

**Scaling and Sustaining Local Contexts: Strengthening Infrastructure and Community Engagement for Implementing the Traditional Knowledge (TK) & Biocultural (BC) Labels and Notices**

### **Narrative**

Building on the national and international momentum in libraries, archives and digital repositories to implement the Local Contexts initiative of Traditional Knowledge (TK) & Biocultural (BC) Labels and Notices, New York University (Professor Jane Anderson (PI), Equity for Indigenous Research and Innovation Coordinating Hub (ENRICH), with Principal Consultants Laurel Haak, Mighty Red Barn, and Professor Maui Hudson, ENRICH and University of Waikato, are applying for the National Leadership Grant for Libraries (National Digital Infrastructures and Initiatives category) for *Scaling and Sustaining Local Contexts: Strengthening Infrastructure and Community Engagement for Implementing the TK & Biocultural Labels and Notices*. This Project Grant is focused on rapidly increasing the capacity of [Local Contexts](#) to enhance and build a sustainable foundation for the delivery of the critical digital intervention the TK and BC Labels and Notices supporting the inclusion of Indigenous rights and interests within national library and archive digital information infrastructures.

The Traditional Knowledge (TK) and Biocultural (BC) Labels and Notices, are a digital labelling mechanism that correct records, bring Indigenous rights and interests into institutional contexts and educate non-Indigenous peoples about Indigenous rules and responsibilities around sharing knowledge and data. These digital tools are delivered through the Local Contexts Hub - digital information-sharing and curation platform that enables local communities, scholars, and collections managers around the world to interact and create legitimately inclusive and culturally appropriate data descriptions and management plans for new and existing cultural heritage, biological and genetic resources collections.

This one-year proposed project builds momentum for Indigenous sovereignty on a global scale through inclusion of Indigenous rights and interests within library, archive and museum digital information infrastructures. It extends current work to establish the Local Contexts Hub technical infrastructure, and engages local communities, researchers, and collections managers in collaboratively exploring and testing governance and business frameworks for Hub services delivery. This will lead to the substantive description of Hub organizational structure and sustainable business models, stimulate third-party adoption, and develop success metrics for community engagement, adoption, use, and impact of TK and BC Labels and Notices.

This project focuses on five key functional and technical aims that will enable Local Contexts to scale and sustain its offering. These include:

1. Develop organizational structure options for effective delivery of Local Contexts Hub services.
2. Determine sustainable business models for effective community engagement and delivery of TK and BC Labels and Notices.
3. Engage with Local Contexts Hub users to identify Notice and Label workflows that minimize barriers and incentivize adoption across stakeholders.
4. Standardize and document Labels and Notices Hub fields for successful implementation and usage tracking across a spectrum of third-party platforms.
5. Identify success metrics and data collection methods for community engagement, adoption, use, and impact of TK and BC Labels and Notices.

Importantly, and in response to the pandemic across Indian Country and the accelerated need for the TK and BC Labels and Notices, we have made one change from our initial proposal submitted in October 2020. In our original proposal we planned for a two-year project. Through an assessment of the work required and calibrating this with the exponential need we are experiencing, we have reduced the time-frame we need to complete this work to one-year. Responding to the urgent needs of Indigenous communities is the priority of the Local Contexts initiative. With no change in project plan, we have reduced the timeframe by increasing the consultant hours required to complete this project. This is a pivot we have made to get a quicker response in how we scale and sustain Local Contexts in a responsible way for Indigenous and institutional users.

### **Statement of Need**

Every Native American, Alaskan Native and Hawaiian Native community has cultural and biological collections within national archives, libraries, and museums that they do not own, do not control, and cannot govern care and circulation over. Significant information about these vital collections, including individual and community names and proper provenance information is often known or can be ascertained, but is strikingly absent. Issues of responsibility, inventorship, ownership, as well as the incomplete and/or significant mistakes in the metadata extend to every other knowledge asset or digital record building upon this information. Recognizing Indigenous rights in cultural heritage, intellectual property, and genetic resources is difficult to achieve through our current legal mechanisms because of limits imposed by intellectual property law (i.e. pre-existing knowledge, tangible expression, length of time). This tension is exacerbated by increasing digitization, since there is no legislation or policy in place that protects Indigenous peoples' digital knowledge sharing. Ultimately, this disregard for Indigenous rights affects cultural memory; the accuracy of historical narratives; present day Indigenous culture, health, and well-being; and is also a critical matter pertaining to Indigenous knowledge and data sovereignty.

How to build equity, diversity, and sovereignty into digital infrastructures is the critical issue of our time. Indigenous cultural heritage and biological collections are unique in composition, content, in their social and cultural value to the communities from where they derive and to non-Indigenous publics seeking to better understand the complexity of Indigenous cultures and cultural practices. While these collections are enormous, they unfortunately have limited information about them and consequently impoverished metadata. In addition, complex historical-political conditions create ethical concerns around access and future circulation. Organizations like the Society of American Archivists, have established specific protocols for the treatment of Indigenous collections generally and increasingly libraries and archives around the globe have heeded Indigenous peoples' calls to integrate Indigenous curatorial models and knowledge into mainstream library and archive practices, from cataloging to display modes.

