

# Advancing Environmental Justice Pedagogies

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Photo Credit: Michelle Ng, EJ Working Group Annual Retreat, February 2023

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# Executive Summary

The goal of this white paper is to advance environmental justice (EJ) pedagogies at the Stanford Doerr School of Sustainability. With EJ comprising a core value of the Doerr School, we draw from research and practice to offer strategies for faculty, lecturers, and administrators to integrate EJ principles and practices into curricula and classrooms.

Our work first describes teaching strategies that support EJ pedagogy, then proposes action steps to support instructors and administrators with integrating EJ pedagogies into their teaching philosophy, curricula, and classroom practices.

First, we draw on the EJ and education literature to identify key elements of EJ pedagogies. We discuss a selection of foundational articles that consider complementary and intersecting components of EJ pedagogies, including some focusing specifically on “**critical EJ pedagogy**”<sup>1</sup>. Building on this foundation, we also draw on selected literature on **anti-racist pedagogy, feminist pedagogy, Afrocentric pedagogy and Indigenous pedagogy, eco-justice pedagogy, land-centered pedagogy, and critical community engaged learning (CEL) pedagogy**. Informed by this literature on relevant teaching philosophies and our experience in EJ classrooms, we offer a definition of EJ pedagogy that includes five specific strategies:

1. **Assessing positionality and intersectionality**—Instructors and students reflect on how our own identities—including our race, class, gender, sexuality, ability, and nation—intersect to convey or withhold power and privilege in particular settings, and shape our understanding of society, history, the environment, and social movements.
2. **Centering race and Indigeneity**—Course content calls attention to and centers discussions around race and Indigeneity, examines how racial injustice shapes stories of struggle and resistance to environmental injustice by historically marginalized communities, and privileges course materials in which historically marginalized communities speak for themselves.
3. **Including multiple ways of knowing**—Course content includes important forms of knowledge and non-Western worldviews that are often silenced in our pursuit of sustainability solutions, including arts and storytelling, Indigenous knowledge systems, and the lived

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<sup>1</sup> The authors of this paper appraise “critical environmental justice (CEJ) pedagogy” as the pedagogical standard to aspire to. While our EJ pedagogy definition comprises numerous aspects in common with definitions of CEJ, it is limited in others that are also crucial. Our guide is meant as a first stepping stone for instructors with less experience teaching EJ content and employing EJ strategies. We hope that instructors eager to deepen the critical lens of their existing EJ content explore Dr. David Pellow’s “Toward a Critical Environmental Justice Studies” (2016) and other literature cited in the “Critical Environmental Justice Pedagogies” section.

experience of individuals, which are imperative for advancing climate justice and a more sustainable future.

4. **Dialogic learning**—The classroom dynamic facilitates mutual exchange between instructors and students, who are both learners and experts, where the instructor uplifts the agency of students through multiple strategies, e.g., inviting student participation in shaping course learning goals, classroom norms, course content, and assessments/deliverables.
5. **Reciprocity**—Instructors demonstrate the importance of, and aim to model, building long-term relationships with community members and social movements based on authentic trust, mutual capacity-building, and relevancy, where collaborations between academic and community partners attend to the community’s real needs.

Second, we lay out practical action steps for instructors seeking to implement EJ pedagogies in their classrooms, and for school/department administrators seeking to support the use of EJ pedagogies among faculty, staff, fellows, and teaching assistants. We include easy-to-use rubrics for instructors and administrators as goal-setting and assessment tools. We highly recommend adopting such assessment tools to encourage the implementation of EJ pedagogy strategies in the Doerr School. This might include, for example, a quarterly self-assessment for instructors offering new classes that center or intersect with EJ topics or pedagogies, as well as rubrics for tracking institutional action steps taken to advance EJ pedagogies: [linked here](#).

We view EJ pedagogies as tools for inviting teachers, students, and administrators alike to consider how current social, economic, and environmental systems maintain social inequities, promote exploitation of particular groups of people, and motivate transformative action towards social and environmental change. Importantly, EJ pedagogies suggest pathways for interrupting trajectories of inequity that are deeply connected to environmental degradation for the purpose of restoration, repair, and justice, as key elements of sustainability education and teaching.

# Introduction

“Societies that prioritize and intentionally connect healthy natural environments and social justice are likely to sustain their institutions, people, and ecosystems in the face of large changes that challenge their status quo.”

—National Academies of Sciences, Engineering, and Medicine (NASEM, 2020, p. vii)

To promote thriving human societies, sustainability scholars and educators recognize the importance of achieving environmental protection and social well-being for all people (Ardoin et al., 2023; Leach et al., 2018). Many also recognize that the environmental challenges facing people and ecosystems are not equally distributed across geographic regions or populations. Socially and economically disadvantaged communities have historically been forced to bear a disproportionate share of environmental harms (Baird, 2008; Colquette & Robertson, 1991; Mohai & Paul, 2019). These same communities have been largely excluded from the environmental protection benefits and decision-making processes that more privileged communities enjoy.

The processes that perpetuate such global disparities are shaping and shaped by transformations in the Earth’s life support systems—with social inequality being highly correlated with biodiversity loss, pollution, anthropogenic climate change, and other negative outcomes for human and planetary well-being (Lazarus, 2014; Rogers et al., 2012).

Presenting a commitment to well-being across generations, Matson et al. (2016) argue that sustainability must tackle issues of fairness, difference, inclusion, and justice embedded in notions of human well-being. As asserted by environmental justice scholars Agyeman, Bullard, and Evans (2003), “a sustainable world must be a just world.” So how do we move forward on a trajectory of inter-, intra-, and multigenerational well-being and a thriving biosphere, given the complexities of inequitable distribution of environmental harms and benefits in coupled human-natural systems?

Environmental justice (EJ) scholarship and practice provides one approach to research and social-ecological problem solving that seeks to achieve social equity as a necessary component of global sustainability. EJ scholarship investigates strategies for a “just transition” to a sustainable future (Agyeman, 2013) by analyzing supply chains and globalization (Pellow, 2007), inequities in the distribution of environmental harms such as pollution (Pulido et al., 1996), social movements in food, energy, land, and climate justice (Agyeman et al., 2016; Mohai et al. 2009), and pathways towards Indigenous sovereignty (Adamson, 2011; Whyte, 2018a, 2018b). Its content comprises inequities in safe access to environmental services rooted in racism, class discrimination, colonialism, sexism, ableism, homophobia, xenophobia, and other systems of oppression (Corbin, 2018; Lazarus, 2014;

Park & Pellow, 2011; Pulido, 1996; Pulido & Peña, 1998; Pulido, 2000; Snyder et al., 2014; Taylor, 2000).

Mobilizing around a commitment to bringing more EJ pedagogy to campus in 2018, the Stanford EJ Working Group developed the foundational document, “Advancing Environmental Justice and Environmental Human Rights at Stanford: A plan for achieving Stanford’s Long-Range Plan and presidential initiatives” to inform Stanford Long-Range Vision planning process (EJ Working Group, 2018). In 2019, Stanford students launched a petition advocating that Stanford hire more Environmental Justice faculty—signed by over 800 people (EJ Working Group, 2019). Students also organized a rally in White Plaza in support of the EJ faculty hire petition, deeper centering of environmental and racial justice in Stanford’s Long-Range Vision, and financial reparations to the Native people on whose land Stanford sits (S.E.R.J. Demands, 2019). In 2021, a comprehensive EJWG Coordinating Council Briefing Memo provided the new Doerr School of Sustainability with a list of strategies for centering EJ in building the new school (EJWG Coordinating Council, 2021). That same year EJ Working Group members coalesced to create a new EJ minor (Bora, 2021), and students Neha Patkar and Keoni Rodriguez and nationwide collaborators developed the Teaching and Learning Environmental Justice (<https://www.teachingej.com>) website, a robust repository comprising hundreds of EJ course syllabi, teaching modules, organization websites, and resource lists from about one hundred formal and informal EJ classrooms nationwide (Patkar & Rodriguez, 2021). Across campus, dedicated faculty, instructors, and staff continue to integrate EJ into university programs, and into their own teaching. Efforts to integrate EJ into Stanford sustainability curricula have been well-received by students, who actively seek additional EJ offerings. (See Boxes 1, 2, & 3).

Supporting this momentum, the Doerr School leadership has positioned environmental justice as a core pillar of the school, thereby uplifting the perspectives of students and instructors who believe EJ should be woven throughout all of our educational programs to inform each class and curriculum. To this end, the Doerr School has committed to developing a leading-edge curriculum for environmental justice, including through the EJ-Centered Dean’s Lecture Series in 2022-2023 (e.g., *Dean’s Lecture Series: Environmental Justice Roundtable*, 2023), the EJ and Sustainability Conference co-hosted by the GSB and the Doerr School (Stanford GSB, 2023), and the Doerr School’s commitment to supporting a new EJ Center in the coming year.

