

**Decolonization and Transformation of Higher Education for Sustainability: Integrating
Indigenous Knowledge into Policy, Teaching, Research, and Practice**Jing Lin^{a*}, Angela Stoltz^b, Matthew Aruch^c, and Annie Rappeport^d^a*University of Maryland, College Park, USA*^b*University of Maryland, College Park, USA*^c*University of Maryland, College Park, USA*^d*University of Maryland, College Park, USA**Correspondence: jinglin@umd.edu

ABSTRACT

This article argues that institutions of higher education (IHEs) require a fundamental paradigm shift toward an Indigenous Knowledge (IK) model inclusive of Indigenous Peoples, perspectives, and values. This model acknowledges the sacred value of nature, the rights of non human species, and the power and potential of transformative learning via collaboration with Indigenous communities. Through four personal experiences from one IHE, we highlight challenges and opportunities to decolonize higher education across the domains of policy, research, teaching, and programs. Examples include the Graduate Student Government's resistance to university policies of unsustainable construction projects; incorporating IK from Eastern traditions and world spiritual

Received September 15, 2020; revised January 15, 2021; April 8, 2021; accepted June 28, 2021; electronically published August 2, 2021

practices into course curriculum; Indigenizing higher education courses and projects through inclusion and collaboration with local Indigenous tribal members; and finally, ongoing transnational research and education collaborations with an Indigenous Mebêngôkre-Kayapó community in the Brazilian Amazon.

Keywords: decolonization, higher education, Indigenous Knowledge, sustainability

INTRODUCTION

Today, institutions of higher education (IHEs) tout sustainability, environmental awareness, and civic responsibility. However, practices at colleges and universities throughout North America often contradict these principles. Historic trees are cut down to make way for the newest buildings, and buildings and curriculum trap learners inside, presenting nature as a “distant other.” Administrative decisions focus on the bottom line, and courses on sustainability emphasize economic growth and consumption. Heesoon Bai (2015) describes modern education as “abstract, explicit, precise, fragmenting, narrow, static, mechanical, and lack[ing] empathic ways of being” (p. 141). Indeed, in our view, higher education institutions are still fundamentally rooted in anthropocentric, colonial perspectives, albeit many endeavors have been made to promote sustainable development (Lin et al., 2020). Furthermore, higher education institutions have been unable to address the catastrophic social and environmental impacts of climate change. We propose that a decolonized educational paradigm is necessary for fundamental changes to take place; this paradigm posits nature as living, dignified, intelligent, and deeply connected to humanity. Indigenous communities and Indigenous Knowledge (IK) can offer innovative concepts, tools, and methods for transforming our ways of knowing and being, fostering virtues such as equanimity, humility, respect, compassion, and peace.

In this article, we argue for the need to decolonize higher education and propose a model for integrating Indigenous communities and IK into postsecondary policies and practices. We share examples of decolonizing policy, teaching, research programs, and collaborative projects from one institution of higher education (IHE). First, we share how the Graduate Student Government (GSG) integrated lessons from a Cambodian Indigenous community and a Buddhist monks' deforestation resistance movement to challenge university policies of unsustainable construction projects. Next, we describe the incorporation of IK from Eastern traditions and world spiritual practices into an ecological ethics and education course curriculum. Then, we discuss the challenges of Indigenizing higher education courses, projects, and efforts to cultivate inclusion and collaboration with local Indigenous tribal members. Finally, we present the ongoing evolution of a global partnership which aligns IHE research projects and student study abroad field courses with the Mebêngôkre-Kayapó, an Indigenous community in the Brazilian Amazon. These cases highlight that changes can be made within university governance, curriculum design, interdisciplinary projects, and international education partnerships. Sustainability endeavors in higher education, in our view, involve activism, the incorporation of Indigenous knowledge, the importance of ensuring that Indigenous people play a central role in university projects, and the involvement of students working with Indigenous communities to sustain and protect nature.

CURRENT MODEL FOR HIGHER EDUCATION

Although there are some significant efforts by IHEs to promote sustainability in research, teaching and programs, as illustrated by the annual Green College Survey conducted by the Princeton Review¹, the current model of higher education still fundamentally operates from colonial and capitalistic paradigms. Colonialism and capitalism, driven by the hunger for power and wealth, enculturate learners into industrial

¹ See <https://www.princetonreview.com/college-rankings/green-guide/data-partnership>

