

UC DAVIS

ENVIRONMENTAL JUSTICE:

ABANDONING EXCLUSIVITY FOR INCLUSIVE COMMUNITY-BASED SOLUTIONS AND APPROACHES



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We are living in unprecedented times. A global viral pandemic has captured worldwide attention, upended our lives, and shined a long overdue light on the generational effects of the systems of discrimination on the health of Black, Indigenous, and people of color (BIPOC). We have recently seen horrific tragedies at COVID-19 hotspots like South Los Angeles, a predominantly Latinx and Black neighborhood. At Martin Luther King Jr. Community Hospital, staff scrambled to find the supplies, space, and workers to care for the onslaught of patients in a region that was seeing a new COVID-19 case every six seconds and a death every eight minutes. This is not a community that flouted public health guidelines and refused to wear masks, but one filled with bus drivers, grocery shelf stockers and cleaners who live in overcrowded conditions because of Los Angeles' long standing housing crisis. As seen throughout the country, BIPOC adults and children are disproportionately affected by the virus in part because they are already in poor health when exposed. BIPOC tend to live in higher polluted areas and have experienced more severe COVID-19 health outcomes than those living in cleaner environments. For example, Black communities are exposed to more particulate matter than other communities, even when socioeconomic status is comparable. Particulate matter is associated with asthma and adult cardiorespiratory disease, two risk factors for COVID-19. Therefore, the on-going pandemic is also highlighting environmental injustices in the United States and other European countries.

BIPOC communities are also at the forefront of the global climate crisis. They experience greater susceptibility to climate change impacts due to the legacy of race-based zoning laws, political and economic marginalization, and existing social, health,

housing, and poverty disparities. This is especially true for native communities whose way of life and food security have been linked to the land for generations. Those outside of Native communities have little understanding of the immediate and disruptive impact that the climate crisis has already had. For example, the Swinomish tribe in the Pacific Northwest region of the United States has watched the salmon season they counted on for millennia dwindle from 8-months to a just few days per year. As sea levels rise, permafrost melts, coasts erode, and waters warm sufficiently to impact local species on ancestral homelands, Indigenous people around the world are increasingly being challenged with threats to their food source, water quality, income, and physical and mental health.

Communities with a legacy of racism codified in housing policies and land use decisions also find themselves at greater risk from rising temperatures. Hotter temperatures have been measured in communities previously redlined by banks. Redlining was a discriminatory practice of denying mortgages to residents of certain areas based on their race to "protect" the investments of wealthier white communities. As a result, many redlined areas suffered from poor or neglected city planning, such as having denser housing and concrete spaces rather than community parks and green spaces that can help mitigate hot temperatures decisions and urban maintenance that favored wealthy white communities at their expense. Recent investigations of "urban heat islands" show increased land-surface temperatures in those areas that were previously redlined by banks and higher rates of emergency department visits due to asthma. Communities suffering the highest rates of COVID-19 infection, serious illness and death are also those with the greatest environmental exposures and extreme weather events (*see Box 1*).

Environmental Injustice Case: Dallas, Texas

A south Dallas, Texas community watched a mountain of toxic waste ([www.washingtonpost.com /climate-environment/2020/11/16/environmental-racism-dallas-shingle-mountain/](http://www.washingtonpost.com/climate-environment/2020/11/16/environmental-racism-dallas-shingle-mountain/)) grow until it towered 60 feet tall over their backyards, shadowing their homes, stretching more than a city block in a neighborhood settled by formerly enslaved people. For more than a century this area has been zoned for everything wealthy White communities did not want: industrial rail yards, chemical plants, a landfill, concrete factories, and industries that brought up to 100 diesel trucks per day to the neighborhood. Land-use decisions and redlining by White decision makers who are long gone continue to have a lasting negative impact across the United States. In this instance, in 2017, two White business partners decided that this BIPOC community was an ideal place to start a dump and illegal recycling operation that ground black shingles into dust and spewed toxins and fine particulate matter into the air. City officials looked the other way as the mountain grew and then ignored residents when they started complaining in January 2018. It took months of pressure to get city officials to acknowledge the operation's existence, and two years to make plans to remove this health hazard.