Yet, even with a collective agreement that EJ is needed at Stanford, a critical gap remains in our understanding of how we will advance EJ pedagogies in a meaningful and holistic manner across a diverse set of sustainability departments and programs at Stanford. In other words, how do we link practical interventions for EJ teaching to a broader pedagogical framework that embodies environmental justice principles and practices in the Doerr School of Sustainability? This white paper strives to answer this question.



## Box 1: Student Voices from ES194 (Intro to Environmental Justice)

In Autumn Quarter 2022 our team surveyed undergraduate and graduate students enrolled in *ES194 Introduction to Environmental Justice: Race, Class, Gender and Place*. Throughout the course, students engaged with readings, guest speakers, and one another on a broad array of environmental justice topics, including Indigenous environmental justice, food justice, and energy justice. Demonstrating the impact of EJ teaching and learning, students shared the following responses:

- “[The class] changed the way I think about environmental issues.”
- “This class has sparked my interest to engage more in communities that are important to me... local action is so powerful!”
- “One of the best classes I've taken, and also most valuable to what I want to do after graduating!”
- Describing the speaker series, one student said: “It was fantastic to hear from so many individuals working in the field and with such nuance and care.”
- When asked what they would hope to see in future EJ classes, a student said: “A chance to volunteer with a local EJ issue... [it] would be great to see the hands-on example of EJ solutions.”

## Box 2: Student Voices from ES194 (Intro to Environmental Justice)

- Regarding pedagogy used in the course, 83% of student survey respondents found small group discussions enhanced their learning, 78% of respondents found the final research project and op-ed enhanced their learning, and 78% of respondents found the speaker series enhanced their learning.
- The majority of survey respondents identified the most salient core values of the class to be centering BIPOC (Black, Indigenous and people of color) and front-line community voices, valuing lived experience, intersectionality, and positionality.
- **94% of respondents would recommend the class to other students**, reflecting the current pattern of this class being oversubscribed.

# Purpose Statement

Given the commitment sustainability scholars have already made to engaging issues of fairness, difference, inclusion, and justice that are embedded in notions of human well-being (Matson et al., 2016), EJ is a crucial component of all courses on sustainability. Acknowledging that educators may have different levels of familiarity with EJ and different preferences for integrating EJ into their classes, this white paper offers guidance on how EJ can be incorporated into sustainability education at the Stanford Doerr School in multiple ways.

We hope that this resource can support efforts to incorporate environmental justice as a central component of courses such as the SUST 101 series, a new three-quarter series offered through the Doerr School. The SUST series is designed to provide undergraduates with an essential toolbox for understanding and acting upon key issues in sustainability during and beyond Stanford. This series develops skills in critical thinking, complex decision-making, group problem-solving, and learning-by-doing. Yet current course syllabi only marginally include EJ topics and teaching strategies (Majumdar & Moler, 2023). Given the strong interest in environmental justice across campus, we can also envision planning for a Winter or Spring 2024 SUSTAIN 101 quarter that might focus exclusively on environmental justice.

We also hope that the white paper can guide instructors seeking to build EJ modules into their existing courses. We recognize that some instructors, who are teaching across a range of sustainability topics and are also interested in EJ, may wish to start with small additions. Stepwise engagement in EJ is a helpful approach to deepening sustainability education around issues of power, justice, and race in sustainability. We hope to provide additional resources and teaching tools to support both types of instructors – when EJ is central to a course, and also when it is included as a teaching component.

## Box 3: Student Voices from EARTHSYS 10

Students who took *EARTHSYS 10: Introduction to Earth Systems* in Autumn 2022 were invited to comment on sustainability-related content areas that they would be most interested in exploring through coursework during their remaining time at Stanford. With an enrollment of 285 students last fall, this is the largest sustainability-related course offered at Stanford. Course instructors included the following question into the end-of-quarter course evaluation: *Reflecting back on what you've learned this quarter in EARTHSYS 10, what are some areas you would be most interested in exploring in future coursework at Stanford? Are there particular*



*topics, frameworks, or perspectives you would like to learn more about in relation to sustainability?* 134 students responded to the survey. Environmental justice was among the top four areas of EARTHSYS 10 student interests, following energy and green tech; food, agriculture, and soils; and policy and economics.

## About the Authors

As members of the Environmental Justice Working Group Education Project Group at Stanford University and participants in the Center for Teaching and Learning IDEAL Pedagogy Program, our writing team includes the perspective of students, academic staff, and faculty who have a common interest in this topic. Convened by the EJ Working Group, our team met on a biweekly basis to reflect and write on this topic over several months from September 2022 to August 2023.

To briefly introduce ourselves:

**Sibyl Diver** is an interdisciplinary environmental scientist and EJ scholar doing community engaged research on Indigenous water governance, teaches in the Earth Science Program, and co-directs the Environmental Justice Working Group. She also co-founded the Intro to Environmental Justice course as the primary gateway course for EJ at Stanford with Dr. Emily Polk.

**Charlie Hoffs** studied Chemical Engineering (BS '23) and Community Health and Prevention Research (MS '23) at Stanford and aims to advance environmental and food justice policy.

**Stephanie Seidmon** is a master's student at the School of Education, an experienced classroom teacher, and curriculum development specialist.

**Kenji Ikemoto** is an Academic Technology Specialist at the Center for Teaching and Learning, which is well positioned to share out learnings from our working group.

**Belinda Ramírez** is a Teaching Fellow in the COLLEGE program and food justice scholar.

**Emily Polk**, is a writer and EJ scholar teaching and writing about community-led responses to climate change and social movements, teaches as an advanced lecturer in the Program on Writing and Rhetoric, and co-directs the Environmental Justice Working Group. She also co-founded the Intro to Environmental Justice course as the primary gateway course for EJ at Stanford with Dr. Sibyl Diver.

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**Caroline Daws** is a Teaching Fellow in the COLLEGE Program, a fungal ecologist, and an educator in the Outer Coast program in Sitka, Alaska.

## Acknowledgements

Recognizing the centrality of Indigenous knowledge, practices, and land to all environmental justice work, we recognize that Stanford sits on the ancestral land of the Muwekma Ohlone Tribe. This land was and continues to be of great importance to the Ohlone. Striving to advance EJ pedagogy requires acknowledging, honoring, and making visible the University’s relationship to Native peoples, the histories behind this relationship, and actively collaborating with Native students, staff, faculty, and community members.

We would like to acknowledge the Center for Teaching and Learning at Stanford for their capacity-building support, offered over the last year through convenings that helped connect a diverse set of collaborators and funding to cover the hours of work contributed by student collaborators. We would also like to recognize the years of work contributed by the Environmental Justice Working Group focused on incorporating EJ into our research, teaching, and community engagement at Stanford

through an intergenerational collective. In particular, we are grateful to authors Stephanie Seidmon, Charlie Hoffs, Kenji Ikemoto, and Sibyl Diver for their role bringing this project and text together over the last year. We also thank EJWG members Michelle Ng, Bianca Santos, Neha Patkar, and Katherine Burke for their editorial contributions. We are grateful to the environmental justice community that we have here on campus, which sustains us personally and professionally. We deeply appreciate the support of Movement Generation in helping facilitate our 2023 EJWG Retreat, during which ideas for this white paper were further enriched. And finally, we would like to acknowledge the Stanford Doerr School leadership team for their collective commitment to environmental justice as one of the core values of the school, alongside the core values of diversity, equity, and inclusion, and to express our excitement for ongoing collaborations towards fulfilling this charge together.

## Glossary

**Critical pedagogy**—“grounded on a social and educational vision of justice and equality, constructed on the belief that education is inherently political. Dedicated to the alleviation of human suffering. Interested in maintaining a delicate balance between social change and cultivating the intellect—this requires a rigorous pedagogy that accomplishes both goals. Concerned with “the margins” of society, the experiences and needs of individuals faced with oppression and subjugation. Dedicated to understanding the context in which educational activity takes place. Committed to resisting the harmful effects of dominant power” (Kincheloe, 2008).

**Environmental justice**—“all people and communities have the right to equal environmental protection under the law, and the right to live, work and play in communities that are safe, healthy and free of life-threatening conditions” (Urban Planning Department at the Columbia Graduate School of Architecture, Planning, and Preservation, 2023).

**Environmental racism**—“a form of systemic racism that manifests itself by racially minoritized people being systematically oppressed through environmental contamination and inequitable access to environmental benefits” (Height et al., 2023).