### Local Contexts

Local Contexts was founded in 2010 to bring forth the voices, authority, and local power of Indigenous communities in sharing and managing their intellectual and cultural property in cultural heritage, biological, and genetic resources. Local Contexts delivers the TK and BC Labels and Notices as an extra-legal provenance, protocol and permission mechanism establishing equity by embedding Indigenous rights and interests within digital infrastructures. It offers digital strategies for Indigenous communities, cultural institutions, and researchers and has two primary objectives:

- To enhance and legitimize locally based decision-making and Indigenous governance frameworks for determining ownership, access, and culturally appropriate conditions for

sharing historical, contemporary, and future collections of cultural, biological, and genetic heritage and associated data.

- To increase Indigenous involvement in data governance through the integration of Indigenous values into data systems and metadata structures.

### TK and BC Labels and Notices

Local Contexts delivers on these value propositions through the unique innovation of the Traditional Knowledge (TK) and Biocultural (BC) Labels and Notices and Hub provision and delivery service. Developed over ten years in collaboration with Indigenous community partners around the world, Labels and Notices address historical legacies of exclusion within records and data, building new relationships of trust and collaboration around data use and potential commercialization opportunities for the future. TK and BC Labels and Notices are digital tags that correct records, bring Indigenous rights and interests into institutional contexts and educate non-Indigenous peoples about Indigenous rules and responsibilities around sharing knowledge. TK and BC Labels and Notices have been embedded within key national digital infrastructures including at the US Library of Congress and are the foundation of a new [Indigenous Data Provenance](#) Standard being developed with the international standard setting organization the IEEE. The impact of digital labelling using the TK and BC Labels and Notices is foundational as well as far reaching, helping to address:

- Erasure of Indigenous culture and contributions in educational settings like museums, archives, libraries, and universities;
- Supporting repatriation and appropriate disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, in accordance with the terms of the Native American Graves Protection and Repatriation Act, NAGPRA, (1990);
- Unethical harvesting of Indigenous knowledge in National Parks and Indigenous lands and waters;
- Promotion of Indigenous Data Sovereignty and Indigenous Data Governance;
- Building of a global digital infrastructure for research, innovation, and historical inquiry that is far more equitable and inclusive;
- National obligations under the United Nations Declaration on the Rights of Indigenous Peoples, which includes sharing of the benefits that derive from Indigenous knowledge and data.

The complimentary digital tagging system of TK and BC Notices has been developed and adopted by researchers and institutions to identify and make more visible Indigenous collections and contributions often hidden within museums as well as other cultural, research, and scientific institutions. For example, the American Philosophical Society in Philadelphia has integrated these Notices at multiple levels of their digital infrastructure (see below for the Center for Native American and Indigenous Research [CNAIR](#) public web page. The Notices are also used in the APS [Indigenous Subject Guide](#)) as a way of engaging in new decolonial practices that include publicly acknowledging and committing to new processes for incorporating and recognizing Indigenous rights and interests in cultural collections.

### Local Contexts Hub

The TK and BC Labels are delivered through the Local Contexts Hub. The Hub, based at NYU Libraries, is an open-source project that enables information exchange through an open API. The Hub is a safe place for communities to customize their unique Labels and then deliver them directly to archives, libraries, museums and data repositories. The Hub allows for distinct community control

over the customizing of the text for each Label. In this way each community retains control and authority over their Labels, can update them, and deliver them to institutions as needed. The Hub is also a space for institutions and researchers to apply TK and BC Notices and to support the inclusion of Indigenous rights and interests into their own institutional contexts. The Hub utilizes the power of open persistent identifiers for Labels & Notices to enable machine learning and enhanced search capabilities.

