Introduction

The HƒE Project and Beyond: New Constellations of Practice in the Environmental and Digital Humanities

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Since the publication of "The Future We Want," the outcome document of the 2012 United Nations Conference on Sustainable Development (dubbed Rio+20),[1] there has been growing infrastructural support and funding for curricular innovation and programming in the environmental humanities.[2] International researchers are increasingly advocating for the integration of humanities insights into codesigned and coproduced knowledge about anthropogenically caused change (Bai et al. 2015, 10; Hartman 2015; Nye et al. 2013). But what forms will integrated or transdisciplinary codesigned research take? Can the humanities (which typically are characterized as weakly tooled to address social and environmental crises) catalyze imagination of new ideas, narratives, frameworks, alternatives, demands, and projects that will enable people to envision plausibly different, even livable, futures (Adamson 2015, 139)? Most articles and white papers calling for integration of the humanities into global environmental-change sciences suggest how far we have come in advocating successfully for the value of the humanities. Still, the argument of many of these position papers often starts from embedded assumptions that take the form of statements such as "We need to begin now to incorporate the insights of the humanities" (Bai et al. 2015).

This special issue of *Resilience*, "The Green Humanities Lab," will report and reflect on an ambitious Andrew W. Mellon–funded project called Humanities for the Environment, or HƒE, which took

place between 2013 and 2015. Most of the contributors to this issue collaborated together as part of an H*f*E steering committee based at Arizona State University (ASU), while other contributors are part of a larger international EcoDH (ecological digital humanities) network. Each article in this issue discusses projects or initiatives the authors have been working on for two years or more. All of us are excited to be stepping out of the shade, so to speak, to illustrate that calls for what Steven Hartman and others have called integrated environmental humanities or integrated codesigned research are being creatively and generatively answered by expanding and increasingly well-organized groups of humanists (Hartman 2015). Hartman's collaboration with Anders Birgersson and Peter Norrman on the highly innovative Bifrost Project, an arts-research intervention to bring "hundreds, if not thousands of artists, writers, scientists, educators, community leaders and activists" together to "educate the public on climate change," is only one of the most developed of these arts-media initiatives (Birgersson, Hartman, and Norrman 2015).

The steering committee that collaboratively developed the H*f*E project included nine environmental humanists from ASU and nine from other universities throughout the US and Canada.[3] Some are artists, many have long been involved in establishing the environmental humanities, some are new to the field, some have been piloting digital humanities labs and projects, and one is a Nobel Prize–winning member of the UN's Intergovernmental Panel on Climate Change (IPCC). Most members of this steering committee have been networking for over a decade through the Association for the Study of Literature and Environment, the American Society of Environmental History, and the Environment and Culture Caucus of the American Studies Association. Many had also networked previously through Mellon Foundation grants including one at the University of California, Davis, that brought many of the members of the steering committee together for Davis's Initiative on Environments and Societies.[4] Through these associations and others, the steering committee brought a wealth of public humanities and collaborative experience in environmental justice and sustainability community outreach to their work at ASU.[5]

Having been funded by the Mellon Foundation, the H*f*E project at ASU was guided by Mellon's persistent defense of the value of the humanities and by its consistent encouragement of "scholars and insti-

tutions to experiment and adapt" (Howard 2014, 4). Members of the steering committee were aware that a high percentage of Mellon dollars have been granted to support the environmental and digital humanities and to make project outcomes "openly available" (Howard 2014, 9, 10–11). With this in mind, the steering committee saw their charge as piloting experimental EcoDH projects that aim to adapt humanities practices while keeping and valuing the best practices of the traditional humanities.