**Intersectionality**—“a term coined by Kimberle Crenshaw, a Black feminist legal scholar, to articulate how social differentiation occurs through interactions between ‘markers of difference’ (for example, social identities formed by gender, race, and class). To understand different experiences, it is necessary to analyze how social identities intersect and interact. See this helpful introductory video (<https://www.youtube.com/watch?v=w6dnj2lyYjE&feature=youtu.be>) from Teaching Tolerance” (Center for Sustainable Food Systems at UBC Farm, 2021; Crenshaw, 1989; Crenshaw, 1991; Darity, 2008; Learning for Justice, 2016).

**Land Back Movement**—“A movement that addresses the root pain of colonization—the theft of Indigenous lands, alienation of lands for resource extraction, the violence and genocide committed against Indigenous peoples for statehood and capitalism, and the hundreds of years of devastating aftereffects. The movement for Land Back has existed for over 10 years, with ownership or control by no single group or organization” (Pieratos et al., 2021).

**Pedagogy**—“think of your course content as clay and pedagogy as the ways you ask students to make ‘something meaningful’ from that clay. Pedagogy is the combination of teaching methods (what instructors do), learning activities (what instructors ask their students to do), and learning assessments (the assignments, projects, or tasks that measure student learning)” (Center for Educational Innovation, 2023).

**Positionality**—“Coined by philosopher Linda Alcoff, positionality is a term used by feminist scholars to indicate that lived experiences and social identities (such as those implicated by race, class, and gender) shape our worldviews. These identities do not have fixed essences or certain characteristics; they are markers of relational positions and are fluid, shaped by “socially constructed positions and memberships to which [they] belong” (Alcoff, 1988; Alkon & Agyeman, 2011; Center for Sustainable Food Systems at UBC Farm, 2021).

**Sustainability**—“meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987).

**Traditional Ecological Knowledge (TEK)**—“A substantive body of knowledge that is created and stored by human societies to aid in their flourishing in the face of environmental and natural resources challenges. The time scale of this knowledge is many generations. In this sense, TEK is taken as archival in nature. It is a store of knowledge of the relationships between living things and their environment” (Whyte, 2013).

## **Defining EJ Pedagogies: Building on Existing Pedagogical Approaches**

For the purposes of this work, we define environmental justice pedagogy as a critical pedagogy that invites teachers and students alike to consider how current social, economic, and environmental systems create and maintain social inequities and promote exploitation of particular groups of people – and also to consider how to interrupt trajectories of inequity that are deeply connected to environmental degradation for the purpose of restoration, repair, and justice. In this section, we

consider several foundational articles in the literature that shape our definition of EJ pedagogy. We summarize this foundation, then build on it by synthesizing a broader array of critical pedagogies to articulate core tenets of EJ pedagogy. While EJ pedagogy is not limited to these approaches, these concepts help form the ethical core of the EJ pedagogy that we advance through this paper.

Here, we explore several articles from the education literature that convey the teaching philosophies informing environmental justice pedagogies. Acknowledging the vast environmental and social justice literature informing these ideas, we focus here on scholarly sources that can instruct an EJ pedagogical approach: we do not claim for the pedagogies listed to be fully comprehensive or mutually exclusive of one another. From our synthesis, we hope to share some useful starting points, and contribute towards an actionable set of critical pedagogical strategies that instructors can readily implement, presented in the following section on EJ Pedagogical Strategies. Here, we explore how seven critical pedagogies intersect to contribute to an EJ pedagogical framework.

## Critical environmental justice pedagogy

The environmental justice movement strongly connects social justice to environmental protection, as does the tradition of environmental justice studies (Byrnes et al., 2023; Holifield et al., 2011; Jolivéte, 2015; Pellow & Brulle, 2005; Pellow, 2017). As described by Pellow (2016), environmental justice studies began primarily with “documenting environmental inequality through the lens of race and class.” Yet, EJ studies have developed further to engage with deeper questions of distributive justice and more nuanced understandings of the ways that “gender, sexuality, and other categories of difference shape EJ struggles” (Pellow, 2016). This approach brings in critical race theory, Black ecology, political ecology, ecofeminist theory, disability studies, carceral studies, queer pedagogy, and anarchist theory (Dillon & Sze, 2016; Ducre, 2018; Gilmore, 2007; Height et al., 2023; Jampel, 2018; Nemi Neto, 2018; Stein, 2004; Svarstad & Benjaminsen, 2020). As Pellow (2016) writes, this shift towards critical EJ studies emphasizes the importance of intersectionality and multi-scalar analysis in order to address the multiple forms of inequity, and multiple social categories of difference shaping inequities within interconnected social and ecological systems. Further, this approach seeks transformative change: abolishing power structures that embed environmental injustice in society. Finally, it asserts the value of historically marginalized communities in new ways – arguing that these communities that are so often viewed as inferior or powerless are, in fact, “*indispensable* to building socially and environmentally just and resilient futures for us all,” and well-positioned to lead society towards sustainability.

## Anti-racist pedagogy

Anti-racist pedagogy is an “organizing effort for institutional and social change that is much broader than teaching in the classroom” (Kishimoto, 2018). Going beyond curriculum development, anti-racist pedagogy is an approach to teaching and living, and an ongoing process that encourages reflexivity in the classroom (Blonder et al., 2022). It extends to understanding challenges of social hierarchy, even when race is not the subject matter. It begins with instructors engaging in self-reflection on their identity and social position, eventually leading to the integration of this analysis into their discipline, research, department, university, and community work. Dr. Kyoko Kishimoto identifies 3 components to anti-racist teaching: 1) incorporating topics of race and inequality into the course content and syllabi, 2) teaching from an anti-racist approach, and 3) organizing within campus and the community, such as by advocating alongside students and staff for greater recruitment, retention, and promotion of instructors of color (2018).

## Feminist pedagogy

Feminist pedagogy centers lived experience as a core value. In an EJ classroom context, this includes engaging with the lived experience of both students and communities that have lived through and responded to multiple forms of oppression. Similar to anti-racist pedagogy, feminist pedagogy also strives to engage with and deconstruct harmful forms of social hierarchy, through intersectional queer, Black (Collins, 2022; hooks, 1994), Indigenous, working class (Hong, 2006), and other feminist pedagogies. A feminist approach “values student voices, creates active learning spaces in which marginalized voices are heard, emphasizes collaboration and the co-production of knowledge, and foregrounds intersectional critical analysis that addresses the complex matrix of race, ethnicity, class, gender, ability, sexuality, and nation, while emphasiz[ing] feminist praxis and a collective effort toward progressive social change” (Berila, 2006). Further, Berila describes how feminist pedagogy relies on a “co-production of knowledge [that]...recognizes both students and teachers as knowers and learners. Resisting the more traditional hierarchical and one-directional idea that the teacher distributes knowledge, feminist pedagogy recognizes that students have a great deal to offer the learning experience” (2006). Feminist approaches encourage making space for students to engage in experiential, community-engaged education, which includes critical analysis of academic-community relationships. To mitigate problematic “missionary” endeavors, in which projects are harmfully conceived as “saving” marginalized communities, this approach centers local experience, expertise, and leadership in self-determining their own sustainability solutions. Feminist pedagogy also emphasizes the role of art and creativity in education (Johnson & Wilkison, 2020).



## Afrocentric pedagogy and Indigenous pedagogy

Afrocentric pedagogies and Indigenous pedagogies are two (among many others) different paradigms that invite students to benefit from non-Eurocentric knowledge systems, and the educational systems contained within them, through an intersectional approach (van Wyk, 2014; Battiste, 2017; Bang et al. 2013). While instructors and students may not have this heritage themselves, this pedagogy involves finding authentic points of connection (in this case, intersections are related to sustainability concerns) that invite respectful learning from Indigenous or African knowledges, identities, languages, and experiences that have strongly shaped environmental justice principles, practices, and movements. For example, Indigenous pedagogies in environmental education emphasize the “groundedness of educational processes and practices in the experiences of the learner in a particular school community being served” (van Wyk, 2014), as opposed to a teacher-centered approach. Applied in the classroom, the Kiswahili concept of *ujamaa*, i.e., working together as an extended family to maintain a cohesive community, “requires that the facilitator reject the learner-facilitator/educator separation and not presume to be the well from which knowledge springs. It requires that knowledge and its dissemination should be informed by the actual and aspired interests of the community”. This involves the formation of a ‘cooperative classroom’ to foster cultural safety, and ensure participants feel authentically listened to (Biermann, 2008). Afrocentric and Indigenous pedagogies also train students to interrogate epistemologies and ontologies, “to analyze and interpret the structure and use of text and other discourses, and to reveal the hidden assumptions embedded in such. That is, any acceptable process requires a sufficiently comprehensive approach that addresses questions of how knowledge is being structured and used” (van Wyk, 2014).

