

Welo Hou: Building Connections to the Roberts Mele CollectionBishop Museum Library & Archives

Abstract

The Bishop Museum Library & Archives requests a Native Hawaiian Library Services Grant from the Institute of Museum and Library Services (IMLS) to support *Welo Hou: Building Connections to the Helen Roberts Mele Collection*. Addressing needs identified by the Library & Archives and reflected in the results of a baseline survey of community stakeholders, this project will accomplish the task of digitizing and indexing a rare collection of mele (Hawaiian poetic compositions) for the purposes of increased and enriched public accessibility. The timeframe for the completion of the project is two years, beginning on October 1, 2017 and ending September 30, 2019.

The Roberts Collection of mele is a rare compilation of Hawaiian poetic compositions written from pre-Western contact to the early 1900s, which are housed in the Bishop Museum Library & Archives. The collection was gathered from Hawaiian sources on the islands of Hawai‘i, Kaua‘i, and O‘ahu in 1923–1924 by Helen Hefron Roberts (1888–1985), a trained musician and anthropologist. The one-year survey which produced this material was the project of the Hawaiian Legend and Folklore Commission, a committee created in 1921 by Legislative act “to arrange for the collection, printing, publishing, and preserving of the poetic compositions of the Hawaiian people.”

Mele are a valuable primary resource with direct and specific applications to the community of students, teachers, cultural practitioners, Museum staff, and other researchers who are currently served by the Library & Archives’ institutional and public services. *Welo Hou* addresses access limitations across the Bishop Museum Library & Archives mele collections, which are currently indexed and searchable only by the first two lines of each composition—a retrieval system that necessitates prior knowledge of Hawaiian language and the conventions of mele research, and is highly inefficient for all researchers.

Specific activities of this project include the creation of word-searchable digital typescripts of the nearly 700 Roberts Collection mele, their associated manuscript notes and available English-language translations, and the creation of new Hawaiian-language digital typescripts utilizing modern diacritical markings. Recognizing the foundations of mele as an oral tradition, the project will also link the mele typescripts to at least 200 individual Roberts Collection mele recordings which will be extracted from existing digitized recordings to further the interpretive potential of the collection. These features will be available to the public through an in-house database and delivery system to be freely used by patrons. A project blog *Welo Hou* will also provide access to full-text transcriptions and audio from the Roberts Collection, and will function as a place to build a community of mele researchers and enthusiasts.

The Roberts Collection has long drawn the attention of eminent Hawaiian scholars like Mary Kawena Pukui (1895–1986). Her research culminated in the 1995 publication of *Nā Mele Welo: Songs of Our Heritage* (Bishop Museum Special Publication 88), which features over 80 mele from the collection in a “continuing effort to make these mele available for study and enjoyment.” To carry on this goal, *Welo Hou*, or to unfurl once again, aims to provide more opportunities for researchers of all levels of Hawaiian language and cultural fluency to access the Roberts Collection with ease, and impart greater confidence and satisfaction in the mele resources available at the Library & Archives. Furthermore, the project will serve as a model for future mele digitization and increasing accessibility across the Library & Archives’ collections.

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1. Statement of Need

“Mele is specific to Hawaiian scholarship....Without mele there is no mo ‘olelo Hawai‘i.”
—2017 survey respondent

Mele, Hawaiian poetic compositions, are an invaluable primary resource for Hawaiian scholarship and cultural connection, linking voices of the past with the community of the present. Today, of Hawai‘i’s 1.4 million inhabitants (with just 5% of the population Native Hawaiian), only 24,000 are Hawaiian-language speakers. This means that less than 2% of Hawai‘i’s residents have the basic tools needed for a rudimentary understanding of mele. Through improved access and engagement, the Bishop Museum Library & Archives proposes to expand the community of Hawaiian and non-Hawaiian language speakers utilizing the knowledge and traditions of Hawaiian mele in their research.