Now a too-brief but highly appropriate moment of appreciation and acknowledgment. In this special issue, what will become increasingly evident is that the coeditors of *Resilience*, Stephanie LeMenager and Stephanie Foote (who are both members of the HfE steering committee), have been integral to the innovative thinking about methods and conceptual frameworks emanating from new media formats, print culture, and the digital arts. At the first summer 2013 meeting of the steering committee, Stephanie Foote encouraged the group to think, keep notes, analyze, and write about each stage of the experiment that would take place over the next two years. She urged project groups to collect data, in many written, visual, and digital forms; to interpret data at the end of the project period; and to discuss, evaluate, and recalibrate research process(es). Documenting not only data but also processes and writing about it, Stephanie LeMenager added, would allow other humanists and humanities centers to replicate a green humanities lab at their own institutions as they engaged in similar activities that could be adapted and scaled for their own settings. This special issue of *Resilience* brings that idea to fruition as it provides the print and digital "laboratory space" where contributors will represent their own HfE outcomes or their connections to other EcoDH initiatives currently being developed around the world. As LeMenager notes in "Citizen Humanities," reflecting on her own project, some ideas were imagined in the first meeting, but "not everything that was thought or designed" for each project "got into the final version of it, and yet none of the thinking or designing that contributed to it can be seen as irrelevant." I and other members of the steering committee are immensely grateful to Stephanie LeMenager and Stephanie Foote and hope that "The Green Humanities Lab" constitutes a significant contribution to the future of EcoDH practice and research, as it also provides models for further transformation of the humanities.

In what follows, I introduce the articles in this special issue in the context of a brief history of the development of the environmental humanities, out of which the HfE project and other EcoDH projects are emerging. I also discuss the "new constellations of humanities practices" that these projects are piloting and the contributions I believe they are making to engaged public humanities practice.

The Anthropocene Humanities

Many environmental literary critics, historians, ecofeminists, and philosophers have commented on the coterminous turn toward the study of Anthropocene discourses and the environmental humanities in the early 2000s (Deloughrey 2015, 352; Nixon 2014a; Adamson 2015; Nye et al. 2013). The roots of the environmental humanities, of course, are arguably much older and more rhizomatic than even the early 1990s dates usually given to the emergence of environmental literary criticism, history, and philosophy (Adamson and Ruffin 2013, 1–17). However, the first uses of the term "ecological humanities" can be traced to Australia, where in 2001 Libby Robin, Deborah Bird Rose, and Val Plumwood cofounded a group to study the ecological humanities (Nye et al. 2013). The work of this group touched off a new interdisciplinary movement in the humanities to pursue "a wide range of conversations on environmental issues in this time of growing awareness of the . . . challenges facing all life on Earth" (Rose et al. 2012). In the same period of time, Paul Crutzen, a Nobel Prize–winning geologist, and Eugene Stoermer, an atmospheric chemist, published a short essay proposing the neologism "Anthropocene" to describe challenges, in the words of the ecological humanities study group, that are facing "all life on Earth." This term has still not gained full approval among geologists, but if accepted by the scientific community, it would signal a transition from the Holocene to a new "Age of the Human" (Zalasiewicz, Williams, and Waters 2015).

In the decade and a half since the publication of Crutzen and Stoermer's essay, scholars from across the disciplines have begun pouring into symposia and conferences to advocate for a change in the *intellectual* climate (Castree et al. 2014; Nixon 2014a). At *Future Earth*, the United Nation's largest research platform,[6] Steven Hartman, a professor of English literature, has written a blog in which he

argues that "one hard lesson that we have learned from the first five IPCC assessments is that rising scientific confidence and consensus do not in themselves produce shifts in societal values and norms, or changes in human behavior on a significant scale. Amplification of the scientific message is not the answer to the cultural dilemma we now face" (Hartman 2015). Noel Castree and many other environmental humanists and social scientists have agreed, arguing that, to date, big science has tended to provide facts and data about anthropogenically caused change but offer little "sense of humans as diverse, interpretive creatures who frequently disagree about values, means, and ends" (Castree et al. 2014, 765). As long as scientists continue to dominate international, regional, and national governing and policy bodies such as the United Nations' IPCC and *Future Earth*, little will change.