## Eco-justice pedagogy

Eco-justice pedagogy brings together intersectional learning about ecological systems and social justice factors as important determinants of sustainability problems and outcomes. First, this approach attends to the role of environmental racism and class discrimination in environmental decision-making. Instructors explicitly discuss environmental politics and social justice issues, e.g., by “inform[ing] students about the politics of toxic waste disposal...how different groups are resisting the contamination of their local environments and workplace, and how the politics of environmental discrimination works” (Bowers, 2002). In addition, eco-justice pedagogy considers the recovery and restoration of non-commodified approaches to community building. Bringing these topics into sustainability curricula will help students “recognize the extent their daily lives depend upon commoditized relationships and activities...help them recognize the patterns and activities within their own communities that are still largely based on face-to-face, intergenerational sharing of

knowledge and skills...” It can also facilitate learning from non-commodified approaches to community building and survival, which can draw on knowledges and experiences of historically marginalized groups, including low-income communities of color, that “have survived economically and politically repressive environments because of their ability to carry forward the intergenerational knowledge that enabled them to be less dependent upon the consumerism that more privileged groups took for granted” (Bowers, 2002). Finally, bringing eco-justice pedagogy into sustainability education emphasizes teaching an ethic of responsibility towards future generations that ensures the health and wellbeing for all people – and in parallel – critically engaging with ongoing practices and policies that create sacrifice zones in low-income Black, Indigenous and people of color (POC) communities of color, and in the Global South.

## Land-centered pedagogy

Grounded in Indigenous epistemologies, land-centered pedagogy is a transformative model for environmental justice education, where learning is co-produced with the land as an active agent and contributor to teaching (Simpson, 2014). Land-centered education emerges from Indigenous-led critiques of environmental education and holds us “accountable to an Indigenous futurity” by demanding the return of Indigenous lands to Native peoples (Tuck et al., 2014). Thus, land-centered pedagogy refuses more basic environmental education initiatives and constructions of place-based education that erase the deep knowledge and relationships held between Indigenous peoples and the places they come from, and that perpetuate European universalism and settler colonialism that casts Native peoples as “repositories of static forms of cultural knowledge” (Tuck et al., 2014). This pedagogy draws from Indigenous knowledge systems, where land is a mother, ancestor, and teacher. Beyond acting as a passive subject or context through which experiential education occurs, land has its own animacy and its own lessons to teach. Acknowledging that all of our relationships with land are shaped by the processes of settler colonialism, this pedagogy invites greater awareness of colonial histories, how these have shaped the experiences of settlers differently from those of Indigenous peoples, and what this means for Indigenous and non-Indigenous relations today. Positive results of such awareness raising might include deconstructing settler fantasies of becoming Native, and increasing support for Landback Movements. Within educational settings this work can include honoring both urban and rural spaces as storied Indigenous lands, engaging in the politics of naming and mapping with Indigenous territories, supporting Indigenous language revitalization, furthering Indigenous food sovereignty, and acknowledging the enduring relationships between Indigenous peoples and place.

## Critical community engaged learning (CEL) pedagogy

Building on the foundational work of Paolo Freire (1970), critical community engaged learning (CEL) asks student learners to engage directly with community members as collaborators, with a critical eye towards the structural forces that exclude community knowledges, experiences, and leadership (Cachelin & Nicolosi, 2022). Importantly, instructors of courses that do not engage with community members can also still shape their course content and pedagogical strategies to inform how students approach future community partnerships. This approach facilitates power sharing and advances the co-production of knowledge, especially with historically oppressed communities. Additionally, this approach firmly asks students to interrogate and challenge systems of oppression that maintain Indigenous erasure, structural racism, exploitative capitalism, and environmental racism – particularly with education at primarily white institutions (PWIs). It also recognizes that some students may be engaging with this critical analysis of oppression for the first time. This kind of awakening can cause grief and anxiety that, without care, can lead to feelings of helplessness and resignation. Other students may not only be familiar with critical analysis of oppression, but may also have acute experience of them in their personal lives. An instructors’ thoughtful framing and support for these discussions can help invite healthy and healing reflection for these students that avoids tokenizing, essentializing, or retraumatizing experiences. In this way, critical CEL is structured to combat feelings of helplessness, invite intersectional approaches to transformative action in solidarity, and promote student agency towards realizing solution-based outcomes in partnership with communities – while avoiding paternalism.

For additional details, please see this annotated bibliography and [accompanying definition](#), developed by EJWG member Stephanie Seidmon, of what critical environmental justice pedagogies aim to do.

## **EJ Pedagogical Strategies and Teaching Practices**

Drawing from the pedagogical approaches and philosophies reviewed above, we identify five practical strategies for integrating EJ pedagogy in curricula and classrooms at the Stanford Doerr School for Sustainability. We then identify an exemplary case study course modeling each strategy.

We are grateful to and credit the Teaching and Learning Environmental Justice website (<https://www.teachingej.com/>) for collating these materials (Patkar & Rodriguez, 2021), and instructors Sibyl Diver, Emily Polk, James Hoyte, Timothy C. Weiskel, Kyle Whyte, Amy Doolittle, and Penn Loh for generously sharing their syllabi for public use.

## **Assessing positionality and intersectionality**

EJ education challenges both instructors and students to critically reflect on their positionality: aspects of their identity or social position (e.g. race, class, gender, sexuality, ability, nation, and more) that shape their perspective as a learner or teacher of environmental justice. In this case, we are considering how personal identity can affect one's social status, or level of privilege in society.

Assessing positionality requires more than simply exploring individual aspects of our identity separately (e.g., looking only at one's gender, or only at class position). Rather, we must interrogate how multiple identities intersect for a given person to produce a more nuanced and **“intersectional”** social position for that individual (e.g., considering interactions between gender, ethnicity, class, and other factors) – where multiple facets of one's identify intersect to convey and/or withhold power and privilege within a particular social context (Haraway, 1988; Malin & Ryder, 2018; Thomas, 2022). For educators, it is helpful to recognize how an instructor's intersectional personal identity affects their classroom teaching style, as well as their selection of course topics, readings, discussion questions, and modes of assessment. One part of EJ pedagogy may include instructors discussing their own positionality with their class, as well as inviting students to reflect on their own positionality (Cachelin & Nicolosi, 2022; Kishimoto, 2018). As Polk and Diver describe, “By becoming more aware of the standpoints of marginalized communities and their lived experiences, as well as developing a critical awareness of our own positionality (e.g., our own race class and gender), we begin to see where our blinders are and to better understand our own ‘partial perspective’ “(2020). Such authentic personal reflection can help instructors gain dispositions and skills needed to facilitate challenging EJ conversations with their students. With this approach, instructors can more authentically locate themselves, what they know and what they don't know, in discussions of systemic racism and other forms of oppression that are linked to patterns of environmental degradation and harm that disproportionately affect communities of color and economically disadvantaged groups.

This approach also invites students and teachers of environmental justice to explore multiple origin points of environmental justice movements (e.g. from the Civil Rights/Black Power Movement, Indigenous Rights Movement, the Chicano Movement, and others, following Taylor 2016). It reminds us of the distinct experiences of oppression of different groups that have all contributed to social justice movements. And it inspires us to examine intersections between these movements, in order to better understand the multiplicity of social change efforts that shape and are shaped by environmental justice.

Practicing and modeling how to assess positionality from an intersectional lens can also help instructors to ensure cultural and identity safety for their students. When cultural safety is achieved, students and instructors are more likely to actively listen to each other, more fully share their personal backgrounds, and accept hearing expertise and experiences from standpoints that do not

match their own. Further, instructors must be prepared to facilitate complex conversations involving uncomfortable ideas and emotions, and to support students being challenged through their learning experiences to better understand themselves.

Concrete examples of how instructors may apply this strategy in day-to-day classroom routines, lesson planning, activities, and assessments might include:

- Conducting a positionality exercise such as filling out a privilege map (here is [one example](#) [Kearney, 2022] that engages with the Wheel of Power/Privilege), and incorporating critical thinking about positionality into class discussion.
- Creating safer spaces for authentic communication by codeveloping class norms, and building in additional small group activities that enable peer-to-peer connections.
- Encouraging students to get to know you and one another, i.e. through a “[share square](#)” from Voices from the Valley EJ curriculum project (2011), creating a student-only communication platform, setting up individual small group or one-on-one meetings with all students.