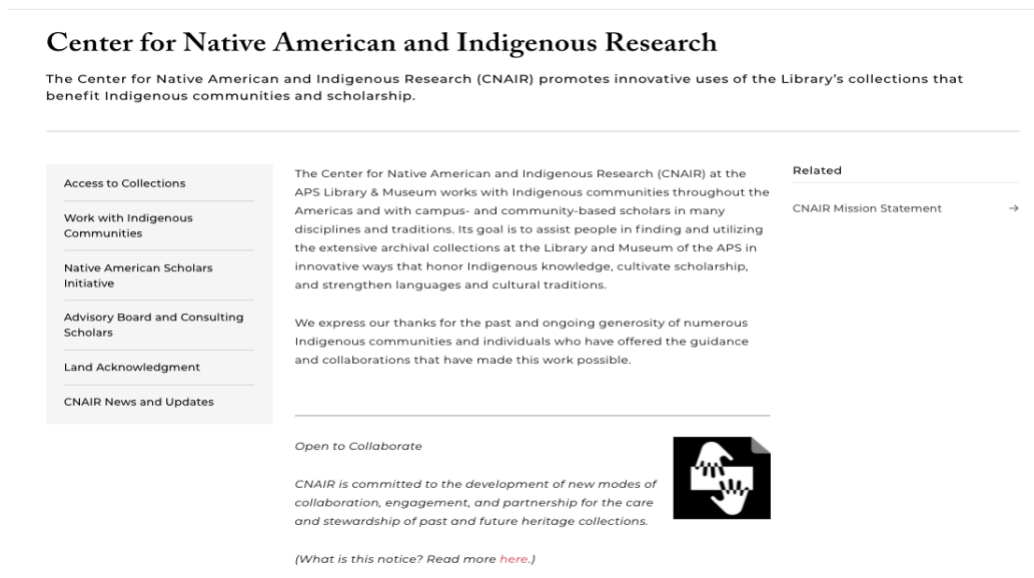


Fig 1. Use of the Open to Collaborate Notice at the American Philosophical Society.

### Current Use and Impact

Local Contexts serves 4 distinct constituencies:

- Native American, Alaska Native and Native Hawaiian communities and organizations in the US and Indigenous communities internationally;
- International, National, State and local archives, museums and libraries, universities and schools;
- Science and data repositories;
- Governmental agencies using/sharing/incorporating Indigenous Knowledge.

In the US there is a growing network of over 150 Native Nations and Museums, Libraries and Archives across 25 States that have either implemented TK & BC Labels and Notices or are in the initial implementation phase. These institutions including the Library of Congress, the Smithsonian Institution, American Philosophical Society, Abbe Museum, University of Maine, Sam Noble Museum, New York State Museum, Archive and Library, the Field Museum and the New York Botanical Gardens. International institutions include Wellcome Collections, Sanger Institute, Royal Botanical Gardens Kew, Te Papa and National Archives New Zealand, and the Royal Museum of British Columbia.

The TK and BC Labels work to connect people, places, lands and waters, to data and metadata – bringing transparency and making real Indigenous governance protocols – ensuring Indigenous interests are recognized and creating pathways for benefit sharing from the secondary use of

Indigenous knowledge and information. **Given over 200 active national and international users, broad stakeholder support, and growing international government interest, there is a pressing need for Local Contexts to develop an organizational sustainability plan for its key technical delivery mechanism, the Local Contexts Hub.**

### **Responding to Indigenous Needs Arising from Covid-19.**

Providing core digital and human infrastructure to support Native American communities access, manage, control and share their digital heritage, languages, and traditional knowledge is core to the work of Local Contexts. Historic barriers to Native Americans' access to collections and collecting institutions due to physical distances, economic inequities, and outdated models of access and ownership have been heightened alongside the fallout from COVID-19. With increased and likely long-term restrictions on travel, the devastating loss of Elders and the ongoing vulnerability of Elders—as knowledge holders—even if travel bans are relaxed, it is imperative that access to collections that hold cultural practices, endangered languages, and community knowledge is increased. The TK Labels and Notices not only do this work, but they are a tool that can be used by all stakeholders remotely. As cultural institutions that hold and steward Native American collections are being asked to make their collections more available online, this is without the capacity to update their digital infrastructures to support proper engagement and to reflect appropriate consent and the inclusion of Indigenous protocols. The COVID-19 crisis has made it clear that promoting resilience within Native communities will rely on structured building blocks across a spectrum of stakeholders with the primary goal of empowering communities and creating long-term relationships between communities and institutions to address long-standing omissions, exclusions and to enhance institutional digital infrastructure and support strategic partnerships that promote Native goals for shared stewardship and collaborative curation.

Our current Local Contexts work is focused on: 1) building the technology to deliver the TK and BC Labels and Notices remotely and at scale through the Local Contexts Hub, and; 2) providing extensive training and education on intellectual property law and Indigenous data sovereignty to support Indigenous decision-making, governance about sharing knowledge. The building of the Local Contexts Hub is currently supported by an NEH grant (PE-263553-19), the beta testing of the Hub across diverse Indigenous and institutional constituencies is being supported by the Mellon Foundation (2103-10250) and the education and training to over 90 communities is being delivered by ENRICH, Local Contexts, the Native Nations Institute at the University of Arizona and the Penobscot Nation through an IMLS LB21 grant received in 2020 (RE-246475-OLS-20). This IMLS NLG grant complements the above activity by helping us respond to capacity alongside responsible attention to future sustainability of the entity that delivers the Labels and Notices.

### **Project Design**

This grant proposal springs from the Equity for Indigenous Research and Innovation Coordinating Hub (ENRICH) which oversees Local Contexts and will engage the expertise of Indigenous data sovereignty networks nationally and internationally to enhance tribal ability to engage and negotiate with institutions around Indigenous data and knowledge. We are dedicated to working with all stakeholders: tribal archivists, researchers, librarians and museum staff, to bridge past practices and establish trusted and resilient digital infrastructures that support and promote reciprocal and collaborative relationships. The activities proposed in this grant build and extend ongoing work to build inclusive frameworks for managing Indigenous cultural and intellectual property and that support Indigenous data sovereignty.