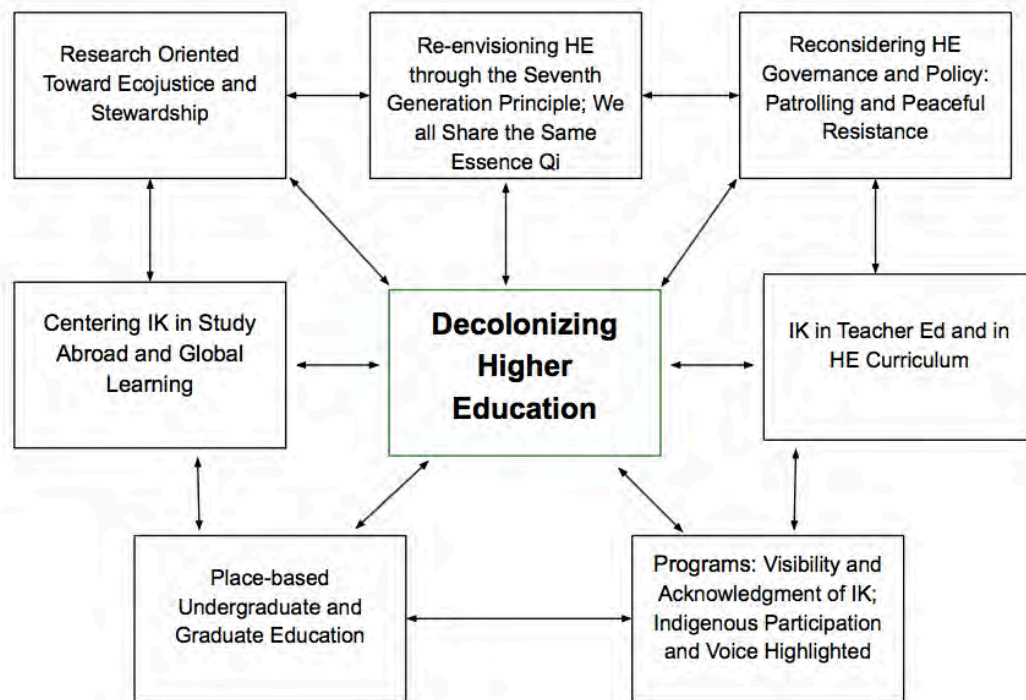
and neoliberal perspectives and thinking (Watson, 2020). In other words, higher education largely aims to train talents who would work for an economic structure that centers on possessing “resources” or achieving “success,” as indicated by power and wealth. Under the capitalist root metaphor that human society will always aim to produce more for perpetual, lineal, and upward growth (Bowers, 2002), the fundamental mission of higher education is based on anthropocentric values. In order to achieve efficiency and effectiveness, university departments and programs form into specialization silos, making it difficult for learners to see interrelated concepts and gain a holistic perspective on our ecological connection with nature. Through compartmentalized, fragmented, and abstract learning, nature and other species are not seen as alive and intelligent beings who share the world with us, but are instead treated as lifeless and inconsequential. Subsequently, the interests and wellbeing of non-human species are out of sight - and then out of mind - from many of the most highly educated people.

In Western society, the history of colonialism is still very much unreflected upon. Colonialism was upheld by White supremacy, which denigrates a large part of the world and deems some races and cultures to be inferior. Today, hierarchical cultural norms are still maintained, which fundamentally sabotages the equanimity of all beings and the interconnection of all existence (Smith, 2012). Universities are a microcosm of this phenomenon; they are established on unceded Indigenous lands and function as small colonies. Indigenous values pertaining to the interconnectedness of the natural world are replaced with mostly unquestioned Eurocentric, anthropocentric worldviews. In fact, the scientific, Eurocentric, positivist mindset that dominates our higher educational systems embodies colonial, Western perspectives, privileging detached, abstract, and rational knowing and learning as superior to other ways of knowing. For the most part, learning takes place indoors in rectangular classrooms and labs, in buildings that do not replicate nature or natural forms, connected with the local ecology and living world. Students are

burdened with an unbearable amount of mind-focused, productivity-oriented tasks; given little time and space for breathing and inward looking; and rarely have the opportunity to engage deeply with the local ecology and living world. University students are expected to become efficient and productive workers who uphold systems that reinforce individual progress and wealth accumulation rather than the wellbeing of the broader ecological community (Lin et al., 2020; Culham & Lin, 2020; Bowers, 2002).