Recent studies have shown that people of color in Dallas breathe more polluted air than White residents and have a shorter life expectancy. Across the United States, Black and Latinx residents are far more likely than White people to live near landfills, power plants, and other sources of emissions that reduce air quality. Additionally, they are far more likely to die from exposure to pollution. "Shingle mountain" is yet another chapter in the fraught racial history of the City of Dallas. Before the Civil War, downtown Dallas burned to the ground and enslaved people were blamed. White residents suspected a rebellion, so every single enslaved person in Dallas was flogged. This is the legacy of a Dallas, a city within one of the most vehement proslavery states in the Union. Texas defined itself as a safe haven for slaveholders and declared that the institution of slavery would never end. Texas is also the birthplace of Juneteenth, the Black freedom holiday that started in Galveston after Texas resisted emancipation years after it was decreed. After Texas' reluctant acceptance of the end of slavery, Dallas had the largest per capita Ku Klux Klan chapter in the United States. This is the legacy upon which city planning occurred that created the conditions that made environmental travesties like Shingle mountain not only possible, but also inevitable. BIPOC districts have the highest levels of air pollution and sulfur dioxide emissions in the city. According to "," nearly 300 industrial sites emit pollution in Black and Latinx Dallas. This pollution leads to reduced life expectancy, according to a study by the University of Texas Southwestern Medical Center, where authors found that life expectancy in Texas varied as much as 30 years between ZIP codes.

Box 1: *Environmental Injustice Case: Dallas, Texas*

Environmental Justice: Historical context

Principles of environmentalism in the United States began in the late 1800s. This movement primarily involved the conservation of nature, but precisely left out the environmental struggles of BIPOC.

Environmental justice (EJ) was primarily championed by communities carrying the heaviest pollution burdens who saw the need to incorporate social justice into the

environmentalism movement. Much of current EJ activism is grounded in the legacy of the United Farm Workers of America (UFW) led by Cesar Chavez who began organizing farm workers in the 1960's to protest their exclusion from workplace protections of fair treatment and fair wages that had begun in 1935. UFW organizing strategies – boycotts, clergy-labor partnerships, and door-to-door outreach – informed the public about the health risks of pesticide exposures to farmworkers and

consumers and resulted in improved working conditions. Additionally, many commonly used pesticides were banned, and UFW initiated lawsuits helped strengthen pesticide regulation and improved public access to pesticide application reports. Much of the national movement for immigrant rights, the building of Latinx political power, reshaping of labor advocacy, and environmental justice has its roots in the farmworker movement. This includes Barack Obama's 2008 presidential campaign theme that affirmed the UFW spirit of "Si Se Puede" (Yes, We Can) persists in the movement for social and economic justice in the United States.

EJ issues were propelled into the mainstream consciousness in the 1980s when protests in the South took national prominence. In 1982, mass demonstrations were held in Warren County, North Carolina against the plan to bury 60,000 tons of toxic PCB-contaminated soil in the landfill. Protests led to arrests of dozens of activists, including District of Columbia's Delegate to Congress, Walter E. Fauntroy. He would later commission the United States General Accounting Office (GAO) to investigate similar landfills in southern states and find that they were all located in black or low-income neighborhoods. In 1987, research by the United Church of Christ's Racial Justice Commission comprehensively documented the presence of hazardous waste sites in racial and ethnic communities throughout the United States. Their landmark study showed that three out of five Latinx and Black Americans and half of all Asian/Pacific Islanders and Native Americans lived near at least one abandoned or uncontrolled toxic waste site.

Several local organizations were formed across the country to address environmental and economic justice issues after the GAO and United Church of Christ's reports were

released. In 1991, this mobilization resulted in the convening of several hundred Native American, African American, Latinx, and Asian/Pacific Islander delegates at the First National People of Color Environmental Leadership Summit held in Washington, D.C. The outcome was a comprehensive platform for a national and international movement of all people outlined as 17 Principles of Environmental Justice. Since then, the principles put forth in this document have served as a foundation for the growing EJ movement. With pressure and advocacy from these groups along with the mounting data that racial minority and low-income populations bear greater environmental risk than the general population, the Office of Environmental Equity (now called Office of Environmental Justice) within the EPA was founded in 1992. Two years later, President Clinton signed an Executive Order for federal agencies to address EJ in minority and low-income populations in all their policies. However, Congress never passed a bill to make the order a law. Thus, the United States has done little to enforce these principles. This is evident to this day as industrial sites, heavily-used and -polluted freeways, and hazardous waste sites tend to be located close to poor communities that disproportionately include BIPOC. These communities have little to no regulatory and legal protection from the industries and polluters around them and need the work of EJ advocates to voice their concerns and advocate for protections.