Reflecting the mission of the Bernice Pauahi Bishop Museum “to inspire our community and visitors through the exploration and celebration of history, culture, and environment,” the Museum’s Library & Archives preserves and makes accessible the most varied collections of published works and primary source materials related to Hawai‘i and the Pacific in the world. The collection includes over 125,000 historical publications, many in the Hawaiian language, and over one million historical photographs, films, works of art, manuscripts and audio recordings. As stewards of rich cultural and historical legacies, the Library & Archives are a source and center for Hawaiian and Pacific Island studies.

Established in 1891, the Bishop Museum Library & Archives suspended public reference hours for a period of five years beginning in 2012 to focus on much-needed strategic planning and collections processing. On March 7, 2017, the Library & Archives reinstated reference hours, once again becoming a free and publicly-accessible repository open three days a week (Tuesdays 1 pm – 4 pm, Thursdays 1 pm – 4 pm, and Saturdays 9 am – noon). Given the nature of our collections, we are a non-circulating repository. Our small but dedicated team includes five full-time and two part-time staff members who provide public access and reference services, and additional support via phone and email to patrons who cannot physically access the collections.

Since our March reopening, a period spanning just over two months, our staff have already assisted 300 patrons in person. These patrons are language enthusiasts, hula practitioners, musicians, anthropologists, poets, genealogists, curriculum developers, researchers, students, teachers, and lifelong learners. Most of our patrons access the collections for personal research (42.8%) unrelated to education or employment. Of the 300 patrons assisted since our re-opening, 40% self-identify as Native Hawaiian and 19% as Pacific Islander. Of the patrons assisted during this period, 82% focused on research where Hawaiian poetic compositions would have been beneficial (such as genealogical research or land studies). However, only 16% of these researchers were Hawaiian-language speakers, making the wealth of knowledge inherent in the mele collection difficult to access and use in their research.

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In 2017, a survey, both qualitative and quantitative in nature, was conducted to identify the needs of the community member who utilize the Library & Archives. The survey consisted of a variety of questions measuring the patron's current level of satisfaction concerning the accessibility, efficiency, and availability of mele resources. One hundred and thirty respondents participated in the survey and identified the following top three priorities: (1) the need for digitization; (2) greater accessibility; and (3) a more efficient retrieval system. These results served as the basis for the design and development of this project proposal.

The Bishop Museum Library & Archives requests a Native Hawaiian Library Services Grant from the Institute of Museum and Library Services (IMLS) to support *Welo Hou: Building Connections to the Helen Roberts Mele Collection*. The Roberts Collection of mele is a rare compilation of Hawaiian poetic compositions written from pre-Western contact to the early 1900s which are housed in the Library & Archives. The collection was gathered from Hawaiian sources on the islands of Hawai'i, Kaua'i, and O'ahu in 1923–1924 by Helen Hefron Roberts (1888–1985), a trained musician and anthropologist. The one-year survey which produced this material was the project of the Hawaiian Legend and Folklore Commission, a committee created in 1921 by legislative act “to arrange for the collection, printing, publishing, and preserving of the poetic compositions of the Hawaiian people.”

Beginning with this unique and treasured collection, *Welo Hou* addresses access limitations persistent across the Bishop Museum Library & Archives mele collections, which are currently cataloged and searchable only by the first two lines of each composition—a retrieval system that necessitates prior knowledge of Hawaiian language and the conventions of mele research, and is highly inefficient for all researchers. It has been nearly century since Helen Roberts first traveled the archipelago collecting the mele that comprise the Roberts Collection, yet the texts and audio recordings remain virtually inaccessible to the general public. The overarching goal of *Welo Hou*, which is to increase accessibility through an improved documentation and search system, will directly impact the efficiency of acquiring mele resources across the Library & Archives' collections.

2. Project Design

“Mele provide much information about grammatical style, poetic device, and word choice; also pronunciation (if available as an audio file).” —2017 survey respondent

Project Overview

This project meets the IMLS agency-level goal to broaden access and expand use of the Nation's content and collections. Within two years, the Library & Archives will transcribe all mele texts from the Roberts Collection, creating four new digital typescripts from archival manuscript material: (1) original typewritten lyrics, (2) edited lyrics, (3) lyrics in modern orthography, and (4) mele translation and notes. Individual mele audio recordings from the Roberts Collection will be extracted from existing digitized archived recordings and linked through an Access database to their associated manuscript materials. Sound clips of 15- to 20-second length extracted from each individual mele will serve as an access reference to quickly ascertain mele style in the

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search process. A weekly blog also titled *Welo Hou* will engage the public with the project and the Collection, making freely available full-text transcriptions and linked audio recordings.