DECOLONIZING HIGHER EDUCATION THROUGH AN INDIGENOUS KNOWLEDGE MODEL

To decolonize the educational paradigm prevalent in IHEs, we propose a shift toward an IK model that is place based, nature based, and ecologically guided. In the IK model, nature is perceived and treated as living, warm, dignified, and intelligent, and all living species have the right to life and respect (Lin et al., 2020). It posits nature not as “wild” or as “resources” but as family. The model calls for “centering concerns and worldviews” of Indigenous people in IHEs to counter colonial and capitalistic ideologies (Smith, 2012, p. 41). In the model, higher education is to be re-envisioned through the indigenous Seventh Generation Principle; IK is to guide undergraduate and graduate education (which should be place-based); IK is comprehensively incorporated into university governance and policy, teacher education, research endeavors, study abroad programs and university-community partnership, all with an overarching goal of promoting ecojustice and stewardship. Here is a diagram of the IK model (see Figure 1).

Figure 1*Indigenous Knowledge Model*

Smith (2012) shared twenty-five Indigenous projects that demonstrated strategies for decolonizing IHEs. In particular, IHEs must collaborate with Indigenous communities to invite the sharing of Indigenous perspectives, network with Indigenous people, reframe education from Indigenous worldviews, support Indigenous representation, and co-develop a vision of a sustainable future in harmony with nature (Smith, 2012). We recognize that Indigenous populations and Indigenous worldviews are diverse, but there are common principles that are shared across Indigenous communities. For example, the Indigenous Seventh Generation Principle is commonly held among indigenous groups. This principle holds that anything we do could affect seven generations into the future. This Indigenous principle reminds us we must be responsible for our actions as future generations and their ecological living systems are affected for the long term, and multiple generations of humans share an interconnected destiny with their ecosystems. IHEs' understanding and adoption of this Indigenous principle can shift the current colonial paradigm to

one that values and sustains life, where “the priority to care for and protect the land is for the *Web of all Life*, and the *Seven Generations* yet to come” (Eyers, 2017).

FOUR EXAMPLES OF DECOLONIZING EFFORTS IN AN INSTITUTE OF HIGHER EDUCATION

As members of an IHE, we have individual agency to direct our work towards decolonized practices. Here, we share four decolonization efforts at one university campus that touches on the topics of university governance, instruction, and campus/community collaborations at home and abroad.

Re-envisioning Sustainability Through Relational Awareness - Annie Rappeport

The Indigenous people of Cambodia value the wisdom of their ancestors and the special connection they have with the trees. They believe they owe their lives and livelihoods to the trees, and that, like the skin that envelops and protects the human body, the forests of Cambodia protect the community. This is the foundation of their Indigenous Knowledge system. Trees have inalienable rights that must be respected and protected (Lemkin & Jewson, 2016). Geographic surveying and data collection by USAID indicates that Cambodia has a rich biodiversity with over 2,300 plant species (USAID, 2018). However, due to legal and illegal logging practices, deforestation runs rampant throughout the country. In response, Indigenous Cambodian communities have come together to protest on behalf of the trees. The loss of the trees, which Indigenous Cambodians describe as nature’s elders, is reminiscent of the tragic loss of Buddhist Cambodian elders during the Khmer Rouge genocide (Zucker, 2008).

Advocacy for the forest is also actively supported by the *sangha* (a *sangha* is a Buddhist community of monks, nuns, novices, and laity) who, since the 1990s, have regained freedom and influence over Cambodian culture (Maza, 2017). The *sangha* and Indigenous Cambodian leaders have risked their freedom and lives to speak out for the trees of Cambodia (Chandran, 2017;

Lemkin & Jewson, 2016). Working in tandem, Indigenous and *sangha* communities exposed illegal logging activity, created patrolling teams, highlighted forest destruction, and increased public interest in forest protection through convenings and peaceful protests.

Both the *sangha* and Indigenous communities feel compelled to advocate for the rights of nature. They believe trees have an inherent right to life, as they are elders with wisdom and are ancestors worthy of respect and reverence. These strong values persist after millennia in spite of the anthropocentric ideologies imposed upon the society and imported into the country via occupations, wars, and globalized trade. One of the *sangha*'s most striking forms of advocacy is holding a ceremony to robe trees with saffron, a ritual for robing human elders/teachers. This practice demonstrates that the Buddhist monks hold trees with the same level of reverence as the highly honored human members of the *sangha*. To protect the forest members of the *sangha*, Bun Saluth, a monk with a creative and powerful resolve, led a group to dig a deep ditch around a forest to create a protective barrier (Groeneveld, n.d.). These examples demonstrate how Cambodia's Buddhist communities pursue environmental activism in peaceful, yet effective ways. They provide insights and inspiration for individuals and communities in other contexts who wish to protect nature in the midst of pressure compelled by economic development.

