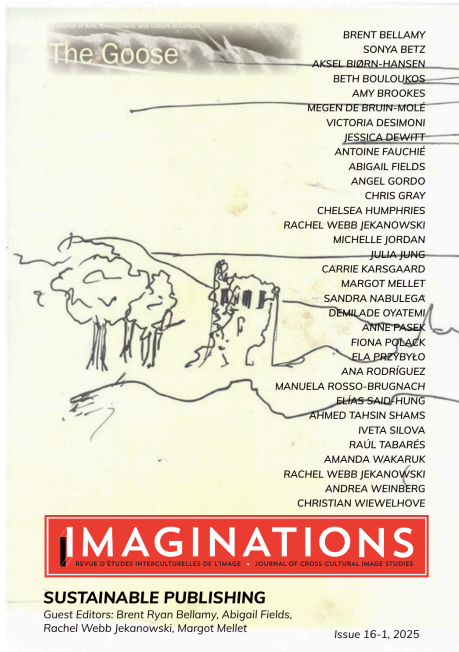


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THE PEDAGOGY OF MANIFESTO MAKING: MOBILIZING
COLLECTIVE EFFORTS FOR DECARBONIZING SCHOLARSHIP
AND RESEARCH

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Thinking about decarbonizing research production, dissemination, and publishing stretches the colonized, western, neoliberal imagination. Oftentimes, scholars think of research as a cognitive process, but it is also a highly material one. Our assumptions of academic processes and outputs are infused by oil—whether these be frequent flights and quick trips, international collaborations, or high-carbon research events provisioned with single-use plastics, catered meals transported across distances, and swag and printed materials that contribute to waste and carbon emissions. The adoption of energy-intensive AI tools like ChatGPT and cloud-based computing platforms celebrated for expediting research processes are only augmenting the problem, despite their seeming immateriality.

High-carbon academic output expectations can be understood as petrocultural (Åberg et al. 2), inclusive of both the institutional mechanisms and cultural practices that entrench fossil fuel use. Higher education petrocultures result in inertia on emissions reductions even when higher education institutions express climate com-

mitments. While we see, for example, institutional commitments to the Sustainable Development Goals, and funding earmarked for energy innovations, more insidious expectations of high-carbon research and dissemination remain beyond view. Petroculture scholar Stephanie LeMenager articulates how western subjects adhere to fossil-fuelled notions of the good life associated with “unfettered luxury in the form of new time-saving machines, breathtaking speeds and automobility, and magical materials like plastics” (qtd. in Boyer 1; see also Martens 194-5)—a reality echoed in globalized academic expectations of fast-paced research publishing and dissemination. Linked to the progress narratives of modernity, petroculture shrouds its inherent “creative destruction” (LeMenager 82) by prioritizing speedy, high output, and efficient academic production over good relations, planetary boundaries, and issues of environmental and climate injustice. Instead, petrocultural norms oriented around academic output, mobility (Tzanakou and Henderon 1), and high-carbon fast travel (Conti 19-20; Pasek 35-36) provide the basis for the “cosmopolitan scholar” (Pasek 35), expected to single-author publications and disseminate research globally—a position that is not equally accessible to all. Problematically, for those not yet accessing the position of cosmopolitan scholar, whether due to early-career status or positioning in a marginalized region, aspirations for obtaining this position arguably drive petrocultural dissemination practices, even against these scholars’ own climate commitments.

Changing these material relations is necessary if higher education is to act on climate. The paper you are reading is both a reflection on and invitation to participate in a collaboratively developed *Manifesto for Decarbonizing Scholarship and Research*, the full text of which is included below and can be found online at educators-for-climate-action.com/researchers/. Initiated during the global Learning Planet Festival in early 2023, the *Manifesto* responds to the call by Rachel Jekanowski and colleagues (“Part 2”) for academics to call their institutions to account, advocating concrete changes to social sciences and humanities scholarship through shifts in institutional policies and practices that promote and support low-carbon research practices. Countering “oily entanglements” (Jekanowski “Part 1”) and ba-

nal forms of petroculture in higher education, the *Manifesto*—and this paper—take a broad understanding of “publishing” inclusive of knowledge production, publishing ethics, and processes of dissemination such as conferences, guest lectures, book launches, and public presentations. In our field of education, and in the social sciences more broadly, knowledge production, including data collection and collaboration, often occurs in practice-oriented contexts through partnerships with practitioners, rather than in campus-based labs. The *Manifesto* seeks to provide structural supports for institutional change, unpacking the ways fossil fuels are embedded in the material practices of research and dissemination and making concrete recommendations for decarbonizing research and publishing through institutional policies and practices.

Participating in the *Manifesto* allowed collaboration with a variety of scholars across varying disciplines and positions to consider how higher education institutions can and must do more to leverage policy, funding, and incentives to support alternative ways of being a researcher, doing research, and sharing research findings through various forms of publishing and dissemination. Written as a collective biography, this paper explores our experiences of developing the *Manifesto*—which we consider a living document—and the subsequent tensions that arise in the ongoing process. These tensions invite further dialogue and action on decarbonizing research and publishing among our readers.

THE CONTEXT FOR THE MANIFESTO: SETTING THE STAGE

The manifesto that undergirds the work of this paper grew out of the authors’ collective critique of continuing petroculture in education and our concern for its immense effects on people and planetary ecosystems (Karsgaard and Shultz 4-5). These effects are clearly laid out in the Intergovernmental Panel on Climate Change report (2022), which also urgently calls for rapid emissions reductions. No industries or workplace sectors are exempt from an ethical responsibility to respond to the need to mitigate climate change in their organizational and institutional practices; there are

no justifications or loopholes for academia to escape accountability in this regard (ALLEA 14; Borgermann et al. 18-21). As a collective, the authors seek to respond to the call for emissions reductions via adopting strategies and advocating for systems approaches to decarbonizing research.

