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Afro-Indigenous Women Healers in the Caribbean and Its Diasporas: A Decolonial Digital Humanities Project

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Abstract

Caribbean Women Healers: Decolonizing Knowledge Within Afro-Indigenous Traditions, is a multi-year collaborative research co-produced by faculty and digital librarians and technical professionals from the University of Oregon Libraries' Digital Scholarship Services (DSS). This digital humanities project contributes to existing Black Digital Humanities by centering deeplistening and digital decolonization methodologies that prioritize human dignity, traditional ecological knowledge (TEK), and data stewardship. More specifically, Caribbean Women Healers highlights how Afro-Indigenous (Black and Black-Indigenous) women elders mobilize their intergenerational knowledge and roles as healers, teachers, and community leaders within Caribbean healing traditions to effect change well beyond the traditional centers of those communities.

Introduction

Caribbean Women Healers: Decolonizing Knowledge Within Afro-Indigenous Traditions, is a multi-year collaborative research project developed by Dr. Alaí Reyes-Santos and Dr. Ana-Maurine Lara, funded, and supported by the University of Oregon; and co-produced with digital librarians and technical professionals from the UO Libraries' Digital Scholarship Services (DSS) department under the leadership of Kate Thornhill, Digital Scholarship Librarian, and Franny Gaede, Director, Digital Scholarship Services. [1] This digital humanities project contributes to existing Black Digital Humanities by centering deep-listening and digital decolonization methodologies that prioritize human dignity, traditional ecological knowledge (TEK), and data stewardship. More specifically, Caribbean Women Healers highlights how Afro-Indigenous (Black and Black-Indigenous) women elders mobilize their intergenerational knowledge and roles as healers, teachers, and community leaders within Caribbean healing traditions to effect change well beyond the traditional centers of those communities.

In 2016, after four years of meeting and spending time with Caribbean women that keep their Afro-Indigenous, Indigenous and Afro-descendant healing traditions alive, Reyes-Santos and Lara were inspired to conceptualize a project that validates healers' knowledge in a world where Eurocentric notions of health and medicine vilify and dismiss them. As healers and ceremonialists, themselves, Reyes-Santos and Lara's journeys within Caribbean communities throughout the Dominican Republic, Cuba, Puerto Rico, and the U.S. Pacific Northwest region, seeks to interrogate and to interrupt the colonial gaze that historically vilifies and demeans our elders as "uneducated," or "simple," or "primitive," and that deems their knowledge simply "folklore," "popular religion," or "supersitition."

As a space pushing back at these settler mentalities, *Caribbean Women Healers* documents Afro-Indigenous, Afro-descendant, and Indigenous healing within a TEK context that includes preserving food and medicine forests and gathering grounds, transmitting traditional food and medicine knowledge to others, caring for and treating their families, and members of their communities. Healing work includes attending to people who seek help with the health of their

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lands, plants, animals and human bodies. Healing entails attending to physical, emotional, psychological, social and spiritual dimensions of health and well-being. As such, the healers documented for this project also manage encyclopedic, communally-sustained knowledge of spiritual traditions kept alive in spite of colonial and nation-states' attempts to disappear and vilify them. The healing practices and ethnobotanical knowledge disseminated through this digital humanities project are legacies of survival strategies in the face of colonization and slavery, anti-Black racism, and anti-Indigenous genocidal practices.

Caribbean Women Healers is informed by the positionality of its researchers, two Black-Indigenous women who are a third generation *curandera* and tradition keeper from Puerto Rico (Reyes-Santos) and a fifth generation *curandera* and tradition keeper from the Dominican Republic (Lara), both living in the Pacific Northwest. [2] The researchers' own rootedness in relationships with elders and healers were central to the relationships that were developed prior to and will continue to be maintained after the project. The healer partnerships cultivated and traditional ecological knowledge documented by Reyes-Santos and Lara are represented by digital artifacts captured using sound, video, and photography. Taking lead responsibility for website conceptualization, writing and digital artifact creation, layout ideation, and conduit between the healers, Reyes-Santos' and Lara's direction positioned *Caribbean Women Healers* to be one for and about the healers' traditional ecological knowledge.

Core to the project's digital development was DSS' specialization in co-creating open digital humanities projects that center cultural awareness through web development and design, online privacy, open source and proprietary web application development and management, and data stewardship. The library research team included Thornhill as digital project manager; Gaede as project administrator; Anna Lepska as graduate student digital research assistant; Azle Malinao-Alvarez as the interactive technology consultant with support from digital collections and preservation expert Julia Simic, as well as Corey Gillen and Ray Henry, members of the UO Libraries' Library Technology Services department (now Applications Development and Integration). This library team will henceforth be referred to collectively as "the builders" the authors of this paper "the authors," and Reyes-Santos and Lara "the researchers." This interdisciplinary team placed the healers' community at the center of the research project to publicly validate and share aspects of their knowledge with the healers, teachers, researchers, and students studying race, indigeneity, ethnobotanical medicinal healing, and intersectionality.

History of the Project

Since 2010, as Afro-Indigenous ceremonialists and scholars working in the fields of Black and Indigenous Studies, Reyes-Santos and Lara have collaborated in Afro-Indigenous survival and revitalization projects, ethnographic research projects, and on another digital project. They have spent the past eleven years travelling to Indigenous, Afro-descendant, and Afro-Indigenous ritual, healing, and ceremonial spaces in Mexico, the Dominican Republic, Cuba, Puerto Rico, and the United States. While participating in and collaborating with these spaces, they have become students, apprentices, and allies working with elders to continue disseminating and valorizing their traditional knowledge through visits, fundraising, workshops, ceremonies, and academic research. For instance, in 2012, Lara and Reyes-Santos fundraised and planned a visit of Mexica elders to sacred sites in the Dominican Republic, where they met Afro-Indigenous healers and ritual leaders; in 2012, the Black Feminist Retreat in the Dominican Republic brought together U.S.-based Black scholars and artists, and activists, cultural workers, and traditional ceremonialists living in the Dominican Republic; in 2015, they also organized a trip of Mexica and Mezcalero Apache elders to meet Cuban *regla de ocha* communities in Havana. Both these events are examples of the kind of exchanges they have helped bring to fruition as efforts to disseminate and exchange traditional healing knowledge across Indigenous, Afro-descendant, and Afro-Indigenous communities in the Americas.

