

Negotiating Methodological Tensions: Resisting Settler Colonialism in Engineering Education Research with Communities

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Austin Morgan Kainoa Peters was born and raised in Waiehu, Maui, Hawaii. Peters is a multiethnic engineering education researcher with genealogical and Indigenous ties to Hawaii. Through his history of assimilation in engineering education at all educational levels, he remained tethered to his Native Hawaiian culture through his need to care for the natural world and passed down embodied practices. As an engineering education researcher, he plans to continue to unlearn his assimilative educational experiences to conduct research that centers Native Hawaiian ways of knowing and challenge oppressive structures of engineering education that continue to possess and exploit the natural world and marginalized people.

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Introduction

The purpose of this critical theory paper is to reflect on my personal experience negotiating the tensions of being a Native Hawaiian and an engineering education researcher, largely connected to settler colonialism. While this paper uses methods reminiscent of autoethnography, I do not want to confine my research and reflective practices within the boundaries of Western academic standards founded upon settler colonialism. However, I must acknowledge that my individual and familial history of conforming to settler colonialism for economic survival and my location within engineering education research (EER) as a settler colonial discipline will always lead to settler colonialism operating within my work and me in some form. I am committed to furthering my unlearning of settler colonialism and using my work to make visible and resist the settler colonial boundaries of the locations I occupy. This paper is my latest attempt to further this work, specifically through talking about the methodological tensions of doing EER in my Native Hawaiian community and offering how I negotiate these tensions to do my best to ensure that I prioritize the natural world, Hawai‘i, and my cultural values.

As a Native Hawaiian graduate student in engineering education, I used to struggle with this feeling of doing “extra” work to conduct research in a way that aligns with my cultural upbringing. For example, in the early chapters of my dissertation (that I am currently working on), I provide two chapters beyond what my department requires. The first chapter situates the historical, political, and cultural context of the Kingdom of Hawai‘i as illegally occupied by the United States (US) settler state despite international recognitions of sovereignty [1]. The second chapter outlines a methodology rooted in the *‘aumakua* (deified ancestor) of my mother. As I am in the process of my dissertation data collection, I am beginning to learn that what these chapters and other “extra” work are essential to me. That first chapter situates the Hawai‘i that I know and have a relationship with while the second chapter highlights how I am a Native Hawaiian genealogically connected to, born, raised, and accountable to the island of Maui. This switch in mindset acts as an example of the tensions that I constantly go through. Even though this essential work is at the core of who I am and the way I bring my ancestors with me in academic spaces, it also is the very thing that academia disvalues and positions as extra because I am no longer operating as only a clog in the settler colonial machine focused on maintaining White profit and power. I will continue to do this essential work that both excites me with the possibilities of what research could be and frustrates me through the need to justify the significance and academic rigor of these aspects of my research.

These frustrations are something I feel more often within the EER space relative to other academic spaces. The first entry from my personal dissertation journal (Entry 1 – 10/8/25) sums up my frustrations towards EER:

“My original proposal for engineering education forced me to focus on the engineering side of my research that I don’t care about as much. The education side (not necessarily better) is where I got to talk about the things I do care about or maybe it just aligns better. Of course, the education side still has settler colonial underpinnings but at least...the increased understanding of settler colonialism is helpful to let me be a Native Hawaiian fighting within Western

institutions compared to an engineering education researcher that must justify settler colonialism's existence just to incorporate Native Hawaiian culture in my work. Maybe someday, engineering education as an institution will get better, but for now, I am using this journal to discuss the methodological practices that I have to do to remember the multiple lenses, complicities, and resistances that I constantly negotiate."