While the Bishop Museum Library & Archives transitions away from its current online Voyager interface in search of a new Museum-wide database and delivery alternative, these transcriptions and audio recordings will—for the first time—become entirely word searchable and accessible at the Library & Archives during public hours. Reproductions of the mele texts and audio will be available to the public, subject to the Library & Archives reproduction and usage program. Upon upgrading to a new online delivery system, the mele texts and translations will be available to search worldwide.

To promote awareness of the project and its progress, and to foster a community of mele enthusiasts, a weekly feature to be called *Welo Hou* will be initiated on the Library & Archives blog page found on the Bishop Museum website at <http://www.bishopmuseum.org/blog/library-and-archives>. *Welo Hou* will highlight mele found in the Roberts Collection; provide historical context for the collection and its contributors; explore unique vocabulary found in poetic works; report on significant findings and problems encountered in the course of the project; explore mele styles and the nuances of pronunciation through audio recordings; and will provide complete lyrics and translations to the Roberts Collection mele.

This blog will encourage an open dialogue between the public and the project personnel as well as amongst the public themselves. Another aspect of the weekly blog will be related articles culled from the historic Hawaiian-language newspapers, which were published for over a century, from 1834 to 1948. These newspapers were in fact the “blogs” of their time, a place where people could send their own writing for publication—opinion pieces, questions to the audience, responses to inquiries, mele of their own composition, and so forth.

Key Personnel

Lindsay Hanohano-Tripp is the Bishop Museum Library & Archives audio technician. In this position, she works regularly with archival Hawaiian-language material for the 19th and 20th centuries. She also has experience as a Hawaiian-language teacher and tutor and has a strong background in hula and mele. Her experiences will be an asset as she transcribes the mele texts, edits the audio, creates an index for both media, and develops content for the *Welo Hou* blog.

Todd Fukushima is resource specialist at the Library & Archives. He has a wealth of experience with the historic Hawaiian-language newspapers as a result of personal study and publishing the Hawaiian newspaper blog *nupepa*. He also not only proofreads Hawaiian-language material for the Museum, but also for a wide variety of organizations. Using those strengths, he will be tasked with copyediting all text produced during the course of the project.

Leah Caldeira has been collections manager for the Library & Archives for seven years and is familiar with administering and overseeing the department’s projects. Ms. Caldeira actively manages all websites associated with the Library & Archives. She will serve as project director, where she will manage the overall project and will also be responsible for creating an in-house delivery system for the mele text and audio using Microsoft Access.

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Project Timeline

In the first year (October 2017 to September 2018), project meetings will be held to designate transcription standards for the three different mele transcript versions and translations, and for specific digital filing conventions to be employed for the project. Equipment to be used during the project will be purchased in the first month after funds are released.

The indexing and transcribing of the mele texts will begin in November 2017. Digital transcriptions will be manually produced. As a substantial portion of the original text is handwritten and/or includes handwritten editing marks, OCR software cannot be used effectively. The source material's for the project are manuscript pages scanned by a number of volunteers over a brief period. These will be assessed for quality and any unclear files will be rescanned for archival preservation and use during the indexing and transcribing process.

The mele blog *Welo Hou* will also launch in November 2017, and will be promoted with the support of the Museum's social media platforms. The following month, the proofreading and editing of transcripts will begin.

An article announcing the project and publicizing the new weekly blog will be written for the Bishop Museum newsletter *Ka 'Elele* between December 2017 and January 2018 (to be published in the Spring issue).

Individual mele packets (saved as PDF files) composed of (1) the original scanned source material, (2) the original typewritten lyrics, (3) the edited lyrics, (4) the lyrics in modern orthography, (5) the translation typescript, and (6) any additional historical reference materials and Hawaiian-language newspaper articles respective to the specific mele packet, will be assembled for each mele starting in April 2018.