They began to experiment with digital platforms as powerful tools to share information early on. In 2011 they interviewed Dominican feminist and queer activists on educational justice; Reyes-Santos edited short films documenting their experiences, and posted them to a YouTube channel. In 2017, Lara trained students in Reyes-Santos' class in ethnographic methodologies to participate in a storytelling documentation trip in the wake of Hurricane Maria and create educational resources for the University of Oregon Puerto Rico Project. Some students travelled to Puerto Rico with Reyes-Santos, took photos documenting the catastrophe and how people organized themselves as communities, and

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completed interviews with people affected by the Hurricane in mostly rural areas. A student team edited content and created a blog to educate people in the Pacific Northwest about Puerto Rico's history and to disseminate the stories shared by people in the island.

In 2018, the UO Libraries launched the DSS Faculty Grants Program. As an internal university award, UO faculty were eligible to apply for in-kind and budget support offered by DSS, and its sister library departments, for scholars to explore non-traditional and creative digital scholarship through either through a humanities, social science, or interdisciplinary lens. As a major strategic priority for the department, *Caribbean Women Healers* was selected because of its innovative approach to raising the voices of historically marginalized and colonized voices. It was also selected because DSS wanted to explore the question, "How might the sustainability of a digital project be conceptualized from a standpoint that considers humanity as a social construction and subject to change over time and place?" [Gallon 2016].

The Caribbean Women Healers WordPress site contains over 200 photographs and interview clips with eight healers, highlighting various research sites and depicting biodiversity in botanical plant life in different micro-climates and ecological areas. The website gives context for how Reyes-Santos and Lara partnered with healers and how the healers' knowledge and approaches to sharing influenced the research's overall ethnographic practices. Additionally, the site includes a digital map highlighting research sites and an extensive bibliography that introduces a variety of texts that serve as an introduction to the study of Afro-Indigenous communities in the Caribbean, and their spiritual and traditional ecological knowledges. And on April 22, 2020, the website celebrated its launch with over 70 people in attendance globally virtually attending on Zoom.

Contextualizing Caribbean Women Healers in Black DH

Openness is a concept that has come to characterize knowledge and communication systems, epistemologies, society and politics, institutions or organizations, and individual personalities. In essence, openness in all these dimensions refers to a kind of transparency which is the opposite of secrecy and most often this transparency is seen in terms of access to information especially within organizations, institutions or societies. [Peters 2015]

In order to allow democratic collaboration, co-design, co-creation, co-management, and co-evaluation through the Internet, openness emphasizes free, transparent, and unrestricted access to knowledge and information. Within the digital humanities, openness situates scholars to be self-aware and confront socio-technologic and economic frameworks that influence their research and teaching practices.

As digital cultural heritage materials have become more common online, in large part thanks to funding through private and grant funding agencies and foundations (e.g. The Andrew W. Mellon Foundation, National Endowment for the Humanities, and Institute of Library and Information Science), openness has become a norm for those working in custodial [Society of American Archivists 2021] and post-custodial [Society of American Archivists 2021b] digital stewardship [Society of American Archivists 2021c].

The relationships between openness, data, digital technologies, and Black and Indigenous studies demonstrate how digital technologies and data privilege white Western cultural traditions and power systems that systematically oppress human beings, societies, and cultures through violence, genocide, racism, and enslavement. [Gallon 2016] [Lothian and Phillips 2013] [Risam 2016] [Christen 2019]. The rejection of those oppressive traditions and power systems have given rise to a number of Black Digital Humanities archival projects that curate and provide public access to documents, maps, and other historical, material and textual materials. *The Caribbean Sea & Land Project* demonstrates the relevance of mapping and sharing historical and cultural information in accessible and interactive formats, specifically when engaging Black and Indigenous Caribbean populations. It incorporates a digital map to share geographical and historical information about different islands in the Eastern Caribbean. *Slave Voyages*; *Black British History on Record*;

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First Blacks in the Americas; and the Early Caribbean Digital Archive, among others, illustrate how geographies and public access to historical records play a central role in Black DH practices.

The diasporic and transnational realities of Black communities, and the legacy of slavery and the Middle Passage, present those of us in the Black DH with opportunities to create platforms that represent transcolonial and transnational realities beyond textual representation, while incorporating different communities and learning styles. *Caribbean Women Healers* joins in the oral digital storytelling practices that characterizes projects such as *None on Record; African Diaspora in the Indian Ocean World*; and *Civil Rights in Black & Brown*; and initiatives like the *Caribbean Memory Project* that foster public participation and co-creation of digital archives by Caribbean people.

Aligned with these Black DH projects, and as scholars who seek to work in the open, we seek to apply decolonizing methodologies connected to the ontologies of openness: access, transparency, collaboration, sharing, accessibility, and the choice of permanence. *Caribbean Women Healers* frames humanity within the context of historical colonial violence and the oppression of Afro-Indigenous people. It subverts the colonial gaze by giving respect, space, and validation for TEK through its imagery, interviews, and bilingual nature. A core attribute of this digital project is its approach to the openness of sharing and documenting TEK. This project's knowledge work is rooted in authors' participatory ethnographic documentary, Black Feminist, and open decolonization methodologies for working with TEK.

For the authors, this means centering participant's dignity and cultural practices, and rejecting white, Western settler supremacy ways of being. Ownership and custody of digital technologies and digital cultural heritage is a core issue for how the authors operated throughout the project as researchers and builders. The work of Kim Christen [Christen 2012] [Christen 2019], Christen with Jane Anderson [Anderson and Christen 2019], and Trevor Reed [Reed 2021][Reed 2021b][Reed 2021c] offer directions for open engagement within an ethics of care [Caswell and Cifor 2016][Archer and Prinsloo 2017] and participatory cultural heritage collecting frameworks [Gilliland and McKemmish 2014][Allard and Ferris 2015] [McCracken 2015] [Earhart and Taylor 2016] [Becerra-Licha 2017][Benoit and Eveleigh 2019] foregrounding the cultural underpinnings and politics regarding indigenous knowledge and sovereignty. Centering the healer community's individual choice, cultural access protocols, and applying their own deep listening practices was the highest priority.