## Proof of concept, assessing positionality and intersectionality

[EARTHSYS 194: Introduction to Environmental Justice: Race, Class, Gender and Place.](#)

Stanford University. Dr. Sibyl Diver, Dr. Emily Polk.

EARTHSYS 194, created in 2018 by Dr. Polk and Dr. Diver as the first comprehensive introductory course to environmental justice at Stanford, incorporates critical reflection on one’s positionality and intersectional identity through readings, in-class exercises, and assignments. The course aims for students to “develop an increased awareness of context and positionality as students practice situating their own identity (race, gender, class) as part of their thinking, writing, researching and communication practices regarding environmental issues.” For example, when students submit one of their main course assignments, an EJ project proposal, they also include a positionality statement discussing how their identity

relates to why and how they are undertaking the assignment.

Photo Credit: <https://profiles.stanford.edu/sibyl-diver>; <https://profiles.stanford.edu/emily-polk>



## Centering race and indigeneity

For centuries, race and Indigeneity have shaped the landscape of environmental injustice in the U.S. through the legacies of colonialism, slavery, and other forms of racialized dispossession. A key component of EJ courses involves explicitly calling attention to and centering discussions around race and Indigeneity, alongside additional modes of oppression (Berila, 2022; Kishimoto, 2018). This type of inquiry requires direct engagement with the political dimensions of sustainability science and problem solving.

In the U.S., particular traumas of racial injustice shape how historically marginalized peoples have experienced, resisted, and sometimes overcome, environmental injustice through social movements (Bullard et al., 2008; Bullard & Wright, 2012; Pulido & Peña, 1998; Taylor 2000, 2016) . And U.S. environmental justice movements have evolved hand-in-hand with action research, as with early mapping work demonstrating the preferential location of toxic waste facilities in low-income



communities of color (Bullard 1999, 2000). At the same time, environmental justice also applies to sustainability issues outside of the U.S., especially in the Global South and among Indigenous peoples.

In the global context, there are different place-based histories of coloniality, racial formation, and Indigeneity. Thus, marginalized groups in other countries may be historically defined by ethnicity, caste, gender, national origin, ability or other factors, as opposed to by race or Indigeneity. International EJ leaders may also discuss these issues using human rights frameworks that strongly intersect with environmental justice.

While this is already a central element of specialized EJ courses, conversations about race and Indigeneity can be part of all sustainability courses, including technical science courses. For example, biology professor Rodolfo Dirzo, who also serves as Associate Dean of Environmental Justice at the Doerr School, situates technical coursework and fieldwork on environmental issues in the specific racial, ethnic, and cultural contexts in which they manifest, both in his survey course Conservation Biology: A Latin American Perspective (BIO 144), and through an overseas studies class on: Bio-Cultural Diversity and Community-Based Conservation in Oaxaca (OSPGEN 63) (Dirzo, 2023a, 2023b).

Concrete examples of how instructors may apply this strategy in day-to-day classroom routines, lesson planning, activities, and assessments might include:

- Providing resources to help students talk about complicated issues of race, privilege, and power without causing unintentional harm (e.g., resources that teach about [non-violent communication](#) (Manning, n.d.) and anti-racism thinking tools from [white supremacy culture](#) [Okun, 2023]).
- Learning about race, ethnicity and Indigeneity in a sociopolitical context using critical race theory, and also in a cross-cultural context (racial categories may be constructed differently depending on where you are coming from).
- Studying histories of structural racism that intersect with the environmental degradation to produce EJ problems, and explicitly naming moments of racial injustice that occur in EJ case studies covering major resistance campaigns, covered by resources like [#StandingRockSyllabus](#) (NYC Stands with Standing Rock Collective, 2016).

## Proof of concept, Centering race and Indigeneity

[ENVR E-145: Introduction to Environmental Justice](#). Harvard University. Dr. James Hoyte, Dr. Timothy C. Weiskel

ENVR E-145 explores EJ through the lens of race by centering almost all weekly units around course themes that elevate how environmental issues disproportionately impact people of color, and spotlighting the leadership of community organizers of color in resistance movements. The course focuses on topics including Hurricane Katrina, racialized urban planning and redlining, nuclear development in Navajo Nation and the Pine Ridge and Spokane Indian Reservations, asthma amongst low-income communities of color, labor, and toxic waste. The course invites numerous guest speakers of color to speak about their work and leadership organizing environmental justice research, policy, and campaigns.



Photo Credit: <https://www.possefoundation.org/news-and-events/founding-board-members-jamie-hoyte-and-gene-shanks-named-life-directors>, <http://yale-68.net/Bio-Tim-Weiskel.htm>

## Including multiple ways of knowing

In academic discourse, including environmental studies, Western scientific knowledge systems are typically privileged over non-Western knowledge traditions. When the standard of knowledge production requires publication in a reputable peer-reviewed journal to generate an “objective” knowledge contribution, we often exclude the lived experiences of people affected by environmental

injustices. Local and Indigenous knowledges have historically been marginalized within academia – often dismissed as “anecdotal,” rather than taken up as valid, valuable, and actionable forms of knowledge (e.g., Diver, 2016). As we envision a sustainable future for all, scholars question the wisdom of this approach. In light of climate denial and skepticism, grounding climate justice arguments in rigorous evidence is imperative. Yet, the common academic practice of limiting knowledge production to narrowly-defined forms of expertise restricts access to crucial bodies of knowledge that are essential for avoiding environmental collapse, and also for achieving the repair and reconciliation needed to advance sustainability at a global scale.

Important forms of knowledge that are often silenced in our pursuit of sustainability solutions include knowledge shared through the arts and storytelling, oral histories, or other forms of individuals and communities sharing their lived experiences. In our scientific research and our classrooms, we often leave out knowledge systems that privilege oral tradition, knowledges produced outside of the U.S. or communicated in languages other than English, knowledge rooted in and communicated with deep emotions and/or with a spiritual basis, and knowledge systems that hold multiple truths at the same time – thereby diverging from positivist science traditions that assume the existence of a single, knowable truth. By working to embrace a wider spectrum of knowledge systems, as well as different forms of sharing knowledge, we can take important steps towards breaking down colonial legacies and white supremacy that continue to permeate our society. Bringing these perspectives to sustainability education through EJ pedagogy is imperative for advancing climate justice and a more sustainable future for all.

Concrete examples of how instructors may apply this strategy in day-to-day classroom routines, lesson planning, activities, and assessments might include:

- Using course materials that center Indigenous knowledge systems, and additional ways of knowing that extend beyond Western scientific knowledge systems. Examples can be drawn from the [Enduring Legacies Native Cases Initiative](#) from Evergreen State University (n.d.), [Traditional Ecological Knowledge curriculum](#) developed by Save California Salmon (n.d.), [land back curriculum](#) developed by the Amah Mutsun Tribal Band Campaign to Protect Juristac, and many others (2023).
- Highlighting storytelling as an important form of knowledge sharing through podcasts, film, oral histories, or other formats that disrupt hierarchies of expertise and enable community self-representation.

## Proof of concept, include multiple ways of knowing

[EAS 501: Indigenous Sustainability & Environmental Justice](#). University of Michigan. Dr. Kyle Whyte.

EAS 501 tackles an introduction to Indigenous perspectives on EJ both by covering topics related to Native American EJ and doing so by engaging with Indigenous epistemologies. The course “seeks to understand, from Indigenous perspectives, how many Indigenous movements, Indigenous sciences and knowledge systems, and the



projects of Indigenous organizations and governments seek to achieve sustainability and environmental justice, including the challenges they face and the lessons they have learned.” The course also strives to create a safe, anti-racist, empowering class environment (to “keep close to heart the goal of building a learning community”) that is grounded in “collegiality, reciprocity, trust, consent, and mutual care” and the priority that “health comes first.”

**Photo Credit:**

[https://en.wikipedia.org/wiki/Kyle\\_Powys\\_Whyte](https://en.wikipedia.org/wiki/Kyle_Powys_Whyte)

## Dialogic learning

EJ movements privilege democracy, inclusion, and the dismantling of hierarchical structures that cause disproportionate levels of environmental harms for communities of color and low-income communities. A key manifestation of these values is education through horizontal learning. In the *Pedagogy of the Oppressed* (1970), Paulo Freire rejects the “banking model” of education, in which teachers endlessly and unidirectionally lecture to their students, ostensibly banking facts in student minds. Conversely, Freire and many EJ educators seek to equalize their status with students, by recognizing that instructors have as much to learn from students as students have to learn from them.

