Transdisciplinarity and Boundary Work for Landscape Architecture Scholars

Joan Iverson Nassauer

ABSTRACT To substantively advance sustainability and equity, landscape architecture scholars must reform our own scholarly norms. To increase the influence of our discipline and offer practitioners and communities more relevant knowledge and tools, we can build on our strong tradition of transdisciplinary work to: 1) more credibly affect and be informed by knowledge in other socio-environmental disciplines that study landscapes and communities, and 2) confront our own “two cultures” problem in which science may be misunderstood as limiting creative excellence. To achieve these aims, I suggest we employ the landscape as a transdisciplinary boundary object—recognizing that all landscapes function within dynamic multiscalar socio-environmental systems, and viewing both commonplace and unique landscapes as essential objects of our scholarship. Doing this presents opportunities for individual scholars to serially specialize in different areas of landscape inquiry, teaching and learning from colleagues and communities throughout our careers, and to be credible leaders of transdisciplinary science. It also offers a conceptual frame for activating boundary work between the two cultures within our own discipline. Importantly, it also helps us to be more fully prepared to teach future practitioners to use landscape science in design and planning, empowering the profession to support communities in advancing sustainability and equity.

KEYWORDS Boundary object, ecological design, equity, landscape ecology, sustainability, two cultures

INTRODUCTION

In this essay, I argue that we landscape architecture scholars can credibly advance the sustainability and equity of communities if we reform our scholarly norms to fully embrace transdisciplinarity. Landscape architecture can support communities confronting persistent societal inequities, large surprising socio-environmental disturbances, and pervasive emergent harms if we challenge our discipline to deepen our commitment to transdisciplinary landscape science. Science alone cannot meet these profound challenges, but society—including professional practice—must adequately employ what science offers. Using transdisciplinary landscape science, landscape architecture could address this science-society gap, connecting science and society. I use the term “transdisciplinary landscape science” to include design and engineering sciences, environmental and social sciences, and arts and humanities scholarship that could inform design, planning, and landscape change across scales—and to emphasize that science must be part of transdisciplinary discovery about landscape design and planning for sustainability (Wu, 2006; Gobster & Xiang, 2012; Helfenstein et al., 2014; Nassauer, 2020).

Now, when landscape architecture practice is confronted with scientifically complex issues that are local in effect but global in scope, the stakes are higher than ever for scholars to infuse professional curricula and practice with credible knowledge that empowers the profession to deliver on our commitment to “design a sustainable and equitable world” (ASLA, 2022). To do so, I argue that we should aspire to occupy a more pivotal position in building new knowledge to advance equity and sustainability.

Credibility may be our greatest obstacle to leadership. Despite landscape architecture’s longstanding
Tradition of drawing on knowledge from other disciplines, individual scholars may not be sufficiently familiar with knowledge and methods from these disciplines to credibly advance sustainability and equity (Milburn & Brown, 2003; Thering & Chanse, 2011), and professional curricula may not equip practitioners with tools to employ this knowledge critically. Grose (2014) observed that, from the perspective of ecologists, landscape architecture may suffer from “exaggerated holism,” but its “penalty is in not being seen as expert in any but design, or even in design” (p. 71). And in fact, landscape architecture has no knowledge domain unique to the profession. A survey of all landscape architecture programs identified “design” and “natural” as core knowledge domains, and the authors concluded that “conceptualizing appropriate change to the landscape” might actually be the true core domain (Langley et al., 2018).

Brown & Corry (2011) asserted that “much of contemporary practice in landscape architecture is still based on beliefs rather than facts.” They called for evidence-based landscape architecture, which they defined as “deliberate and explicit use of scholarly evidence in making decisions about the use and shaping of land. [It] supports decisions but does not dictate them . . . , and it uses knowledge—generally from methodically studied experiment or experience—as the principal information source for design” (p. 328). They argue that we should learn from evidence-based approaches in medicine, environmental management, and health-care architecture, and warn us that landscape architecture has “the vulnerability to diminish in importance by ignoring the lessons of other disciplines” (p. 329).