Reyes-Santos and Lara's emphasis on Afro-Indigenous narratives honors the historical reality of *palenques* and *manieles*, sovereign communities where Indigenous and African peoples came together in freedom; where Indigenous peoples shared herbal, medicinal knowledge with recently arrived Africans; where African communities shared their ancestral healing and ceremonial knowledges, and found ways to retain their traditions far away from home; where Indigenous and African peoples came together in kin relations and treaty building. Their methodology honors the Afro-Indigenous paths of resistance that have enabled the maintenance and dissemination of traditional healing practices and ecological knowledge for 528 years. The healers featured in *Caribbean Women Healers* are steeped in these histories and the traditions born out of them. The methodologies used for this project enabled this to come into being, and how, specifically, these methodologies and website contribute to breaking down the marginalization of Black Digital Humanities. [Gallon 2016]

As Afro-Indigenous communities gain visibility, this project initiates what must be a broader dialogue in Black DH about what it means to bridge the concerns of Black and Indigenous methodologies and community needs in the U.S. and internationally for the successful implementation of open scholarship projects. It foregrounds Black Feminist DH practice deeply informed by Indigenous decolonial methodologies for community-based research applied to the digital sphere. The methodological approach to the stories and ethnobotanical resources shared on the site and digital stewardship techniques draw from the norms for social interactions and information sharing exemplified by the healers themselves, as well as healers' intentions.

The project was always meant to be open, shared beyond the healer and scholarly communities from whence it came. It has been motivated by the needs and desires of the healers themselves. All community participants were excited and saw a need to make traditional knowledge available through new technologies. Rather than see the Internet as a hindrance to their world and belief systems, they articulated an understanding that presenting their work and knowledge

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to the world was a way to safeguard them and their knowledge. Healers, like the Cuban-American *Iyalocha* Jannes Martínez, were specific in their critique of what they saw as decontextualized traditional knowledge permeating the Internet. Technological access acts as a supplement to relationship and practice. As Jannes stated in her interview with Reyes-Santos and Lara, "Reading something on the internet doesn't mean you know it and understand it."

Many of those who participated, in particular those from Puerto Rico and those living in rural areas in the Dominican Republic, stated there has been a rupture to traditional forms of knowledge transmission and production. They theorize that these ruptures are produced by three primary factors:

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- 1. social violence that produces early death, expressed in the saying, "la muerte es parte de la vida" (death is a part of life);
- 2. rapid emigration from their communities to urban centers and to other countries expressed in the statement "el campo se está vaciando" (the countryside is being emptied);
- 3. fundamentalist Christian religious social values and norms that demonize Afro-Indigenous/Black traditions and practices.

Their theories speak to scholarly findings in the field of Black Studies and Reyes-Santos and Lara's engagement with the field. Reyes-Santos and Lara understand that the social violences discussed by healers as the reason behind "early death" are an extension of colonial-modern state policies that fail to produce the conditions for sustaining Black life, as well as colonial-modern ideas about race, gender and sexuality that foster the punishment of gender and sexual difference, and the devaluation of Blackness. (Wynter 2003) Neoliberal economic policies and state participation in globalized capitalism have contributed to rapid urban migration and emigration to Latin America, Europe and North America that have left rural areas depopulated and/or disenfranchised, and elders caring for land and knowledge on their own [Reyes-Santos 2015] [Thomas and Clarke 2013].

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Ethnographic and historical research by Lara documents that Christian colonial violence leads to the ongoing ostracization of traditional healers, the demonization of Afro-Indigenous practices and traditions, the dismantling of altars and the destruction of sacred sites [Lara 2020]. Even with all of these obstacles, and perhaps because of them, healers expressed the need to continue transmitting knowledge to their families, communities and future generations. That impulse has shaped this project from beginning to end. Moreover, the fact that both Reyes-Santos and Lara are themselves Afro-Indigenous Caribbean healers and keepers of traditional ceremonies opened up spaces for connection with elders, for sharing and meeting healers in ceremony, and understanding the worldviews articulated by the healers in multiple Caribbean traditions. Often, once Reyes-Santos and Lara were recognized as healers and ceremonialists, a deeper conversation ensued with interviewees.

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As stated by Winona LaDuke, "Traditional ecological knowledge is the culturally and spiritually based way in which Indigenous peoples relate to their ecosystems." Here we highlight how Afro-descendant and Afro-Indigenous communities have a wealth of resources to contribute to TEK in the Americas. Our Black Feminist DH approach required that the authors be willing to be transformed by the people Reyes-Santos and Lara were honoring in the documentation process; Reyes-Santos and Lara had to be open to transform how they imagined the work, how at times they were trained to undertake this kind of endeavor. The researchers centered Black/Afro-descendant women and queer healers' voices and ways of knowing, while destabilizing colonial distinctions between researchers and research subjects [McClaurin 2001]. [Simmons 2001] The authors had to become research subjects as well; all of us from our specific social and academic location observing how we responded to systems of knowledge that have historically been rendered invalid in academic setting: Black, Indigenous, female, queer, healer, oral, collective.

Healers, researchers, and builders were engaged in a collaborative process of knowledge production to together imagine what would be the best ways of representing the information on the website. We privileged oral transmission of knowledge over archives while still providing access to relevant archival projects, scholarship, creative work, and educational tools. We recognized the orality that characterizes interactions with healers and the relevance of sustaining oral traditions in the contemporary moment; specifically, honoring how women and queer people have maintained traditional ecological and medicinal knowledge alive while facing high levels of social vulnerability and violence whether

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As articulated by Moya Bailey, "The ways in which identities inform both theory and practice in digital humanities have been largely overlooked. Those already marginalized in society and the academy can also find themselves in the liminal spaces of this field. By centering the lives of women, people of color, and disabled folks, the types of possible conversations in digital humanities shift. The move "from margin to center" offers the opportunity to engage new sets of theoretical questions that expose implicit assumptions about what and who counts in digital humanities as well as exposes structural limitations that are the inevitable result of an unexamined identity politics of whiteness, masculinity, and ablebodiness" [Bailey 2011].

