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Authors

Lercari, Nicola
Arksey, Marieka
Caskey, Christopher
et al.

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California Gold Country's Digital Heritage: Innovations in Community Engaged Research and Training

Nicola Lercari¹, Marieka Arksey², Christopher Caskey¹, Monty Thornburg³ and Robin DeLugan¹

¹ University of California, Merced, US

² University of Wyoming Archaeological Repository, US

³ John Muir Geotourism Center, US

Corresponding author: Nicola Lercari (nlercari@ucmerced.edu)

This article presents the results of the Historic Coulterville Digital Preservation Project, an important digital humanities research collaboration which started in the Fall 2015 between the University of California Merced Resource Center for Community Engaged Scholarship, the John Muir Geotourism Center, the Northern Mariposa County History Center, and faculty and graduate students of the Interdisciplinary Humanities Graduate Program at UC Merced. Dictated by the needs and goals of the community members of the gold rush town of Coulterville, in the Sierra Foothills of California, who are invested in the preservation of their cultural heritage, the project focused on digital historic preservation in four areas of focus: i) the archives and photographs at the Northern Mariposa County History Center, ii) the Coulterville cemeteries, iii) oral histories of Coulterville, and iv) the digital documentation of Coulterville Main Street Historic District. Combined, these four areas of focus presented a breadth of subject matter through which to test various digital preservation methods in a real-world scenario as well as provided both the students and the community members the opportunity to study subjects in greater depth that were of mutual interest. The project provides an example of the potential for community-university research collaborations to benefit local communities while also providing training and networking opportunities for students, and new scholarship case studies for the scholars.

Keywords: Community Engaged Research; Digital Humanities; Digital Heritage; Local Heritage; California History; Graduate Training

Introduction

Community-engaged scholarship aims to improve academic research, teaching, and service by aligning university expertise and community priorities via respectful, equitable, and mutually beneficial collaboration (Duran & Wallerstein, 2003; Glassick, Huber, Maeroff, & Boyer, 1997; Israel et al., 2003). It responds to criticisms that some traditional research treats communities as laboratories for questions which may have little importance to the people being studied. Scholars have also been accused to enter into communities to do research without developing trusting or meaningful relationships with stakeholders and neglecting to share the results of research with the public from whom they gathered data. The continuum for what counts as community-engaged research includes research questions that address local concerns, a collaborative process whereby community members co-produce new knowledge, and academic partners making and supporting policy recommendations.

When done responsibly, community-engaged research not only advances the priorities of local communities, it can also increase public support for local universities by illustrating the relevance and responsiveness of research to local, regional, and statewide concerns. For public and land grant universities in particular,

collaborative research can reinforce the university's mission to serve local populations (Gibson, 2012; Kellogg Commission, 1999; Peters, Jordan, Adamek, & Alter, 2005). Community-engaged scholarship in U.S. undergraduate and graduate education introduces students to community service and research, thereby linking the classroom to community priorities (Bringle, Hatcher, & Muthiah, 2010; Gilvin, Roberts, & Martin, 2012).

In Fall 2005, the University of California opened the doors of its newest campus in Merced. The decision to locate the nation's most recent research university in the San Joaquin Valley and nearby Sierra foothills—a region with grave disparities in health, economy, environment, and education—was in part a recognition that such region would greatly benefit from a myriad of problem-solving research. Endeavors to integrate community-engaged research and scholarship into the fabric of UC Merced (UCM) and community alike led to the opening of the Resource Center for Community Engaged Scholarship (ReCCES). ReCCES promotes collaborative research based on a community-engaged framework that develops around the following best practices: a) reciprocity and mutual benefit, b) attention to cultural understandings and power, and c) the responsibility of disseminating research results back to the community and other relevant non-academic entities. By participating in fundamental national conversations about how to better conduct community-engaged research (DeLugan, Roussos, & Skram, 2014), ReCCES serves as a first-point of contact and matchmaker of research interests for those on campus and in the community who seek to develop community-engaged research projects. Through outreach on and off campus, ReCCES builds foundational relationships that lead to innovative research partnerships and endeavors to sustain these relationships once the research project is over. This article presents one such collaboration (see **Figure 1**).