While each of the individual authors has been slowly increasing awareness of the considerable carbon emissions generated by our research activities, our collective sensemaking has led us to converge and synthesize our understandings, as well as to better identify and differentiate the mechanisms and effects of carbonizing research. Each of us has taken personal steps to decarbonize our research over varying periods of time, motivated by concerns that largely mirror the anxieties of other scholars about digital carbon emissions. At the same time, as scholars have done before us, we wrestle with the ways that decarbonizing efforts can be in tension with research outputs, economic costs, and researcher well-being (see, for example, Reyes-Garcia et al. 8). Nonetheless, we are aware that collective action is needed to address systemic change, and we collectively struggle to advance pathways for advocacy and change. Hence, we see the *Manifesto* and its associated work (including this essay) as a way to get about that work.

Our work on the *Manifesto* began in 2023 during the Learning Planet Festival, a global event organized by the Learning Planet Institute in partnership with hundreds of partners across the world, including Arizona State University (ASU), where all authors were affiliated at the time as faculty, students, and a postdoc. This festival celebrates creativity, collaboration, and the power of collective intelligence, fostering connections across disciplines, sectors, and regions to address the most pressing challenges facing our planet. Operating on a decentralized model, the festival combines localized in-person gatherings with virtual sessions and hybrid events, creating an accessible, inclusive platform that significantly reduces the carbon footprint typically associated with large-scale conferences. This innovative format not only broadens participation but also provides a more sustainable alternative to how we come together to address planetary challenges.

The festival became a catalyst for us to come together, creating the opportunity to collaboratively address a pressing paradox: while many of us are committed to tackling the climate crisis through our scholarly activities and daily academic lives, the methods and processes of academic research and publishing often contribute to the very problems we aim to solve. Within this framework, we organized a participatory workshop and invited participants from diverse disciplines and backgrounds “to come prepared with computers and ideas—and be ready to write!” Organized by the *Education for Planetary Futures* Learning Futures Collaborative¹ at ASU with support from the Greater Phoenix Regional Centre for Excellence in Education for Sustainable Development, the workshop brought together a small group of faculty members, postdoctoral scholars, and graduate students from the social sciences, sciences, and humanities, with a strong representation from the field of education. We provided participants with a set of background readings and viewings about reducing emissions through academic conferencing (e.g., Lewy et al.), as well as materials from the Low Carbon Research Methods Group (lowcarbonmethods.com/), to get them started.

Given our shared experiences within the dynamic and research-driven environment of ASU, it is important to situate the creation of this manifesto within this context. ASU has been consistently recognized as a global leader in sustainability, consistently ranked #1 in the United States and among the top ten universities worldwide for its sustainability efforts. The university is renowned for its technological innovations, such as the development of mechanical trees designed to capture carbon from the atmosphere (“Mechanical Tree”) and its leadership in advancing just energy transitions (“Symposium”). Further, it has adopted ambitious campus-wide sustainability goals and a vision to drastically reduce carbon emissions (ASU Business and Finance) and has integrated sustainability into its curriculum, requiring all incoming students to take a sustainability course (Faller).

Despite these accomplishments, significant gaps and contradictions persist. ASU president Michael Crow has been a prominent advocate for reimagining the role of universities in addressing global chal-

lenges, openly critiquing the structural failings of higher education institutions and their contribution to the environmental crisis (Crow and Dabars). Reflecting on this responsibility, Crow stated, “We did not understand how to intellectually design a teaching, learning, and discovery organization capable of actually keeping us from killing ourselves. It is unbelievable” (qtd. in Mitchell). This critique underscores a key tension not only at ASU but across higher education: while institutions may champion ambitious sustainability goals, they are complicit in the climate crisis as they continue to operate through neoliberal infrastructures and technocratic visions of progress that reinforce petrocultural norms (Crow and DaBars; Silova 54-59). ASU’s public-facing sustainability commitments are undermined by persistent petrocultural norms embedded in academic research and publishing, high-carbon practices like frequent air travel for conferences, widespread use of single-use plastics, and hierarchical academic reward systems that prioritize speed and productivity. These deeper contradictions are particularly evident in the university’s growing partnerships with artificial intelligence companies—such as OpenAI—without fully reckoning with their immense energy demands and alignment with extractive knowledge economies. These tensions are not unique to ASU but reflect broader systemic inconsistencies that pose challenges to scholars within large, public institutions who are striving to decarbonize their research while navigating complex institutional landscapes that perpetuate carbon-intensive academic practices. They highlight a disconnect between technological, infrastructure, and curricular advancements and the need for deeper cultural and institutional shifts in how academia operates.

ASU’s approach to decarbonizing research and scholarship remains largely underspecified. There is no clear institutional framework for reducing the carbon footprint of academic knowledge production and publishing. It is important for us to be more explicit and discursive about our intentions and positionality. Recognizing these contradictions and the lack of a clear institutional framework, we see the urgency in addressing these systemic gaps. It is within this context that we wrote, and are now reflecting on, this *Manifesto for Decarbonizing Scholarship and Research*.

THE METHOD BEHIND THE MANIFESTO: A COLLECTIVE BIOGRAPHY APPROACH

Perhaps in keeping with the petrocultural norms we inhabit, we initially envisioned the manifesto writing workshop as a space for “rapid collaborative research” focused on decarbonizing research practices. However, as the workshop unfolded, it became clear that the act of writing could not—and perhaps should not—be rushed. Instead, the process evolved into a slower, more intentional journey, stretching over two years and marked by extended dialogues, background research, moments of pause and silence, and a commitment to deeply engaging with the complexities of the topic. Drawing inspiration from Isabelle Stengers’ call for “another science” and Donna Haraway’s notion of “staying with the trouble” (4) the writing process became an enactment of the principles we sought to articulate in the *Manifesto*. We grappled not only with the content of the *Manifesto* but also with the relational and ethical dimensions of our academic lives, including the inherent contradictions and tensions within our own practices. This slower, more intentional approach mirrored a different way of being in the academy—one that prioritized care, relationality, and collective accountability over speed and output. The process itself reminded us that how we work together is as important as the work we produce, underscoring the need to model the transformative practices we advocate for in academia.