Participatory Methodology & Decolonizing the Digital

Healer Community-Centric Methodology and Their Impact on the Project

This research project provides a powerful counterpoint to the context in which Afro-Indigenous traditions are being maintained and practiced. The aforementioned dynamics not only generate interruptions in inter-generational transmission of traditional ecological and spiritual knowledges. They are also reflective of a socio-political context in which Afro-Indigenous traditions and ways of knowing are marginalized. As the *campos*, the countryside, "empty out," traditional land bases and community spaces are increasingly threatened. As economic marginalization increases, Black people, Afro-Indigenous healers have to become even more creative in figuring out ways to gather the medicines that they need, collect the materials for their offerings, and develop paths to find each other.

Very much aligned with Reyes-Santos and Lara's approaches to working with the healers, the authors' awareness of socio-political sensitivities heavily influenced the digital treatments of spoken word, portraits, plant location data, Internet access, and website design worked to not reinforce the harms brought upon Afro-Indigenous communities. Together, healer, researcher, and builder methodologies sought to subvert the western-centric approach to using digital tools for tools and innovations and putting something on the Internet for the sake of making information publicly available. It was important for the authors to always ask questions of the community regarding access, transparency, collaboration, sharing, accessibility, and the choice of permanence. Ultimately, the authors' approach first foregrounded permission and consent knowing that not all information should be free and open. Centering the healer community's individual choice and cultural access protocols was their first priority.

Beginning in 2016, Reyes-Santos and Lara conducted interviews with women healers in rural and urban communities in the Dominican Republic, the Pacific Northwest, Cuba and Puerto Rico. In these interviews, they focused on the world views of their elders. Their research approaches were (and continue to be) grounded in a critical Indigenous approach [Smith 2011] [Cole 2001] whereby the elders determined the parameters of shared knowledge, and in conjunction with us, determined the kinds of questions and methods by which those questions would be answered. This approach was not only critical, it was absolutely required. As younger women engaged in respectful relation with elders, Reyes-Santos and Lara could open the possibility of conversation, but the elders were the ones who would determine what it was that Reyes-Santos and Lara should, could and needed to know.

Critically engaged methods include the collection of oral histories, [Smith 2011] observant participation, [Campbell and Lassiter 2014] and transparent data collection [Smith 2011] [Simpson 2015] in ways that prioritized the locations and points of views of their elders. Gathering this knowledge took place in the midst of healing sessions, at family gatherings, hanging out in peoples' patios, at the dinner table, at dance parties, hiking, resting, and just spending time together, *compartiendo*. They spoke with *regla de ocha* priestesses, *servidoras of la 21 división*, *sobadoras*, and other healers drawing from their Indigenous and Afro-descendant ancestral knowledge; women they have met while dancing at the rhythm of Caribbean batá or atabales drums, or just walking down the street in a place that was new to them. Reyes-Santos and Lara were also attentive to including queer/two-spirit healers living in the Diaspora, whose own geographies include healing communities in the U.S. and the Caribbean.

These initial methods soon transformed into a practice of deep listening. The first thing Reyes-Santos and Lara were taught was deep listening. Over the last decade, they have learned to understand deep listening as a practice that is

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Deep listening changed Reyes-Santos and Lara as researchers because it changed their orientations to "being," to space-time, and to their own relations. It required prioritizing recording the conversation in the format most comfortable to the healers; to undertake interviews healers with husbands, children, neighbors, or patients around us or while on a hike through a forest in the middle of a hot tropical morning. Deep listening is about being embedded in everyday living, to listen to the cacophony of voices, noises, landscapes where healing takes place. Beyond the initial interview, Reyes-Santos and Lara were kept accountable to this practice by continued check-ins and visits with healers. Their relationships transcend the timeline of the project.

By engaging in a practice of deep listening, Reyes-Santos and Lara first learned that all of the elders have unique and powerful understandings of the divine, known variously as Bondieu, Papa Dios, Olofi, Ometeotl and Gran Espíritu. They learned about the unspoken understandings of elders' relationships to ancestors and to all living beings, which are the primary sites for healing. They learned about the parameters of what is considered "alive" and "dead" (e.g. all of existence is alive, but plastic is dead). They learned about the context in which life is prolonged and death is accepted — or not. They learned about how current economic, political and social conditions are understood in relationship to the prolongation and/or decimation of the lives of elders, their families, their communities, and the land itself. They learned that in different traditions healing is directed either towards the prolongation of life or toward the aversion of death. These distinct orientations translate into relationships with the plant world, relationships with the spirit and ancestral worlds, and relationships to living, breathing human beings.

In addition to deeply listening, Reyes-Santos and Lara also walked. Miriam Ricourt describes walking as a practice of disruption and meaning-making that was and continues to be a central praxis of maroon peoples (*cimarrones*). Walking was critical to their understanding of elders' worlds. They walked with them through their communities, as seen in Figure 1, through their forests, within their churches, homes, and ceremonial grounds. Walking together, and being together in walking, allowed all present to assert our mutual humanity (everyone was hot) and limitations (when one person got tired — usually Reyes-Santos or Lara, much to the amusement of those who could keep going). Walking together allowed Reyes-Santos and Lara to understand how elders move through space and why. Walking enabled Reyes-Santos and Lara to understand the elders' specific geographies — the trees, plants, and places where they make meaning on an on-going basis, the ways they tended these spaces, and the sense of loss that is an increasing part of the human experience in the face of rapid climate change. In walking together, Reyes-Santos photographed plants, groups of plants, and Lara asked questions that prompted stories about specific places.

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Figure 1. Walking together through town. Ana and Eugenia on their way to visit with women elders from Eugenia's community.