Historic Coulterville Digital Preservation

Community collaborators, the John Muir Geotourism Center (JMGC; JMGC.weebly.com) and the Northern Mariposa County History Center (NMCHC; <http://coultervillehistorycenter.org>) are located in the gold rush town of Coulterville in the Sierra Nevada foothills of Mariposa County in California, the same county that is home to Yosemite National Park. Although the Sierra Nevada Foothills around Coulterville have been inhabited by native people for millennia, the town was settled in 1850 when George W. Coulter and his wife Margaret opened a store in the remote Maxwell Creek gold mining district (National Register of Historic Places, 1982). The town was originally called Maxwell Creek, but the Sonoran miners, who began the mining enterprise here with John Fremont in 1849 prior to California statehood in 1850, used to call it Banderita (little flag) due to the American flag proudly displayed outside Coulter's store (Phillips, 1942). In 1853, Maxwell Creek was renamed Coulterville and became a thriving center of international migration, commerce and gold mining.

Roughly half of Coulterville's population was Chinese at one time (County of Mariposa, 2014). Other original immigrant groups included the Irish and Italian. In 1864 Abraham Lincoln established Yosemite as the first governmentally protected area in the world with his Yosemite Grant. The naturalist John Muir walked to Yosemite via the Coulterville Road (the original Yosemite Highway) in 1868 after the Civil War and began his lifetime of scientific and literary works. His efforts later inspired President Theodore Roosevelt to visit Muir

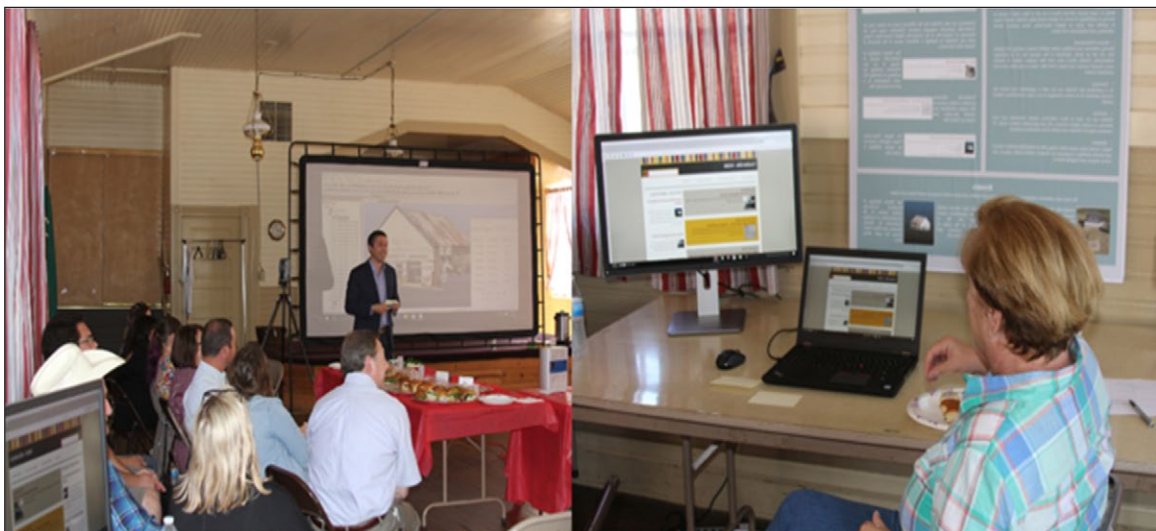


Figure 1: The community exhibit in Coulterville in 2016.

in Yosemite and their meeting resulted in the National Park Service being created in 1916. Both Muir and Roosevelt traveled through Coulterville many times and one of Roosevelt's favorite places was the Jeffery Hotel from which Roosevelt's memorabilia and other important historical artifacts are displayed today in the NMCHC. In 1913 cars began entering Yosemite National Park for the first time via the Coulterville Road. In recent decades, other major routes bypass Coulterville to provide entry into Yosemite, thereby isolating the historic community (Layne, 1943). At its peak, the population of Coulterville was roughly 5,000, the largest in Mariposa County during the 1850s–60s boom period.

As the gold mining industry collapsed in 1942 and the timber industry followed in the 1960s, Coulterville's population changed significantly. Today it has approximately 150 residents. The population of the surrounding region is 3,000 and includes long term residents, retirees and people engaged in tourism, and in the remnants of the declining industries. Many long-term families in the region are among the poorest in California. Recently, historically established residents have joined with newcomers to build recognition of Coulterville's historic importance for economic development (Thornburg, 2011). Because of that interest, the NMCHC has become one of the most important community organizations in the region. The NMCHC represents the northern portion of Mariposa County enabling it to draw on a wider area to recruit its all-volunteer staff. It is open to the public four days of the week. NMCHC director, Helen Bauman, shares that like many other volunteer organizations, most of the museum staff are retired and the average age is 70 years old. The museum's strong desire to modernize, for example, by digitizing the museum's collection, influenced the UCM research collaboration. Meanwhile, the JMGC adopts National Geographic's theme to enhance the natural, cultural and historic significance of a place for both visitors and residents (National Geographic, n.d.). The JMGC is working both in Coulterville and other nearby communities on naming the Historic Yosemite Highway after John Muir to draw new visitors to the region. The overlapping goals of the two community organizations is to preserve and promote the rich history of Coulterville and surrounding region.