This helps to explain why environmental humanities symposia and conferences that are focused on the Anthropocene have been raising questions about human motivations and behaviors and calling for revolutionary change on a large scale that will produce shifts in societal values and norms and catalyze interventions led by humanists, artists, writers, scientists, educators, community leaders, and activists (Birgersson, Hartman, and Norrman 2016). The term "Anthropocene" is still not well recognized outside academia, writes cultural critic and geographer Giovanna Di Chiro, and it is still deemed to be problematic by many because it is often employed as if "aggregate *Anthropos*" are homogenous, all equally responsible, or equally aware of the processes taking place on a planetary scale in the Anthropocene (2015b, 369). Indeed, Anthropocene narratives about the human, cultural critic Rob Nixon observes, almost always fail to describe "unequal human agency, unequal human impacts, and unequal human vulnerabilities" (2014b). However, as a metaconcept, or a term that is coming to mean something like an Anthropocene story or Anthropocene discourses, and as a neologism that is arising in the early twenty-first-century expansion of neoliberal capitalism, a time in which most societies around the world have experienced a deep and "widening chasm between the super rich and the ultra poor," Nixon notes, the word is seen by many humanists to be a potentially useful keyword (Nixon 2014a; Zalasiewicz, Williams, and Waters 2015). Nixon challenges his fellow humanists to tell—not the story of aggregate *anthropos*—but two different kinds of narratives: the convergent story of *anthropos'*, or humanity's, legible impacts on

the earth's geophysical systems now and for millennia to come and the divergent story of a widening schism between the rich and the poor that is revealing the immense "inequalities in access to resources and exposures to risk" (Nixon 2014a).

Other researchers who engage with interspecies ontologies not only have troubled notions of the Anthropocene and aggregate anthropos but urge environmental humanists to think in terms of intergenerational justice for all species, or what it might mean to support justice for multispecies aggregates (DeLoughrey 2015; Di Chiro 2015b; Haraway 2015; Rose et al. 2012). As I and many other environmental humanists have argued, in the IPCC and other international arenas where the term "Anthropocene" circulates, discussions addressing multispecies assemblages or rights for nonhuman species are rare (Adamson 2013; Harway 2015, 160). On the other hand, in international settings where indigenous groups and alliances lead, such as the World People's Conference on the Rights of Mother Earth, when delegates speak about violations of "our soils, air, forests, rivers, lakes, biodiversity, and the cosmos," they describe these violations as "assaults against us."[7] *Us* is not imagined as "aggregate anthropos" but is emphasized to mean all living beings—human and nonhuman—in a multispecies aggregation in the midst of multiply scaled, divergent multinatural worlds that delegates claim have rights to "maintain and regenerate life cycles and evolutionary processes" (Adamson 2013).

These discussions and debates had been developing in the environmental humanities since the early 2000s, when Sally L. Kitch, director of the Institute for Humanities Research at ASU, convened a working group of environmental humanists at her own university in 2007 and began networking with other environmental humanists through the Consortium of Humanities Centers and Institutes (CHCI) who would conceive of the "Humanities for the Environment" concept. As Kitch explains in "Experimental Humanities and Humanities for the Environment," the CHCI provided a critical international meeting ground where she began collaborating with other directors of centers, programs, and institutes, including Poul Holm of Trinity College in Dublin, Ireland, who now leads the European COST (Cooperation in Science and Technology) program to develop its Oceans Past Platform and increase collaboration between historians and marine scientists, and

Iain McCalman, a historian of the Great Barrier Reef and codirector of the Sydney Environment Institute at the University of Sydney, Australia. Together, they and other members of the CHCI would connect to a rapidly expanding network of environmental humanities networks in the United States and Europe and to members of Australia's ground-shifting ecohumanities group discussed above.[8] As an organization, the CHCI had never before networked internationally on any one project, but after receiving a large grant from the Mellon Foundation to "network across national borders," they called for the submission of project proposals and competitively awarded a grant to the Humanities for the Environment group and distributed funds to three hubs, in North America (Arizona State University), Europe (Trinity College), and the Australia-Pacific region (University of Sydney).

As one of the principal investigators of the North American Observatory, I joined Holm, Kitch, McCalman, and other international principal investigators in writing a set of common threads that would guide a networked global study of what we named the "Anthropocene humanities."[9] We took the position that the humanities are a largely untapped resource of insight into human motivation and agency that should inform how we study the "chemical, physical and biological processes" that are changing so rapidly that scientists are proposing "that we are now living in the Anthropocene." We chose the term "observatory" as the formal mechanism we would use to network both regionally and around the world. The word "observatory" would signal that the Mellon award would not monopolize resources through narrow centers but would, rather, be used to reach out to newly developing environmental humanities programs and initiatives and to map regionally and globally established programs. "Observatory" was also chosen as a descriptive term to quicken the imagination of humanists being called on to think outside the limitations of traditional humanities research protocols, such as the single-authored monograph, and engage in more collaborative, interdisciplinary, or digital projects and research. Also, we believed that the word "observatory" would align well with research platforms and scientific initiatives such as *Future Earth* by evoking a sense of a humanities laboratory or a collaboratory research space offering humanities points of view. Each observatory would be a place whose purpose would be the observation of both

human and nonhuman activity and phenomena at scales that would span the cosmic to the microscopic.