Recognizing the importance of this process, we sought to make it visible to readers by sharing our reflections on the writing journey. Writing a manifesto involves not only articulating collective goals but also confronting our own positionalities, experiences, and complexities within the systems we critique. To provide a more grounded and personal entry point into the *Manifesto*, we turned to a collective biography approach (see Haug; Charteris et al.; ZIN). This method allowed us to illuminate the complexities and tensions of the writing process itself, highlighting how our personal and collective experiences shaped the vision and purpose of the *Manifesto* while situating ourselves within this work.

Collective biography is a collaborative research method that foregrounds the relational and embodied dimensions of knowledge production. It invites participants to engage deeply with their own and each other's stories, not as isolated accounts but as interconnected threads that reflect broader social, cultural, and historical contexts. By collapsing the traditional object/subject divide, it positions our experiences not as detached observations but as fundamental components of the knowledges we create. Furthermore, it challenges the prevailing academic culture of solo work by fostering collaboration, shared accountability, and a deeper relationality—principles that align with the *Manifesto's* vision of reimagining education and knowledge production for planetary futures. As a group of women, we were drawn to this approach because it reflects how we want to work together, in ways that feel honest and grounded, creating space for vulnerability and connection—two elements often frowned upon in academia—while pushing back against systems that dismiss or silence women's voices.

Our approach to collective biography was also inspired by new materialist perspectives, particularly the work of Bronwyn Davies and Susanne Gannon, which emphasizes the entanglement of human and non-human forces in the production of knowledge. From this perspective, collective biography is not merely a method of narrating and reflecting on human experiences but an exploration of how those experiences are shaped by the material-discursive environments in which they occur. Memories are not static recollections but active, dynamic encounters with the past, influenced by the interplay of bodies, spaces, objects, and emotions. In our work, this meant paying attention not only to the content and process of writing the *Manifesto*, but also to the material and affective conditions that shaped them—the physical settings of our sessions, the digital tools we used to collaborate, the fossil fuels that powered our commute to work, and the emotional currents that emerged as we wrote and shared. By incorporating this new materialist sensibility, we aimed to situate our reflections within a broader web of relational and material influences, aligning our process with the *Manifesto's* commitment to

interdependence and transformation, while acknowledging our own oily entanglements in academic life.

To craft this paper in the collective biography genre, we gathered for three focused sessions as a group and worked asynchronously between these sessions. We began by establishing a shared focus: exploring what brought us to this work, our experiences and memories of creating the Manifesto, and the tensions we encountered before, during, and after the writing process. Our goal was to recall specific, detailed memories related to these questions, writing them down in vivid, sensory-rich language, and sharing them with the group. We carefully listened to each other's stories and read each other's reflections, creating a collaborative space where individual stories intertwined, sparking connections and discussions about the broader social, cultural, and institutional forces influencing our work. We commented on each other's stories and critically examined recurring themes, contradictions, and moments of discomfort, asking questions such as: How do our positionalities and experiences inform the manifesto? What assumptions or frameworks have shaped this process? How do the tensions we have encountered reflect the systems we critique in the manifesto itself?

Through this iterative process, we revised and refined our narratives, drawing out insights that deepened our understanding of the *Manifesto's* purpose and meaning. By weaving together these reflections, we attempted not only to articulate the personal and collective dimensions of this work but also ground the *Manifesto* in a relational and embodied praxis, aligning its creation with its goals. Through the process, we solidified a number of themes that shed light on the difficult and ongoing work of addressing the "oily entanglements" of academic work and decarbonizing research and publishing.

COLLECTIVE (OILY) ENTANGLEMENTS: INSIGHTS FROM THE MANIFESTO MAKING PROCESS

Our learning through the *Manifesto's* creation process revealed the banality of petroculture in academic publishing practices and the complex responsibilities in unpacking and

shifting these practices. Where many of us had never considered the carbon output of academic research and publishing, engaging in the collaborative development of the *Manifesto* initiated a “slow dawning” of understanding. Prior to working on the *Manifesto*, many of us had engaged in climate-friendly behaviors in our personal lives, such as commuting by bike, engaging in local advocacy, and leading youth education initiatives about climate change. However, academic practices had remained beyond view, and we felt detached from the institutional work of decarbonization. As we worked together on the *Manifesto*, we began to realize the “oily entanglements” of academic research and publishing in our previously unexamined individual actions and professional or institutional expectations (e.g., Eisenbeiß et al.; Liora et al.; Wassénus et al.). This invisibility of petroculture within academia reminded us of Hannah Arendt’s notion of the “banality of evil” (252) where the bureaucratic functioning of academic institutions—from ethics protocols to CV-development expectations—normalizes our unsustainable actions. Manifesto-making thus became a pedagogy as it led to surfacing these banal violences and driving us to reflect on our own practices, raising a number of tensions. We discuss these tensions in the sections below.

WHERE WE WORK AND WHY: EXAMINING GLOBAL-LOCAL TENSIONS IN ACADEMIC PUBLISHING

The tension between global and local travel in academic research and dissemination was a recurring theme in our reflections. It was not just about the frequency and distance of travel but about the relationships we build and the responsibilities we share—or fail to share—with those we collaborate and publish with. “I often wonder,” one of us pondered, “why I need to travel halfway around the world to study something that could be explored here, in my own context.” This question resonated deeply, prompting us to examine the assumptions tied to the perceived value of global research versus local work.