Since 2010, ReCCES and the president of the JMGC, have exchanged ideas about potential community-university research collaborations (Thornburg, 2014). Connections were made with NMCHC. In 2015, a UCM faculty of World Heritage and Interdisciplinary Humanities (IH) was introduced to JMGC due to his expertise in digital heritage and historical preservation research both in California (Lercari, Forte, & Onsurez, 2013; Lercari, Mortara, & Forte, 2014) and Turkey (Lercari, 2017, 2018; Lercari, Shiferaw, Forte, & Kopper, 2017). This initial contact led to JMGC collaborating with UCM to develop the *John Muir Geotourism App* project (discussed below) focusing on bringing more visitors through State Route 132 and Coulterville to Yosemite. These early efforts influenced the direction of the digital heritage preservation project in Coulterville that is the focus of this article.

In the context of a Fall 2015 seminar in IH Methods and Research, said faculty member and his graduate students held a meeting at the JMGC to initiate a community-research collaboration. The students were introduced to the significance of John Muir's influence on the region. They were also informed about the goals and needs of the NMCHC. Each student shared their research interests, and the students then formed groups around areas of mutual benefit between the needs and interests of the NMCHC and those of the students. Collectively, four short-term exploratory research projects were initiated between the community members and the students. The *Historic Coulterville Digital Preservation Project* emerged. The project ran from the fall of 2015 to the spring of 2016 when it culminated in a public exhibit for the community in Coulterville (Croft, 2016). Working through the community-engaged framework discussed above, the preliminary work in Coulterville was guided by Thornburg and by Bauman. Project goals centered on the digital preservation of the heritage assets identified as priorities by the residents during prior NMCHC annual membership meetings and were refined through ongoing conversations with various community members and graduate students.

This approach resulted in four areas of focus: a) the archives and photographs at the NMCHC, b) the Coulterville cemeteries, c) the oral histories of some of the longer-term residents, and d) the iconic historic buildings lining Main Street. Combined, these four research areas presented a breadth of subject matter through which to test various digital humanistic methods in a real-world scenario. The exploratory research would serve as a model for more in-depth, future community-engaged digital humanities projects in Coulterville.

The final results of these projects were also disseminated via a permanent web portal developed using Omeka Classic, an online content management system able to curate archives, museum, and scholarly collections as well as provide a space for virtual exhibitions. This custom web portal was developed making use of exhibit-related features to provide a public venue for the NMCHC's data so that others will be made aware of their collection, disseminate the result of our project, and bring to light the lesser known

narratives of the people of Coulterville (see **Figure 2**). The URL for the virtual exhibit remains active today (<http://coulterville.omeka.ucmercedlibrary.info/>). We anticipate this web portal to be online for a period of five years. We did not catalogue or transfer ownership of the digitized content from the NMCHC to UCM. We recognized through the creation of this virtual display that NMCHC and similar smaller institutions would greatly benefit from being able to archive their data through UCM and the California Digital Library, thereby making it more accessible. This is one of the reasons for establishing the *Community Heritage Network* (CHN) discussed later in the article.

Historical Archives and Photographs

The Historical Archives and Photographs focus area worked with the NMCHC to address various questions raised by Bauman. What is the condition of some of their more at-risk collections? What would it take to develop a solid workflow for doing the data entry for the collections in the museum? Since these were very broad questions to attempt to answer in a short time frame, we concentrated on the NMCHC materials identified by Bauman as being in most critical need of attention and which would also have significant importance to the community. Bauman is an established member of the Coulterville community and has long interacted with residents regarding how the town is represented through the NMCHC and how to best preserve the artifacts and archives of the town that are stored there. Given the limited time that the students had for interacting with the community before beginning the project, we strongly relied on Bauman to represent the community's interests.

Most of the collections that she identified had been donated but remained largely unorganized or uncatalogued. Associated paper accession records used a multitude of organizational systems. Our work had two goals: a) assist with the organization and cataloging of the museum's archives and photographs, and b) assess the current collections management software (PastPerfect 5). The students and volunteer staff instituted the following workflow: identify specific records and objects of priority to the museum; organize these objects into manageable subgroups; identify a subgroup of records suitable to testing various scanning and storage methods; identify digitization methods appropriate to the selected items, digitize the selected items; analyze the results and identify problem areas; identify future directions. A subgroup of data selected for analysis consisted of the materials of a rather remarkable woman named Edith Pearl Hannah who donated her effects in 2005.