There were stories of disappeared species, of disappeared peoples, of new constructions and new economic forces. There were stories of successful healings and of challenging circumstances. There were stories of plants transplanted and of the spirits who lived among them. All of this was possible to learn when they walked together.

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Deep listening and walking required Reyes-Santos and Lara to shift their emphasis from video clips in the original prospectus to audio clips that are not clear of contextual noise. The microphone often created an uncomfortable situation in spaces where knowledge is mostly produced through communal conversation, questions, and interactions with the human world and plants. Most of the women interviewed did not feel comfortable being recorded on video and shared their most insightful stories while receiving patients or taking a stroll to show specific plants.

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To produce a website with equal representation, Reyes-Santos and Lara decided to privilege audio over video to share information. Audio clips are short and speak to specific, relevant themes. They worked with an editor who was asked to leave contextual noise in the recordings to enable the listener to understand what it was like to be in conversation with the healer in their everyday practice and subtly convey the context. Reyes-Santos and Lara are not documentary filmmakers and were aware they were not seeking to produce documentary-quality material. They were documenting some of the wealth of knowledge they have received over the years from elders and share that knowledge respectfully with others seeking to value it, research it, and connect with it. The material on the website allows us all to reflect on how we have come to construe knowledge in the Americas and what our elders have to offer as humanity approaches a variety of social and environmental challenges.

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Working with elders in a transparent way that honors the sacrifices they continue to make to sustain their knowledge means that everything presented on the website has been discussed with them. Reyes-Santos and Lara printed photographs, shared audio clips and received the authorization to continue not just from the elders, but also from the guardian spirits that guide them. This multi-layered process of knowledge ratification extends beyond the ethical boundaries of university human subjects committees and is directly and permanently rooted in the ethical parameters of Afro-Indigenous traditions themselves.

Researching within and with traditional ceremonial and healing communities carries with it the ethical obligation to not only cause no harm, but the additional ethical obligation of honoring the self-determination and affective and spiritual

priorities of Afro-Indigenous communities. Reyes-Santos and Lara presented these values in a slide show format in the website. Together, these values articulate a different set of ethical values underlying community engaged digital humanities scholarship. These values place Black voices, ways of knowing, ways of being and ways of teaching front and center within the digital sphere, rupturing "implicit assumptions about what and who counts in digital humanities" [Bailey 2011]. The values that undergird an ethical code of conduct among the healers included in the project are:

- "Antes que todo, Dios. (Gracias a la Misericordia)": Humility before Creation, and all beings human, plant and animal are a manifestation of Creation
- "Todo Vive.": All of Earth is alive; All of Earth is life.
- "Moyumba/Ancestros": To honor ancestors and elders and all those who have come before us.
- "Obedi ka ka, obedi le le.": Knowldege was shared throughout the world.
- "Convivir.": To be in relation with each other across a long span of time.
- "Compartir.": To generate intimacy and authenticity in our relations through storytelling, laughter, sitting together, eating together, etc.
- "Cara a Cara.": To see each other's faces, to know the truth of our experiences in each other's gazes/eyes/faces
- "Ser generosa.": To never arrive empty handed, to never let someone leave empty handed, either.
- "Ser recíproca.": Enabling balance in the universe between all living beings, material and immaterial, even in the creation of knowledge.
- "Hay que fluir.": To be flexible and easy-going in the rhythms of life's chaos and unexpected events.

From the beginning Reyes-Santos and Lara knew that they wanted *Caribbean Women Healers* to be primarily used as a site of knowledge production and transfer for practitioners, students, and the general public. They wanted it to be a place for the provision of resources and to function as a teaching tool. Construction of the digital project formally started at the beginning of the 2019-2020 academic year with the goal of launch on Earth Day 2020. Collaboratively the project builders helped address digital technology platforms and we began conversations about web design and digital assets management and its representation, with an emphasis on the protection of community as part of open digital practice. Because the researchers wanted to create a multimodal digital research project, the builders listened to the researchers speak about their ideas and aspirations, interviewing them on questions of visual design, ownership, and digital content representation. This gave the builders a sense of what types of website user interactions and reader experiences were to be anticipated while navigating the website. Throughout the conversations, the builders were able to help prioritize target audiences while also learning about what types of digital assets were being created with and for healer stories, and how Reyes and Lara wanted users to experience text, audio, images, and geographic space.

The questions asked by the builders (Appendix A) helped to inform approaches to the overall digital stewardship and web development approach to the project. By applying these questions that were inspired by National Endowment for the Humanities recommendations for data management plan [National Endowment for the Humanities 2018], user interactions and collections management for ethnographic archives, [Punzalan et al. 2017] [Christen 2018] [Christen 2019], and web accessibility standards to support people with disabilities and cultural awareness [World Wide Web Consortium 2020] [Williams 2012], the answers helped determine what would be the best socio-technical infrastructure for the digital project's future sustainability.

Understanding the Technology in Use

The technologies used to build *Caribbean Women Healers* were selected based on the builders' collective professional experiences developing and managing digital library and archival services and public humanities projects within higher education and expertise in cultural heritage digital stewardship. Throughout the project, the builders approached construction to prioritize cultural needs, web accessibility, and long-term social-technologic sustainability framed within a digital assets and software preservation context, a framing that requires constant digital curation and software monitoring. They needed to balance technology selection and choices in methodologies that would align with the values of the project as well as ones that allowed a small build team to manage the project without fear of losing platform technical support beyond their capabilities. Another requirement was robust user support documentation for all digital

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tools so researchers could continue maintenance if the builders were no longer available.

At the University of Oregon, WordPress and the premium theme Divi are available as a Software as a Service enterprise technology solution through the vendor CampusPress. The project's digital assets and written content representation, usability, and arrangement, flexibility for responsive web design and visual design, and the ability to have interactive media embedded in the site were foundational technical requirements. The batch upload and extraction of embedded descriptive metadata from digital images were important for digital project workflows and possible in WordPress. The platform also needed to allow for embed streaming audio-visual assets hosted on a third-party streaming media service, and store at least 1 GB of data. The UO's campus agreement with CampusPress meant the digital technologies were vetted by the university for ADA-compliance (WCAG 2.0 Level AA) and other campus privacy and security records requirements. WordPress is commonly used by the DH community [Digital Humanities Intiative 2020] [Coble 2021] [DiRT: Digital Research Tools 2018], and the research team had experience using it. Divi has a number of accessibility tools built-in and this set-up is compatible with the toolkit we use to build and evaluate projects, including the Accessible Color Palette Builder, the WAVE web accessibility evaluation tool, and Toltap Colorblind Web Page Filter.