### Specific Aims

This Project Grant is focused on increasing the capacity of Local Contexts to scale and sustain the delivery of the critical digital intervention of TK and BC Labels and Notices. A trusted digital infrastructure is necessary for community adoption and inclusion of Indigenous rights and interests within library and archive digital information infrastructures. With over 100 institutions in first stage implementation, Local Contexts is at a critical moment of development.

This project focuses on five key functional and technical aims that will enable Local Contexts to scale and sustain its offering.

1. Develop organizational structure options for effective delivery of Local Contexts Hub services.
2. Determine sustainable business models for effective community engagement and delivery of TK and BC Labels and Notices.
3. Engage with Local Contexts Hub users to identify Notice and Label workflows that minimize barriers and incentivize adoption across stakeholders.
4. Standardize and document Labels and Notices Hub fields for successful implementation and usage tracking across a spectrum of third-party platforms.
5. Identify success metrics and data collection methods for community engagement, adoption, use, and impact of TK and BC Labels and Notices.

### Workplan

This project will be carried out as an iterative community collaboration. We will involve experts in Indigenous community leadership, Indigenous data sovereignty, and start-up organizational development through a project Advisory Board (see *Supporting Document 1* for Letters of Advisory Board Membership interest). We are situated within the work of [ENRICH](#), and Indigenous data sovereignty networks including [GIDA](#) and the [United States Indigenous Data Sovereignty Network \(USIDSN\)](#). This project will engage with existing platforms used by Indigenous communities, including the Mukurtu CMS (see *Supporting Document 2* for Letters of Support).

**Specific Aim 1. Explore organizational structure options for effective delivery of Local Contexts services.** We will interview up to 10 subject matter experts and conduct desk research to identify comparator organizations, and describe governance structures, operational and staffing options -- including partnerships -- appropriate and beneficial for the long-term sustainability of the Local Contexts Hub and delivery of TK and BC labels. This work will build upon principles of open scholarly infrastructure.<sup>1</sup> Deliverables include a lean business plan, a proposed governance structure based on draft organizational values and operational principles, a 3-year budget forecast, and potential partner list.

**Specific Aim 2. Determine sustainable business models for effective community engagement and delivery of Notices and Labels.** We will describe Hub service stakeholders using [Metadata 2020 personas](#): creators, curators, consumers, and custodians. From this, we will create a concentric circle map, with a central circle of existing users and middle and outer circles showing potential similar and

---

<sup>1</sup> Bilder G, Lin J, Neylon C (2020), The Principles of Open Scholarly Infrastructure, retrieved 24 February 2021, <https://doi.org/10.24343/C34W2H>. See also the [POSI website](#).

new users. Each consumer circle will be sub-grouped by persona and value proposition, and will include estimated numbers of consumer organizations. Using learnings from Specific Aim 1, we will develop 1-2 Hub service models and iteratively test feasibility in stakeholder surveys and 1-1 virtual meetings with existing and potential consumers. We will refine the model and governance structure in 3 regional mixed-stakeholder virtual working groups that include local communities, researchers, and collections managers from Australasia, Americas, and Europe. Deliverables include a finalized governance proposal with core organizational values and operational principles, a business model that articulates payers, estimated fees, a sustainability growth plan that illustrates the transformation from full grant funding to recurring revenue, and metrics for tracking progress.

**Specific Aim 3. Engage with Local Contexts users to identify Notice and Label workflows that minimize barriers and incentivize adoption across stakeholders.** We will test usability of Hub services in a series of 3 regional virtual focus groups. We will collaborate with our already existing Cultural Institution Working Group of over 100 members to identify 30 focus group participants. We will use an online whiteboard to illustrate service options and implementation workflows, and collect feedback through facilitated discussion. Each group will iterate on findings from the previous group. Through this agile process we will identify incentives and barriers to Hub adoption and uptake, and will specifically test the use of open persistent identifiers to enable citations and tracking of Notices and Labels. We will also identify specific training needs. Deliverables include a white paper summarizing findings and recommendations for Hub technical plans, community engagement, and help desk documentation.

**Specific Aim 4. Standardize and document Labels and Notices fields for successful implementation and usage tracking across a spectrum of third-party platforms.** We will document target custodians of TK and BC Label and Notice metadata, such as DataCite, Library of Congress, and Europeana, and where possible and practical, identify existing custodian metadata fields that align with TK and BC Labels and Notices. We will investigate options for Hub integration of persistent identifiers (PIDs) such as DOIs, ARKs, ORCIDs, RAIDs, and RORs, as well as core and extended metadata schema, to ensure the Hub open infrastructure and Labels and Notices meet findable, accessible, interoperable, and re-useable criteria.<sup>2</sup> We also seek to employ design concepts that support critical Hub use cases (collaboration on object curation and search and discovery of community authorized material) and the flexibility to evolve with community usage needs. Deliverables include a white paper describing custodian metadata field alignments, persistent identifier recommendations, and usage tracking options.