During the second year (October 2018 to October 2019), we will embark on our first public project assessment, soliciting responses for a period of 20 days in October; however, mele transcription will continue to March 2019, with copyediting completed the following month. Audio editing and the creation of sound clips will take place from October 2018 to June 2019. Simultaneously, the mele audio will be aligned with its corresponding text, bringing the close of the indexing task in June 2019.

The in-house delivery system (Microsoft Access database) will be completed between July and August 2019. A second public survey will solicit responses throughout August 2019, allowing for an assessment of the project as a whole, and some time to make adjustments to the delivery system before announcing the completion of the project.

Activities relating to the blog and social media will continue indefinitely. A second article written for *Ka 'Elele* between August and October 2019 (published in the Winter issue) will announce the completion of the project and encourage continued engagement with staff and both our in-house and online resources.

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Necessary Resources

The Library & Archives requests a laptop computer with a large screen display to allow for side-by-side views of scanned originals and typescripts being produced. Two (2) external hard drives will be needed to store original scanned images and newly-produced digital transcriptions and audio files. One drive will serve as the permanent location for all files, and the other drive will be used as the working drive. In accordance with Bishop Museum's established digital procedures, all files will also be saved on the main server, which is backed up twice daily and will be regularly backed-up to off-site secured servers.

Project Review and Assessment

Statistics tracked for blog activity, social media response, and feedback will also be used for project evaluation. The original survey, conducted in the beginning of May 2017 gauging public opinion on use and access to mele at the Bishop Museum Library & Archives, will be conducted again in October 2018 and once more in August 2019. Survey questions again will attempt to ascertain the importance of mele, if mele is used in the patron's respective research, the advantages and disadvantages, of current mele access (in-house, online, and with other institutions), and satisfaction levels respective to accessing Bishop Museum Library & Archives mele collections, and ways in which the Library & Archives can improve.

3. Impact

"Mele (are) an important source of Kanaka Oiwi knowledge about places, people, and events. They allow us to see and hear a glimpse of the lifeways of our ancestors."
—2017 survey respondent

Bishop Museum "envisions a future where all people understand and celebrate Hawai'i's cultural heritage and natural history, and use that knowledge to inspire the future." We believe that we are a forum for dialog and a center for education and lifelong learning. *Welo Hou: Building Connections to the Roberts Mele Collection* strives to connect collection materials, to support interaction between staff and researchers, and to engage the public in both the collection and the project. By creating and making accessible the data and connections needed for an enhanced retrieval system, along with community engagement, the project will expand the community of mele enthusiasts and the dissemination of traditional knowledge. The resulting processes and organizational structure will serve as a model for all Library & Archives mele collections.

To achieve these goals, *Welo Hou* proposes the creation of word-searchable digital typescripts of the nearly 700 Roberts Collection mele, notes, and translations housed in the Library & Archives' manuscript collection, and to establish their connection to approximately 200 digitized mele audio recordings. The linking of audio to typescript in its various forms (original form, edited form, a version with modern diacritical markings, and an English-language translation) will establish opportunities for further analysis of language evolution, mnemonic phrasing, and musical composition. It will easily allow a researcher to read lyrics while listening to the corresponding audio recording, a seemingly basic connection that has yet to be made.

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Because of the inefficient current dataset and search system, founded upon the notion that the first two lines of a mele will suffice for all researchers, the Roberts Collection is underused, difficult to access, and frustrating for both researchers and staff. Only a Hawaiian-language speaker with extensive mele experience can use the current system to any degree of satisfaction. With the data and ability to search full-text transcriptions and translations, this project will make the collection more accessible to researchers of all levels of Hawaiian language and cultural fluency.

In addition, the *Welo Hou* blog will be a virtual gathering place for the public to interact with staff, to freely access select mele and audio recordings throughout the duration of the project, and to dialogue with other researchers. It will allow an unprecedented level of online mele engagement. As an institution that holds significant mele resources, this blog will allow for active and dynamic collaboration with the public.