I use this paper to voice my frustrations and highlight the essential work that I see as necessary to challenge settler colonialism throughout our related disciplines. I start with a reframing of settler colonialism from a human-centered oppression to an oppression of the natural world, mainly to bring in more conversations and perspectives of settler colonialism that is rarely discussed in EER [2]. This reframing helps me to broaden settler colonialism as a concept to show: 1) how engineering, engineering education, and EER are processes of settling through capitalist relationships to possess the natural world for White profit. I draw on EER literature at the intersection of my dissertation work, specifically the engineering for community development and qualitative research spaces. Then, I bring in my dissertation research context and methodology to illustrate the tensions that I negotiate. I offer these negotiations as my personal research commitments. Each of these commitments will include pivotal moments in my research practices through entries from my personal dissertation journal like the one in the previous paragraph and observations anchored in my dissertation field notes. I hope that being transparent on my stories of both excitement and frustration will help more engineering education researchers reflect on the ways that we reinforce settler colonialism in our work, especially when doing research with (or more likely on) the communities who disproportionately suffer from settler colonial consequences.

Reframing Settler Colonialism

Bear with me for this long articulation of how I frame settler colonialism, a framing that will allow me to demonstrate how settler colonialism guides engineering, engineering education, and EER. Seminal White scholars in settler colonial studies, Patrick Wolfe [3] and Lorenzo Veracini [4], describe settler colonialism as an ongoing, everchanging, and human-centered structure of oppression where a foreign population works to replace the Native population with the goal to permanently possess a place for settler profit. I agree with this goal of settler colonialism and how settler colonialism as a structure is a system of oppression that is ongoing [3] and everchanging [4] to reinforce itself and other structural oppressions. Where I disagree is that settler colonialism is about the oppression of humans, namely the replacing Native populations. While the replacing of Native populations and their relationship to the natural world is integral to the settler colonial structure, I argue that settler colonialism centers the oppression of the natural world (the land, skies, seas, and everything-in-between, inclusive of marginalized and Native peoples).

Drawing from Indigenous scholars [5], [6], I situate this oppression of the natural world as reducing the natural world from an animated being with physical, emotional, and spiritual qualities [7] to an inanimate physical resource. This reduction rationalizes the acquisition and extraction of wealth of this resource for White profit. Through socially constructing and extracting wealth from the natural world, settlers can then also establish power dynamics by distributing this wealth differently to different marginalized peoples to establish oppressive

(racialized, gendered, classed, etc.) hierarchies [8] where Natives and marginalized peoples are relegated as resources for labor, a form of settler accumulation [9]. In other words, I argue that the oppression of marginalized peoples through settler colonialism is a product of the settler colonial structure oppressing the natural world, representing a way to possess and propertize the natural world as a composite of exploitable resources [6].

By centering the oppression of the natural world, I can also reframe how settler colonialism is in relationship with colonialism. Patrick Wolfe argues that settler colonialism is a subset of colonialism [10], [11] while Lorenzo Veracini describes settler colonialism as antithetical to colonialism because settler colonialism is about replacing the Native population where colonialism is about resource or labor extraction [4], [10]. I align more with Wolfe that settler colonialism is a subset of colonialism. However, I completely diverge from both in describing colonialism as the possession of the natural world inclusive of the people Native to that place, largely due to the influence of possession scholars like Maile Arvin [12] and Aileen Moreton-Robinson [8].

The next pertinent question then becomes what role does the “settler” play in settler colonialism as a subset of colonialism? I view settling as the relationship that a stranger establishes with the natural world in a specific place. Western relationships of settling are based in capitalistic relationships [13] that require the possession of the natural world and its peoples as resources for profit. Settler colonialism from a Western perspective becomes possessing the natural world of a place through capitalist relationships for White profit. With this framing, settler colonialism does not only have to do with political control like the US being a settler state that possesses or colonizes the natural world of Native American, Alaska Natives, and Native Hawaiians but also includes other forms of settling (physical, economic, social, cultural, etc.) that establish relationships to possess the natural world despite political independence. I can now describe how engineering, engineering education, and EER are manifestations of Western settler colonialism,

Engineering: Physical Process of Western Settling to Possession

I position engineering as a physical process of Western settling based in capitalist relationships to possess different portions of the natural world. Lucena, Schneider, and Leydens [14] in their book chapter “Engineers and Development: From Empires to Sustainable Development” describe how empires used engineering through infrastructural projects to reach their goal of “*permanent transformation* (italics theirs), i.e. the attempt to transform nature into a predictable and lasting machine that could be controlled and would last to ensure their imperial patrons a return on investment and display superiority over indigenous people (p. 14).” While these projects occurred in some colonies like Brazil, Egypt, India, and Mexico that may not fall under settler colonies currently, the connection to permanently transforming the natural world of a place as resources for extraction demonstrates how engineering projects are the physical manifestations of Western settler colonialism based in capitalist profit despite political recognition.