Interviews for *Caribbean Women Healers* are hosted on the streaming media service Panopto. Like WordPress, this tool was vetted by the University for ADA-compliance and other privacy and security requirements. For the project, we required robust sharing and permission access controls, as well as the ability to make transcripts and captions available. Using Panopto, the builders created embed codes so the interviews could be embedded in iframes on the website. The builders also added ADA-compliant PDF transcriptions and translations, as well as closed captions in .srt files. In Figure 2, you can see a screenshot of a healer interview playing in Panopto with translated closed captions, a transcription, and interactive timestamps.

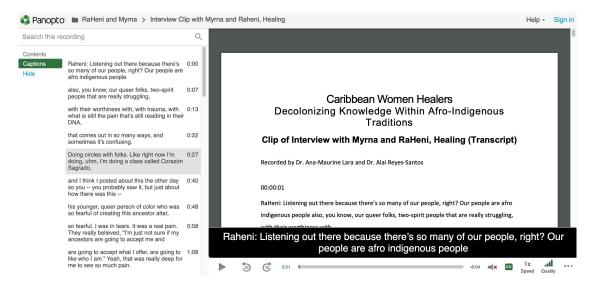


Figure 2. Screenshot of a healer interview playing through Panopto with closed captions, a transcription, and interactive timestamps.

The map requirements for this project included the ability to embed it within the project site and have the ability to operate like a tour and simulation of moving from one country, as seen in Figure 3, Cuba, to another – a rupture to the borders produced through our modern nation-states. The tool also allowed builders to make web accessibility modifications for universal user experience using the HTML tags. At the time of the build, StoryMapsJS hosted by the Northwestern University Knight Lab met this requirement.



Figure 3. Screenshot of the StoryMapJS digital map representing Cuba

The digital assets created for this research project included audio files, digital images, and textual documents. All digital files and metadata associated with them required specific tools for creation, manipulation, file interoperability, and ability to meet digital preservation standards supported by the United States National Archives and Records Administration. [National Archives 2019] Beginning with the audio files, Audacity was used for editing the healers' full-length interviews and conversion into .mp3 files. Adobe Photoshop and Bridge were used for resizing and reformatting of JPGs. They were also used to embed photographic descriptive metadata aligned with IPTC and DublinCore standards. Additionally for digital images, EXIF Tool was used to analyze and extract embedded technical metadata before making them web ready and available on the project site. Microsoft Word and Adobe Acrobat Pro were used to create ADA-compliance PDFs of interview transcriptions and translations.

Open Digital Stewardship as Methodology Supporting Decolonization

Digital stewardship, also called data stewardship, is framed within a research data management and archival context it is the creation and management of digital objects over a lifecycle involving the creation, appraisal and selection, ingest, preservation actions, digital storage, access and reuse, and transformation (Digital Curation Centre 2021). Rooted in library and archival information science practice, digital stewardship calls for digital practitioners to curate and preserve digital files, and the metadata or information that gives said files context and meaning, with the goal of long-term access and on-going preservation planning that avoids technological obsolescence. Traditionally applied only to digital asset management or research data management spaces, digital stewardship can extend to the software access and preservation with the goal of supporting organizational decision practices associated with the development, maintenance, and preservation of technological infrastructures [Software Preservation Network 2021]. Digital stewardship at its core works to avoid and prevent information loss while making sure digital assets and software are FAIR (findable, accessible, interoperable, and reusable) [GO FAIR].

Caribbean Women Healers is an example of applying decolonizing methodologies to approaches in digital stewardship. The documentary of cultural heritage and spiritual practices situated the research team to be self-aware and confront western centric socio-technologic and economic frameworks that influenced how they applied digital methodologies to the project's digital design, construction, and the treatment of traditional ecological knowledge and indigenous healers' voices. Calling back to the ontologies of openness; access, transparency, collaboration, sharing, accessibility, and the choice of permanence all have place within the decolonization of traditional digital stewardship practices rooted in traditional archival custodial practices.

The central frame for the research team's work is to center the dignity and respect the cultural practices of the people with whom they are working. Toward that goal, the team worked to maintain transparency with each other and asked

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what can be difficult questions regarding access, collaboration, sharing, accessibility, and the choice of permanence.

Speaking first to transparency, it was important to acknowledge the white hegemony of academia, libraries, and the digital space, and the potential for intellectual violence when white researchers enter the Black research space. Within the team, we sought to forestall this by centering the healers, the researchers, their voices, methodologies, and the values shared. We also maintained a regular meeting schedule to continue to discuss all aspects of site design and implementation as wireframes and interactive prototypes were created. Throughout this collaborative process, issues regarding the site's overall layout, navigation, and missed pages and content were remediated together.

Access connects to intellectual property ownership and custody, readability and interpretations within cultural contexts, and public access to the project. Designing *Caribbean Women Healers* to be freely available for anyone to access over the Internet meant critically thinking about the impact access to TEK would have on the healers and website visitors. As a research team, it was always the goal to make the website available for educational use and give space for sharing healer knowledge. Creative Commons was discussed, but determined not to be appropriate because the researchers and community only wanted information to be permitted in an educational environment all the while retaining their copyright to the digital assets and project as a whole. Together the team selected RightsStatements.org "In Copyright - Educational Use Permitted". It is not intended for licensing, but captures the researchers' intention and the agreement with the healers, as well as being reader-friendly as opposed to intense legal-ese or complicated rights holder statements.