The insights I gained through my years of working with Cambodians influenced my activism in the university where I study and work. In theory, the university I affiliate with has formulated policies aimed at being a role model for sustainability among higher education institutions across the nation and world. However, sustainability and economic priority are entangled in tensions and contestations due to pressure to expand the campus as a measure of economic growth. I witness how economic growth priorities override the primacy of sustainability. One such example was the campus leadership's decision to "develop" the largest greenspace, the

golf course, to create large parking lots to accommodate the thousands of people flocking to campus for football games. Using a scarcity argument (limited space leads to limited options) and rhetoric that the existing greenspace was used only by an elite few, the university planned to develop the greenspace into parking lots. This plan was initially well received. However, when student leaders heard environmental concerns by the students during a town hall meeting, the Graduate Student Government (GSG) decided to take critical actions.

As President of GSG, inspired by the actions of the Cambodia's Indigenous leaders and Buddhist monks, I reached out to graduate students who directly benefited from the existing greenspace, such as those who study astronomy (there is an observation facility nearby) and environmental studies. We curated lessons and testimonies from environmental experts in the community. Through these endeavors, a coalition consisting of students and faculty was formed, and a resolution for preservation of the green space was drafted. The coalition worked with the campus student newspaper to publicly expose the detrimental environmental and academic effects of the proposed development. On campus and at the golf course, we maintained a constant physical presence in important discussion events and engaged in peaceful persistence as we articulated the negative effects of the proposed development to members of the community. Throughout all of the activities, we remained calm and respectful, reminiscent of the actions by the Indigenous Cambodian communities and Buddhist monks.

In a sense, the coalition was "patrolling" the bureaucratic process, much like Cambodia's Indigenous and monk communities. Plans to develop the greenspace were effectively slowed down by the coalition and by other community groups who wrote petition and protest letters, requested a change of plans, and pointed out the misalignment between the proposal and the university's sustainability principles. Through mobilizing and networking with stakeholders, gathering

testimonies, and examining campus development projects through Indigenous perspectives, the coalition formed by the GSG helped with decolonizing practices in an IHE that can be applied to other contexts, organizations, and policies.

Incorporating Eastern Indigenous Perspectives: Embodying Respect for Nature and Equanimity of All Species - Jing Lin

Indigenous Eastern traditions emphasize an ontology that everything is connected, and all are spirits with intrinsic values and intelligence. As faculty, I incorporate this ontology by emphasizing a holistic understanding of ourselves and the world around us. I have devoted my research to this topic and have published many books and articles over the years. In Eastern philosophy, embodiment is critical and I have made this a priority in my teaching. Not only do I try to embody what I am teaching, I also integrate these teachings into my classes. I do this by incorporating the Taoist cosmology and epistemology, as well insights from Buddhism and Confucianism into my research and teaching.

Taoist cosmology and epistemology focus on Qi as the creative energy and spirit, and virtue is taken as the mechanism undergirding the universe (Culham & Lin, 2020). Taoism posits that everything in the universe is imbued in the Tao creative energy called Primordial Qi. In my classes, we discuss the Daoist philosophy, and I engage students in exploring Daoist arts, which has a striking feature of intuiting the spirit and energy of nature, bringing nature into the center of arts and the artists' whole being. I use Taoist arts to discuss the implications of arts for sustainability education.

Further, in my classes, students explore Buddhist perspectives in terms of the equanimity of all existence. I illustrate that Buddhist cultivation leads people to an expanded view of the human family as a part of the broader Earth and cosmic community. I share the story of Buddha

giving his life to save six tigers (Lin, 2019). This story embodies the principle that all life is sacred and valuable, and that human life does not supersede the value of the life of non-human species. I also incorporate the tenets of Confucian philosophy which teach that humans and nature are one and they correspond and resonate with each other.

By incorporating Eastern Indigenous teachings of Taoism, Confucianism, and Buddhism, I attempt to counter anthropocentric, colonial, and capitalist ideologies and hierarchies. I present alternative worldviews on our role and position as human beings in relation to our ecosystems and the universe. I also incorporate Western and other Indigenous perspectives which hold deep respect for nature and non-human life forms. In my course on Ecological Ethics and Education, I routinely engaged students in an exercise where the scenario of a hungry person is presented and the ethical question concerns whether a lamb or a chicken should be killed to feed the person. During this exercise, we discussed various responses based on differing spiritual and religious perspectives, examining the spectrum of responses from Jainism, which believes even tiny insects should not be killed, to Buddhism, Taoism, Hinduism, and to western religions. This exercise helped students see how our worldviews shape how we position the values of other species in relation to humans. We also debunked the capitalist notion of progress and engaged in studying and reflecting on creative approaches for sustainability education. Eco-justice topics and student and civil society activism are discussed. Finally, students designed plans to make changes in various contexts. Over the years, many students who have taken the course have become environmental activists. They shared that the course has been transformative to them - and has raised their awareness. Some published research papers, while some created programs and planned to open their own ecological farms. One student drafted a vision for transforming the university he works in and has led many institutional initiatives while working as a sustainability program manager.