These authors [14] continue mapping the intersecting timeline of development and engineering from this imperial development to national, international, and sustainable development, as well as engineering to help that are still largely guided by making decisions for and consequently, inferiorizing local and Indigenous communities through colonial, positivist, modernist, and

savior ideologies. While I agree with their argument, a settler colonial perspective helps to explain that these ideologies are the everchanging [4] guises of the settler colonial structure to maintain the agenda of capitalist relationships with the natural world that allow the extraction of resources for White profit. Overall, these ideologies that Lucena et al. [14] describe as guiding engineering are connected back to the furthering of development, a measure of capitalist progress and relationships based in Western settling through technological advancement that continues to possess and exploit the natural world [12], [15]. These aspects of capitalist progress and relationships are built into American engineering [16] and the Western globalization of engineering at-large [17]. Thus, I view engineering as the physical process of Western settling to colonize or possess the natural world of a variety of places through capitalist ideologies of progress and development.

Engineering Education: Social Process of Western Settling to Possess

If engineering is the physical manifestation, then Western education through schooling represents the social manifestation of Western settling to reinforce the possession of the natural world as a resource for capitalist growth. In previous work [2], I describe how engineering education instills capitalist progress through objectivity [18], depoliticization and meritocracy [19], and industrial values [20] that maintain economic and racialized power in the hands of white settlers [2], [12]. In this section, I focus on engineering education in communities to illustrate how this social process to possess the natural world also operates within how our field interacts with communities. Although my experience, understanding, and reading about engineering education in communities is limited, I do view this location as a particularly important place for conversations about settler colonialism, especially when these programs are working with colonized communities.

Starting with Delaine and colleagues' [21] systematic literature review of reciprocity in the engineering service learning and community engagement space, they describe the ways that higher education and engineering education as institutions affect the implementation of engineering service learning and community engagement courses. I am using institutions here to describe the institutionalized characteristics, meanings, and structures related to settler colonialism throughout higher education and engineering education that play an important role in shaping organizations (e.g. specific universities, colleges, classroom units, etc.) [22]. The way that I will refer to institutions and organizations is different than the framing of Delaine and colleagues [21] who use institutions to refer to universities and organizations to refer to groups within the university like student organizations and groups external to the university like non-governmental, community, and partner organizations.

Throughout their literature review, Delaine and colleagues [21] make the connection that reciprocity does not align when the context of the course was focused on the university organization. Rather, the university organizations acted as intermediaries of information distancing students from the community so that educational impacts prioritize the university organization or students as members of that organization. In these examples, there is possibility that these examples of engineering service learning and community engagement are exploiting communities for the university's benefit, a sign of institutionalized control and extraction of wealth through capitalist relationships that possess these communities. Maile Arvin, Eve Tuck,

and Angie Morrill [5] explain that the U.S. usurped wealth from possessing land as a resource and marginalized people, namely chattel slaves as forced laborers. These examples of engineering service learning and community engagement being used to extract and maintain wealth within White institutions of higher education and engineering education rather than to communities demonstrates the distribution of wealth central to reinforcing oppressive hierarchies through Western settler colonialism [8]. This extraction also reinforces a capitalistic relationship that possesses the natural world that includes marginalized communities.