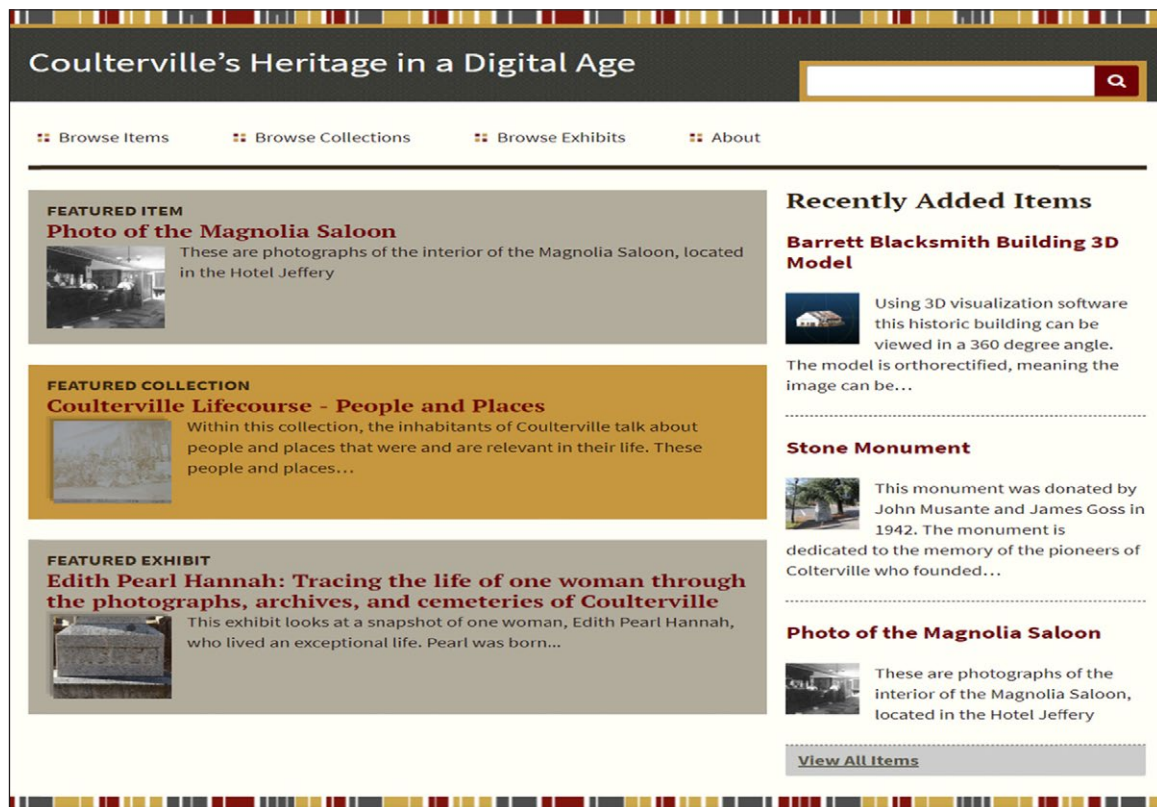


Figure 2: The web portal.

Edith Pearl Hannah (Pearl) is a well-known resident of Coulterville, celebrated for her independent spirit, generosity, and affection for animals. Pearl was one of the first women from the community to become a doctor. She remained unmarried (an uncommon practice at the time), and opened her own veterinary practice. Pearl inspires many in Coulterville. None of her possessions in the NMCHC have been cataloged or displayed which means the younger generation is largely unaware of the strong female role model. By focusing on her items in the collection, this project prioritized the deep connection that the Coulterville community has towards this inspirational historic figure, as expressed to the team by Bauman and also confirmed through an informal conversation with four residents at the local coffee shop. Ensuring that the museum collection is preserved, and by creating a virtual exhibit, a stronger personal connection is possible between Pearl and the younger generations in Coulterville. The items in this collection included photographs, archival records, and three-dimensional objects. The accession record cards were scanned, enhanced in photo editing software, and transcribed. This was done in response to the advanced state of decay of these records and the imminent loss of this data. Photographs and archives were scanned on a flatbed scanner and objects were photographed with each file name standardized using the item's accession number in order to link these files to their records and easily integrate them into the museum's PastPerfect digital catalog. During this process the condition of the objects was noted and the items were re-housed in proper storage materials. Overall, this work addressed a very small portion of the NMCHC collections and brought to the forefront the issues that all small museums face – the lack of personnel and resources to battle the rapidly degrading records and objects in their care.