At Arizona State, I worked with Kitch to organize three workshops designed to cultivate the EcoDH seed projects that are the focus of "The Green Humanities Lab." In this early phase of the North American Observatory's work, H*f*E researchers across the country were organized into three regional clusters: Northeast (headquartered at Clark University), South (Wake Forest University), and West (Arizona State University). Each cluster focused on regionally specific projects. The West Cluster's regional theme, "Toward a Just and Sustainable Future: Values, Affect, and Scale," was linked to the international project's focus on Anthropocene humanities, which, in turn, guided us to the three workshop themes that would help to shape the projects discussed in this special issue. The workshops were titled Conceptualizing the Human in the Anthropocene, Multispecies Relations in the Anthropocene, and Transdisciplinary Imagination(s) for the Anthropocene.[10]

From Seeds to Viable Projects: New Constellations of Environmental and Digital Humanities Practice

In our first organizing meetings in the summer of 2013, members of the steering committee self-selected into project groups based on the themes of the three workshops. As Michael Simeone, a contributor to this issue, explains in "Resilient Observation: Toward Transformational Research among Environmental Humanities and Sciences," there are important challenges to be considered in the implementation of interdisciplinary projects that propose to address complex social and environmental challenges: "Appealing to complexity does a good job of linking disciplines together *conceptually* but does little to advance the environmental humanities toward demonstrating their ability to harmonize with other disciplines that intersect with the environment and sustainability *in reality*." In each of the workshops, as consultant for each of the digital elements of the projects, he proposed a notion of resilient observation that would become central to the generative brainstorming that characterized the "lab" or "observatory" practices innovated among the group. The goal, in Simeone's words, was to empower researchers "to identify new challenges—not as partnered experts but as a principled collective."

Because of the theme, "Toward a Just and Sustainable Future: Value, Affect, Scale," the steering committee was interested from day 1 not only in the projects we would pilot but in recognizing the ethical and social justice issues connected to digital projects. As HfE European Observatory member and contributor to this issue Charles Travis articulates in his essay "The Digital Anthropocene, Deep Mapping, and Environmental Humanities' Big Data," one of the major social-environmental issues accompanying the threat of climate change is the current production of cyberspace. As Travis explains, it has been estimated that nearly four thousand gallons of water are consumed to manufacture an eight-inch silicon-wafer foundation supporting the chips that anchor expanding digital terrains, which affects how we think about scale in relation to each other and the environment. At the same time, as Stephanie Posthumus, Stéfan Sinclair, and Veronica Poplawski write in "Digital and Environmental Humanities," there is much that environmental humanists can learn from critical engagement with technology and that digital humanitists can take away from environmental humanities' exploration of the real, material impact of the Internet, cloud services (e.g., Google, Facebook), and electronic devices on the environment. Issues such as this were a constant background for all our workshops and collaborations.

Each of the pilot projects conceived and executed by the West Cluster innovate what I call new constellations of digital, visual, narrative, and curatorial practice. As the lead developer of the HfE international website team, I have chosen the word "constellation," not only because of my own longtime scholarly interest in ancient observatories, almanacs, oral narratives, and cosmologies as "seeing instruments," but because it is associated with astronomy and the stars to which most human cultures have linked their ancient or founding belief systems (Adamson 2015, 136). Therefore, "constellations of practice" is an apt phrase for HfE observatories generating methodologies and practices that are seeking to move beyond traditional contemplative or reflective humanities outcomes and to grasp deeper understandings of biogeochemical processes at scales that span the microscopic to the cosmic. None of the tools or practices employed by HfE researchers are, in themselves, new. What is new is the ways in which these methodologies and practices are being constelled by collaborative teams piloting EcoDH projects employing long-tested humanities

practices—including storytelling, visual and narrative arts, curation, and mapping—in print and digital forms.