A Seat at the Table: Indigenizing Higher Education - Angela Stoltz

When I began my doctoral studies, one of my most challenging experiences was the awareness that Indigenous people, perspectives, and issues were completely absent from university spaces. I struggled with this on a personal level because I have over 40 years of experience and enculturation with and children who are members of the Nanticoke tribal community. As a parent, I have witnessed and experienced the negative impacts that colonialism has on Indigenous children, families, communities, and way of life. As a teacher and teacher educator, I believe it is our responsibility to educate current teachers, future teachers, and the local community about local Indigenous histories, nations, and values in order to decolonize our educational institutions and society and to ensure a viable future for Earth, her non-human inhabitants, and future generations.

As clinical faculty, I decolonize my institutional spaces by Indigenizing them. I curate curricular resources that highlight nearby Indigenous communities and K-12 curricula which reflect the cultural and community assets of Indigenous people. These resources are used in my pre-service and in-service teacher preparation courses where I developed lessons on the history of Indigenous education in the US, current issues facing Indigenous students in the US, and strategies for supporting Indigenous students in K-12 education in the United States. The resources I curated are the result of collaborations with local tribal members and leaders in Native American education who have supported tribal communities for decades. The Indigenized materials incorporated into my teacher preparation courses align well with social justice initiatives in mathematics education, such as Julia Aguirre's Math Strong work (2018) and the College of Education's Diversity and Inclusion Teacher Preparation Initiatives.

One result of Indigenizing my pre-service and in-service teacher preparation courses is that my students started to recognize the negative narratives surrounding Indigenous K-12 students and

their families. Further, they acknowledge their ignorance of Native American educational histories, K-12 students, and educational needs in K-12 classrooms. This new understanding led to the development of critical perspectives on our colonial educational system. The activities in my class catalyze pre-service teachers' interests in learning about local Native communities and bolster them to think of strategies that support K-12 Native children in their communities. Despite these changes, these practices are only a starting point for decolonizing teacher preparation and education courses. Teacher education programs require further commitment to ensure that teachers are provided with the skill sets to support their own decolonized curricular and instructional practices.

I also work to Indigenize university initiatives focused on sustainability. In 2017, I volunteered for our university's Solar Decathlon (SD) team which developed a net zero carbon emission housing design that integrated Indigenous Knowledge Systems (IKS) with westernized systems-based design principles (USDOE, 2017). During my first meeting with a PI for the project, I learned that there were no local tribal members on the project. In response, I engaged local tribes and tribal members to share information on the project, expressed the need for local tribal representation, and inquired about their willingness to participate as advisors for the team. It was clear to me that, first and foremost, local tribal community members needed a seat at the table for the project to ethically move forward, as *only Indigenous people have ownership over Indigenous Knowledge*. With representation from local tribal leaders on the SD team, a door was opened to an authentic reframing of "sustainability" from the lens of IK.

The SD collaborative project featured IK in the SD design, highlighting humans as an inherent part of the air, sunlight, and greenery of the environment. The project invited local tribal elders to share their beliefs and history, on how they have lived in harmony with nature by

minimizing waste and impact. Tribal members' beliefs and practices were incorporated into designing and building SD with modern technology. The project took second place in an international SD competition.

In subsequent engagement in interdisciplinary sustainability efforts, I continue to collaborate with local tribal community members and leaders through an informal coalition. Following the coalition's weekly group discussions, I have begun meeting with administrative leaders in my university to discuss departmental and institutional level policies that support partnerships with local Indigenous communities. The next step is to engage the Indigenous coalition with university administrators to move policies forward that support our local tribal communities through collaboration. One such effort is to increase the admission of Native American students who are very underrepresented in our university (less than 2% of the students are Native Americans). A think tank consisting of tribal elders, indigenous educators, academics, and government officials have met with enrollment officials at the university. These efforts are ongoing, and they regularly remind me of how deeply ingrained colonial ideologies and perspectives are in the daily lives of our higher education community. These ideologies and perspectives are apparent through the language we use; the perspectives we present and ignore; our active efforts to deny Indigenous sovereignty, agency, presence, and perspectives, and our tendencies toward adopting a "white savior complex."