For scholars from rural areas, remote regions, or underrepresented contexts, however, travel is not optional—it is essential. “If I stayed

in my home country, I wouldn't have had access to the education and networks that are shaping my academic career now," one of us shared. This disparity, where some are required to travel to gain access while others may choose to travel for broader exposure, highlights inequities in academic systems that Jonathan Sterne describes as deeply rooted in uneven distributions of academic labor and power (1855-1856). Nicole Starosielski and Janet Walker explain that such disparities reflect systemic entanglements that prioritize resource-intensive practices over sustainable and inclusive alternatives (3)—reflections with which we strongly identified as we reflected on publishing expectations that demand international reach within a global knowledge economy. "When I think about my collaborators in Uganda," one of our team members noted, "I realize how different their needs are. Travel for them isn't just about opportunity—it's survival in academia."

But the tension is not only logistical, it is also relational. "When are we truly collaborating, and when are we extracting? Why do we feel more compelled to write about others than to reflect on our own practices and contexts?" These questions lingered as we grappled with our roles in perpetuating or challenging these dynamics. Meredith Conti's call for "slow academic travel" as an antidote to "fly-over" scholarship (18) echoes our own discomfort, suggesting deeper engagement with the contexts where we work—either globally or locally—as a counterbalance to the extractive tendencies of neoliberal scholarship. Similar to Anne Pasek, Emily Roehl, and Caleb Wellum, our discussions revolved around building relational networks of collaboration as a means of fostering connections and rebalancing relationships with our research participants, while reducing the ecological costs of research, publishing, and dissemination.

SLOWING DOWN: ENACTING ALTERNATIVE KNOWLEDGE ECONOMIES

The theme of slowing down is both a response to and a critique of the fast-paced, high-carbon academic culture embedded in

the knowledge economy (Conti 22-24; Le Quéré et al. 5-7). Increasing acceleration and expansion of fast-paced publishing and expectations of high mobility scholarship not only threaten research quality and integrity (Edwards and Roy 55-56) but also incur unsustainable material impacts, resource exploitation, and waste production (Arsenault et al. 14; Wassénus et al. 2770-2771). Slowing down advocates for a shift away from the extractive, hyper-achievement, productivity-driven norms that have come to dominate academic research and publishing toward a slower, more intentional engagement with knowledge creation and dissemination (Conti 24-25; Jekanowski et al., “Part 1,” “Part 3”). Slowing down is not simply about doing less work (though this may also be the case) but about working differently—reorienting research practices to align with values of sustainability, equity, and relationality. It connects deeply with the degrowth movement, which calls for the deceleration of extractive systems to prioritize well-being and ecological balance over perpetual growth.

Within our collective reflections, we recognized expectations rooted in petrocultural norms, which drive scholars to prioritize speed and global dissemination even when they clash with the values of decarbonization and degrowth. One author reflected on tensions of balancing the ecological costs of travel with the expectations of maintaining scholarly networks, noting that her decision to attend fewer conferences impacts not only her but also her students, as they attend alone without the benefit of her mentorship during the conference. Another team member observed how institutions’ approaches to decarbonization vary widely, emphasizing the challenges of aligning scholarly practices with sustainability goals, particularly in contexts where the pace of research is dictated by globalized academic norms.

Together, these reflections reveal the need to rethink how success is defined in academia, moving away from fast-paced research and publishing cycles and toward more sustainable and ethical practices. Systemic changes that prioritize slower, more deliberate and reflective approaches allow for deeper engagement with the subject matter, more ethical consideration of research impacts, and more sustainable use of resources. By resisting the pull of productivity-focused met-

rics, we can reimagine the knowledge economy through the principles of degrowth, reshaping academic culture to align with sustainability and relationality.

NAVIGATING EQUITY AND RESPONSIBILITY IN DECARBONIZING RESEARCH: SCALES OF RESPONSIBILITY

As we began to recognize petrocultural academic publishing processes and expectations, and faced our complicity in these, we subsequently began to recognize how responsibility for change is enacted in a dynamic between individuals and systems. We shared difficult conversations where we recognized our own affective investments in petrocultural publishing expectations—of enjoying international conference travel and feeling productive when we quickly produce manuscripts, for example. Here, we noted the personal and affective work involved in letting go of our investments in petro-fuelled modernity (Stein et al. 282-283), particularly as many of us still benefit from this system. At the same time, our reflections did not centre only on individual efforts. While each of us acknowledged the personal actions we could take to divest from modernity and decarbonize scholarly practices, advocating for institutional shifts to cultures and expectations (e.g., tenure and promotion) is necessary to support the agency of individuals. Additionally, we recognized that privilege and responsibility are not equally distributed among individuals or institutions. Questions such as, “How could we ensure that our recommendations prioritize equity?” and observations that some of the manifesto solutions “scream privilege” prompted us to further explore different challenges faced by individuals and institutions in decarbonizing research.

On the individual level, our group identified tensions between decarbonization and the research methods scholars use.² For example, a practice-based scholar may find it harder to reduce their carbon footprint compared to a survey-driven researcher, as on-site dissemination of published work may be expected by partners and practitioners. Similar challenges may be faced by scholars working on collaborative teams, since team-based research and publishing often in-

volves extensive coordination, travel, and resource demands for data collection and dissemination across multiple locations, all of which contribute to a larger carbon footprint than solo-authored research typically entails. Scholars are further influenced by the socio-historical cultural values in their fields, such as the deeply ingrained expectation of extensive travel in comparative and international education for global dissemination of published works. Career stage also plays a significant role: senior faculty may face fewer negative consequences from their decarbonizing efforts, while early-career scholars face more pressures, as one of us expressed: “In a period I am expected to develop my CV, generate and gather data, widely disseminate my research, and foster international networks, high carbon academic expectations influence my decision-making.” Graduate student collaborators, far from home, expressed worry that restricting travel would negatively impact familial obligations and relational ties.