**Specific Aim 5. Identify success metrics and data collection methods for community engagement, adoption, use, and impact of TK and BC Labels and Notice.** We will develop a set of impact metrics that will provide useful and timely information on adoption and usage of TK and BC Labels. This work will draw from learnings and analytics in data sharing,<sup>3</sup> research

---

<sup>2</sup> Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3**, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>.

<sup>3</sup> [German Federated Data Infrastructure webpage](#). Accessed 24 February 2021.

infrastructure,<sup>4</sup> and tech start-up communities.<sup>5</sup> Deliverables will include a set of proposed metrics and associated data sources, collection methods, and target audiences.

### Objectives and Deliverables

Overall, the goals of the Local Contexts initiative are that: (A) Indigenous communities have a clear, accessible, and culturally appropriate digital platform for inclusion in collection curation; (B) Communities, researchers, and institutions have a clear, accessible platform for the ethical and responsible early identification of Indigenous rights and interests creating long terms capacity for engaging with Indigenous communities on collections; (C) Collections managers and institutions have a robust platform for identifying and making findable Indigenous collections and data for Indigenous communities alongside managing ethical accessibility to their Indigenous collections. Project deliverables are designed to drive Local Contexts sustainability and mission goals:

- (1) **Organizational structure.** A community-vetted governance model, built upon core organizational values and operating principles of open scholarly infrastructure. The model will include a lean business plan, community-based governance structure, staffing recommendations, a 3-year budget forecast, and potential service partner list. This work will be utilized to incorporate Local Contexts and instantiate the organization, a key step in ensuring sustainability. This deliverable drives Local Contexts Goal A: *Indigenous communities have a clear, accessible, and culturally appropriate digital platform for inclusion in collection curation.*
- (2) **Business model.** A community-vetted business model that articulates the core value proposition for each persona and stakeholder, fee structure and payers, a sustainability growth plan that illustrates the transformation from full grant funding to recurring revenue, and metrics for tracking progress. This work will be utilized to recruit members, collect revenue to hire staff, and drive recurring revenue for sustainable operations. This deliverable drives Local Contexts Goal C: *Collections managers and institutions have a robust platform for managing ethical accessibility to their Indigenous collections.*
- (3) **Services Design.** A community-vetted user interface, technical priorities, and Help Desk needs. This work will be utilized to develop a technical roadmap and community engagement strategy. This deliverable drives Local Contexts Goal B: *Communities, researchers, and institutions have a clear, accessible platform for the ethical and responsible early identification of Indigenous rights and interests creating long terms capacity for engaging with Indigenous communities on collections.*
- (4) **Third-party Adoption and Implementation.** Standardization of Notices and Labels as well as key data fields for implementation to enable their adoption across a spectrum of platforms and metadata standards. This work feeds into services design and will also help to drive membership directly and through enabling implementation pathways. This deliverable drives Local Contexts Goals B and C.
- (5) **Success Metrics.** Key success metrics for each community, data collection workflows to track adoption, identify barriers, and assess progress. This work feeds into governance, business model, services, and stakeholder adoption, and drives all three Local Contexts goals.

### Project Advisory Board

---

<sup>4</sup> With particular attention to adoption and usage analytics of the global and cross-stakeholder open infrastructure organizations ORCID, DataCite, and Crossref.

<sup>5</sup> Alistair Croll and Benjamin Yoskovitz (2013) *Lean Analytics: Use Data to Build a Better Startup Faster*. O'Reilly, Sebastopol, CA. ISBN-13: 978-1449335670.



Our Advisory Board is Indigenous-led and has been developed to advise project staff on matters including: project development and testing; outreach to Native/First Nations communities; best practices/changing standards; community and participatory research projects; cultural heritage collections management; outreach to collecting institution sector; sustainability, growth and expansion of project nationally and internationally; intellectual property and non-legislative interventions; and, scholarly outreach and impact. We will contact our Advisory Board members on both an individual basis and as a group for reference. Members of our Advisory Board include tribal representatives, Indigenous and non-Indigenous staff in a range of cultural institutions, representatives from our international Indigenous Data Sovereignty networks, representatives from data repositories and Indigenous and non-Indigenous researchers who will be active users of the Hub.

### Diversity Plan

The focus of this project is to build equity into digital infrastructures at a field and core metadata level. Consequently, the work proposed incorporates diversity and inclusion in at least three dimensions: stakeholder perspectives investigator experience, and methodologies.

**Stakeholders:** This project purposefully engages diverse stakeholders to evolve understanding and support adoption of the Local Contexts Hub. Local Contexts was developed to address the exclusion of Indigenous interests in law, policy and digital infrastructures. As an Indigenous and allied-led and developed initiative, it is grounded in attention to Indigenous rights and protocols with a direct focus on decolonizing institutions and infrastructures. As a continuum of all of our work thus far, Indigenous peoples and communities are the center – this includes project design and development, engagement and project growth, outreach and capacity building. Indigenous peoples are key stakeholders for building the success of the Labels and the Local Contexts Hub. Through this project we will be directly engaging with Indigenous communities, researchers, and library, archive and museum staff in tribal and non-tribal contexts. In addition, we will include collection manager perspectives on proposed means of supporting and sustaining the Hub, as well as usability of Hub services. As the Hub is intended to serve a global audience, we will engage Indigenous and other stakeholders in Australasia, Americas, and Europe to gather regional insights.