The Washington Post conducted a comparison between the implementation of the Obama administration's Clean Power Plan and the Trump administration's Affordable Clean Energy Plan, which supplanted the previous administration's plan and was less stringent about reducing emissions. The most striking finding was that the Trump administration's



plan would have no effect on environmental inequities even though the Trump administration's own analysis concluded that there may be 1,400 more premature deaths than there would be under the Obama administration's Clean Power Plan. This approach was consistent with the Trump administration's purported race and class blind policies despite extensive data showing that air pollution exposures are associated with worsened health outcomes and higher exposures are experienced by low income and BIPOC communities.

Several states, including California, have implemented economic incentives for companies to reduce pollution to combat not only climate change, but also to protect local communities. The California Air Resources Board's cap-and-trade program sets an overall cap on carbon emissions and leaves it up to companies to either cut their emissions, buy

permits, and keep emitting or offset their emissions by reducing them somewhere else, i.e., planting a tree farm. Overall, California's emissions have dropped even as the state's economy has grown, and cap-and-trade has played a role in this reduction. However, many disadvantaged communities have actually seen their local emissions rise. This is because many of the large polluters locate their companies in or near disadvantaged areas, and state and local agencies cannot regulate facility emissions at their source. This means that a facility can readily pollute in one area and then offset this pollution by planting trees in another part of the state or even outside of California. This process has made pollution a commodity and has failed communities with the highest exposures. Researchers and local environmental justice advocates have found that emissions increased during the first two years of cap-and-trade implementation showing us the

race- and income-blind environmental policies fail those who need the greatest protection whether initiated at the local, state, or federal level.

How is the research community addressing environmental justice?

EJ research remains a small area within the field of environmental sciences, even though intersectionality is an established factor in environmental health. There has been significant movement in the development of EJ principles and an increasing body of literature addressing environmental exposures. However, this work has been hampered by a standard narrative that fails to address health and compartmentalizes environmental exposures, communities, and boundaries without attending to the social forces that shape these conditions. The research community has historically tackled questions of environmental health injustices by measuring differential exposures of single environmental hazards based on socioeconomic status, geography, or race/ethnicity. This type of evidence is often preferred by lawmakers and better understood by the public to create urgency to address the problem.

The EJ community has been calling for a more cumulative approach to understand the multiple exposures and impacts faced by their constituents in the places where they live, work, and go to school. Advocates and researchers are now more often launching investigations that address the impact of racism and colonialism, past and current land use decisions, and their contribution to health disparities. Combining these approaches with measures of the sum total of pollutants that a community faces has the potential to paint a clearer picture of the link with history and the extent of exposures and their impact on the unequal burden faced by BIPOC people when

compared to the rest of the population. This approach pushes decision makers to understand the impact of cumulative exposures to multiple environmental chemical contaminants in the context of the social determinants of health.

Creating sustainable approaches to reduce health burdens requires effective and equitable collaborations of researchers engaged with affected communities and truly multi-disciplinary teams that extend beyond our limited perception of what multi-disciplinary means. In this manner, we can identify optimal targeted solutions, utilize research to build community resilience, improve enforcement measures, increase environmental health literacy of the public, and empower communities most at risk.

Colonized environmentalism

The pandemic is hastening the collapse of many systems built on colonialism, racism, and environmental exploitation at the expense of mental, spiritual, and physical well-being. This, and the racial uprisings of the summer of 2020, have propelled and hastened a push toward the dismantling of systemic racism, the decentralization of power, and the welcoming of non-White, non-European values into all areas of society including environmental and conservation science.

Indigenous activists have historically been excluded from environmental initiatives even while defending the land so deeply beloved and cherished by their people. It has been difficult for them to get a seat at the political table, and the modern environmental movement has been driven largely by Eurocentric, Judeo-Christian belief structures that conflict with those of Indigenous communities and the African slaves brought here. The Eurocentric, Judeo-Christian

mindset has historically conceived of “man” and “nature” being separate and considered the Earth, including its non-human inhabitants and resources, to be used for whatever “man” needs. The subjugation of nature is promoted in Genesis 1:28:

God blessed them and said...“Be fruitful and increase, fill the earth and subdue it, rule over the fish in the sea, the birds of heaven, and every living thing that moves upon the earth.”