A Stanford graduate and feminist scholar, bell hooks further applies, critiques, and adapts Freire’s

approach to dialogic learning for the anti-racist feminist classroom (hooks, 1994).<sup>2</sup> Learning through dialogue (“dialogic” learning) and other horizontal teaching techniques helps to break down classroom hierarchies, thereby opening up students and teachers to bidirectional learning and knowledge co-production. Dialogic learning emulates social movement practices that operate according to an ethic of mutual exchange, strive for mutual respect, and seek to transcend hierarchical relationships by enhancing student agency. This not only invites students to engage across disciplines, but also encourages students to learn across multiple knowledge traditions and worldviews (Byrnes et al., 2023).

Greater appreciation of intergenerational knowledge-sharing between teachers and students encourages co-production of the knowledge-making process. With more horizontal teaching approaches, students gain additional agency over their learning, because they are invited to be part of classroom decision-making. And when students engage more deeply with their learning, their learning experiences have greater meaning, in a metacognitive sense. Just as it encourages us to recognize classrooms as a power-laden and political environment, co-production of knowledge also acknowledges the political nature of science, where science and society are recognized to be co-shaping one another (e.g., Jasanoff, 2004).

Taking dialogic learning seriously in sustainability education will require creative interventions that support instructors in shifting away from standard lecture formats, currently used as the primary mode of teaching. It will also involve lifting up student agency in creating new courses and curricula, and adapting courses to support student interests and needs. Classrooms can also employ dialogic learning through critical CEL approaches that invite students to align behind community expertise and experience to better define and solve environmental problems linked to social inequities.

Concrete examples of how instructors may apply this strategy in day-to-day classroom routines, lesson planning, activities, and assessments might include:

- Intentionally distributing time between one-directional teaching practices such as lecturing, with whole-class/small group discussion, class-based exercises and other collaborative activities. Consider inviting students to “teach out” their learning to one another.
- Co-creating syllabi with your students, or create decision points for students to direct class learning during your course.

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<sup>2</sup> The 2023 original dance production “Glory” by amara tabor-smith and Stanford students recently explored and celebrated hooks’ field-changing contributions to critical scholarship and pedagogy (tabor-smith, 2023).

- Enabling students to choose from an array of class assessments that extend beyond a typical “class paper” to include podcasts, storymaps, art installation, op-ed or [EJ blog](#). If applicable, students may develop materials for use by a partner organization.
- Creating structures and practices that allow students to give real-time feedback, and that can provide for anonymity.

## Proof of concept, dialogic learning

[FES 846B: Topics in Environmental Justice](#). Yale University. Amity Doolittle.

FES 846B, a seminar course, empowers students as co-creators of knowledge and as drivers of their own learning by centering student-led class discussions and ensuring social relevance of assessment tools for students. Participation and contributions to class (e.g. in-class participation, discussion leadership, and reading responses) are 60% of the grade. For the remaining 40% of the grade, the course culminates in a simulated grant proposal competition, in which students present their EJ project proposals for consideration of a fictional \$50,000 year-long grant to support their ongoing research and scholarship. Training students to launch their careers in EJ action and scholarship in this way acknowledges the power and importance of youth in leading the next generation of EJ movements.

Photo Credit: <https://environment.yale.edu/profile/doolittle>



## Reciprocity

EJ work prioritizes working alongside and in support of frontline communities asserting their



leadership to solve life threatening problems facing their community, despite long histories of oppression. EJ work therefore requires long-term relationship building, solidarity with EJ movement leaders, and a commitment to directing resources and support to EJ organizations and communities. At the same time, universities, instructors, and their students gain important benefits from having the opportunity to work with frontline EJ organizations. Thus, positive academic-community relationships advancing EJ work are developed through careful practices of mutual respect and reciprocity. The ethics behind reciprocity in EJ movements are complex, and intersect with Indigenous worldviews on reciprocal relations (e.g., Wilson, 2008; Kovach, 2009; Vaughan, 2018; Whyte, 2018a, 2018b; Diver et al., 2019; McGregor et al. 2020 ).

University-based EJ courses can manifest such values of reciprocity by engaging in learning activities, research, and/or service with local communities facing and fighting environmental injustice. If not organized through mutualistic and trusting relationships, however, class engagement with local communities can also unintentionally deepen structural inequalities and harm. EJ courses that facilitate community-engaged participatory research (CBPR), CEL, or community service with local communities and organizations must ensure that the partnership is built on a relationship of authentic trust, and based on long-term commitments. The partnership should also address the community's self-identified needs through a mutualistic relationship that builds, rather than burdens, the organizational capacity of community groups.

Concrete examples of how instructors may enact this strategy in day-to-day classroom routines, lesson planning, activities, and assessments might include:

- Modeling reciprocity and mutual respect through your own interactions with co-instructors, teaching assistants, guest speakers, and students.
- Building CEL opportunities and projects into your courses, and teaching principles of respectful and mutually beneficial community engagement.
- Creating opportunities for students to support one another through small group discussions (supported by class norms), and constructive peer review activities (supported with clear guidance).

**Proof of concept, reciprocity.** [UEP 278: Environmental Justice, Security, and Sustainability.](#)  
Tufts University. Dr. Penn Loh.

UEP 278 aims to introduce students to the practice of forming and maintaining reciprocal, mutualistic community partnerships through field trips, guest speakers, and community partnerships with a small number of organizations with whom the class has long term relationships. The course aims to “deepen our understanding of the challenges and responses to environmental injustice through several site visits with local EJ groups and guest presenters who will help frame environmental justice efforts in other parts of the country and the world” and to “inspire and meaningfully engage students in local and regional efforts to promote environmental justice.” The class involves site visits to Alternatives for Community & Environment in the predominantly Black neighborhood of Roxbury, GreenRoots in predominantly Latine Chelsea, and the Chinese Progressive Association in predominantly AAPI Chinatown. The course also involves supporting a community partner on an EJ project, teaching students how to undertake such collaborations in generative, not self-serving or extractive, ways.



Photo Credit: <https://tischcollege.tufts.edu/people/faculty/penn-loh>

## Action Steps for Implementing EJ Pedagogy at Stanford

Here, we describe specific steps instructors can take to build EJ pedagogy into any classroom at Stanford, as well as actions that the Doerr School administration can take to support instructors in this effort. Our action steps for instructors are organized into three stages.

### Phase 1—Personal reflection

First, bringing EJ into your teaching practice requires instructors to think deeply about *why* you want to teach with EJ. This involves engaging with and reflecting on your own identities, positionalities, experiences, and beliefs on a personal and professional level as an instructor, and also how these may intersect with EJ movements led by Black, Indigenous and people of color communities (or not).

Stepping into this work involves educating yourself on EJ issues, topics, and stories, as well as understanding how you personally connect to this work. If you do not have personal experiences with EJ movements, it is also fine to express strong interest in the topic. Getting grounded with your starting point in doing this work is important, because it enables instructors to be authentic with themselves and with their students. Engaging as a “learner” is an authentic starting point. This phase of reflection for instructors is also important as a model for the processes that students may go through to gain self-reflexivity skills in an EJ class.

## Phase 2—Revising your content

Second, implementing EJ pedagogy calls on us to rethink the content of *what* we choose to teach. This may include rethinking the topics, course materials, and voices centered in the class. Instructors may start by changing required readings in a specific course, but can also extend changes to the broader educational program. Effective strategies for exploring relevant EJ topics include seeking out the voices of those most impacted by environmental injustice, particularly BIPOC and other historically marginalized communities, with the goal of aligning behind these communities. In developing course content, it is important to identify materials that facilitate community self-representation, i.e., using texts, audio, video, and guest speakers that enable historically marginalized communities to speak for themselves. This approach will help students understand the problems identified by EJ communities, community-led expertise, and solutions being put forward from within EJ communities. Following EJ pedagogies in this way may shift the kinds of sustainability problems you consider, problem definitions you present, and the methodologies for problem solving that you engage in.

There are multiple online resources available to help instructors with rethinking syllabi. For a deeper discussion of anti-racist environmental justice pedagogy beyond that which we present, one can request access to the syllabus of [ESPM 290: Critical Engagements in Anti-Racist Environmental Scholarship](#), a Berkeley course designed to train future Berkeley environmental course instructors on how to more deeply center anti-racism in their teaching and research (Mgbara et al., 2021). An additional resource for revising syllabi includes the website <https://www.teachingej.com/>, which provides an open-access repository of EJ syllabi that anyone can contribute to (Patkar & Rodriguez, 2021). Where possible, instructors should seek input from students and community members on what topics, resources, or issues are meaningful to them, and what are the most important voices to platform in course content.