Recentering Indigenous Communities Within University Partnerships - Matthew Aruch

I have been involved since 2014 in a partnership between the Mebêngôkre Kayapó community of A'Ukre in the Brazilian Amazon and university partners from the United States, Canada, and Brazil. I work as a study abroad field course instructor, taking students from my IHE to the Kayapó community every summer. During this process, I became familiar with the

partnership history and was active in ongoing partnership activities. To me, the partnership demonstrates the potential for mutual learning and reciprocal benefits between an IHE and an Indigenous community.

Similar to the Cambodia example above, The Kayapó Indigenous Territories (KIT) are located at the “arc of deforestation,” an area of the southeastern Amazon under constant threat of logging, mining, and agricultural pressures (Anderson, 2019; Hecht & Cockburn, 2010; Schmink & Wood, 1992). To counter these pressures, Indigenous Mebêngôkre-Kayapó communities have long partnered with nongovernmental organizations (NGOs), IHEs, and other allies to protect their land and culture through transnational advocacy networks (Keck & Sikkink, 1994; Zanotti, 2016; Zimmerman et al., 2001). In one innovative example, the Kayapó community of A’Ukre entered a research and education partnership with an international NGO in 1992 to create the Pinkaiti ecological research station (Pinkaiti) (Conservation International, 2020; Zimmerman et al., 2001). The partnership created an 8,000 hectare tropical forest preserve for research to offset the A’Ukre community’s economic pressures for regional mahogany logging. The ongoing university-A’Ukre community collaborations represent an evolving example of decolonization efforts through recentering and reframing partnership activities and benefits over time.

At first, IHE participants were driven by their own research agendas, and Indigenous knowledge was used separately and in support of “academic” scientific explorations (Agarwal, 1995; Berkes, 2009). Between 1992 – 2004, Pinkaiti was an active research facility for about two dozen university researchers from Brazil, Canada, and the United States. Over time, IHE participants and A’Ukre relationships moved beyond research. The university researchers became increasingly involved in Kayapó cultural activities, which often eclipsed their IHE research

agendas. In a 2019 participant interview, a Brazilian researcher noted the shift from tropical ecology research to community relationships:

[At first,] I think it was mainly the wilderness - the pristine and the non-impacted [forest]. But, with time, I developed very close ties with the community. And now I am much more connected with the cultural aspects with the Indians than anything else. If I went to A'Ukre now, I wouldn't go straight to the project [Pinkaiti]. I would stay in A'Ukre, at least for a good part of the time, because they are like my relatives. They are more than friends. They are family to me.

In 2004, Pinkaiti shifted from a research space to one of international education working with the A'Ukre community. Modeled on earlier research activities, the IHE affiliate piloted the first Kayapó study abroad field course (Aruch et al., 2019; Zanotti & Chernela, 2008). The first IHE courses used only Pinkaiti infrastructure, and Kayapó participation was limited to those who had supported earlier research. Over time, the field course resources, activities, and leadership increasingly centered on the A'Ukre community to highlight Indigenous knowledge and governance norms. Course activities expanded beyond Pinkaiti to A'Ukre, and facilities were constructed or repurposed to support IHE participants. In addition, A'Ukre drove instructional equity, creating participation opportunities for younger Kayapó men and women of all ages.

Today, the partnership works in such a way that field course curricula and activities are co-constructed among university, community, and NGO partners (Associação Floresta Protegida, 2020). During the course, two community-appointed field course coordinators work alongside North American and Brazilian IHE instructors to weave together a curriculum of Indigenous knowledge, natural sciences, and social sciences related to tropical ecology, Indigenous cosmology, agriculture, sustainable development, the arts, and mediamaking. Indigenous ethics

feature prominently in course design. All IHE participants sign a code of ethics around media use, traditional knowledge, and biopiracy. At the end of the course, participants leave copies of all media with the community.

Increasingly, commitment to a community driven set of norms and activities is affirmed by multinational IHE faculty, centering on Kayapó people's demands, knowledge, practices, and expertise. The course has created a third space (Bhaba, 1994) where international education facilitates a complex "dialogue and partnership" across diverse knowledge and perspectives (Berkes, 2009, p. 151). One instructor noted the balance among partners in a 2019 participant interview:

There's a lot of voices, and it's hard, I think, to attend to everything at once, and there are kind of competing visions on what and how the course should be. And so, trying to find that, that medium that benefits the community, that the community can control and can govern and feel ownership over.