These examples associated with access are also ones of collaboration, another tenant of openness. The project team worked by respecting each other's expertise and centering collaboration with the community, asking many questions and prioritizing culturally aware and accessible design that could only be planned, built, and maintained with the support and expertise of the full interdisciplinary team. In supporting the web design for cultural awareness, Reyes-Santos and Lara discussed with the building team what colors, symbols, and visual characteristics were appropriate and which could not be used, such as the color red. Using these guidelines, Malinao-Alvarez and Thornhill worked together to create an accessibility-compliant color palette and style guide, as seen in Figure 4, to shape the feel of the site.

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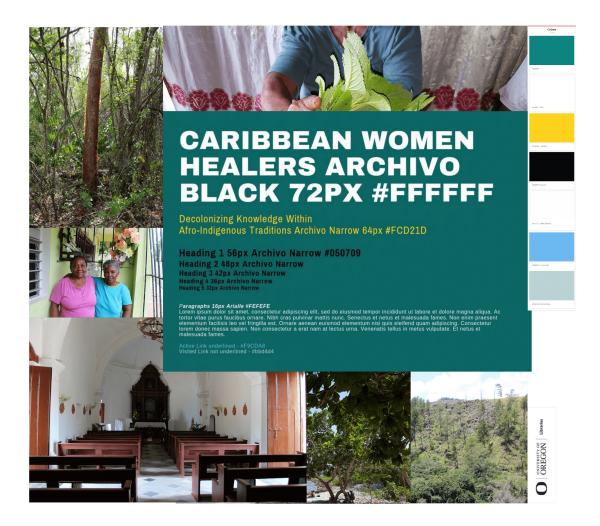


Figure 4. Caribbean Women Healers Project style guide

Ensuring Spanish access to the website was critical because the majority of healers are monolingual Spanish speakers, and similarly, a major audience for the website was the English-speaking student body of the University of Oregon for whom we would need to transcribe and translate the healers' Spanish language knowledge and interviews.

For both groups, it is important for them to hear the words used by the communities themselves to name the plants they use for healing; to have their plant knowledge validated throughout the site and for others to learn such names. This was a major reason why the research team declined to use the Latin scientific or English terms for the plants. The sixteen interview clips on the website were selected and edited from full-length interviews, first by undergraduate research assistant Miguel Perez and then by Thornhill after Perez needed to leave the project. When artificial intelligence captioning services from Panopto and Zoom proved unable to provide Spanish transcriptions for the edited clips, first Perez, then Thornhill created transcriptions, which we contracted with Rev.com for English translations. After having graduate assistant Lepska, Reyes-Santos, and Lara review these translations for quality assurance, future transcriptions and translations were performed by Transcription Outsourcing LLC. Reyes-Santos and Lara continued to review translations for accuracy before anything was made available on the site.

The careful curation of shared knowledge was a major task for the research team, selecting what was appropriate to be shared openly and online and what was for the healer community alone. The choice of open or closed access remains with the community; these collections did not become part of the Libraries' collections, nor are the healer interviews available to be downloaded through Panopto. One area that this was particularly acute was in the creation of the digital map and the latitude and longitude associated with the photographs of plants taken in association with a planned ethnobotanical dictionary. That metadata was removed using EXIF Tool and Adobe Bridge and for the map, abstracted to a more general location, with the story shared on the map talking about history and methodology, rather than the

specificity of the location or the research site where the photograph was taken. This honored some of the healers' requests to protect them from ongoing ostracization in their communities.

What is shared, though, is meant to be shared with the largest possible audience. A running thread throughout the process was the emphasis on accessibility, navigation, content display and ability to view the content through multiple kinds of devices and networks. Given that the majority of healers in the project live in rural communities outside the U.S., and that they access the internet through phones on 3G networks, we wanted to ensure that the website is equitable, flexible, and intuitive for user and interactivity; have information be perceived in multiple ways regardless of sensory ability; and have the site be responsive to different screen sizes dependent on the types of technical devices used to access it. By applying accessibility concepts throughout the digital technology selection and digital content process, the builders understood requirements for a sitemap, inspirations for look and feel, and different ways to represent and engage with interviews. For example, transcriptions and translations were made separately available to download on healer pages. These PDFs, which are speech-to-text reader-friendly, are read aloud by the computer.

Open Source and Sustainability

Given the principles of openness informing Caribbean Women Healers and many (if not most) digital humanities projects, it might be expected that open-source software solutions were selected for philosophical reasons rather than for desirable design or special features. This is not to say that open source cannot be beautiful, usable, or functional (or all three) — that would be absurd. However, in many years of development experience, the staff of DSS discovered the custom open-source digital projects they co-created with faculty at the University of Oregon typically had a limited lifespan as teaching or research tools. Whether an individual left the university, or a major database system or programming language was deprecated, after a few years, the project was frequently in dire straits, with security and accessibility issues requiring significant intervention.

We can and should approach digital projects with a clear understanding of their limited lifespan, engaging in appropriate digital stewardship activities to ensure the underlying digital collections are maintained. Beyond those collections, however, the builders sought a greater level of sustainability for *Caribbean Women Healers* by using platforms with broad institutional support. Not only is WordPress the most-used web content management system in the world, but the University of Oregon has a multi-site license agreement with the educational technology company, CampusPress to provide access to WordPress to all faculty, staff, and students. There is a depth of WordPress expertise in the Libraries and in central campus Information Services, as well as access to vendor support should more extensive troubleshooting be required. Through CampusPress, we have access to the premium WordPress theme Divi, which we used for *Caribbean Women Healers* and enabled the builders to closely implement the culturally responsive design vision developed by the research team.

In selecting a digital mapping tool, we opted for the familiar open-source option, Northwestern University's Knight Labsponsored StoryMapJS, rather than ESRI's recently updated Story Map product. Either would have worked for our needs, abstracting from a specific location to protect healers' privacy and showcasing Reyes-Santos' and Lara's images and writings from their research sites. Each story on the map focuses on the spiritual histories of enslaved and colonized Indigenous communities of that location. Given the builders' collective experience with StoryMapJS, we were disinclined to add a new platform to our oeuvre for the sake of it or because it was new. In the time since *Caribbean Women Healers*' launch, Thornhill and Gaede have gained a great deal of experience with ESRI Story Maps and the same institutional support factors that has encouraged our use of WordPress may yet see us switching platforms for digital mapping.