To measure project outcomes, findings, and the effectiveness of our product, two assessment surveys will be administered to measure changes in the satisfaction levels of Library & Archives users. These surveys will be compared to a third, and baseline survey, completed in May 2017. Included in the survey was an optional email address for those who would be willing to re-take the same survey over the course of the project. The resulting data should clearly show an increase in user satisfaction (including a subset of survey responders that we can directly compare to their previous survey results), a decrease in systematic frustrations, growth in the number of users accessing the collection, and a greater appreciation for mele as a research tool.

4. Communications Plan

“It is through mele that we learn, preserve, and pass on our stories and histories.”
—2017 survey respondent

A newly-created *Welo Hou* blog on the Bishop Museum Library & Archives website will offer a platform to engage the online community in the progress of the project. Ms. Hanohano-Tripp will begin posting on the Library & Archives blog in November 2017 to introduce the project. New posts will be generated every Monday (promoted as “Mele Mondays”) for the duration of the project and will include historical background, new discoveries, and interesting points of discussion for open commentary. Promotion for “Mele Mondays” will begin in November 2017, supported by the Museum’s department of Institutional Advancement, which uses its *‘Ka Elele* newsletter (12,000 household circulation, three times per year) and various social media platforms (Facebook page—38,500 likes; Instagram—11,000 followers; Twitter—5,000 followers) for the public dissemination of Museum news.

Stakeholder community members (including teachers, cultural practitioners, and researchers) identified in the planning stages of the project were targeted in a pre-project survey distributed in May 2017. This survey addressed the applicability of mele to current Hawaiian-focused research. It also measured public awareness of, and satisfaction with, the current availability of digitized

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and translated mele manuscripts and audio at the Bishop Museum Archives. Survey participants from 2017 who indicated their willingness to take part in a follow-up survey will be contacted at the project's mid-point (October 2018) and at the project's completion (August 2019). Mr. Fukushima, Library & Archives resource specialist, will be tasked with distributing the surveys.

At the completion of the project, a press release will be presented by the Museum's director of communications, Claudette Springer. An announcement will be placed in the Museum's *Ka 'Elele* Winter 2019 issue, which is circulated to approximately 12,000 households.

5. Sustainability

“Digitization is a godsend for accessibility. The [Bishop Museum Library & Archives] must make the investments and the benefits will be unfathomable, especially targeting a threatened Hawaiian identity through Hawaiian language.” —2017 survey respondent

Welo Hou will continue to evolve beyond the grant period in order to meet the needs of the community. Once the Roberts Collection mele have been made full-text searchable and connected to audio recordings, the project will serve as the framework upon which future mele projects will be modeled. We envision new and improved procedures will emerge throughout the course of the project's life, ensuring that it operates at optimum efficiency. Software system updates and compatible programs will ensure that the collection remains up to date and protected. The *Welo Hou* blog will remain online as a platform for continued dialogue among the mele community. A potential partnership between Bishop Museum and the University of Hawai'i Digital Arts and Humanities Initiative is a collaborative opportunity through which the *Welo Hou* project may continue to evolve in technically innovative ways. The Museum's new online delivery system will ensure that full-text search capabilities are available to researchers online. All measures will be taken to allow for the continuance of informing a broad audience about the intricacies of the Hawaiian worldview through mele.

DIGITAL PRODUCT FORM

Introduction

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to federally funded digital products (i.e., digital content, resources, assets, software, and datasets). The products you create with IMLS funding require careful stewardship to protect and enhance their value, and they should be freely and readily available for use and re-use by libraries, archives, museums, and the public. However, applying these principles to the development and management of digital products can be challenging. 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

You must provide answers to the questions in Part I. In addition, you must also complete at least one of the subsequent sections. If you intend to create or collect digital content, resources, or assets, complete Part II. If you intend to develop software, complete Part III. If you intend to create a dataset, complete Part IV.

PART I: Intellectual Property Rights and Permissions

A.1 What will be the intellectual property status of the digital products (content, resources, assets, software, or datasets) you intend to create? Who will hold the copyright(s)? How will you explain property rights and permissions to potential users (for example, by assigning a non-restrictive license such as BSD, GNU, MIT, or Creative Commons to the product)? Explain and justify your licensing selections.