In contrast, the colonized and the enslaved of this continent came from cultures with underlying belief structures that viewed human beings as just a small part of the natural world – neither superior nor separate. This ideology upholds the connection of human beings to the Earth and all living things.

The “man versus nature” belief system supported and justified European imperialism. This same bible verse was often used and quoted to justify the oppression, mass extinction and cultural genocide and further spread of this dogma as BIPOC peoples were forced to abandon their cultural truths for their survival. This schism between man and nature persists today. It is evident in our anthropocentric language of environmentalism and environmental science: we **preserve** wilderness as domains separate from those of humans, we **manage** wildlife populations, and **create** sustainable ecosystems, on stolen lands after the forced removal of the original caretakers. The new caretakers, like the United States Department of Agriculture’s Animal and Plant Health Inspection Services, works to **combat wildlife damage**. This ideology that wildlife could pose a threat to human health, safety, natural resources, and property was new to this land, and this discord in concert with American colonialism has had a profound negative effect on the management of Indigenous land and Indigenous

communities by the United States government. Simultaneously, Black Americans have been discouraged from enjoying the outdoors. Many were lynched in these landscapes, so for them, the experience of the outdoors was linked with putting your life at risk. The Natural Park Service capitulated to Jim Crow laws in parts of the country where segregation was enforced. In those parks, facilities built for Black visitors did not match in quality to those built for White visitors or were not as readily available. These measures made it more difficult for African Americans to enjoy nature, which then resulted in park officials and American society at large perceiving that African Americans did not want to visit parks and had low interest in outdoor recreation. These viewpoints steeped in the legacy of racism and colonialism now influences who we think of when asked to picture an environmentalist. A 2018 study in the Proceedings of the National Academy of Sciences uncovered the persistence of the image of what an environmentalist looks like. They found that the majority of Americans believe that people of color do not feel strongly about environmental causes; the image in most people’s mind of an environmentalist is someone who’s white, well-educated, and in the middle class. Respondents of all ethnicities overwhelmingly associated environmentalism with Whiteness, and underestimated environmental valuation in their own communities. Yet, in this same survey non-White participants overwhelmingly reported higher levels of concern for the environment than White respondents. While communities of color are more likely to live in areas with poor air quality and are overall more vulnerable to the effects of climate change, the public perception of who cares for the environment is an additional factor in why policies and advocacy efforts often ignore the most vulnerable communities.



Abandoning exclusivity for inclusive community-based solutions and approaches

Indigenous knowledge can reveal truths not available when relying on Eurocentric approaches to conservation. Indigenous cultures and economies are spiritually connected to their ancestral ecosystem and acknowledging traditional ecological knowledge is critical to understanding and combating climate change. A 2019 investigation into the impacts of climate change on 11 Indigenous coastal communities in northern British Columbia and southeastern Alaska found a dynamic and resilient social-ecological system where Indigenous Peoples have adjusted to changing climate and biodiversity for millennia. Interviews with community members provided a unique lens into the effects of environmental change and showed that they were aware of significant environmental shifts over their lifetimes, as

well as the acceleration in changes over the last two decades. Respondents described changes in weather patterns, and the behavior, distributions, and availability of important plants and animals. The investigators concluded that our current environmental policies are far too rigid in their exclusion of Indigenous knowledge and that token community visits must evolve into a more inclusive respect and recognition of Native environmental observers and managers so that they can share their knowledge to create tangible progress. In this vein, 11 Alaskan tribes formed a partnership to identify harmful algae blooms by weekly collecting water samples that are used to identify and quantify phytoplankton species and cellular toxins along with recording environmental parameters so that shellfish can be safely harvested. Similarly, in October 2019, the Rosebud Sioux welcomed a large new buffalo herd as the basis of a new community food

system. Tribal citizens, officials, representatives of the National Park Service and the World Wildlife Fund participated in the effort to populate the tribe's newly named Wolakota Buffalo Range. The herd was established to rebuild the tribe's connection to their land and restore a healthy balance between the land, people, animals, plants, and water. The restoration of the bison to native land was the culmination of decades of work by scientists and park managers to ensure that the herd would grow from the initial 100 transferred from federal park land to 1,500 over several years.