The ongoing multinational IHE-A'Ukre community relationship represents an ongoing process of decolonization committed to recentering IK knowledge and generating allies and expertise (Smith, 2012). The A'Ukre community considers themselves experts in working with the US, Canadian, and Brazilian IHE partners, often consulting with other Kayapó villages considering collaboration with NGOs or IHEs (personal communication, 2019). Pinkaiti researchers and field course students continue to engage with the Kayapó through community driven research projects and NGO programs (koko jagoti.org; Ramon Parra et al., 2018).

CONCLUSION

Decolonization is not "uncolonization," nor can the legacy of colonization be simply addressed through the strategies described above. IHEs require a paradigm shift to move toward

sustainable models for research, policy, teaching, and practice. IK can catalyze and enlighten such a paradigm shift. We understand that, to truly decolonize IHEs, we need institutional buy-in at the highest level. At the same time, we need to educate our university faculty and staff on how to transform our practice in ways that embed the wisdom of IK for sustainability across all colleges and programs. To accomplish this, we need both internal and external strategies. Internally, we recommend cross-college and cross-disciplinary dialogues and actions. Externally, we must enlist the support of Indigenous communities and state and federal agencies who focus on place-based and nature-based education, sustainable ecological virtues, and systems thinking. Through the decolonization of IHE, we can co-develop a collective vision and a set of holistic, practice-based activities for all institutional stakeholders to engage in support of a sustainable future. The IK model we have designed summarizes what we have illustrated in our examples and provides some strategies that can be used by IHEs to support this effort that are drawn from our experiences and practices.

Although universities are making efforts to incorporate sustainability into their endeavors, Indigenous communities and IK continue to be marginalized within a paradigm that embraces a predatory ethos toward nature and IK. Our article provides four examples that demonstrate the potential transformation of higher education for sustainability across domains of policy, teaching, research, and collaborative programs. The IK model is also relevant for other institutions, private or public. Armed with IK knowledge, resistance can happen peacefully, stopping projects that deplete our green space; dialogues can take place that could foster our compassion for other species facing extinction; projects can incorporate Indigenous people, giving them an important seat at the table; and true partnerships can form through mutual learning and a sense of ownership for the

local community. As individuals, we can do something, and, as a collective, we have the power to push for broad and fundamental institutional change, which we must do without delay.

AUTHOR NOTE

Jing Lin is Harold R. W. Benjamin Professor of International Education Policy at University of Maryland, College Park. She received her doctoral degree from the University of Michigan. Lin has published more than a dozen books, from educational reform in China, to women teachers in Africa, to peace and sustainability education, and spirituality, religion and education.

Angela Stoltz is Assistant Clinical Faculty in the Center for Mathematics Education in the Division of Teaching, Learning, Policy, and Leadership at the University of Maryland, College Park. Her research and teaching focuses on access and equity in STEM through the integration of non-Eurocentric people and perspectives.

Matthew Aruch is the Assistant Director of the Science, Technology, and Society Program and recently completed his PhD in International Education Policy at the University of Maryland, College Park. His research investigates research and education-based transnational, multi-sectoral partnerships in the Brazilian Amazon.

Annie Rappeport is a Ph.D. candidate at the University of Maryland, College Park. She worked for over five years in various roles with the Institute for Shipboard Education which administers the Semester at Sea program. Rappeport is a 2021 Ann C. Wylie Dissertation Fellowship Recipient for her dissertation research on memory construction as a means for reconciliation and positive peacebuilding in post-genocide Cambodia.

REFERENCES

- Aguirre, J. (2018). *Math strong: Actualizing our commitment to a more just and humanizing mathematics education* [Paper presentation]. Teachers Development Group Leadership Conference: Portland, OR.
- Anderson, J. L. (2019, November 4). Blood gold in the Brazilian rain forest. *New Yorker*.
<https://www.newyorker.com/magazine/2019/11/11/blood-gold-in-the-brazilian-rain-forest>
- Aruch, M., Korab, K., Regan, M., Murtough, K. (2019). Short-term study abroad as innovative ecopedagogy: Examples from Brazil and Indonesia. In M. Peters & R. Heraud (Eds.), *Encyclopedia of educational innovation*. Springer. DOI: https://doi.org/10.1007/978-981-13-2262-4_74-1
- Associação Floresta Protegida (2020). Curso de campo.
<https://florestaprotegida.org.br/projetos/curso-de-campo>
- Bai, H. (2015). Peace with the Earth: Animism and contemplative ways. *Cultural Studies of Science Education*, 10,135-147.
- Berkes, F. (2009). Indigenous ways of knowing and the study of environmental change. *Journal of the Royal Society of New Zealand*, 39(4), 151-156. DOI: <https://doi.org/10.1080/03014220909510568>
- Bhaba, H. (1994). *The location of culture*. Routledge.
- Bowers, C. A. (2002). Towards an eco-justice pedagogy. *Environmental Education Research*, 1, 21-34.
- Chandran, R. (2017, October 23). Risking banishment, Buddhist monks speak up for land rights in Cambodia. *Reuters*. <https://www.reuters.com/article/us-cambodia-landrights->

religion/risking-banishment-buddhist-monks-speak-up-for-land-rights-in-cambodia-
idUSKBN1CS1CA

Conservation International. (2020). Brazil's Kayapó: Stewards of the forest.
<https://www.conservation.org/projects/brazils-Kayapó-stewards-of-the-forest>.