Bishop Museum's copyright will be extended to all digital assets created during the course of this project. The words/content (poetic compositions) will remain free cultural works. All assets (notes, transcriptions, translations, and audio) will require a level of permission for non-personal use. This is our foundational approach and applies to all collections in the Archives (photography, art, etc.). Our reproductions and usage program is available to potential users upon request. We are working toward including the program online for user ease.

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.

Bishop Museum will retain ownership of all digital assets. All materials can be freely accessed at the Bishop Museum Library & Archives. Use of mele content will be unrestricted. Digital assets for personal use will be unrestricted. Digital assets for non-personal use will be subject to our reproduction and usage program. This is our standard treatment for all Bishop Museum archival collections. We are working toward including the program online for user ease.

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.

The Museum's publications coordinator will work directly with patrons in obtaining permissions for non-personal use. This can be done either in-person or via email. We are working toward implementing this process online for user ease.

Part II: Projects Creating or Collecting Digital Content, Resources, or Assets

A. Creating or Collecting New 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 format you will use.

- One (1) Excel spreadsheet listing the specifics of the 700 poetic compositions
- Seven hundred (700) digitized (pdf) poetic compositions
- Four (4) Word documents per mele: original typescript, original typescript plus handwritten notes, original typescript with modern diacritical markings, and translation (if applicable)
- Online access to materials and community dialogue via the Museum's WordPress web interface/blog
- Microsoft Access database for in-house digital asset delivery

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

All materials will be created on a PC using the following software: Sony Sound Forge Pro, Microsoft Office (Excel, Word, Access), and Adobe Acrobat Pro.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG) you plan to use, along with the relevant information about the appropriate quality standards (e.g., resolution, sampling rate, or pixel dimensions).

- Digitize original Roberts Collection manuscript files as 300 dpi .pdf files
- Transcribe collection as .doc files, convert to .pdf files
- Mele digitized as .wav files, convert to .mp3 for public ease of use (full mele and audio clips saved as .mp3 files)
- Index collection as .xls files
- In-house delivery as a .mdb file

B. Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan (i.e., how you will monitor and evaluate your workflow and products).

Workflow and products will be monitored throughout the duration of the project. The quality control plan is as follows:

- Indexed content will follow the Library & Archives Archival Description Manual for standardized data entry and form
- All transcriptions will be copy edited prior to inclusion in the product inventory
- All local digital content will be saved to the Museum's servers daily
- All digital content is backed-up twice daily (at 7:00 am and 12:00 pm) on Museum servers

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period of performance. Your plan may 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).

Digital assets will be stored in labeled folders and will be backed up to both on-site and off-site servers on a twice-daily basis during the grant period and beyond. Additionally, Bishop Museum rents space for a hard drive of master back-up files, secured and off-site. The hard drive is exchanged/updated monthly. The Bishop Museum is committed to providing funding for the ongoing care of digital assets and improved technology. File formats will be updated as needed by the Museum's IT department as technology changes in the future.

C. Metadata

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

Descriptive data will be preserved with each digital file. Bishop Museum Library & Archives Archival Description Manual includes controlled vocabulary and authority files created in-house to meet our unique collection needs. It includes a robust section describing Hawaiian cultural subjects (modified LOC subjects), the standardization of diacritical markings, etc. Metadata created will follow these standards.

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

Digital files will be preserved by the Museum using the same standards under which physical collections are maintained. Digital assets will be stored in labeled folders and will be backed up to both on-site and off-site servers on a twice-daily basis during the grant period and beyond. Additionally, Bishop Museum rents space for a hard drive of master back-up files, secured and off-site. The hard drive is exchanged/updated monthly.

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 online blog of digital content, Welo Hou, will be linked to the Bishop Museum Library & Archives website (<http://www.bishopmuseum.org/collections-3/library-and-archives/>) and will be publicized via museum PR releases, social media, and publications.

D. 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).

The digital assets will be publically available and full-text searchable on the blog Welo Hou. This will link directly to the main Bishop Museum Library & Archives site. Full-text materials will be freely available in-house during our hours of public operations and access. Full-text pdf's of materials will be available by request via email. We are working towards implementing the in-house process online, in partnership with the University of Hawai'i Digital Arts and Humanities Initiative.