African Americans are also working to repair their fractured connection to the land. Africans were kidnapped and enslaved both for their forced labor and their skills and knowledge that allowed them to cultivate colonized land. The combination of free labor and land propelled the United States into superpower status, supplanting European nations that had previously occupied that position. Subsequent systems of racism have systematically fractured African American's connection to living off the land with the targeted lynching of Black landowners for the appropriation of their land and the Great Northward Migration of Black families and individuals to the Northeast, Midwest, and West, from the Jim Crow South into urban ghettos. For those who stayed, they were faced with the challenge of farming an eroded and exhausted soil that was the result of the unrelenting cultivation of cotton. George Washington Carver, an African American professor and scientist at Tuskegee University in Alabama, taught regenerative agriculture – the use of cover plantings, crop rotation, and minimal disturbance to the soil – that dramatically increased crop yield. Young Black farmers are now honoring this legacy and the legacy of their ancestors by using heritage farming practices to undo some of the soil damage done by early European agriculturists

and restore organic matter and capture greenhouse gases.

A forestry project in the West African country of Benin is another positive example of community engaged research and resource management. Since European colonialism in Benin, the Tobé-Kpobidon forest has been owned and managed by the state to the exclusion of the Indigenous population. Unsustainable practices led to the degradation of the land, and this insult to the ecosystem was mirrored in the deep poverty of the original caretakers. A team of researchers working with a stakeholder group that included elders, community leaders and priests (representing deities revered by the locals) implemented a community approach to forestry. Decentralization of power and integration of the community's belief structures fostered participation from all residents of the forest and the surrounding areas. Forest communities gained access for hunting, beekeeping, and harvesting of medicinal products, which resulted in a significant positive impact on the local economy and native flora for the years during and after the study. The project validated Indigenous knowledge and began to reverse some of the devastating impacts of colonialism and racism that had thrown this community into a subsistence economy and damaged the forest ecosystem. The project was hailed as a win for community forestry and as evidence that right of access to forest property correlated with improved livelihood of forest dependent communities. In addition, the project demonstrated that a sustainable ecological outcome can result in improved economic stability.

What does equity look like in conservation and environmental science?

We know that racism and systemic racism limit a BIPOC person's power to influence

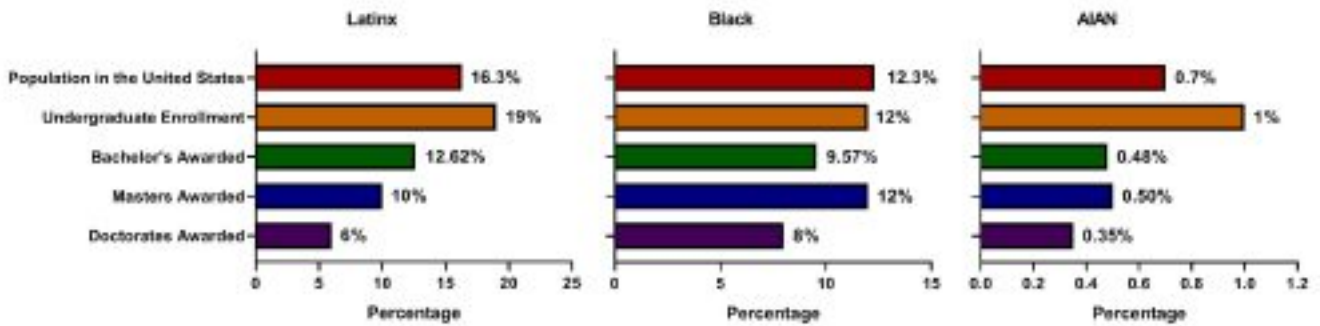


Figure 1: Demographic data of enrollment and degrees in 2016 of minorities in science and engineering from the National Center of Science and Engineering Statistics (NCSES).