Instructors may also tap into Stanford resources, including the expertise of [Felicia A. Smith](#), MLIS (the inaugural Racial Justice and Social Equity Librarian at Stanford), the [EJ Working Group](#), and the [Haas](#)

[Center for Public Service](#), as well as community-led EJ Centers, such as the [Deep South Center for Environmental Justice](#), [WE ACT for Environmental Justice](#), the [Bullard Center for Environmental and Climate Justice](#), and many local and regional EJ organizations (see web resources collated by the [EJ Working Group](#), or [Partnerships for Climate Justice](#)). For Stanford instructors seeking curricular guidance and consultation on integrating equitable pedagogy more broadly, Stanford's [IDEAL \(Inclusion, Diversity, Equity, and Access in a Learning Environment\) Pedagogy program](#) offers instructors a free Canvas course on centering equity in their course content and pedagogical approach, as well as syllabus consultation, and the opportunity to participate in a quarter-long Diversity, Equity, and Inclusion (DEI) pedagogy project within their department, or take part in an instructor learning community. The EJ Working Group is also working on learning modules to support EJ teaching at the time of publication for this paper.

## Phase 3—Changing your teaching practices

The third phase of implementing EJ pedagogy is to change *how* we teach. This may include changes to classroom teaching techniques, learning activities, classroom norms, assessments, communication, course design, administration, and course policies. This may also extend to reevaluating the presumed locus of expertise and authority in the classroom, as well as reimagining power relationships between instructors and learners. Specific examples of classroom teaching techniques that align with EJ principles are provided in the EJ Pedagogical Strategies section above, and the rubrics listed below.

## Rubrics for Implementing EJ Pedagogy at Stanford

We now present action steps tailored for our two primary audiences: A) instructors implementing EJ pedagogy and B) Doerr School administrators. These action steps aim to promote the five key EJ-centered pedagogical strategies: 1) assessing positionality and intersectionality, 2) centering race and Indigeneity, 3) including multiple ways of knowing, 4) dialogic learning, and 5) reciprocity.

In order to encourage and assess the implementation of these strategies, we suggest that the Doerr School take two steps.

Firstly, the Doerr School could prompt instructors to complete a quarterly self-assessment, particularly instructors offering new classes that center or intersect with EJ topics or pedagogies. Instructors can rate their own implementation of each pedagogical practice, e.g., from 1 (limited implementation) to 5 (very successful implementation), before and after each academic quarter.

Secondly, the Doerr School's curriculum development leadership team could set goals for and track institutional action steps around advancing EJ pedagogies. Included below are checklists for instructors and evaluation guidelines for Doerr School administrators for each of the five EJ-centered pedagogical strategies. All of the recommended strategies for instructors and administrators listed below are organized into two complete rubrics [here](#)

# Assessing Positionality and Intersectionality

## Instructor Rubric

(see complete rubric [here](#))

Criteria	Pre-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>	Post-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>
<b>Phase 1—Personal reflection</b>		
Spend time engaging with and reflecting on your own personal identities, social privilege, positionalities, experiences, and beliefs.		
Be open to your understanding of positionality and privilege changing or deepening as you begin to support students in examining their personal identities, positionalities, experiences, and beliefs.		
Identify and critically examine the values, history, positionality, and mindsets of your discipline.		
<b>Phase 3—Changing your teaching practices</b>		
Plan and implement, within the first couple weeks of the quarter, a positionality exercise, in which students can write about, illustrate, and/or discuss how their various privileges and oppressed identities impact who they are and how they move through the world.		

Incorporate critical thinking about positionality into each class discussion. For example, invite students to explore how the authors of various class readings are informed by their positionality.		
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### Administrators' self-evaluation

(see complete rubric [here](#))

Criteria	Evaluation Metrics
Provide simple, adaptable teaching modules and exercises that instructors and TAs can use to facilitate positionality activities in class.	Number of course modules created, number of modules used, number of users
Provide resources that support instructors to facilitate challenging conversations around social privilege and discrimination. This might include having instructors practice difficult conversations with each other before facilitating them with students.	Number of modules created, number of modules used, number of users, number of facilitated discussions hosted, number of discussion attendees
Direct incoming and existing faculty to trainings to re- and up-skill in this arena with ongoing support to ensure they can do this successfully.	Number of training attendees

### Centering Race and Indigeneity

#### Instructor Rubric

(see complete rubric [here](#))

Criteria	Pre-Quarter Self-Assessment (1-5) <i>1 = I have not attempted to</i>	Post-Quarter Self-Assessment (1-5) <i>1 = I have not attempted to</i>



	<i>incorporate this.</i>	<i>incorporate this.</i>
	<i>5 = I have fully incorporated this.</i>	<i>5 = I have fully incorporated this.</i>
<b>Phase 1—Personal reflection</b>		
Identify and name sources of inequity in your discipline or area of study.		
Locate strategic intersections of your course content with social justice movements, frontline communities, and other instructors taking this approach.		
<b>Phase 2—Revising your content</b>		
Explicitly discuss race and Indigeneity. Be mindful that the following topics can be difficult for students of all backgrounds to confront; endeavor to create a supportive and brave space in the classroom while boldly introducing the following topics into the narrative of environmental history: slavery, white supremacy, colonialism, genocide of Indigenous peoples, pandemic disease, eugenics, internment, incarceration, police brutality, imperialism, and racism.		
Discuss data and evidence that explicitly highlights racial disparities in income, health, educational equity in the U.S. context.		
Prioritize people of color when selecting guest speakers to invite to speak to the class.		
Prioritize people of color when selecting readings to assign to the class, and spotlight the scholarship and work of specific leaders of color in the EJ movement, and include their voices when possible (e.g. video clips, etc.).		

Implement an “asset-framing” over a “deficit-framing” to spotlight the power and agency BIPOC communities hold in resisting environmental injustice. This involves sharing narratives of specific BIPOC leadership in social movement building, as opposed to solely speaking of “vulnerable communities”.		
Explore BIPOC-led EJ movements throughout history and today.		
Be open to discussing complexities to racial formation and Indigeneity, colonial legacies, and social justice movements that differ from the U.S.		

### Administrators’ self-evaluation

(see complete rubric [here](#))

Criteria	Evaluation Metrics
Define an explicit commitment in the Doerr School mission statement to environmental justice as a core value of the school, which includes an acknowledgement of racial justice.	Adapted mission statement (Y/N)
Hire additional EJ and non-EJ faculty and instructors of color.	Number of EJ and non-EJ faculty and instructors of color
Provide an easily accessible DEI fund that can be used as honoraria to support guest instructors coming from frontline communities.	Amount of funds dedicated to DEI fund
Advocate at the university level to include language about DEI and invite candidates to submit DEI statements in hiring statements and criteria.	DEI criteria included in hiring language and process (Y/N)
Institute a policy in promotion and tenure review processes	DEI work evaluated in promotion and

to request documentation and evaluation of employee contributions to DEI and justice.	tenure evaluation (Y/N)
Conduct a DEI review of Doerr and share the results publicly.	DEI review conducted (Y/N), results shared publicly (Y/N)
Appoint and compensate a student DEI commission, which participates in a comprehensive review process.	Student DEI commission created (Y/N)

## Including Multiple Ways of Knowing

### Instructor Rubric

(see complete rubric [here](#))

Criteria	Pre-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.  5 = I have fully incorporated this.</i>	Post-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.  5 = I have fully incorporated this.</i>
<b>Phase 1—Personal reflection</b>		
Invite guest speakers who employ arts, storytelling, interpretive social science research (which includes ethnography and action research), or Indigenous knowledge systems in their environmental scholarship and action.		
Invite guest speakers who speak from their lived experience of environmental injustice (or bring in the voices of frontline community leaders through video clips, social media, etc.).		
Assign readings that involve qualitative research (especially community-based participatory research or CBPR), oral histories,		

Indigenous knowledge systems, and more. Assign films, music, podcasts, and digital art. If accessible, pay for and facilitate student’s engagement with local public art, music, theater, writing, and poetry that engages justice themes.		
<b>Phase 3—Changing your teaching practices</b>		
Hold class discussions about the forms of knowledge that have and have not been valorized in students’ prior education, e.g. before Stanford or in K-12. Invite students to share about ways they have learned about the environment beyond the traditional bounds of school and academia.		
Create a safe and supportive space for students to bravely share about their lived experience, and positively affirm the experiences of students who share.		
Include experiential educational experiences (within the bounds of the class’s ability) such as gardening, local volunteering, and hiking during class time.		
Allow students to complete visual art, poetry, oral history, and other creative projects in addition to or instead of final exams and papers.		