To achieve credibility as leaders in advancing sustainability and equity, we must conduct scholarship that is credible both within and beyond the design disciplines. A transdisciplinary approach can help us do this.

**Transdisciplinary Landscape Science**

Advocates for transdisciplinarity have long recommended “an overarching scientific and practical approach, transcending and crossing disciplines and professions, creating a common conceptual base” that promotes shared production of multi-functional landscapes (Jantsch, 1972; Naveh, 2001). Transdisciplinary landscape science requires that multiple relevant disciplines, practitioners, and community members consider the same problem iteratively together (Tress & Tress, 2001; Tress et al., 2005).

As the prefix “trans” indicates, in contrast to interdisciplinary, it goes not between but across and even beyond disciplines and their related activities . . . leading to new relationships between researchers and all others involved. . . . [This enables] the different nature of the mutual relationships of these participants, opening many more options for resolving the complex problems which landscape research is facing. (Naveh, 2007, p. 382)

In this way, it requires a mindset different from interdisciplinarity, in which multiple disciplines consider the same problem, each from their own disciplinary perspective; and it is very different from multidisciplinarity, in which multiple disciplines consider related but distinct problems about the same place or topic. To illustrate these distinctions, I adapt a figure from Tress et al. (2005), presented here as Figure 1. In Figure 1, the white circles represent research goals for a specific research project. We landscape architects might think of the goal as “new knowledge about a landscape type”, in which we characterize “landscape type” by classification concepts or parameters for generalizing the results of a specific research project to other landscapes and places. In disciplinary approaches, different disciplines independently characterize and study different landscape types; learning from other disciplines requires each scholar to independently search, interpret, and infer beyond their own scholarly experience. In multidisciplinary approaches, different disciplines agree to a shared characterization of the type of landscape each discipline will study as part of a project. While different disciplines might study different places and will ask different questions, agreeing on the type of landscape being studied allows collective knowledge development about that landscape type and invites more direct comparison of knowledge among disciplines. In interdisciplinary approaches, different disciplines agree to a shared characterization and shared questions about the landscape type being studied—often studying the same places—and these disciplines query, challenge, and learn from each
Disciplinarity
- Within one academic discipline
- Disciplinary goal setting
- No cooperation with other disciplines
- Development of new disciplinary knowledge and theory

Multidisciplinarity
- Multiple disciplines
- Multiple disciplinary goal setting under one thematic umbrella
- Loose cooperation of disciplines for exchange of knowledge
- Disciplinary theory development

Interdisciplinarity
- Crosses disciplinary boundaries
- Common goal setting
- Integration of disciplines
- Development of integrated knowledge and theory

Transdisciplinarity
- Crosses disciplinary and scientific/academic boundaries
- Common goal setting
- Integration of disciplines and non-academic participants
- Development of integrated knowledge and theory among science and society

Figure 1
Distinctions among disciplinarity, multidisciplinarity, interdisciplinarity and transdisciplinarity. In all these research approaches, the goal is to generate new knowledge about a landscape type, as defined for a specific research project (Adapted from Tress, et al. 2005).
other to develop integrative new knowledge. This pushes different disciplines to address inherent contradictions, inconsistencies, or untapped synergies among their areas of knowledge; it opens the way for discovery. In transdisciplinary approaches, different disciplines, practitioners, and community members agree to a shared characterization and shared questions about a place or places that can be used to inform decisions about those places and also to inform decisions about similar landscape types. This approach is distinguished by codevelopment of research questions and new knowledge, and iterative knowledge sharing among scholarly disciplines, communities, and practice (Tress & Tress, 2001; Wu, 2008; Norström et al., 2020).

In both interdisciplinary and transdisciplinary approaches, shared characterization of the type of landscape being studied operates as a means of integrating knowledge among disciplines, and of establishing the bounds for generalization from a research project. Transdisciplinary approaches go further to directly and continuously engage with society. This elevates the relevance of research, making it more likely that discovery will lead to innovation and implementation.