At the institutional level, decarbonization commitments may have different impacts depending on the university size and socio-historical contexts. Although each of us shares a connection with ASU—a large, research-intensive university—we also have scholarly kinship ties to different-sized and socio-culturally situated institutions. Several contributors expressed concern that decarbonization efforts might disproportionately impact scholars in more isolated or resource-poor contexts, such as rural universities or scholars from the Global South. For example, reducing travel opportunities or shifting to virtual publishing and dissemination formats could exacerbate isolation for scholars already struggling to access academic networks. On the other hand, these shifts may also pose equity challenges for under-resourced communities, where technology access may be limited. Recognizing that the *Manifesto*’s work was deeply influenced by being rooted in our shared ASU context prompted us to consider the potential strengths of non-dominant institutions in leading the way toward decarbonizing research and publishing. One scholar noted that at their smaller institution, “research that connects with and benefits the local community is prioritized, particularly where the local post-industrial community faces economic, social, and other challenges that research can help address.” Smaller, regional univer-

sities may offer valuable lessons on decarbonizing research by focusing on connection with local communities and publishing in local venues, shifting the balance of academia away from a global knowledge economy.

AI'S CARBON COST IN ACADEMIA

The development of the *Manifesto* began at a time when AI—including generative AI—was widely regarded as a critical solution for both promoting sustainability and maintaining stability, with extensive literature highlighting AI's potential to positively impact sustainability initiatives, particularly its alignment with achieving the Sustainable Development Goals (SDGs). For instance, Ricardo Vinuesa and colleagues referred to AI as an enabler of 134 targets (79%) across all SDGs, while also cautioning that 59 targets (35%) across the SDGs could face negative impacts due to AI development (2). Although we deliberated on AI's role in supporting decarbonization efforts, the *Manifesto* itself does not explicitly address AI—a notable oversight, especially given the rapid and widespread adoption of Generative AI in research since its creation—for data analysis, writing, reviewing, and editing—and the concomitant enormous energy and resource use.

AI's efficiency comes at a substantial cost. The edtech platforms now used by educational institutions—driven by major technology companies such as Google, Microsoft, and Amazon—operate on cloud infrastructures housed in massive data centres, which require huge amounts of energy to run (N. Jones 163-166; Williamson). For instance, it is estimated that a single query to ChatGPT uses the same energy as keeping one light bulb on for 20 minutes (Kerr), and the platform has a massive water footprint (Li et al.). Furthermore, the rapid development of generative AI tools is impacting the sustainability commitments of tech companies. Organizations that once pledged to achieve net-zero carbon emissions by 2040 are now struggling to meet their goals, with some even questioning the feasibility of fully eliminating emissions while continuing to “grow” (Green).

Meanwhile, universities, including ASU, continue to embrace advancements in AI despite the apparent conflict between these innovations and their sustainability goals. In its AI guiding tenets, ASU asserts that “we have a responsibility to our community to keep pace with the rapid progression of AI,” yet it makes no mention of the inherent tension between this stance and its decarbonization commitment. Additionally, continued reliance on generative AI tools to make research faster and more efficient prevents researchers from achieving carbon neutrality. Or even further, as a collaborator stated, “it seems that academia’s ability to carbonize (via AI) outstrips even our ability to imagine decarbonizing research.”

The rise of AI also raises ethical concerns about fairness and equity given the uneven access to these tools. This disparity exacerbates global research inequities, as scholars in resource-constrained environments struggle to compete with peers in well-funded institutions. In a system where academic opportunities and recognition often depend on publication volume, inequitable access to AI tools widens the gap, further entrenching systemic disadvantages (Bissio 82). Problematically, AI continues to be adopted without much critical reflection or consideration for this widening gap, as its efficiency has accelerated the pace of academic production leaving those unable—or unwilling—to integrate it at risk of being left behind.

The *Manifesto*, envisioned as a living document, offers an opportunity to revisit these omissions and adapt to emerging challenges. As AI’s educational, environmental, and ethical impacts become increasingly clear, future iterations of the *Manifesto* will incorporate these issues, ensuring it remains relevant and responsive to the evolving landscape of decarbonizing research and scholarship. This iterative approach reinforces the *Manifesto*’s commitment to collective reflection and action, making it not only a call to decarbonize but also a dynamic framework for addressing the systemic inequities and complexities that shape academic practices.

DECARBONIZATION FOR ALL! FROM TECHNICAL JARGON TO COLLABORATIVE ACTION

During our collective writing process, we noticed a clear difference in how individuals related to the concept of decarbonization, shaped by their backgrounds and experiences. For some, particularly those with expertise in sustainability, renewable energy, or ecological justice, the connection to the *Manifesto* felt natural and urgent. These contributors engaged with ease, viewing decarbonization as directly tied to their academic work and professional responsibilities. In contrast, others, including some students and faculty from the field of education, felt that the term “decarbonizing” was distant, technical, and outside their realm of expertise. One student admitted that this unfamiliarity initially kept her from participating in manifesto-making, saying, “the word ‘decarbonizing’ sounded highly technical and felt intimidating.” Another reflected, “thinking about decarbonization and climate change within academic scholarship was challenging for me,” and pointed out the problem of low awareness of climate issues and solutions among the general population.

This unfamiliarity is not just about the term itself but reflects the deeply systemic and complex nature of decarbonization. One professor shared that her contributions felt “basic compared to the more sophisticated and nuanced understandings of decarbonization that others brought to the table.” This sense of complexity can make the work feel inaccessible or overly specialized, leaving participants unsure if they belong in these conversations and spaces.