environmental policies and practices. This has been compounded by conservation organizations historically having leadership that is predominantly white and male. In addition, jobs in conservation and environmental science typically pay less than other fields. BIPOC often do not have the luxury of accumulated family wealth, to take low paying jobs, especially very low paying entry levels jobs necessary to gain experience. Similarly, many jobs in environmental science and research require an advanced degree. Getting into college means being lucky enough to attend the right schools, have the right support systems, and the luxury of staying out of the job market long enough to attain the years of education needed to enter the field. While systems of inequitable primary education need to change, we within academia and conservation organizations must recognize that the movement needs heterogeneity of ideology to solve the complex issues that we face. This commitment starts with acknowledgment of the contributions that we all make to perpetuate injustice both at the individual and organizational level and taking an honest look at how ideology and systems within our institutions specifically and actively exclude and repel people of color. We must stop being comfortable with the overrepresentation

of white people in environmental and conservation spaces. This will require a rigorous approach to combating stereotypes of environmentalists and creating inclusive spaces that welcome the diversity that environmental science so desperately needs.

A major challenge is supporting BIPOC students who want to specialize in environmental sciences and other STEM fields. According to a recent study, without a diverse research community, academia will lack a diversity of perspective for how to frame and approach environmental problems. This lack of inclusion of diverse perspectives may further exacerbate health disparities and stall advancements in public health policy. The lack of representation is a multifaceted problem, including the limited access to quality education and the opportunity to attain a higher education degree as BIPOC live in underserved neighborhoods and communities. However, once successfully admitted to universities, Black and Latinx university students enrolled in STEM programs either switch majors or drop out at higher rates than their White peers. This is compounded by the fact that BIPOC make up less than 10 percent of tenured faculty positions, and in research-intensive science departments, less than 4

percent of tenured professors are African American, Hispanic, or Native American (**Figure 1**).

The few BIPOC who attain academic research positions often experience racial disparities in federal research funding. A recent survey of funding by the National Institutes of Health (NIH), the largest funder of scientific research in the United States, revealed that even after controlling for education, training and publication record, Black researchers are 10 percent less likely to receive funding than their White colleagues. Since researchers from underrepresented communities are more likely to study their communities, this systemic racism within funding structures hinders progress in understanding the needs of the most vulnerable communities. This funding gap has been known for at least a decade but remains unchanged. Underfunded scientists often do not reach research benchmarks required for promotion and tenure and may subsequently leave academia, which leaves classrooms without role models for BIPOC students.

Decades of activism and EJ research have taught us that preserving environmental health is fundamental to providing and preserving human health. The mass protests for Black lives have energized the movement for equity and the welcoming of non-European values into conservation and environmentalism. For example, the Sierra Club, despite decades of exclusivity and honoring eugenicist founders, has embarked on what they describe as the “beginning of a long journey for Sierra Club; by centering our key principles of equity, justice and inclusion in every aspect of our work”. The acceleration of changes in our global climate compels us to address the environmental impacts on health that are experienced by those already burdened with poverty, racism, and adversity.

We must recognize that the way we have historically approached environmental health has ignored both the effect on and the potential contributions of the most vulnerable populations. Research and policies addressing environmental issues must center equity, so that community members’ knowledge, input and guidance are centered, respected, and sought. Sustainable approaches to reduce health burdens will require effective and equitable collaborations of researchers engaged with affected communities, and truly multi-disciplinary teams that extend beyond our limited perception of what multi-disciplinary means. In this manner, we can identify optimal targeted solutions, utilize research and policy to build on community resilience, improve enforcement measures, increase environmental health literacy of the public, and empower communities most at risk.

Links to further reading

1. <https://www.openaccessgovernment.org/going-viral-covid-19-environmental-injustice-institutionalised-racism/93724/>
2. <https://bppj.berkeley.edu/2020/04/10/californias-cap-and-trade-program-has-proven-effective-now-lets-make-it-equitable/>
3. <https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/conl.12431>
4. <https://www.pnas.org/content/115/49/12429>
5. <https://doi.org/10.1007/s13280-019-01218-6>
6. <https://journals.sagepub.com/doi/full/10.3102/0013189X19831006>
7. As Long As Grass Grows: The Indigenous Fight for Environmental Justice From Colonization to Standing Rock, by Dina Gilio-Whitaker. Published in 2019 by Beacon Press, Boston, MA.
8. A Terrible Thing to Waste: Environmental Racism and Its Assault on the American Mind, by Harriet A. Washington. Published in 2019 by Little, Brown Spark Hachette Book Group, New York, NY. ISBN-978-0-316-50943-5



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