For decades, landscape architecture scholars have advocated and exemplified transdisciplinary approaches. Some might argue that landscape architecture epitomizes transdisciplinarity in that practice is inherently attentive to societal goals, engaged with local communities and aims to produce multi-functional landscapes (e.g., Weddle, 1974; Hough, 1984; Spirn, 1984; Hester, 2006). However, when this journal focused a theme issue on transdisciplinary scholarship (Tress & Tress, 2001; Hester, 2011) questioned whether transdisciplinarity, as it was exemplified in landscape architecture case studies, provided adequate theoretical grounding to guide and challenge teaching and practice. These limitations continue to impede the overall credibility of landscape architecture scholarship.

**TWO CULTURES OF LANDSCAPE ARCHITECTURE SCHOLARSHIP**

Calls for and declarations of paradigm shifts within landscape architecture scholarship assert vastly different perspectives on how to reconcile design with knowledge of landscapes as socio-environmental systems (e.g., Johnson & Hill, 2002; Grose, 2014; Cantrell & Holzman, 2016; Weller, 2018). These differences reflect the “two cultures” problem (Snow, 1959), in which science is characterized as being in opposition to the arts (Lock, 2016). This problem has been endemic to the profession almost since its inception and continues to dog landscape architecture scholarship (Nassauer, 1985; Meyer, 2000; Weller, 2006). For example, we have recognized the urgent need to address destructive socio-environmental phenomena and claimed we have professional grounding in “both environmental and cultural systems, . . . being uniquely positioned to bring related professions together into new alliances to address complex social and ecological problems” (LAF, 2016). But, at the same time, quantification as a means of understanding complex socio-environmental phenomena typically is peripheral to landscape architecture professional education, and even may be misunderstood as dictating “reductionist thinking” (Meyer, 2000; Vicenzotti, 2017; Nassauer, 2020). Some have worried that quantification limits creativity or that the scientific method would become a means of design (Grose, 2014; Weller, 2018). Here, I argue that to support sustainability and equity, landscape architecture scholarship must first surmount our own “two cultures” problem to share a body of disciplinary knowledge (Arts et al., 2017).

One way forward is to recognize that study of both commonplace and unique landscapes is essential to knowledge building by our discipline. Studying landscapes that are common, we learn about socio-environmental functions and characteristics of landscapes that may be generalizable to many
other “common” places. Studying landscapes that are unique, we learn about more nuanced socio-environmental functions and characteristics of specific places, including the intentions of their designers, in a way that heightens our critical awareness and sense of possibility for other places. Note that both types may include existing, proposed, speculative, or imagined landscapes, and that study of either type can address socio-environmental functions as wide-ranging as, for example, aesthetic experience or contaminant remediation. Most importantly, each type of landscape is relevant to understanding the functions and characteristics of the other.

I use the term commonplace to connote that these landscapes dominate the inhabited area of the earth, and to suggest their effect on the everyday experience of diverse communities. They constitute the vast areas of cities and rural places that are designed and managed according to social norms and governance frameworks, and only sometimes by landscape architects. Local vernacular traditions, local governance codes and institutions, engineers, and real estate developers pervasively set the parameters that shape these landscapes. Over time, community members transform them—by design and maintenance choices and by participation in local decision-making.

Unique landscapes are fewer and smaller, and they benefit from intensive professional design and management attention. They are more novel than commonplace landscapes, and may be iconic—recognized as “new ideas of good landscape form for their . . . notable aesthetic quality,” and therefore, emulated in landscapes elsewhere (Mozingo, 1997). Communities experience these landscapes more selectively and less frequently, but they are sought after and cherished by those who recognize them as special places. Crewe and Forsyth (2003) described them as “the work of a relatively few high-profile practitioners, displaying a high degree of artistic attainment. These projects are typically imageable and invite acclaim for their artistic merits. The focus is on creating new and unique works of art” (p. 43).