Based on this theme, we ask: how do we make sure everyone feels not only invited but essential to this effort? The *Manifesto* offers a way forward: as a public, open, and collaborative call to action, it is designed to spark a conversation, break down barriers, and bring together diverse voices. Manifestos have historically pushed boundaries by fostering collaboration and collective ownership of change (Faire et al., 553). In this context, our manifesto emphasizes that decarbonizing research and publishing is not just the responsibility of sustainability experts—it is something that affects and requires all of

us. Climate change is a shared challenge, and addressing it requires collective effort across disciplines and perspectives. By addressing the systemic roots of climate change in accessible ways, like by making the concept of “decarbonizing” familiar and accessible, we can bring more voices into the conversation and create momentum for systemic change at every level.

AN INVITATION INTO THE PEDAGOGY OF MANIFESTO-MAKING

The process of creating the *Manifesto for Decarbonizing Scholarship and Research* was as transformational as the document itself, offering a profound opportunity to reflect on the material and cultural dimensions of academic publishing practices. The manifesto-making process highlighted recurring themes that weave together personal, institutional, and global concerns, reflecting the complex nature of decarbonizing research in the context of higher education. Yet, one outcome of the manifesto process, perhaps unexpected, was a collective retrospective sense that each of us has individually garnered new insights and opened new questions of value to us personally and professionally. Marvelling at this shared experience of learning, someone dubbed this experience “the pedagogy of manifesto-making.” One member felt, “I gained far more than I contributed during the process.” For another, “the project became an awakening.” A third expressed a learning as the emergence of new tensions related to the daunting challenge of translating commitments into action:

“I find myself questioning how to integrate these principles into my own practice and how to navigate institutional inertia without losing momentum. These tensions remind me of the importance of vulnerability, collaboration, and persistence in driving change. While the work may feel overwhelming at times, being a part of this Manifesto also inspires a sense of collective hope and responsibility to align my actions with the vision we’ve articulated.”

Even though many of these questions and tensions do not have immediate or definite solutions, the *Manifesto* offers an invitation to

slow down and reflect. As Báyo Akómoláfé suggests, “the idea of slowing down is not about getting answers, it is about questioning our questions. It is about staying in the places that are haunted” (par. 4). This perspective encourages us to sit with uncertainty and complexity while working for change, trusting that new ideas and ways forward can emerge from the process. By joining the *Manifesto*, we recognize that we are not alone—our tensions and concerns become opportunities for collective thinking and sharing. If there is one thing the collective biography approach has taught us, it is that uncertainties become clearer when we face them as a group. Ideas multiply as we inspire each other with thoughts and insights we did not have or considered before. Being part of this manifesto means staying, collectively, with the trouble of decarbonizing scholarship.

Looking forward, we hope the *Manifesto* will continue to unfold not as a conclusive statement but as a dynamic and relational project that invites participation, revision, and, at times, contestation. Our aim is to mobilize the *Manifesto* within ASU by discussing it with colleagues, administration, tenure and promotion committees, and the research office, and we invite readers to do the same within their home institutions. More broadly, we plan to share the *Manifesto* over social media and work with it through participatory online workshops and conference sessions, collaborating with colleagues to refine and make actionable its calls.

The power of the *Manifesto* lies not in closure, but in its capacity to generate new conversations, unsettle taken-for-granted assumptions and practices, and build solidarities across institutional, disciplinary, and geographic boundaries. As it circulates—through classrooms, ethics committees, conference panels, and informal dialogues—we envision the *Manifesto* as a kind of mobile commons: a shared, shifting space where the work of decarbonizing scholarship is continually reimagined in response to local conditions, emerging technologies, and the unpredictable urgencies of our time. Rather than offering a fixed roadmap, it gestures toward a plurality of paths, inviting others to walk, reroute, and extend it in directions we cannot yet foresee.

We conclude, therefore, with an invitation to readers to join us in the pedagogy of manifesto-making. Add your voice to the *Manifesto for Decarbonizing Scholarship and Research*, refine its vision, and carry it forward to transform research and publishing. To amend or add to the *Manifesto* itself, we welcome readers to reach out to us directly with ideas and research that can help refine this emergent vision for decarbonizing research and publishing. To put the *Manifesto* into action, we welcome readers to carry the *Manifesto* into their home academic contexts, sharing it with their departments, colleagues, educational leaders and upper administration, research ethics boards, tenure and promotion committees, and sustainability offices. Decarbonizing research and publishing will involve both individuals and institutions to recognize and excavate academia's petrocultural expectations and practices, while envisioning the academic life otherwise.

MANIFESTO FOR DECARBONIZING SCHOLARSHIP AND RESEARCH

1. Preamble and Summary

The ways in which we pursue our teaching, learning, service, and research (i.e. our scholarship) create significant carbon emissions. We aspire to do better - to minimize the carbon emissions directly and indirectly produced as part of conducting our scholarship. We recognize that this aspiration requires individual action as well as institutional and systemic change. We have outlined a series of actions we can take as individuals and institutions. Our goal is an inclusive, supportive, and ongoing movement that advances our individual and collective responsibility for a decarbonized future. We invite you to join us.

The leading cause of climate change is fossil fuel emissions. Increasingly, higher education and research institutions are creating climate commitments to safeguard the future of the planet and people. Decarbonization of research is necessary to meet these commitments. Decarbonizing refers to the process of reducing carbon dioxide (CO₂) emissions that result from human activities. In relation to research,

it's about making choices at every step of the research and knowledge mobilization processes.