The H*f*E website itself should also be considered a new constellation of humanities practice, since the website is an experimental exploration of the ways that digital tools can be used to reach new communities of readers, government officials, scientists, and policy makers. However, as Jennifer Ladino notes in "*What Is Missing?* An Affective Digital Environmental Humanities," one of the primary tasks for environmental and digital humanities scholars is reimagining the ways we represent, cope with, and deploy affective responses to climate change, rising extinction rates, loss, and risk when we are imagining and constructing EcoDH websites and projects. Questions about how affective strategies might collapse or erase complexities that must be known, understood, and even appreciated, Ladino cautions, should be raised around each experiment in the EcoDH if we are to organize big data in ways that result in sound big-picture thinking.

These issues, together with the social and environmental justice issues mentioned above, were on the table in the planning for the *Archive of Hope and Cautionary Tales* project that emerged from the first workshop, Conceptualizing the Human in the Anthropocene. This archive was planned as a digital collection of stories about frontline communities organizing to advocate for the right to meaningful, democratic, and just participation in environmental decision-making. Each story would illustrate the theme of the workshop and explore the Anthropocene humanities by telling the convergent story of aggregate anthropos' legible impacts on the earth's geophysical systems and, at the same time, illustrating the fractured narratives of immense social and environmental "inequalities in access to resources and exposures to risk" (Nixon 2014). Ideas for the archive were sparked by H*f*E consultant Giovanna Di Chiro, a noted cultural geographer who has worked both inside and outside academia on environmental justice issues and projects with many community groups. In the workshop, Di Chiro presented an overview of the milestone documents of the environmental and climate justice movements as they have emerged first in the US in the latter half of the twentieth century and then, in a new century, globally. She explained that "environmental justice" is now a term used "to describe a global network of social movements fiercely critical of the disparities and depredations caused by the unchecked expansion and neocolonial

logic of fossil fuel–driven modern industrial development" (2015a). She gave special attention to the work of David Suzuki, who is considered an elder statesman in the global environmental justice movement and who believes that *active* hope is required to imagine and make manifest notions of intergenerational justice or caring for the future. He argues that an "imaginary of hope" must be driven by a primary commitment "to *care, think, and act*" (Suzuki 2013). Inspired by Di Chiro's overview and Suzuki's leadership and tone, project contributors drew up plans to create the *Archive of Hope and Cautionary Tales*, with stories illustrating how small-scale coalitional groups are approaching their work with hope, wonder, and awe.[11]

Three consecutive essays in "The Green Humanities Lab" reflect on the process of creating the *Archive of Hope and Cautionary Tales* and an accompanying set of environmental justice and sustainability principles displayed on the website with the stories. Beginning with "Stories from the Field: Public Engagement through the Environmental Humanities and Allied Disciplines," H*f*E consultant Julie Sze leads a discussion among archive contributors Tracy Perkins, Julie Anand, and Netra Chhetri. The group examines evolving praxis in the humanities, explores the processes of collaboration, and discusses the end goal—promoting environmental, social, and intergenerational justice. The implicit question of this discussion is, *How* do the humanities contribute uniquely through storytelling? Participants discuss the archive as a carefully curated but not yet complete example of digital stories that are each different but share certain themes and desires. Perkins and Sze reflect on their previous experiences working on digital projects, as the group discuss what worked well in their opinions and brainstorm what they might do differently in a next iteration of the project. The conversation explores why the search for social and environmental justice is best served by foregrounding the voices of those most impacted by social inequities and how digital curation offers innovative forms of longevity for the collection of the best ideas and practices emerging from academic-community collaborations and helps make sense of social and environmental decision-making for new generations of community members and readers.

Focusing on the archive, the next two essays explore the principles, issues, and experiences of action regarding environmental justice and sustainability in the world. In "From Principles to Practice: A Place for

Stories," Paul Hirt discusses the process of writing and uploading the story he contributed to the archive, "Biodiversity Conservation and Restoration in the Sky Islands." His essay underscores the importance of storytelling in communicating about principles of environmental justice and sustainability, especially for groups and audiences outside the academy. In "Cautionary Notes on Sustainability Principles," Sally Kitch discusses the utility of a set of distilled sustainability and environmental justice principles that Hirt and Kitch drew from an array of international publications and policy documents for use with the archive on the H*f*E website. Kitch explores how this set of principles can be employed to evaluate the pros and cons of outcomes in different stories or case studies, explaining why trade-offs and compromises are necessary conditions of social and environmental problem-solving in a world that is deeply indeterminate.