### Administrators’ self-evaluation

(see complete rubric [here](#))

Criteria	Evaluation Metrics
Facilitate additional Dean’s Lecture Series events that elevate the legitimacy of Indigenous knowledge systems, oral histories, community-based participatory research (CBPR) or other qualitative methods, and lived experience	Number of Dean’s Lectures that elevate EJ-centered content and methods
Invest in school-wide programs, education, and research initiatives that involve CBPR, humanities, arts, and storytelling initiatives amongst students, staff, and faculty	Number of programs, research initiatives, and funds created/supported involving CBPR, humanities, arts, and storytelling

# Dialogic Learning

## Instructor Rubric

(see complete rubric [here](#))

Criteria	Pre-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>	Post-Quarter Self-Assessment (1-5)  <i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>
<b>Phase 3—Changing your teaching practices</b>		
Reflect on your teaching philosophy and the relationship between teachers, learners, and community.		
Consider student-led goal setting when determining activities and assessments.		
Co-create syllabi with your students.		
Intentionally distribute time between one-directional teaching practices such as lecturing, with whole-class/small group discussion, class-based exercises and other collaborative activities.		
Consistently seek feedback from students about how the course is being taught in real time and actively adapt midstream around student needs and interests.		
Build reflection questions or activities into assessments.		
Be approachable to students and offer your mentorship capacity.		
Create in-class time for students and instructors to all get to know each other as whole people.		

Create optional outside-of-class events such as a class walk around campus, a meal covered by class funds, or field trip.		
Employ strategies that support well-being, belonging, and class community for students, yourself, and community partners that you invite into the classroom.		
Sustain engagement with positive reinforcement.		

## Administrators' self-evaluation

(see complete rubric [here](#))

Criteria	Evaluation Metrics
Fund EJ courses with additional class funds for outside-of-class events, meals, and field trips.	Amount of funds invested in EJ courses
Create and promote student fellowships to create student-initiated sustainability courses, implemented in partnership with faculty PIs and student instructors.	Number of student-initiated courses in the Doerr School
Encourage teachers to co-create syllabi with their students, and offer template resources for doing so.	Templates for syllabus co-creation provided to instructors (Y/N)
Require a certain level of mid-quarter feedback and evaluation for Doerr school courses. Or, direct instructors towards feedback instruments that solicit actionable recommendations that can be implemented midstream during a quarter.	Number of instructors who implement a mid quarter class evaluation

## Reciprocity

### Instructor Rubric

(see complete rubric [here](#))

Criteria	Pre-Quarter Self-Assessment (1-5)	Post-Quarter Self-Assessment (1-5)

	<i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>	<i>1 = I have not attempted to incorporate this.</i>  <i>5 = I have fully incorporated this.</i>
<b>Phase 1—Personal reflection</b>		
Begin showing up to local community EJ events to listen to and learn from local leaders, as well as signing up for relevant newsletters, listservs, and social media feeds.		
Understand the landscape of existing partnerships with local organizations such as through the Office of Community Engagement, the Haas Center, and the EJ Working Group at Stanford, and learn about the many existing programs and infrastructure established to support and trains students in community-engaged research at Stanford.		
Read the Haas Principles of Ethical and Effective Service (Stanford Haas Center, 2023) (Helpful supplemental references include the 1991 EJ Principles and the Jemez Principles).		
Network with professors on campus who are already engaged with community organizations.		
Respectfully approach community organizations and leaders with a curiosity and authentic interest to learn about their needs and interests, share information about your own skill set, interests, and capacities, and explore opportunities for a long-term mutualistic partnership that can meet community groups where they are.		
Develop long-term, sustainable relationships with community partners over several years, and coordinate with relevant community-engaged learning hubs on campus to support continuity of collaborations.		
<b>Phase 3—Changing your teaching practices</b>		
If developing student-community projects, align behind the needs and capacities of frontline community groups, and learn from with campus experts about best practices for community-engaged learning.		



Gather feedback from students and community partners on the changes you've implemented.		
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## Administrators' self-evaluation

(see complete rubric [here](#))

Criteria	Evaluation Metrics
Partner with the Haas Center to fund more student summer and post-grad internships/fellowships with trusted community partners working in EJ.	Number of summer and post-grad job opportunities funded
Provide additional course funds to classes that seek to provide stipends to community partners or guest speakers from the community.	Amount of funds provided to EJ courses
Fund additional research initiatives that involve CBPR and long-term, mutualistic local partnerships.	Number of and funds invested in research initiatives involving CBPR and long-term partnerships
Direct instructors to consult with existing experts at the Haas Center to learn about best practices for community-engaged research, and infrastructure established to support this kind of teaching and learning.	Sent communications to instructors about how and why to contact the Haas Center (Y/N)
Increase the number of Haas Cardinal Courses offered under the Doerr School.	Number of Cardinal Courses in Doerr School

## Additional Accountability Actions for Doerr School Leadership

There are several additional overarching action steps that would be instrumental for the Doerr Schools's self assessment of progress on incorporating EJ into sustainability curricula.

Criteria	Evaluation Metrics
Publish this EJWG white paper on the Doerr School website.	White paper posted (Y/N)
<p>In week 1, email all instructors in the Doerr School emphasizing the school’s efforts to increase student EJ learning. Attach this EJWG white paper and point to its link on the Doerr School website, the instructor pre- and post-quarter self-assessment checklist, and a request that they add the following two EJ questions to their course evaluations:</p> <ol style="list-style-type: none"> <li>1. “The Doerr School of Sustainability is deeply invested in deepening student engagement with environmental justice (EJ). Please rate the degree to which this course incorporated EJ issues on a scale of 1 (EJ issues were never discussed) to 5 (EJ was a central part of the course).</li> <li>2. Please describe any examples of how the course incorporated EJ issues, and/or any EJ topics that were not explored that you wish were.</li> </ol>	Email was sent (Y/N)
In week 7, send all Doerr instructors a 10 min. Doerr School EJ Instructor Assessment Survey. The survey could be used as an instrument to track many of the checklist items in this rubric, such as how many instructors underwent a mid quarter class evaluation, or how many EJ guest speakers they invited.	Survey was sent (Y/N), Number of instructors who fill out survey
In week 10, invite all Doerr School instructors to a meeting to share the survey results.	Meeting was hosted (Y/N), number of instructors attending meeting
Assess how many instructors added the 2 questions to their student course evaluations.	Number of courses that asked these questions
Assess the number of EJ speakers invited to classes, or non-EJ speakers of color	Number of speakers
Assess the number of instructors who report reading the EJWG white paper and their perception of its usefulness	Website analytics for white paper use, and instructor reports of its usefulness

Assess the number of instructors who modified their syllabi or course plan	Number of instructors
Assess the extent of EJ content and pedagogical strategies incorporated into SUSTAIN 101	SUSTAIN 101 self-evaluation
Assess the number of dedicated EJ-centered courses (EJ is main theme)	Number of courses
Assess the number of EJ instructors in the Doerr School	Number of instructors

## Conclusion

EJ is a prerequisite for sustainable societies, by definition. Embracing EJ pedagogy at the Stanford Doerr School will not only improve the sustainability education it offers students, but also advance sustainability worldwide as students graduate and become leaders in their respective fields. In our view, EJ pedagogies help students understand the relationships between environmental racism and discrimination by race, class, gender, and other social factors; examines how various groups have resisted such discrimination by working in community and through social movements; platforms community leadership and expertise in addressing some of our greatest sustainability challenges; supports students in recognizing the ways in which their own daily lives are shaping and shaped by commoditized and exploitative relationships between people and the environment; and facilitates intergenerational knowledge and skill-sharing about how one can engage in collective action to solve these problems, advance environmental justice, and ensure the well-being of future generations.

Broadening the interests and representation of our faculty in environmental justice will help Stanford become a more effective problem-solver in the sustainability space. Furthermore, EJ pedagogy encourages us to center community responses to environmental injustices, build long-term relationships with community partners, engage with the adverse impacts of structural racism, platform community expertise and experience, avoid “parachuting” into communities with pre-determined research questions and assumptions, and find meaningful opportunities for benefit sharing with community partners. By more explicitly connecting social equity with Stanford’s research, teaching and environmental protection efforts, we will achieve more resilient sustainability solutions and greater environmental health for all.

## Key Resource Guides

- Blonder, B., Bowles, T., De Master, K., Fanshel, R. Z., Girotto, M., Kahn, A., Keenan, T., Mascarenhas, M., Mgbara, W., Pickett, S., Potts, M., & Rodriguez, M. (2022). *Advancing Inclusion and Anti-Racism in the College Classroom: A rubric and resource guide for instructors*. Zenodo. <https://doi.org/10.5281/zenodo.5874656>
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