Scholarship about each type of landscape has used different methods and modes of communication (Crewe & Forsyth, 2003; Deming & Swaffield, 2011), and these differences have contributed to “two cultures” mischaracterizations, fragmentation, and conflicts within landscape architecture scholarship. Commonplace landscapes currently are more widely understood as objects of scientific inquiry, and unique landscapes are more widely understood as objects of critical reflection. Landscape historians study both types of landscapes, and knowledge of both types can contribute to theory-building.

Commonplace landscapes often are the subject of studies published in peer-reviewed journals or reports by scholars in landscape architecture, planning, public health, history, philosophy, forestry, ecology, hydrology, geography, anthropology, psychology, and sociology. These studies use varied methods to build knowledge from which inferences can be made for design and planning. According to the explicit intent and scope of the study, this knowledge is generalizable to other communities and to unique landscapes.

Unique landscapes are most often the subject of reflective criticism in the form of essays or descriptive articles that sometimes are published in peer-reviewed journals and often published in books or magazines. They are less frequently objects of systematic study, in part because information to compare unique landscapes can be difficult to collect; it is often in the form of images and practice-based books that are not intended to present an unbiased representation (Grose, 2014). Such information seldom allows for controlled comparison with other landscapes or assessment over time (Felson & Pickett, 2005). For example, to represent the range of landscape architecture practice, Crewe and Forsyth (2003) used work selected for publication in Landscape Architecture magazine, noting that certain types of work were underrepresented in the publisher’s choices. Kullmann (2016) employed recent design competition prizes and professional magazine covers as data for his analysis of landscape-based transdisciplinary practice. Such depictions are intended to recommend the work as desirable—to suggest its immediate legitimacy and salience for practice, but not to represent landscapes more generally. As a deeper basis for study of unique places, scholars may rely on their own experiences and engagement with others in the profession. Consequently, this scholarship may reflect internal professional norms and values more than local community values and socio-environmental functions.
BOUNDARY WORK FOR LANDSCAPE ARCHITECTURE
Recognizing that our scholarship, teaching, and practice must change to realize landscape architecture’s potential for leadership in advancing sustainability and equity, we can do boundary work—both within landscape architecture and as a medium for transdisciplinary communication. Landscape scholars have argued for adapting Star’s concept (2010) by treating landscapes as transdisciplinary boundary objects because a landscape, represented and experienced, can be iteratively shared and conceived by different disciplines and communities, “tacking back and forth” between perspectives that refer to properties of the boundary object and that may be understood differently by different participants (Nassauer, 2012; Arts et al., 2017; Corry, 2021). Below, I discuss five ways in which boundary work can move landscape architecture scholarship toward more credible contributions to equity and sustainability.

Boundary Work Within Landscape Architecture Scholarship
Boundary work can be an approach to confronting the “two cultures” problem within our discipline. Lock (2016) explicates debates between the “two cultures” of science and arts as “rhetorical boundary work.” He describes that actors select “particular attributes for science and scientists or literary intellectuals and mobilize them as part of a wide discourse concerned with professional expertise, resource management and cultural status,” sometimes relying on “broad stereotypes, personal attacks and strawmen arguments to be effective” (p. 163). He urges looking beyond such arguments to consider who is served by the claims made, who is allowed to speak, and who wields attendant power. In this way, boundary work requires all participants to pay attention to power not only in our own discipline but in the communities we affect (Thering & Chanse, 2011).

By intentionally working in the boundary between different scholarly perspectives within our discipline, we may build a more cohesive shared body of theory and knowledge and a more recognizable disciplinary perspective. One way to pursue our “two cultures” boundary work would be to conduct landscape architecture scholarship with an interdisciplinarity approach, as depicted in Figure 1. Within our discipline we might agree to shared questions about the socio-environmental structure and function of the same commonplace and unique landscapes. We could identify suites of commonplace and unique landscapes that potentially share certain functions and characteristics for our collaborative study, with the expectation that we will learn from our different experiences and understandings. This might push us to address contradictions, inconsistencies, or untapped synergies within landscape architecture scholarship.