**Investigators:** The principal investigators come from different countries, are trained in different disciplines, and have roots in different communities. Jane Anderson, originally from Australia, is a legal scholar in intellectual property, with over 20 years of experience working on Indigenous rights and the protection of Indigenous/traditional knowledge and cultural heritage in multiple jurisdictions. Maui Hudson affiliates to the Iwi of Te Whakatohea, Nga Ruahine, and Te Mahurehure and focuses on the application of mātauranga Māori to decision-making across a range of contemporary contexts. He and Jane co-founded [ENRICH](#) and the [Biocultural Label Initiative](#). Laurel Haak is from the United States and brings strong scientific training and lived experience in science policy, research infrastructure, and business start-ups. Together, we have rich topical knowledge, community access, and shared interest in building community-responsive research infrastructure necessary to support the work proposed.

**Methodologies:** This work is built upon Indigenous and decolonial methodologies. It is founded upon the combined interdisciplinary insights offered through Indigenous and decolonization literature, community-based and transformative research, critical Indigenous studies and alternative museology and archival practice. Together these areas inform not only the identification of the problems that Local Contexts is seeking to address but also the form, function and delivery of the project itself. For example, in responding to Indigenous requests for attention to these issues, an

understanding of the historical conditions leading to the legal and cultural problems that Indigenous communities are experiencing with their cultural heritage is an important first step. But designing a new legal and educational framework to address this in a practical way requires consideration of the ongoing structural forms of dispossession that continue to characterize the continued exclusion of Indigenous perspectives and voices from the management of ethnographic collections within institutional sites. It also requires sophisticated methodological processes for collaboration with a diverse array of tribes and tribal institutions with different needs and different expectations for their negotiations with cultural institutions. For this IMLS-NLG-L Project we will use multiple methodologies to support the work proposed. These include desk research to identify comparator organizations, interviews to gather initial insights, surveys and working groups to evolve governance and business model concepts, and focus groups to test and iterate service delivery components. Integrating the experiences and perspectives of the investigators and the breadth of the stakeholders, we will design facilitated work sessions that respect stakeholder cultures and elicit meaningful commentary.

## Performance Measurements

To ensure that we meet our project goals we must be able to track ongoing progress, identify and resolve challenges, and report on what we have learned and delivered. We are approaching this project as a facilitated community collaboration, with iterative cycles of engagement, learning, and consolidation. We will use collaborative tools to support project work, including Google documents, MIRO whiteboards, Slack threaded messaging, and Trello project management software. We anticipate that much of the project work will be carried out in virtual team environments, and are dedicated to building trust and ensuring respect within and between communities. These are the conditions which are necessary for effective participation, idea sharing, and collaboration.

- **Effectiveness:** We have mapped project activities and deliverables to outcomes and Local Context mission goals. This allows us to maintain alignment between short and long-term goals even as we iterate and learn in community interactions. We will measure our effectiveness through interrogation of alignment at bi-weekly project team meetings.
- **Efficiency:** Activities within one specific aim build support for work across aims. One example is the governance work in SA1 that is vetted with the business model work in SA2. In addition to these interactions, we plan to carry out work using online tools and teams, to the extent possible when working with local communities. In many cases, this approach allows for broader participation, with the additional benefit of lower financial cost. We will measure our efficiency through our ability to stay on schedule and within budget, and by assessing participation in the proposed community engagement activities.
- **Quality:** We will be vetting stakeholder expectations in all of our specific aims: what does the community want and expect for governance, revenue generation, technical roadmap, and ongoing community engagement. Each deliverable is shaped by and through community input. We will measure quality through community engagement: how many people and which stakeholders participate are early indicators. Longer-term indicators that we may be able to report on at the end of the project include early member recruitment and early implementation of Local Contexts services by stakeholders.
- **Timeliness:** We will use Trello, an online project management board application, to articulate the project plan, activity checklists and timelines, and manage project progress and reporting. We will measure our effectiveness through our ability to manage our proposed schedule of activities and deliverables.

## Schedule of Completion

Our goal in this project is to create the organizational and technical frameworks that support community adoption and ongoing delivery of Local Contexts Notices and Labels services. We propose a 12-month schedule of activities and corresponding deliverables, shown in **Table 1**.

**Table 1. Project activities, deliverables, and outcomes.** Highlighted in BLUE are the activities supported under this grant, darker BLUE are the project deliverables, GREEN are the outcomes enabled.

