a) Using platforms such as bePress, SSRN, Google Scholar, and other interdisciplinary sources, try to find 1 or 2 articles that you think might help in structuring a policy or legal argument.
- 6) Now consider both the Supreme Court’s discussion and analysis of the Clean Air Act and the news stories you read about the Clean Air Act.
  - a) Which interests do you think are most powerful or influential in determining how the Clean Air Act is interpreted and applied?
    - i) Who were the specific parties that prevailed in the Supreme Court cases? In the case discussed in the ProPublica article? Who were the parties that they were up against? How were the parties funded? Who were the attorneys who represented these parties?
    - ii) What structural or legal reforms might help parties who want to strengthen the Clean Air Act?

**CLASS 5: RESOURCES FOR RESEARCHING INTERNATIONAL AND FOREIGN LAW ON CLIMATE CHANGE**

**Learning Objectives:** Students will learn about various resources for researching international and foreign law on climate change.

**Background Reading: UNFCCC eHandbook:**

<https://unfccc.int/resource/bigpicture/> This guide seeks to provide a starting point for newcomers to help them see the ‘big picture’ of the United Nations (UN) climate change regime.

**International Law:****Major Treaties:**

- The Paris Agreement
- UN Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol
- The Ozone Treaties: Vienna Convention and Montreal Protocol
- Convention on Biological Diversity (includes the Nagoya and Cartagena Protocols)
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Aarhus Convention
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

**Guides & Background Information:**

- **United Nations Dag Hammarskjöld Library, Climate Change Research Guide:** <https://research.un.org/en/climate-change/introduction>
- **American Society of International Law, Special Topics: International Law and Climate Change:** <https://www.asil.org/topics/signaturetopics/climate-change>
- **IPCC Library,** <https://www.ipcc.ch/library/>
- **Earth Negotiations Bulletin,** <https://enb.iisd.org/> ENB is a reporting service on UN environment and development negotiations.

**Foreign Law:**

- **Climate Change Laws of the World** (<https://climate-laws.org/>) Database of foreign climate change legislation, litigation, and executive documents.

- **EcoLex** (<https://www.ecolex.org/>)  
Database of translated environmental legislation and jurisprudence
- **Climate Action Tracker**  
(<https://climateactiontracker.org/countries/>)  
The Climate Action Tracker is an independent scientific analysis that tracks government climate action and measures it against the globally agreed Paris Agreement aim of "holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C."

*In-Class Exercises to help students become familiar with these sources.*

## **CLASS 6: CLIMATE LITIGATION (U.S. & GLOBAL)**

**Learning Objectives:** Students will learn about different litigation strategies employed in climate litigation cases, using the Sabin Center for Climate Change Litigation Database.

**Sample Exercises:** Compare and contrast the Sabin Center for Climate Change U.S. and Global Litigation Databases with Westlaw or Lexis for the following research issues. What are the pros and cons of each? How might you use the two platforms together in developing a legal argument? (Students can break up into groups and then present their findings as a group to the rest of the class).

- (1) (U.S. Litigation) You are drafting a report on lawsuits and criminal charges brought against climate activists for protesting the construction of fossil fuel infrastructure. Find relevant cases and summarize any overall trends or common characteristics.
- (2) (U.S. Litigation) You are considering bringing a lawsuit under NEPA (the National Environmental Policy Act) to oppose the granting of permits for a liquified natural gas plant and want to find other lawsuits brought against fossil fuel companies under NEPA. Find relevant cases and summarize any overall trends or common characteristics.
- (3) (U.S. Litigation) You work for an environmental justice nonprofit and are developing a broad litigation strategy to confront the problem of sacrifice zones and environmental inequity. You want to brainstorm different constitutional claims that can be brought to address the specific challenges faced by historically marginalized communities in the face of climate

change. Find cases that might be helpful in brainstorming an effective legal approach or strategy.

- (4) (Global Litigation) You want to research how human rights tools have been used in climate litigation and the success of these lawsuits. Find cases that have used human rights tools to make climate arguments. Do you think any of these strategies or tools might be effective strategies in the U.S.? Even if they do not have a legal path in the U.S., do you think the arguments could be incorporated in other tools, e.g., corporate due diligence frameworks? Legislation?
- (5) (Global Litigation) You want to research how climate litigation has targeted trade and investment. Find relevant cases and summarize any overall trends or common characteristics.

**Additional Question for Class Discussion:** Did you learn of any new litigation strategies or types of claims that can be used in climate/environmental justice litigation? Consider all the sources you used so far in this course. How might you use each source, or combination of sources to research litigation strategies for advancing climate initiatives? To research climate litigation risks to your client? To draft policy initiatives or legislation?

## **CLASS 7: CLIMATE CHANGE & BUSINESS: RESEARCHING CORPORATE RESPONSIBILITY AND CLIMATE OBLIGATIONS**

**Learning Objectives:** Students will learn about secondary sources for researching corporate responsibility, as well as use resources such as the Chancery Lane Project to respond to a transactional hypo.

**Background Reading:** Chiara Macchi, *The Climate Change Dimension of Business and Human Rights: The Gradual Consolidation of a Concept of 'Climate Due Diligence'*, 6 Bus. and Hum. Rts. J. 93 (Dec. 2020).

### **Sources:**

Business & Human Rights Resource Centre: <https://www.business-humanrights.org/en/>

The Chancery Lane Project: <https://chancerylaneproject.org/> (Note the Chancery Lane Project has been incorporated into Practical Law)

**Sample Exercises:**

Use the Chancery Lane Project and Practical Law for the following research questions:

1. You are the general counsel for a major building management company that owns and leases several office and residential buildings. The board wants to improve its reputation for operating sustainable, environmentally friendly properties and while it has upgraded many of its buildings to achieve an Energy Performance Certificate (EPC) ‘A’ rating, some occupants have complained that these certificates are insufficient at best, greenwashing at worst, as the buildings are not operated efficiently. The board has asked you to examine whether it is possible to include a clause in its standard lease agreement that would require tenants to adhere to sustainable operations to minimize the property’s environmental impact. Use Practical Law and the Chancery Lane Project to try to locate “green” lease clauses and list any that you find that you think might be useful.
2. Your firm advises a regional bank that offers small business loans. The board is exploring ways to improve its environmental credentials while avoiding accusations of greenwashing. One idea the board had was to offer lower interest rate loans to companies that can demonstrate measurable environmental benefits such as reductions in greenhouse gas emissions. You have been asked to research and draft such a clause that can be included in lending agreements. Use the Chancery Lane Project and Practical Law to try to locate a “carbon savings clause” for loan facility agreements.

**CLASS 8: WRAP-UP/FINAL PROJECT – PRESENTATIONS FROM STUDENTS ON A CLIMATE CHANGE/CLIMATE JUSTICE ISSUE**

**Final assignment (can be completed as a final paper and/or a class presentation):** Group or individual presentation/paper on an international, foreign, or domestic climate change/environmental justice issue. Students will summarize the issue, provide any background information that is necessary to understand the issue using reliable news sources, describe the various stakeholders and their interests, and propose legal or policy solutions, compromises, or paths forward. Students will also explain any obstacles or drawbacks to their legal or policy proposals and how these obstacles/drawbacks might be overcome and highlight reliable sources and research methodologies.