Some landscape architecture scholars will use scientific methods. Others will use historical evidence or philosophical argument. Others will use reflective criticism. However, our own expertise and experiences should not obscure the need for us to learn from each other, aiming for a shared body of disciplinary knowledge. Rather, we might think of this boundary work as learning how to enrich different forms of evidence with credible philosophical and critical arguments, and learning to revisit and develop philosophical and critical arguments in light of scientific knowledge.

Boundary Work Within Transdisciplinarity
Looking at the same landscape together iteratively but through different lenses—as a boundary object—is fundamental to transdisciplinary landscape approaches. Van den Brink and colleagues (2019) call on landscape architects to be process managers who are “boundary spanners,” selecting and translating relevant knowledge across disciplinary boundaries, as well as literally connecting key actors in science and society. As Lock (2016) points out, it matters who is included in these iterative exchanges.

Transdisciplinarity invites us to become familiar with relevant knowledge and methods from scholarship in other disciplines, experiences of communities in the landscapes we affect, and exemplars in practice. Familiarity implies regular, casual, iterative exchange to know typical or emergent issues and topics; this is different from limited engagement that is planned only to address a specific research or design problem (Hester, 2011). It also implies the need for landscape architects ourselves to bring diverse life experiences to our work—valuing our varied disciplinary backgrounds, communities, and identities.
Relevant knowledge points to the widely used standards for transdisciplinary science first articulated by Cash and colleagues (2003): credibility as science, legitimacy as unbiased information and as representative of stakeholders’ values, and saliency for decision-making.

As a practice-driven profession, landscape architecture is subject to inevitable tension between public-facing standards of legitimacy and saliency and scholarly standards of credibility. Furthermore, public-facing standards of legitimacy are inherently contentious when popular values fly in the face of unbiased information. For example, community members may object to removal of trees targeted as invasive species. Such tensions create powerful incentives for practice to offer solutions that have immediate public appeal, and little incentive to dig into scientific literature that may challenge conventional solutions or popular impressions. However, existential risks posed by destructive socio-environmental phenomena call for solutions that grow from and contribute to science. In response, scholars can and should pose questions and test landscape innovations in ways that markets for practice may not afford. The landscape science literature is replete with examples (Nassauer, 2020).

Work within transdisciplinary landscape science can strengthen landscape architecture’s credibility among other disciplines. Without credibility, landscape architecture’s claims to holism may weaken its legitimacy and salience over time. For example, many other socio-environmental disciplines and professions—including behavioral sciences, engineering, business, and public health—are discovering the efficacy of design approaches to sustainability challenges, but without turning to lessons from landscape architecture (e.g., Arts et al., 2017; Lotz et al., 2019). Similarly, other design disciplines have discovered the power of working with landscape without relying on landscape architecture (Kullmann, 2016). The implicit message is that we should not assume our own relevance. If landscape architecture scholarship offers knowledge that appears to be superficial, merely illustrative, insular, self-referential, or a “one-off,” it will be out of sync with other knowledge frameworks that are key to sustainability and equity (Thering & Chanse, 2011; Corry, 2021).

Other disciplines have advanced sustainability and equity by demanding that research questions not only respect particulars of place and community, but also produce more broadly generalizable knowledge. Note that “generalizable knowledge” does not purport to be universally applicable; rather, it is the product of research conducted in a way that explicitly aims to enrich or develop theory while also describing the limits of each study’s generalizability to other places and communities (e.g., Mohai, 1995). Working in this way, scholarship in sociology and public health established the theoretical foundations for the field of environmental justice, dramatically influencing scholarship across disciplines as well as policy and planning (e.g., Frumkin & Jackson, 2004; Mastrángelo et al., 2019). Working in this way, landscape architects collaborated with ecologists and other environmental scientists to establish the transdisciplinary science of landscape ecology, which has been fundamental to advancing landscape sustainability (Wu, 2013). But, with important exceptions, our discipline as a whole has not engaged in landscape ecology as science.