Ultimately, the lifespan of *Caribbean Women Healers* is a combination of technical and methodological choice. We selected platforms based on institutional environments and what we thought would give the project the most longevity. UO Libraries' Special Collections and University Archives will not taking custody of the digital collections created as part of this project; everything remains with the researchers as surrogates and members of the communities from which they were collected, settling questions of post-custodial disposition. If any healer wishes their interviews or materials to be removed, both the formal research protocol and their personal agreements with the researchers dictate prompt removal.

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Conclusion

Successes

Caribbean Women Healers enables the dissemination and continuity of Afro-Indigenous healers' knowledge and values in a format that is open access and built to last. Together, a diverse and collaborative team of healers, faculty, librarians, students, and technology specialists produced a DH project that centers the decolonial values of the research throughout the digital scholarship process. This project disrupts the use of unsustainable technical infrastructures and information dissemination, has a research output beyond the boundaries of academia, breaks down disciplinary silos, and redefines relationships between teaching and research [Moritz et al. 2017]. As a project informed by Black feminist praxis, it pays particular attention to the locations of knowledge production, while aiming to maintain multiplicity and plurality. As stated by Nicole M. Brown et al., "black feminism offers interventions that serve to dismantle embedded privilege and reification and (digitally) center the experiences of Black women within digital humanities research."

Challenges

Team communication can be challenging across disciplines. The disciplinary vocabulary and jargon, particularly that associated with the digital work, could create barriers between researchers and builders. Similarly, researchers had to find language to explain project stages to healers. Ongoing communication and mutual openness to questions was key and created opportunities to learn and share new words, meanings, and theories that are part of expertise in ethnography, black feminist praxis, decolonial methodologies, ethnobotany, web development, and information science. An example of this communication challenge are definitions and applications of metadata that are required for images, interviews, and other materials cataloging.

Caribbean Women Healers was first presented in English, requiring additional resources for future development and presentation in Spanish – the primary language of those centered by the project. We kept all interviews in their original languages so healers could hear themselves and share with others their interviews as they were done. And yet we could not escape the demands of the imperial academy to produce knowledge in English as the only legitimate knowledge [Curtis-Boles 2012] [Mohanty 2006]. The resources are in the U.S. and finding digital teams with the kinds of resources and capacity that the UO Libraries provided within the Caribbean is difficult at best. These dynamics replicate some of the inherent issues of the digital humanities, whereby the United States continues to predominate as a site for the production of digital scholarship [Risam 2016]. It is a dynamic that feels inescapable given that both researchers live and work within the U.S. academy. In the meantime, we are aware that academic systems of evaluation for tenure and promotion may implicitly erase the labor that healers engaged in giving input, feedback, and changing and transforming knowledge within the overall process.

Just Futures

The Pacific Northwest Just Futures Institute for Racial and Climate Justice was founded in early 2021 with a generous grant from the Andrew W. Mellon Foundation and is sponsoring the next stage of *Caribbean Women Healers, Sustaining Climate Justice and Health through Afro-Indigenous Healing*. With Mellon funding, Reyes-Santos and Lara will continue their work to incorporate storytelling and healing practices in conversations about TEK with support from the UO Libraries team, including Thornhill, Gaede, and Malinao-Alvarez. Thornhill, Gaede, and Malinao-Alvarez team will initially work on building the Spanish mirror site, with content created by Lara.

Reyes-Santos and Lara will work with Indigenous, Afro-Indigenous, and Black communities in the Pacific Northwest to document and disseminate how these healers deploy TEK to support communities disproportionately impacted by climate change, its attendant environmental disasters, and the pandemic; foster and document TEK exchanges between growing migrant Afro-Indigenous communities and local Native and African American communities; train students to engage in related climate and racial-justice research; and recruit students of color and working-class students as research interns. Work will include edited audio/video interviews, ethnobotanical surveys, and pedagogical

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resources, in collaboration with students of color, migrant students, and first-generation students.

Future Work

Reyes and Lara, both Black-Indigenous women, placed the desires, visions and values of their communities at the center of their collaboration with the UO Libraries. With or without technology, Afro-Indigenous healers in the Caribbean continue to live their lives, working for a present and future in which Black life can be sustained across the generations. And, as the healers told us, this project enables the transmission of knowledge in ways that circumvent the impacts of social violence, rapid emigration and ongoing social stigma.

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We do expect that while facing these challenges and lessons, Caribbean Women Healers will intervene in the future of Black Studies, a future that engages the heterogeneity and inter-ethnic realities of the Black Diaspora; continues to forge transcolonial, transnational, multilingual connections between Black peoples and histories; engages Afro-Indigeneity, women and queer people seriously; bravely interweaves histories of genocide and slavery, and of Indigenous and Black resistance; centers decolonial knowledge production and orality; fosters collaborative, interdisciplinary, self-transformative scholarship that destabilize the assumptions of both Black Studies and DH; and employs Black DH tools to create sound open-access scholarship, teaching tools, and creative possibilities for academia to engage general audiences.

Notes

- [1] To develop the first and second phase of this project, we received funding and support from the University of Oregon's Center for the Study of Women and Society, the University of Oregon's Vice President's Research Initiative Faculty Research Award, the University of Oregon's Center for Latin@ and Latin American Studies, and a fellowship from the University of Oregon Libraries Digital Scholarship Center. We have worked under the approval of the University of Oregon Human Subjects review committee since 2016.
- [2] Curandera is a traditional healer. This is term used throughout the Spanish-speaking Caribbean and Latin America to name women who heal through traditional intuitive, spiritual, and ethnobotanical practices. It is usually a role passed down across generations. A curandera may be a priestess of regla de ocha, a servidora of la 21 division, a sobadora, or none of the above. Regla de ocha, servidora of la 21 division, and sobadora are ways to describe specific healing traditions, tools, and sacred practices and curanderas may draw from many more.

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