All three essays examining the *Archive of Hope and Cautionary Tales* help to contextualize the observations of Mike Hulme, a climate scientist who contributes research to the IPCC reports. Hulme has explored how framing complex environmental changes as megaproblems had necessarily demanded megasolutions and why this "has led us down the wrong road" (Hulme 2009, 332). In contrast to research proposing megasolutions, the three essays focusing on the archive explore not how humanists working with small community-based alliances are seeking one plan of action but how practitioners of the Anthropocene humanities might seek to pilot a range of evidence-based, reasoned, scaled, and culturally diverse responses that provide insight into human motivation and behavior. The stories in the archive are helping to illustrate how diverse groups and individuals address decision-making processes and contemplate multiple potential responses where "several actual, probable and possible realities" might be found "relevant to different constituencies" (Castree et al. 2014 765–66).

The next two essays illustrate how Simeone's notion of resilient observation emerged as a particularly generative idea in the second workshop, Multispecies Relations in the Anthropocene. Also, the idea of "life overlooked" was conceived by Stephanie LeMenager as a frame for the two companion projects that emerged in this workshop: *Life Overlooked* and *Living with Critters*. Both are digitally open-access on the H*f*E website, and both experiment with new constellations of humanities practice designed to test and rethink how nonspecialists

and nonacademic communities might employ digital tools to make the expertise and evidence that is the usual province of universities, science laboratories, museums, art galleries, and libraries more accessible to nonacademic communities. Each project is also an experimental curation of the imagination, arts, and knowledges of stakeholder communities and students. Each seeks to make these arts and knowledges more visible, accessible, and applicable to wider publics and diverse educational settings. Both projects were conceived as applied humanities research that set as their goal the identification of humanities skills that might empower academics and nonacademics alike to become citizen humanists capable of applying principles of affective attachment, social justice, environmental sustainability, and expanded notions of rights for the diverse species inhabiting the biosphere. Both projects were created to enrich what we mean by "citizen science."

In "Citizen Humanities: Teaching *Life Overlooked* as Interdisciplinary Ecology," Joni Adamson, Stephanie LeMenager, and Catriona Sandilands discuss a pedagogical project first beta tested at the University of Oregon and then retested at Arizona State University and York University.[12] In its template form, the syllabus was envisioned as having one common element in the three very different courses—a digital portfolio project that would be uploaded to various social media platforms, such as Facebook or Weebly, or to the H*f*E website. Students would be asked to read and write fiction, poetry, and nonfiction; explore theoretical research on conservation, rewilding, and extinction; take pictures; make drawings or other artwork; and create short performances or films. Students would then pull these elements together to create a digital portfolio focusing on one "species overlooked," defined in Sandilands's syllabus as "any being that tends for the most part to fly (or swim or creep or crawl or tendril or flit or ooze or flagellate or sit apparently unmoving) under the radar of everyday human attention."[13] Students were asked to create a narrative that would make one form of "life overlooked" as charismatic as a panda or a dolphin.

In "Figuring Our Environments and Living with Critters in the Anthropocene," Ron Broglio (an interdisciplinary critical theorist) and María Cruz-Torrez (a cultural anthropologist) discuss a second project emerging from the Multispecies Relations in the Anthropocene workshop. *Living with Critters* was piloted in two communities—

one a fishing community in Mazatlán, Mexico, and the other a desert community in the exurbs of Phoenix, Arizona. Through images and an audio archive found on the H*f*E website, the project explores how everyday people and scientists think about the animals they encounter.[14] Broglio and Cruz-Torrez pose the question, What are the consequences of certain modes of thinking and valuing? The project tests how citizen-humanist-scientists might intervene in the way animal experts and scientists and the general public approach their understandings of diverse species, particularly the invisible ones that are critical to the vital functioning of ecosystems.