Communication

Within landscape architecture, the very different modes of legitimate communication in design practice and scientific scholarship epitomize the science-practice action gap, and our two cultures exacerbate it. Transdisciplinary research that employs both commonplace and unique landscapes as boundary objects can help us bridge this gap. Publishing this work in venues where other socio-environmental disciplines seek landscape science will heighten our insight about how to pursue communication as boundary work. It will help individual scholars become more familiar with methods and knowledge in disciplines adjacent to their own scholarship, and also allow scholars in other disciplines to develop a deeper appreciation for our work.

Pragmatically, to build our credibility as transdisciplinary leaders, we should frame our scholarship to anticipate publishing in double-blind peer-reviewed, digitally-searchable journals inside our discipline and beyond (Corry, 2021). Double-blind peer review of proposals and research papers is an essential mode
for establishing credibility in science and many other spheres of scholarship. It fundamentally distinguishes scholarly publications from books, newspapers, magazines, reports, and blogs, which are reviewed in ways that vary in transparency and possible bias, or are not reviewed at all. Importantly, the double-blind review process also protects against some of the “two cultures” biases described by Lock (2016), since identifying information about authors is not made known to reviewers, and reviewers are not made known to authors.

**Serial Specialization by Individual Scholars**

Working within transdisciplinary landscape science can be a means of surmounting a challenge that can overwhelm landscape architecture scholars: simultaneously being a generalist and an expert scholar, or—most daunting—being an expert in all things. When the landscape is a boundary object for mutual knowledge development, scholars develop new insights and skills that support expertise and specialization. Accumulating insight and knowledge can lead individual scholars to specialize serially, developing expertise that helps landscape architecture to evolve and grows its influence on equity and sustainability. Specialization does not mean abandoning our capacity for synthesis or creative invention by design. Rather, it can deepen creative capacity by increasing our understanding of our medium.

Serial specialization, in which new scholarly identities emerge from experience and research relevance, is common in other disciplines. For example, statisticians have become landscape ecologists, geologists and ecologists have become climate scientists, and sociologists have become environmental justice scholars. These new identities are not opportunistic or short-term. They are responses to evolving knowledge, community legitimacy, and societal saliency—and deep commitments to developing relevant new knowledge. Like community members and colleagues in other disciplines, landscape architecture scholars should capitalize on evolving expertise that is informed by transdisciplinary work.

**Boundary Work Within Curricula and Teaching**

To affect the trajectory of our profession, we teachers of new generations of practitioners should engage our students in doing boundary work. We can equip them with the tools they will need to seek and discern credible socio-environmental knowledge and teach them how to use this knowledge as the basis for creative invention (Nassauer, 2020). We can teach students not only to conceptualize appropriate change in support of sustainability and equity, but to carry the intellectual authority to lead it.

As part of their preparation for practice, design students should learn to seek and critically read scholarship; this includes learning to distinguish between scholarly work that is subject to double-blind peer review and other less credible forms of information. They should learn not only existing landscape scholarship but also how to directly tap new knowledge as it evolves.

In addition, students should have adequate facility in the mathematical concepts and languages that are used in landscape science and that underpin landscape architecture spatial analysis and visualization tools. To critically read scientific literature, to understand how they might use research approaches in practice, and to employ landscape analytical tools, they should know related statistics and modeling concepts. Not all landscape architecture scholars need to be expert in using all mathematical approaches, but our curricula should ensure that our students are not alienated by mathematics and that they employ analytical tools knowledgeably (Grose, 2014). This is essential for advancing our discipline and profession as leaders in transdisciplinary work (Wu, 2021).

**CONCLUSION**

To ensure that our work advances equity and sustainability reliably over time, we should produce knowledge that is recognized as valuable to communities and disciplines beyond the design disciplines, and we should learn from studying both commonplace and unique landscapes. To do this, we can build on our discipline’s substantial record of transdisciplinary work to more consistently and systematically embrace transdisciplinary landscape science: within our individual scholarly careers, within our discipline, and as contributors to landscape science. I recommend an approach in which we explicitly pursue scholarship as boundary work and employ the landscape as a transdisciplinary...
boundary object. I suggest we use this approach to: 1) address our two cultures problem for the purpose of achieving a more inclusive conception of rigorous scholarship and more coherent body of knowledge within our discipline, 2) increase the credibility and legitimacy of our scholarship, 3) elevate recognition of our scholarship, 4) open pathways for individual scholars to establish expertise in our generalist’s discipline, and 5) equip future generations of landscape architects to address novel and dynamic social and environmental challenges. In this way, we might more fully realize our potential for leadership in pursuit of equity and sustainability.