Another important part of Delaine and colleagues [21] review is that it was common to see communities positioned from a deficit perspective and a receiver of knowledge that align with other engineering education scholars [23], [24] in the service learning and community engagement space. These examples reinforce what Linda Tuhiwai Smith [25] explains as the superiority of Western knowledge systems that lessens the validity of other knowledge systems like local and Indigenous knowledge to assimilate everyone towards Western thought as a form of intellectual genocide [26]. This invisibilization of other knowledge systems maintain the institutionalized settler colonial structure throughout higher education [27], and in this case engineering education, for capitalist extraction through the possession of knowledge. With both examples, I argue that engineering education in communities and service learning should be seen as a disciplinary-specific social process of Western settling to further colonial possession.

I recognize that I focused on the examples that lack reciprocity to demonstrate how higher education and engineering education institutionalize Western settler colonialism in organizations. These examples are not exhaustive of the articles in the systematic literature review with some engineering service learning and community engagement implementations being further along towards reciprocity [21], albeit in a field that is lagging in terms of community reciprocity compared to other disciplines [21], [28]. Implementations such as participatory action pedagogies to promote social and technical dualism [29] and designing for justice through critical asset-based approaches [24] are starting to challenge the settler colonial structure at least implicitly. However, I question how much these implementations towards more reciprocity also challenge capitalist relationships that is central to much of EER that I discuss next.

Engineering Education Research: Academic Process of Western Settling to Possess

Lastly, building on the idea that engineering education is a disciplinary-specific process of Western settling built into American and Western curriculum [6], I recognize EER as the academic process of Western settling to possess knowledge that I hinted at in the previous section. A pertinent example of this possession of knowledge is the changing methodological discourses throughout the history of EER. Through a discourse analysis, Beddoes [30] explains that when engineering education started out as a field, the first major research challenge for engineering education researchers was to legitimize this field that sits between the social sciences space and engineering space. These early researchers used rigor, mainly quantitative forms of right, to build the field's legitimacy.

This discourse of rigor is evident in the early fights to bring forth more qualitative research into the EER space. Koro-Ljungberg & Douglas [31], Borrego and colleagues [32], and Baillie & Douglas [33] call out the field to have a larger understanding of rigor beyond classroom-based

experiments, large numbers of participants across multiple institutions for a long period of time, and positivist orientations alone, respectively. They all call for identifying rigor based in method and methodological alignment with research questions, theory, and epistemology to not only create space for qualitative research but also other quantitative methodologies.

While rigor is still central to these arguments, these same calls represent what Beddoes [30] refers to as the shift in methodological discourse to methodological diversity to advance and benefit the field. I would argue that the shift away from rigor is still occurring with many people still holding on to the concept; however, the work of and Donna Riley [34] and Walther and colleagues [35] are especially salient in demonstrating how rigor is problematic and moving towards different understandings of methodology to promote methodological alignment and engagement for qualitative research, respectively. Case and Light [36] explain how engineering education research can improve methodological engagement and alignment through theoretical justification and explicating knowledge generation that has many connections with researcher reflexivity, an idea largely promoted through Secules and colleagues [37] call for better positionality practices.

Beddoes [30] explains how the process of legitimization during the rigor discourse and the shift to methodological diversity discourse are examples of Gieryn's [38] concept of boundary work that socially constructs boundaries around disciplines. The scholars here and those not mentioned who helped the shift from rigor to methodological diversity represent the people doing the boundary work of qualitative EER. I argue that boundary work in general, but especially in the case of EER, represents the establishing of Western knowledges as superior [25]. Rigor as the boundary at the beginning of EER, especially through quantitative standards, demonstrates what type of knowledge is acceptable. Rigor's alignment with positivist orientations based in objectivity, an established mindset in engineering [18], reinforces a settler colonial possession of knowledge that forces assimilation to Western knowledge [26], [27]. This assimilation attempts to invisibilize other knowledges, especially those of Indigenous and marginalized peoples. Through this boundary work process of rigor, Western research can possess knowledge through inferiorizing Native and marginalized knowledges based in mutualistic relationships with the natural world [12], [39] that would challenge Western forms of settling or relationships based in capitalism to possess and extract.