2. Call to Action

We seek to join with the broad higher education community (including full-time and part-time faculty, graduate and undergraduate students, staff and administrators) as well as scholars inside and outside of academia to build an inclusive, supportive, and ongoing movement that advances our individual and collective responsibility for decarbonized scholarship. We invite you to join us in creating that movement through your own actions, our collective support for one another, and our combined efforts to support our universities in implementing policies and practices that support and reward decarbonized scholarship.

3. Who We Are

This effort was spearheaded by members of the *Education for Sustainability and Global Futures Learning Futures Collaborative* at Arizona State University. We are a multigenerational and multidisciplinary group of scholars and educators active in social science and/or education research and practice. We are committed to advancing our own efforts—and broader efforts within our institutions—to reduce or eliminate carbon emissions associated with academic and scholarly research activities.

We believe that education plays a key role in moving toward sustainable and equitable futures, and the decarbonization of education scholarship has a critical role to play. It is unfortunate that the ways we conduct that scholarship contribute to the problem we are trying to solve, and we commit to minimize our contributions. We also recognize, as educators, that we have a unique opportunity to model, with our scholarship, the very practices, behaviors, and approaches that we seek to advance through our scholarship. We see ourselves as advocates, with the goal of bringing research about the decarbonization of education systems to bear on those systems of which we are a part. To put it simply, we aspire to do no additional harm to the

planet and ourselves in our work, and instead to heal the planet and ourselves.

4. Foundations to Build On

There is much good work to build on in our effort to decarbonize scholarship.

As education scholars, we are inspired by our colleagues within social sciences, natural sciences, and technological fields and their ongoing actions to decarbonize research. Our colleagues have reduced travel, minimized their labs' carbon emissions, increased the efficiency of their numerical models, shifted toward renewables, reduced their use of toxic chemicals in laboratories, created alternative modes of conferencing and collective research, centred relationality and the importance of long term connections to place, and more.

We are inspired by the efforts of young individuals who are actively combating climate change worldwide. Contemporary youth across the world are increasingly alarmed about the future of our shared home planet, which must endure the repercussions of prior generations' actions. It is imperative that we commit to collaboration with youth to foster a more sustainable Earth.

5. Guiding Principles

- Scholars and Institutions of Higher Education can reduce their carbon impact across research—which we recognize is often interconnected with teaching and service.
- Campus decarbonization occurs through actions of physical and social infrastructuring. For example, viable alternatives to high-emissions travel exist, but taking advantage of those alternatives requires that they be accessible, safe, convenient, and culturally acceptable.
- Cultural shifts in academia are necessary to contribute to decarbonization efforts.
- Incentivizing responsible, respectful, collaborative local research can contribute to decarbonization efforts.

- Decarbonization and equity should be complementary, not competing goals. Decarbonization should ensure all communities can thrive, including non-human and more-than-human communities and communities who will come after us in time.

6. Intended and Suggested Actions

In this section, we outline our commitments and suggest actions for our higher-education institutions. In accordance with evidence that decarbonization requires both individual action and systemic and institutional changes, we outline action for ourselves as individuals and for our institutions.

6.1 Localizing Scholarship

As individual scholars, we will lower our carbon emissions by localizing our scholarship. We commit to the following actions:

- Prioritize research dissemination with local community organizations and businesses (i.e. playhouses, museums, gardens, and schools).
- Re-invigorate local research conference attendance and participation.
- Encourage and build local partnerships for all research. This would both create a collaborative research culture in international contexts and reduce travel needs for data collection.
- Value the multiplicity and diversity of local knowledges, which leads to more nuanced and contextually relevant findings and promotes more inclusive, sustainable research informed by and aligned with the specific needs and conditions of local communities.

We ask institutions of higher education to:

- Develop and implement evaluation and promotion practices that recognize forms of expertise revealed and expressed locally, nationally, and internationally. International reputation matters but isn't the most significant indicator of quality scholarship, meaning that expertise isn't only contained in academic practice.

- Facilitate and foster collaboration with local governments, community-based organizations, and industries.
- Create and appropriately fund local networks among graduate students and among proximal institutions (universities, colleges, community organizations) for collaboration, peer review/feedback, and graduate student conferences.
- Prioritize research dissemination with local community organizations and businesses (i.e., playhouses, museums, gardens, and schools).
- Re-invigorate local research conferences attendance and participation.
- Establish local hubs that bridge to international organizations to reduce travel.
- Encourage and build local partnerships for all research - this would both create a collaborative culture of research in international contexts and reduce travel needs for data collection.
- Offer adequate compensation for non-academic collaborators.

6.2 Aligning Rewards and Incentives

As individual scholars, we will support, celebrate, and encourage others in their efforts to help build a culture that rewards decarbonization. We commit to the following actions:

- Promote and celebrate research on decarbonization.
- Design academic meetings to allow for robust remote participation and ensure the actual and perceived value of meetings doesn't depend on in-person participation.
- Highlight the decarbonization work of our colleagues in our efforts to support their tenure and promotion.
- Define metrics and criteria for assessing the decarbonization of scholarship.

- Volunteer to work on tenure and promotion policies and advocate for decarbonization as a consideration.

We ask institutions of higher education to support us in these efforts by committing to the following:

- Recognize the value of local and regional conferences in tenure, promotion, and milestones of graduate students and other scholars.
- Align personnel evaluation, including tenure and promotion requirements, with the goals of decarbonization.
- Create incentives for low carbon (or carbon neutral) research and scholarship (e.g., funding, recognized in the standards of academe).
- Create internal research awards across each university.
- Create an interdisciplinary collaboratory of scholars conducting research on decarbonization (educational, social sciences, natural sciences, engineering).