The third workshop, Transdisciplinary Imagination(s) for the Anthropocene, organized steering committee members around two questions: Can aggregate anthropos act collectively as a species? Will groups of humans be capable of acting collectively in the future to reorganize more-efficient and just food systems? The project group, after honing these questions in the space of the previous two workshops, devised an even sharper question: What will an environmentally sustainable, socially equitable, and culturally rich meal look like in the year 2040? They titled their project, *Dinner 2040: The Future of Food* and focused the project on the complex issues surrounding the future of food systems in a climatically changing world.[15] This project models new constellations of humanities practice that have recently been described as the "arts of futurity" and that call attention to the ways imagination can give tangible form to "different worlds outside of the constraints of the given present" (Yusoff and Gabrys 2011, 518). Since Rio+20 and the publication of "The Future We Want," the arts of futurity—including future casting, backcasting, and scenario building—are fast increasing in importance in research programs that integrate the humanities, particularly in relation to risk management, disaster management, and the planning and "production of probable, preferred, or hoped for futures" (Yusoff and Gabrys 2011, 518).

As Joan McGregor writes in "Values on Your Plate: *Dinner 2040*," the project group aimed to design a future regional food system that would focus on the notion that foods consumed in communities should support and nurture important human values, hence the idea that when we eat, there are values on our plate. Gathering a diverse local team of community partners from the culinary and gardening arts, food cooperatives, local O'odham and Navajo indigenous communities, organic

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and nonorganic farming, public health, urban planning, and community markets, they employed a future art that is referred to in urban planning as a "design charrette." This is a process that is often used in urban planning for rapid community assessment of and refinement of design. The charrette was adapted for the *Dinner 2040* group into a creative-envisioning session that involved brainstorming and planning for a future we want to see in central Arizona in the year 2040 CE. The project is designed as a replicable and scalable template, with all project-planning materials easily available on the H*f*E website, where it is easily available to other community groups.

Nicely summing up the experiences of many of the steering committee members, Stephanie LeMenager observes about her own EcoDH project, in "Citizen Humanities," "We learned . . . that collaboration is both strategic and wild, in the sense that all creativity feels accidental and yet is constrained, and enabled, by explicit goals."

Networking the Networks

With the Mellon Foundation as the major funder of the H*f*E observatories, we understood the H*f*E website not only as a project archive but as a networking tool for linking humanists working on similar projects around the world. A graphic globe featured prominently on the landing page of the website conveys the ways different centers and institutes around the world are linked. The final group of "The Green Humanities Lab" essays, already referenced above, are written by scholars outside the West Cluster working on promising projects and scholarship that illustrate an expanding network for EcoDH. In the "The Digital Anthropocene, Deep Mapping, and Environmental Humanities Big Data," by Charles Travis, James Joyce's *Ulysses* (1922) becomes a big-data novel (eighteen episodes; 740 pages; 265,000 words; and a lexicon of 30,030 terms, titles, and expressions). As a case study, Joyce's work serves, in Derrida's (and Travis's) words, as a "supercomputer of textuality." Travis shows how *Ulysses* illuminates how the digital humanities and environmental informatics enable us to conceive the ways that big-data and social media technology and activity can be adapted and integrated with smart-city, agricultural, energy, economic, business, and sociocultural practices.

In "*What Is Missing?* An Affective Digital Environmental

Humanities," Jennifer Ladino, a scholar of affect, explores the role of environmental humanities scholars in relation to EcoDH projects. She raises questions about how affective strategies sometimes collapse or erase complexities that must be known, understood, and even appreciated, if we are to organize visual and textual big data in ways that result in sound big-picture thinking. Focusing on artist Maya Lin, a consultant to the H*f*E's North American Observatory's Northeast Cluster, Ladino explores Lin's web-based project *What Is Missing?* for the ways it seeks to raise awareness about loss and rising rates of extinction. Meanwhile, "Digital Environmental Humanities: Strong Networks, Innovative Tools, Interactive Objects," by Stephanie Posthumus, Stéfan Sinclair, and Veronica Poplawski, explores the merit or narrowness of questions such as "How can a field that embraces environmentally unfriendly computer technology help to further understand environmental issues?" "Should we not be reducing our use of high-energy cloud computing and discouraging the production of yet more e-waste?" The authors outline a provocative argument for what the environmental humanities can learn from critical engagement with technology and what digital humanities scholars can take away from an environmental humanities' understanding of the material impacts of electronic devices on environments and ecosystems.