Transdisciplinary landscape science is an open door of opportunity for well-prepared landscape architecture scholars. Funding is significant in the United States—especially as federal research programs have become increasingly directed toward integrative research, societal relevance, and regional and local implementation. For example, landscape architecture scholars have contributed to influential transdisciplinary scholarship funded by programs of the US National Science Foundation (NSF), the US National Institutes of Health (NIH), the National Oceanic and Atmospheric Administration (NOAA), and the US National Academies of Sciences, Engineering, and Medicine. In addition, we have made leading contributions to the integrative research programs of federal agencies, including the USDA Forest Service, US Army Corp of Engineers, US Environmental Protection Agency, and interagency programs. We also have conducted influential transdisciplinary research for many regional, state, and local agencies across the United States. Our transdisciplinary work also has been substantially funded by several private foundations that aim to affect equity and sustainability. Landscape architecture scholars’ intellectual leadership in this past transdisciplinary work is so extensive that a separate literature review would be needed to begin to encompass it. Looking forward, this record points to many venues for future scholarship.

Boundary work is not easy or fast. But, over the course of a career, scholarship affords us the possibility to deeply engage with communities, pursue intellectual curiosity, and develop new knowledge in a way that fosters transdisciplinarity. As our discipline earns recognition for our transdisciplinary leadership, we can delineate pathways for further landscape science scholarship. If, at the start of a career, we have clarity about how to participate in transdisciplinarity, boundary work can sharpen our scholarship to be more immediately influential. Working this way, we can stoke a virtuous cycle: growing the credibility, legitimacy, and saliency of landscape architecture as a discipline and a profession as we grow our own careers.

Of course, we should pursue boundary work not for our careers or even for our profession, but rather for what our scholarship and practice can accomplish to advance equity and sustainability. In my view, we must reform scholarly norms for landscape architecture in order to reach that potential. This means that we should inquisitively consult and conduct science as part of integrated theory-building, iteratively and critically examining shared knowledge that is relevant within and beyond our discipline. It means we should teach future practitioners to be discerning and skeptical when they are presented with advocacy, belief, and representation. We should teach them to be critical consumers of simple solutions, and cautious, selective users of performance indicator tools that cannot capture complex, time-dependent socio-environmental functions. We should help them understand that scientific knowledge evolves with discovery. Knowing that practitioners sometimes must make design and planning decisions without the knowledge they would ideally want, we should teach students how to intervene with a precautionary attitude—seeking solutions that avoid or prevent potential future harms.

Working within our transdisciplinary traditions, we can collectively recognize landscapes as boundary objects that invite us to share what we know, learn and adapt methods from other disciplines and communities, and codevelop new, more generalizable knowledge to affect landscapes more broadly. We can do the difficult boundary work of seeking to understand and demanding rigor in varied forms of landscape architecture knowledge—and engage our students in this pursuit. We should do this inspired by our belief in our discipline and our collective potential to improve the lives of current and future generations by the quality of our work.
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AUTHOR Joan Iverson Nassauer, FCELA, FASLA, is a professor in the School for Environment & Sustainability at the University of Michigan and past editor-in-chief of *Landscape and Urban Planning*. She uses design-in-science as part of transdisciplinary approaches to build knowledge about how ecological design and planning affect human well-being, aesthetic experience, and the cultural sustainability of environmental benefits. Her work addresses design and planning of metropolitan and agricultural landscapes across scales—ranging from continental scale implications of agricultural practices to neighborhood scale implications of green infrastructure.

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