Culham, T., & Lin, J. (2020). *Daoist cultivation of qi and virtue for life, wisdom, and learning*.
Springer.

Eyers, P. (2017). Decolonization ~ Meaning what exactly? *Stone Circle Press*.
<https://unsettlingamerica.wordpress.com/2017/10/11/decolonization-meaning-what-exactly/#:~:text=The%20first%20and%20most%20basic,that%20has%20dominated%20their%20society>

Groeneveld, S. J. (n.d.). Bun Saluth: Guardian of the Cambodian forest. *Climate Heroes*.
<https://climateheroes.org/bun-saluth-guardian-of-a-cambodian-forest/>

Hecht, S., & Cockburn, A. (2010). *The fate of the forest: Developers, destroyers, and defenders of the Amazon* (2nd ed.). University of Chicago Press.

Keck, M., & Sikkink, K. (1998). *Activists beyond borders: Advocacy networks in international politics*. Cornell University Press.

Lemkin, R., & Jewson, V. (2016). *I am chut wutty*. Journeyman Pictures.

Lin, J. (2019). Enlightenment from body-spirit integration: Dunhuang's Buddhist cultivation pathways and educational implications. In D. Xu (Ed.), *The Dunhuang grottos and global education: Philosophical, spiritual, scientific, and aesthetic insights* (pp. 113-132). Springer.

Lin, J., Hildebrand, G., Stoltz, & Rappeport, A. (2020). Environmental justice must include the rights of all species to life and respect: Integrating indigenous knowledge into education.

- International Studies in Sociology of Education*, 30(1-2), 93-112. DOI: <https://doi.org/10.1080/09620214.2020.1854827>
- Maza, C. (2017, April 11). Activist monks turn to social media. *Phnom Penh Post*. <https://www.phnompenhpost.com/national/activist-monks-turn-social-media>
- National Indian Education Association. (2020). *Native nations and American schools: The history of Natives in the American education system*. <https://www.niea.org/native-education-101-1>
- Ramon Parra, I., Zanotti, L., & Soares da Silveira, D. (2018). Media making media collaborative ethnography and Kayapó digital worlds. In R. Pace (Ed.), *From filmmaker warriors to flash drive shamans: Indigenous media production and engagement in Latin America* (pp. 106-125). Vanderbilt University Press.
- Schmink, M., & Wood, C.H. (1992). *Contested frontiers in Amazonia*. Columbia University Press
- Smith, L. T. (2012). *Decolonizing methodologies*. Zed Books.
- Smithsonian National Museum of the American Indian. (2020). *Framework for essential understandings about American Indians*. <https://americanindian.si.edu/nk360/pdf/NMAI-Essential-Understandings.pdf>
- The Kôkôjagôti Project. (2020). Author. <https://www.kokojagoti.org>.
- Watson, C. (2020). *Alienation and consciousness: Towards a dual-aspect approach to issues of social justice* [Unpublished doctoral dissertation]. Simon Fraser University.
- Zanotti, L., & Chernela, J. (2008). Conflicting cultures of nature: Ecotourism, education and the Kayap'ô of the Brazilian Amazon. *Tourism Geographies*, 10(4), 495-521. DOI: <https://doi.org/10.1080/14616680802434114>

Zanotti, L. (2016). *Radical territories in the Brazilian Amazon: The Kayapó's fight for just livelihoods*. University of Arizona Press.

Zimmerman, B., Peres, C. A., Malcolm, J. R., & Turner, T. (2001). Conservation and development alliances with the Kayapó of south-eastern Amazonia, a tropical forest Indigenous people. *Environmental Conservation*, 28(1), 10-22. DOI: <https://doi.org/10.1017/S0376892901000029>

Zucker, E. (2008). In the absence of Elders: Chaos and moral order in the aftermath of the Khmer Rouge. In A. Kent & D. P. Chandler (Eds.), *People of virtue: Reconfiguring religion, power and morality in Cambodia today* (pp. 195-212). Nordic Institute of Asian Studies.