	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4
<b>SA1. Organizational Structure</b>	Desk research and interviews	Lean business plan, Governance proposal, Budget, Partners		Publish governance structure	
	Identify and initiate work with key advisors			Incorporate Local Contexts, launch organization and hire staff to carry project forward	
<b>SA2. Business Model</b>	Map consumers	Develop service model, Consumer survey and interviews	Stakeholder workgroups	Publish business model	
				Start recruiting members	
<b>SA3. Services Design</b>	User focus groups		Summarize findings		
				Develop Technical roadmap and Community engagement strategy	
<b>SA4. Third-Party Adoption</b>		Metadata map and PID recs	(ties in with SA 2-3)		
<b>SA5. Metrics</b>			Adoption and Impact metrics	(ties in with SA 1-3)	



## DIGITAL PRODUCT FORM

### INTRODUCTION

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to digital products that are created using federal funds. This includes (1) digitized and born-digital content, resources, or assets; (2) software; and (3) research data (see below for more specific examples). Excluded are preliminary analyses, drafts of papers, plans for future research, peer-review assessments, and communications with colleagues.

The digital products you create with IMLS funding require effective stewardship to protect and enhance their value, and they should be freely and readily available for use and reuse by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

### INSTRUCTIONS

If you propose to create digital products in the course of your IMLS-funded project, you must first provide answers to the questions in **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS**. Then consider which of the following types of digital products you will create in your project, and complete each section of the form that is applicable.

#### **SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS**

Complete this section if your project will create digital content, resources, or assets. These include both digitized and born-digital products created by individuals, project teams, or through community gatherings during your project. Examples include, but are not limited to, still images, audio files, moving images, microfilm, object inventories, object catalogs, artworks, books, posters, curricula, field books, maps, notebooks, scientific labels, metadata schema, charts, tables, drawings, workflows, and teacher toolkits. Your project may involve making these materials available through public or access-controlled websites, kiosks, or live or recorded programs.

#### **SECTION III: SOFTWARE**

Complete this section if your project will create software, including any source code, algorithms, applications, and digital tools plus the accompanying documentation created by you during your project.

#### **SECTION IV: RESEARCH DATA**

Complete this section if your project will create research data, including recorded factual information and supporting documentation, commonly accepted as relevant to validating

research findings and to supporting scholarly publications.

## **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS**

**A.1** We expect applicants seeking federal funds for developing or creating digital products to release these files under open-source licenses to maximize access and promote reuse. What will be the intellectual property status of the digital products (i.e., digital content, resources, or assets; software; research data) you intend to create? What ownership rights will your organization assert over the files you intend to create, and what conditions will you impose on their access and use? Who will hold the copyright(s)? Explain and justify your licensing selections. Identify and explain the license under which you will release the files (e.g., a non-restrictive license such as BSD, GNU, MIT, Creative Commons licenses; RightsStatements.org statements). Explain and justify any prohibitive terms or conditions of use or access, and detail how you will notify potential users about relevant terms and conditions.

→ We will be creating written reports, workshop summaries, and likely also blog posts and publications during this project. All project reports will be posted in a [Re3Data](#) and/or [CoreTrustSeal](#) repository, and published with a DOI and ORCIDs for authors under a [CC-BY license](#). We will make these products available on the Local Contexts webpage. We do not anticipate creating any datasets or software.

We will request but not require workshop participants to disclose their name and contact information. Working group sessions will be held under [Chatham House Rules](#) and will not be attributed or recorded, to foster inclusive and open exchange of ideas.

**A.2** What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

→ We will share reports openly under a CC-BY license. Reports will be freely available for download. Any research articles produced will be published in an open access journal.

**A.3** If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

→ We will work with our Advisory Board and verify with workshop participants that these provisions meet ethical considerations of participating communities.

## **SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS**

**A.1** Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

→ We plan to produce project reports and workshop summaries. These documents will be drafted using Google Suite products to enable broad collaboration, and upon finalization will be deposited in a repository that has integrated ORCID and DOIs and CC licenses. We will share links to download the products on the Local Contexts website.

The following is our anticipated product list:

- (1) Governance proposal
- (2) Business model, including lean business plan, consumer map, summary of stakeholder workshops, and adoption and impact KPIs and metrics
- (3) Services Design summary, including focus group findings
- (4) Third-party adoption recommendations, including metadata map and identifier recommendations

**A.2** List the equipment, software, and supplies that you will use to create the digital content, resources, or assets, or the name of the service provider that will perform the work.

→ We will use collaborative tools to support project work, including Google documents, MIRO whiteboards, Slack threaded messaging, and Trello project management software. We anticipate that much of the project work will be carried out in virtual team environments, and are dedicated to building trust and ensuring respect within and between communities, conditions which are necessary for effective participation, idea sharing, and collaboration.

**A.3** List all the digital file formats (e.g., XML, TIFF, MPEG, OBJ, DOC, PDF) you plan to use. If digitizing content, describe the quality standards (e.g., resolution, sampling rate, pixel dimensions) you will use for the files you will create.

→ Documents will be finalized as PDFs. Images will be captured in PNG format, with resolution appropriate for screen and print viewing.