D.2 Provide the name(s) and URL(s) (Uniform Resource Locator) for any examples of previous digital content, resources, or assets your organization has created.

Overview - <http://www.bishopmuseum.org/collections-3/library-and-archives/>
Hawaii ALIVE - <http://www.hawaiialive.org/>
Hawaiian Ethnological Notes - <http://data.bishopmuseum.org/HEN/index.php>
Anthropology manuscripts - <http://data.bishopmuseum.org/anthro/anthmanu/query.php>
Archaeology projects - <http://data.bishopmuseum.org/anthro/anthproj/query.php>
Kekahuna maps - <http://data.bishopmuseum.org/Kekahuna/kekahuna.php?b=about>
Judd Medical Notes - <http://www.bishopmuseum.org/juddmedicalnotes/>
Stokes maps - <http://data.bishopmuseum.org/stokes/stokes.php?b=about>

Part III. Projects Developing Software

A. General Information

A.1 Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

A.2 List other existing software that wholly or partially performs the same functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

B. Technical Information

B.1 List the programming languages, platforms, software, or other applications you will use to create your software and explain why you chose them.

B.2 Describe how the software you intend to create will extend or interoperate with relevant existing software.

B.3 Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

B.4 Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

B.5 Provide the name(s) and URL(s) for examples of any previous software your organization has created.

C. Access and Use

C.1 We expect applicants seeking federal funds for software to develop and release these products under open-source licenses to maximize access and promote reuse. What ownership rights will your organization assert over the software you intend to create, and what conditions will you impose on its access and use? Identify and explain the license under which you will release source code for the software you develop (e.g., BSD, GNU, or MIT software licenses). 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.

C.2 Describe how you will make the software and source code available to the public and/or its intended users.

C.3 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

URL:

Part IV: Projects Creating Datasets

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

Both a publicly accessible and a private dataset will be created. The public dataset will serve as an inventory to catalog each poetic composition and audio recording. This will be generated throughout the grant period. A private dataset/survey will be collected twice: October 2018 and August 2019. These surveys will attempt to quantify our progress and identify areas of strength and weakness.

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?

The proposed data collection does not require approval.

A.3 Will you collect any personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information? If so, detail the specific steps you will take to protect such information while you prepare the data files for public release (e.g., data anonymization, data suppression PII, or synthetic data).

The private dataset/survey will include an optional email address field, for follow-up questions/conversation. This information will not be released publicly.

A.4 If you will collect additional documentation, such as consent agreements, along with the data, describe plans for preserving the documentation and ensuring that its relationship to the collected data is maintained.

n/a

A.5 What methods will you use to collect or generate the data? Provide details about any technical requirements or dependencies that would be necessary for understanding, retrieving, displaying, or processing the dataset(s).

The publicly accessible dataset will be generated in MS Excel and will be based entirely on archival collections. This dataset will also be the foundation for a MS Access database used for in-house searches and asset delivery. The private dataset will be created in Google Forms.

A.6 What documentation (e.g., data documentation, codebooks) will you capture or create along with the dataset(s)? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the dataset(s) it describes?

The datasets will be documented in the Library & Archives data management hierarchy. During the grant period and beyond, the the documentation and datasets will be stored along with the digital assets on on-site and off-site servers, which are backed up twice daily. Additionally, Bishop Museum rents space for a hard drive of master back-up files, secured and off-site. The hard drive is exchanged/updated monthly.

A.7 What is your plan for archiving, managing, and disseminating data after the completion of the award-funded project?

The data will continue to be archived on-site and off-site, as it will have been through the grant period. We are beginning a partnership with the University of Hawai'i Digital Arts and Humanities Initiative. Their technical expertise will allow us to further disseminate the data online.

A.8 Identify where you will deposit the dataset(s):

Name of repository: Bishop Museum Library & Archives

URL: <http://www.bishopmuseum.org/collections-3/library-and-archives/>

A.9 When and how frequently will you review this data management plan? How will the implementation be monitored?

The Library & Archives overall data management plan is reviewed annually, with spot checks done monthly to monitor and ensure data files remain uncorrupted and properly backed up.