6.3 Developing and Advancing the Ethics of Decarbonized Research

The research process is never devoid of values. Decisions about what is deemed significant to explore, the premises accepted, the approaches employed, the interpretations made, the outcomes shared, and the reactions to these findings are all imbued with values. As such, it is critical to create and share ethical frameworks for decarbonized research. As individual scholars we commit to the following actions:

- Develop and share decarbonization ethics and goals as part of our scholarship.
- Include an analysis of carbon emissions and decarbonization efforts in our research outputs.
- Integrate practices of calculating and estimating energy input and carbon output as part of research methodology courses.

We ask institutions of higher education to:

- Require a statement of carbon emissions and decarbonization efforts as part of the Institutional Review Board process.
- Encourage researchers and students to prioritize decarbonization, recognizing that tenured, permanent, or senior researchers are likely in a more advantageous position to employ decarbonizing strategies.
- Make the tools and resources for understanding carbon emissions widely available.
- Provide tools and resources that students and scholars can use to understand and reduce the carbon emissions of their research activities. For example, connect to renewable energy grids when possible, subscribe to computing and storage providers that use renewable energy, maximize the lifespan of technology devices.
- Continue to learn and understand how climate change and energy transitions are impacting scholars, universities, and communities worldwide. Institutions of higher education should then modify their practices as understandings emerge, with a strong emphasis on the ethics of a just transition and the equitable distribution of energy resources.

6.4 Reducing Carbon Emissions

We must implement practices that result in fewer emissions of pollutants released into the atmosphere. The goal of reducing emissions is to mitigate environmental damage, combat climate change, and improve air quality. As individual scholars, we commit to the following actions:

- Reduce our travel to national and international conferencing.
- Power our scholarship with carbonless energy sources (e.g., connect to renewable energy grids when possible, subscribe to computing and storage providers that use renewable energy, maximize the lifespan of your technology]
- Increase our everyday use of public transportation, walking, biking, skateboarding, and/or virtual meetings.

- Minimize plastics use and mitigate all forms of waste through prevention, reduction, recycling, and reuse, thereby maximizing the life cycle of products and materials by keeping them in use.
- Eat locally sourced foods and reduce our intake of high-carbon foods (i.e. focusing on plant-based options).
- Minimize the carbon footprint of AI and digital research tools: Recognize that the growing reliance on artificial intelligence and cloud-based technologies contributes significantly to carbon emissions through the energy-intensive operation of data centers. Commit to using energy-efficient tools, advocating for providers powered by renewable energy, and critically assessing the necessity of AI-driven processes in research workflows.

We ask institutions of higher education to:

- Create campus as a living carbon lab with metrics showing carbon output of basic activities (computing, data storage, commuting, food systems, etc.).
- Continue to decarbonize campus transportation, including investing in infrastructure to make human-powered transportation (like walking and biking) safe, convenient, and accessible; creating incentives for people to use low-carbon transportation options and disincentives for high-carbon options; and offering low-carbon transportation alternatives for people with mobility challenges.
- Decarbonize energy and computing, including more solar-powered servers and storage, reducing use of cloud-based storage that uses fossil-fuels.
- Foster awareness and accountability around AI-related carbon emissions: Ensure that university policies include guidance on the responsible use of AI and digital tools, prioritizing partnerships with technology providers committed to renewable energy. Use local computing for AI when possible. Provide tools and training for researchers to calculate and reduce the carbon footprint of AI-based research activities.

- Reduce single-use plastics.
- Source local foods insofar as possible.
- Prioritize local vendors.
- Install dishwashers in shared kitchen/break room spaces.
- Disallow the use of plastic utensils and dishes by campus catering and food services.
- Limit the use of high-carbon foods (e.g., focusing on vegetarian and plant-based options).
- Reduce the use of fertilizers on campus and curate natural spaces to make them less water-demanding.
- Offer more small-scale, off-grid solar charging stations for devices.
- Create more covered spaces to work outside.
- Decentralize climate controls (i.e., office temperatures).
- As we transition away from fossil fuels, foreground the implications of energy transition, particularly for those most vulnerable to these shifts (e.g. workers, communities at extractive sites).

6.5 Carbon-neutral Investing, Funding, and Support

As individuals, we will not seek or accept funding from sources that currently profit from fossil fuels or that derive profits from activities that increase the overall levels of atmospheric carbon., and we pledge to work with the university to divest from fossil fuels.

Higher Education Institutions must take a definitive stand by divesting from fossil fuel companies and rejecting research funding or partnerships with entities that contribute to environmental degradation. This action is not only a moral imperative but also a necessary step in aligning academic institutions with the principles of sustainability and social responsibility. By distancing from fossil fuel interests, universities can prioritize research and initiatives that advance

clean energy solutions, climate justice, and the long-term well-being of global communities.

In tandem, universities should actively seek partnerships with organizations and funding sources that are genuinely committed to reducing their carbon emissions. This may require investing more time and resources or collaborating with smaller, less prominent organizations, but these efforts should be encouraged. By prioritizing these partnerships, universities can play a crucial role in supporting and advancing research that drives sustainable innovation and promotes climate justice.

7. Invitation and Close

Thank you for your interest in this important work and for learning about our current approach. This is meant as a living document that will grow and improve through expanded and deepened participation, learning, and experience. As noted in our call to action, our goal with hope is that this document can catalyze an inclusive, supportive, and ongoing movement that advances our individual and collective responsibility for decarbonized scholarship. We invite you to join us in creating and capturing that movement in this document.

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NOTES

1. A multidisciplinary group dedicated to transforming education systems to foster sustainable, just, and equitable planetary futures through research, innovation, and action-oriented pedagogies (Weinberg et al., 2024).↔
2. For readers interested in methodological shifts, Anne Pasek's forthcoming edited collection, *Low Carbon Research Methods: Making Equity and Epistemological Gains through Decarbonising Academic Work* (Goldsmiths Press), takes up many of the issues introduced in this section, imagining collective reconfiguring of research methods in relation with climate action.↔