### **Workflow and Asset Maintenance/Preservation**

**B.1** Describe your quality control plan. How will you monitor and evaluate your workflow and products?

→ In addition to project management tools (such as Trello), the three project principals will have regular meetings, and we will have monthly meetings with our Advisory Board. All products will be prepared and shared as collaborative documents (Google Documents, MIRO) and open for community comment prior to finalizing.

**B.2** Describe your plan for preserving and maintaining digital assets during and after the award period. Your plan should address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

→ We will store all project products in an archival repository that has integrated ORCID IDs and DOIs, supports the Dublin Core metadata schema, and enables Creative Commons licensing provisions.

### **Metadata**

**C.1** Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata or linked data. Specify which standards or data models you will use for the metadata structure (e.g., RDF, BIBFRAME, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

→ We will utilize Dublin Core metadata schema as well as Metadata 2020 personae and Local Context labels to curate project products.

**C.2** Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.

→ Metadata created or collected as part of this project will be embedded in project products and archived in a repository.

**C.3** Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

→ The repository we select will enable its content to be indexed for discovery purposes; persistent identifiers and use of Dublin Core metadata, Metadata 2020 personas, and where applicable Local Contexts labels underpins discoverability and ethical access.

## **Access and Use**

**D.1** Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content, delivery enabled by IIIF specifications).

→ Products will be openly available (CC-BY) online, through the repository, discovery services, and on the Local Context webpages.

**D.2.** Provide the name(s) and URL(s) (Universal Resource Locator), DOI (Digital Object Identifier), or other persistent identifier for any examples of previous digital content, resources, or assets your organization has created.

→ New York University provides the [NYU Faculty Digital Archive \(FDA\)](#), an institutional repository for NYU faculty digital scholarship. This resources is available to any NYU research unit, institute, center, department, or university partner with NYU credentials, NYU full-time permanent faculty, and NYU students and affiliated researchers with authorization from a sponsoring department or faculty member. In addition, NYU is a member of the [Open Science Framework \(OSF\)](#), a project management tool that can also be used to publish data and code. Both resources support storage, archiving, DOI and ORCID issuance, as well as indexing and discovery services.

→ Examples of content the PI and principal consultants have produced with URLs and DOIs is listed in the resumes included in the project proposal.

### SECTION III: SOFTWARE

→ n/a

### SECTION IV: RESEARCH DATA

As part of the federal government's commitment to increase access to federally funded research data, Section IV represents the Data Management Plan (DMP) for research proposals and should reflect data management, dissemination, and preservation best practices in the applicant's area of research appropriate to the data that the project will generate.

**A.1** Identify the type(s) of data you plan to collect or generate, and the purpose or intended use(s) to which you expect them to be put. Describe the method(s) you will use, the proposed scope and scale, and the approximate dates or intervals at which you will collect or generate data.

→ We will conduct 1-1 interviews and host and facilitate up to 6 virtual working sessions, during the months of September 2021– March 2022, to review proposals for governance and business plan, as well as collect input on Local Context Hub workflows. Each working session will include about 10 individuals, and will be hosted in time zones appropriate for participants in Asia Pacific, Americas, and European regions.

**A.2** Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

→ No IRB approval is required.

**A.3** Will you collect any sensitive information? This may include personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information. If so, detail the specific steps you will take to protect the information while you prepare it for public release (e.g., anonymizing individual identifiers, data aggregation). If the data will not be released publicly, explain why the data cannot be shared due to the protection of privacy, confidentiality, security, intellectual property, and other rights or requirements.

→ To protect privacy, we will conduct the meetings under Chatham House rules. Workshop summaries will include statements but not quotes. We will have each participant complete a release form indicating their preference for attribution and no PII will be shared outside the project without the explicit consent of workshop participants.

**A.4** What technical (hardware and/or software) requirements or dependencies would be necessary for understanding retrieving, displaying, processing, or otherwise reusing the data?

→ Access to the Internet and PDF viewer software, working knowledge of English, and visual screen reader software for visually impaired persons.

**A.5** What documentation (e.g., consent agreements, data documentation, codebooks, metadata, and analytical and procedural information) will you capture or create along with the data? Where will the



documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the data it describes to enable future reuse?

→ Participant release forms will be archived in the NYU Faculty Digital Archive with other internal project materials.

**A.6** What is your plan for managing, disseminating, and preserving data after the completion of the award-funded project?

→ We plan to archive project outputs in a publicly accessible repository. We will promote the reports using social media (twitter, LinkedIn), blog posts (Medium and Local Contexts webpage), and through presentations at conferences.

**A.7** Identify where you will deposit the data:

Name of repository and URL:

- [NYU Faculty Digital Archive \(FDA\)](#)
- [Open Science Framework \(OSF\)](#),

**A.8** When and how frequently will you review this data management plan? How will the implementation be monitored?

→ We will review this plan with our Advisory Board at project outset to finalize the choice of repository and participant consent plan. We will review again at project completion (month 12) to ensure the plan remains in alignment with project activities and goals.