While the methodological diversity discourse is expanding boundaries and some may situate it as challenging settler colonialism, I would refute that. Much of the methodological perspectives that are expanding the field or what Case and Light [36] call "emerging" in EER are well-established qualitative methodologies in Western academia (i.e. case study, grounded theory, ethnography, action research, phenomenography, discourse analysis, and narrative analysis). These methodologies may be increasing the diversity of research, but I would argue is still maintaining the superiority of Western knowledge systems that aligns with the academic process of possessing Native and marginalized peoples, as well as their relationships with the natural world.

The work that I see as challenging settler colonial possession of knowledge [25] often require methodological justifications, representing another form of attempting to invisibilize othered knowledges. For example, Escobar and colleagues [40] employ *pláticas* that center trust with their participants as a method to better align with their population of interest that is also in

alignment with their use of Chicana Feminist Theory based on Gloria Anzaldúa's *conocimiento* process [41]. Through employing a culturally relevant method, methodological alignment is bolstered through their theoretical justifications with the goal to reject colonial epistemologies [40]. Similarly, Coley and Thomas [42] ground their methodology in kinship and solidarity as an antiracist commitment to the Black engineering graduate students in their study leading to an elongated timeline for the research and reduced productivity from an EER perspective that Martin & Garza [43] also implicate in their work. Throughout the paper, Coley and Thomas [42] adapt Western frameworks and methodologies to better align with this methodological commitment to prioritize the community they built with the members of their study that "required [them] to create additional justification for [their] approaches" (p. 544) through addressing how these frameworks and methodologies converge, diverge, and make sense for their study. These are the same types of justifications that I talked about as "extra" work in the introduction and represent what is often required to push back against the settler colonial boundaries of EER through an invisibilization of non-Western knowledge systems that inferiorize and disvalue colonized researchers and research with their communities to possess and legitimize knowledge within Western academia.

My Research Commitments

Because I view engineering, engineering education, and EER as inherently Western forms of settling, I will always have to deal with the tensions of being Native Hawaiian that opposes both settling through capitalism and colonialism as the possession of the natural world [12]. The portion of my dissertation that is furthest along and is helping me to think about these tensions is my research with Native Hawaiian cultural practitioners whose cultural practice some would consider engineering [44], [45]. However, the settling through their cultural practice is not based in capitalist relationships but in Aloha 'Āina, a foundational Native Hawaiian tenet [46]. These cultural practitioners also find ways to educate cultural lessons and the practices themselves as forms of resisting and challenging the structure of settler colonialism. I would not consider this form of education as engineering education because the lack of possession and capitalist extraction. These practitioners find ways to work within and outside Western settler colonialism that is helping me to unlearn settler colonialism through grounding my research methodology in Native Hawaiian knowledge that I hope others would not consider EER.

I will not describe my methodology in full detail to avoid the cultural knowledge from being exploited as settler colonial research practices continue to do [25]. Instead, I will offer my three commitments in English and cite the Native Hawaiian scholars who inform these commitments. My first commitment is to prioritize cultural understandings to develop mutual loving relationships with the natural world [46 - 48]. My second commitment is to prioritize learning from the natural world through a Native Hawaiian understanding of genealogy [7], [49] – [53]. My final commitment is to prioritize long-term continuity of the natural world and my Native Hawaiian community that requires making visible and resisting settler colonialism [1], [54], [55]. My methodology is carried through the 'aumakua on my mother's side and all of the ancestors, inclusive of the natural world, that continue to guide my unlearning of settler colonialism. If you would like more information on any of these commitments and their cultural underpinnings, please create a relationship so that I am comfortable sharing this knowledge that many discredit or make inferior to maintain possession of knowledge through settler colonialism.

Throughout this section, I will discuss these commitments, my employment of these commitments with the cultural practitioners without discussing explicit cultural methods, and an example of the methodological tensions that I am currently negotiating related to each commitment.