By interrogating questions about the environment through different humanities disciplines, each of the essays in "The Green Humanities Lab" seeks to extend the ways we think about human culture and reframe understandings of life, social and cultural practices, values, and resources. Each essay reflects how inspired leadership, collaboration, and new constellations of practice can change the intellectual climate across disciplines by spurring creative public and practical humanities work that is leading to integrated environmental humanities research on behalf of all life—whether it be human, nonhuman, charismatic, or overlooked.

With great foresight, the CHCI set aside some Mellon funding to facilitate continued international collaboration beyond the initial H*f*E grant period and for maintenance of the website as a networking tool. A 2.0 phase of the H*f*E observatory system and website was launched at an international meeting of observatory leaders held in May 2015 in Arizona. Adding new observatories in East Asia (National Taiwan University), Asia Pacific (Academia Sinica, National Sun Yat-sen Uni-

versity, and National Chung-Hsing University), and Africa (University of Pretoria), HƒE researchers committed to piloting additional projects and programming that will place them squarely at the center of international research and planning for the creation of plausible and desirable futures. In a manifesto written to guide the 2.0 phase, HƒE observatory leaders have planned an agenda that aims to spur public imagination and draw people from academic, policy, business, and community sectors into conversations about how we might collaborate to build social, technological, and ecological systems agile enough to adapt to changing future conditions.[16]

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NOTES

1. Signed by all UN member states, this document calls for more equity-focused definitions of "sustainable development" (see United Nations 2012).

2. For a listing of universities, formal and informal networks, and global environmental humanities initiatives, see Nye et. al. 2013; Hartman 2015.

3. For a list of the researchers networked through Arizona State University, see "North American Observatory: Members," HƒE, http://hfe-observatories.org/observatories/north-american-observatory/.

4. According to their website, "The UC Davis Humanities Institute's Environmental Humanities supercluster is a multidisciplinary research group designed to facilitate faculty study of complex envirocultural problems, support graduate students and postdoctoral scholars working in the field, and collaborate with communities affected by environmental challenges." See "About," DHI Supercluster—Environmental Humanities, last updated February 2, 2012, http://environmentalhumanities.ucdavis.edu.

5. For a history of the growth of the environmental humanities and its relationship to American Studies and ecocriticism, see Adamson and Ruffin 2013. For examples of collabo-

rative public humanities work taking place among this network, see especially Giovanna Di Chiro, "Climate Justice Now!" (Adamson and Ruffin 2013, 204–19), and by Stephanie LeMenager, "The Los Angeles Rangers, Trailblazing the Commons," (Adamson and Ruffin 2013, 220–35).

6. *Future Earth* is sponsored by the United Nations Environmental Programme, the International Council for Science, and the International Social Science Council.

7. This wording comes directly from the Universal Declaration on the Rights of Mother Earth and Climate Change, issued at the World People's Conference on the Rights of Mother Earth, held in Bolivia in 2010.

8. For lists of these networks and links, see Hartman (2015); for an extensive history of the emergence of environmental humanities networks, see Nye et al. 2013.

9. The *HfE* common threads were written one year into the grant period after HfE principal investigators and key researchers had a better sense of the ways their international collaboration could most advantageously be linked. Drafted at an international meeting at a CHCI conference in Hong Kong in June 2014 by Joni Adamson, Jodi Frawley, Poul Holm, Sally Kitch, Iain McCalman, and Charles Travis, the document can be found in its entirety at *Common Threads*, http://hfe-observatories.org/common-threads/.

10. In the first iteration of the HfE website, all three regional clusters where represented. The website is now in its third iteration, and all clusters are now more simply represented as those of the North American Observatory, with each project found at its own unique link.

11. See *Archive of Hope and Cautionary Tales* at http://hfe-observatories.org/project/hope -and-caution/.

12. See *Life Overlooked* at https://hfe-observatories.org/projects/life-overlooked/.

13. From the course description of Sandilands's ENVS 6149/CMCT 6120 course.

14. See *Living with Critters*, at http://hfe-observatories.org/project/living-with-critters/.

15. See *Dinner 2040* at http://hfe-observatories.org/project/dinner-2040/.

16. See Holm et al., 2015.

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