Commitment 1: Prioritizing Mutual Causal Relationships through Cultural Understandings

I learned this second commitment through making a mistake. For my Institutional Review Board (IRB) submission, I was given feedback that I should not be the one reaching out to the cultural practitioners because the better practice is to send out the information through others and have interested cultural practitioners respond. This process was so backwards for me, and an excerpt from my dissertation research journal (Entry 2, 10/10/25) explains why:

“Growing up, my parents would always make me say hi to their friends at party... This is how Hawai‘i culture is. You always greet the people that you know as the first thing to develop and strengthen your relationship with them... [T]he very people that I had to say hi to are the people that raised me. The community always comes before the individual. This is not how IRB thinks. My interpretation of IRB’s process is to give the participant the power to reach out without any persuasive or coercive contact from me... The values of institutions based in settler colonialism, individualism, and Whiteness view distance as the solution to coercion while my culture views relationality and community as the solution.”

I ended up conforming to the IRB process because I needed to complete my IRB quick to recruit, at the expense cultural understandings of relationality.

This is an example of the tension between outcomes and relationship building. Working in a settler colonial discipline built on capitalistic progress that manifest as outcomes pushes us as researchers to produce outputs, often at the expense of relationships with our participants. It is the obsession with efficiency from a Western perspective that plagues both engineering [20] and engineering education [56]. However, one of my field notes (Location 2, 2/6/26) talks about efficiency from a cultural perspective: “Efficiency in terms of relationships not growth that happens when you have the hands and each person plays their role.” I am not going to share the cultural values, knowledge, and stories tied to this field note but I will emphasize something that I learned from the cultural practitioners. Natural resources are finite despite what capitalist growth wants us to think; however, there are always an abundance of relationships that can offset any lack of resources if we tend to our relationships based in mutual causality [7].

I ensure that the relationships I build in these spaces are relationships based in mutual causality not capitalism. I learned what this relationship can look like through the cultural stories and knowledge that the natural world and cultural practitioners carry and pass on. Consequently, my interview process and structure have changed to center the stories around the relationships the cultural practitioners have with the natural world they tend instead of where their practice aligns with engineering as I originally intended. While I am putting the structure of these stories together after between interviews, I use subsequent interviews to write the stories with them and spark more conversation so that the interview space becomes a place to further build a relationship with both the cultural practitioners and the natural world they tend [48].

Commitment 2: Prioritizing the Natural World through Genealogy

I prioritize the natural world because all forms of nourishment, relationships, and knowledge circulate through the natural world [46]. While my formal data collection plan involves the interviews that I discussed in the previous commitment, I also have an informal form of data collection that comes from helping these cultural practitioners take care of the natural world that they tend. While this informal collection builds rapport, it means much more than that. I am connected to these practitioners through where I lived my whole life and the specific area of the natural world they tend. The natural world is our oldest and most knowledgeable ancestor [7], so to learn from these cultural practitioners means to learn from our ancestor. The cultural significance here is that the best way to get to know someone is being accountable to the natural world they tend as this relationship is one of the most important extensions of who they are.

This being accountable to the natural world and cultural practitioners as my genealogical ancestors [Arista, date] is how I am “collecting my data”. Tending their piece of the natural world together has given me more insight about who they are and their relationship with the natural world than any interview ever could. The interviews are just to have specific examples of evidence to tell their stories that I grounded in what I learn from working with them. The significance of this data collection process is represented in the following field note: “I haven’t known you but you still guided me” (Location 1, 1/9/26). Previously, I would categorize myself as a possession of settler colonialism because of all the ways that I avoided learning Native Hawaiian language and culture through my schooling and extracurricular activities to prioritize economic survival through capitalist means. I blamed myself and my family for a long time for my lack of cultural connection. However, as I started to understand my accountability to my ancestors, I started to reflect on the ways that my family preserved these very philosophies and ideologies through everyday actions. It is similar to give forward to the cultural practitioners as before formal data collection as a form of accountability to learn from the right ancestors, namely the natural world, and to shift my narrative from a possession to cultural embodiment.

However, working within EER as a discipline-specific academic form of settling to possess, I am actively bringing multiple layers of settler colonial exploitation whether I like it or not to these locations. I am exploiting both the natural world and the cultural practitioners to unlearn myself as a possession. It feels selfish, especially coming from a culture where wealth and progress are determined through relationships [12], [39]. No matter how much I give forward with helping them tend the natural world, all these actions are still benefitting me as a person and a researcher, which I do not think is about being genealogically accountable to the natural world and cultural practitioners.

This tension of exploiting to unlearn is a tension that I simply will never be able to get over. The only way I find solace in it is that the cultural practitioners do not view my research as exploitation because I am not instilling any of my ideas in these places but learning from the natural world and cultural practitioners. Right now, I think this is the best way that I can be accountable to my ancestors while also operating within settler colonialism and capitalism, but I am continuing to find more culturally appropriate ways of being accountable.

It is also important to note that Hawaiian understandings of genealogy look to the future as well as the past [49], so how am I being accountable to future Hawaiians and marginalized peoples? This is a similar question to one asked on one of the sites, and I noted the both the question and answer in one of my field notes: “They asked, ‘what kind of ancestor does each person want to be?’ Immediately, I knew that I want to be a weed in Western institutions. I can continue to spread and take up space...” (Location 1, 2/21/26). While I am exploiting my ancestors, I am also taking up space as a weed to create opportunities for future Native Hawaiians and other marginalized people in these spaces until we begin to tend to non-capitalist relationships and overturn Western settling to possess. For now, this is how I negotiate my selfishness.

Commitment 3: Prioritizing Long-Term Continuity through Unlearning and Taking Space

The final commitment combines the previous ideas in thinking who is my research benefitting and exploiting, as well as which relationships do I prioritize? My answer is that my research is a selfish endeavor that is helping me to unlearn settler colonialism and gain power within Western academia while also benefitting the institutions that I occupy. I am exploiting the natural world and cultural practitioners for their knowledge.

However, the “extra” work that are disvalued and considered beyond the research space are the places that I can be accountable to and create a mutual causal relationship with both the natural world and the cultural practitioners. Through this extra work that is essential to me is how I temporarily compartmentalize and negotiate the tension while also giving back and forward to the natural world and cultural community as a form of long-term continuity. Developing the stories with the cultural practitioners around their relationships with the natural world instead of connections to engineering and tending to the natural world with the cultural practitioners rather than just doing interviews is this essential work.

This compartmentalization goes back to the weeding metaphor and one of my field notes that says: “weeds always get in the way, but I have to help the right things grow (Location 2 – 1/12/26).” If not obvious from the amount of weed metaphors, I spend most of my time weeding. I prefer weeding over my other responsibilities because I am beginning to learn from the natural world and the cultural practitioners without the pressure of planting. Because of my history of possession, I am not familiar enough with plants or the natural world where I feel confident planting something to bring about the accountability to and relationship with the natural world. What I can do confidently is pull out and slow down the weeds and other colonizing species to ensure that the cultural practitioners who know better can tend to a mutual causal relationship with the natural world. I will likely continue to prefer weeding until I develop a better relationship with the natural world and learn the types of knowledge and stories that go into planting.

I feel like this weeding and planting metaphor is how I negotiate all my tensions. I can confidently describe and call out how engineering, engineering education, and EER spread the weed of settling through capitalism to possess or colonize the natural world, which is what I mostly did throughout this paper. I may not be ready to plant Native Hawaiian methods and methodologies especially in the locations I occupy; however, I will continue to learn and practice this planting with the guidance of my ancestors, inclusive of the natural world and cultural

practitioners. In the meantime, I continue to occupy EER as a Native Hawaiian through being a weed. I am committed to continue to unlearn settler colonialism to prioritize the natural world and create space for others to tend to relationships with the natural world from a place of mutual love and causality or any other form of relationships that oppose capitalist settling.

Depending on your location and level of cultural knowledge, please join me as a weed, begin to tend different relationships with the natural world, or find whatever metaphor and commitments work for resistive work that oppose your framing of settler colonialism.

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