The urgency of this problem is illustrated by the fact that less than one percent of the items under the stewardship of the NMCHC has been entered into a digital collections management system and many objects are stored in a non-climate-controlled room which floods regularly. The accession records are fading quickly and the items in the collection will soon lose their contextual information and some of their historical significance. It is imperative that we align the resources and goals of the university with the goals of such community museums and history centers to preserve these aspects of local heritage before they are lost. A general cataloging workflow document and several other primary museum management documents were developed and shared with the NMCHC. While the Historical Archives and Photographs project was small in scope and did provide answers to the original guiding research questions, it did not address the larger issue of how to generate the manpower needed to implement this workflow. This remains an ongoing issue, for the NMCHC and similar cultural institutions around the world.

Coulterville Life Course: A Cemetery-Based Perspective

The Coulterville Life Course focus area sought to examine records of cemeteries around Coulterville in order to establish and illuminate individual, collective, and family memories tied to the Gold Rush-era boomtown. It aimed to connect local memories, historical narratives, places and records through a public and collaborative process and to forge connections to significant historic places and moments while tying them to cemetery records to help illuminate how this community has addressed past members over time. This project examined burial demographics and was driven by research questions focused on social interactions and stratification such as: Who is buried where and why? Who gets a marked grave? Are racial divisions reflected in cemetery locations and layout? This team was able to obtain access to records for the community's Public Cemetery, which contains the family plots of some of the founding members of Coulterville and is still in use today. However, other cemeteries utilized by specific communities of Asian descent and of the Catholic faith coexisted with the public cemetery and this should drive similar future research. Analyzing the cemetery in terms of grave stones, organization of family plots, and the social meaning of having separate cemeteries, allowed the Life Course team to answer the research questions, giving key insights especially for the social, gender, racial, and economic makeup of the community during the Gold Rush. Initial exploration allowed the team to refine objectives to focus on The Coulterville Public Cemetery log which documented burials from the earliest official use in 1861 beginning with Ellen Jeffery, at the age of 1 month. Overall, there are 607 documented burials and the cemetery is separated into three sections (A, B and C), with rows starting in the front and extending back. The majority of the cemetery population died in the late 1800's, after the initial Gold-Rush boom. The mortality rates from 1851–1900 are listed in **Table 1**.

While this is a fairly normal distribution of mortality rates, what is interesting is that out of all the male adults who died during this time period, 88% were 70+ in age and 98.6% of all of the adult females were 70+ in age. During an era that was expansive and yet tumultuous, to have such high numbers of elderly individuals is quite remarkable. This indicates a great level of care taking place among these individuals and/or different allocation of jobs within the community. Within the documented burials at the Public Cemetery,

Table 1: 1851–1900 Mortality Rates.

Age	% of total population
Infant- 3 years	9%
Adolescent	4.7%
Sub-Adult	4.1%
Young Adult Female	6%
Young Adult Male	9.8%
Adult Female	23%
Adult Male	36%

the team was not able to locate people of Asian or Mexican descent, providing further evidence of a previous Asian cemetery which local residents indicated as being located next to the old China Town in Coulterville, and possibly a separate Catholic cemetery that the project was unable to locate. This cemetery was rumored to be in a private plot of land in the proximity of downtown Coulterville and containing the burials of the Mexican migrant workers who thrived in the Mother Lode region of California in the 1850s and 1860s. Ideally, the data identified and analyzed for the public cemetery can be utilized in future research to further explore the initial questions posed.

Oral Histories of Coulterville

Oral histories offer fuller, often more accurate pictures of the past than those traditionally provided by archives (Baylor University Institute for Oral History, 2016). They can help us understand how individuals and communities experienced the forces of history, teach us what has changed and what has stayed the same over time, and preserve for future generations a sound portrait of who we are in the present and what we remember about the past. Thus, while archival research brings an often empirical and big-picture focus, oral histories can offer insight into people's lived experiences that can contextualize or expand historians' understanding of historical changes. One goal of the Oral Histories focus area was to accomplish these objectives for the residents of Coulterville and add their unique perspectives to the data-driven work being done by the previous two focus areas. The second goal was to turn over digital copies of oral history data collected in this study to the NMCHC for addition to their collection. This second goal responded to the NMCHC desire to expand and modernize its oral history archive.

Preliminary conversations with community stakeholders attached to the JMGC and the NMCHC identified priority interview subjects with family connections to local history, status in the community, advanced age and knowledge of local history, and connections with prominent places in Coulterville. Because this study was conducted prior to a January 2017 federal ruling that removed oral history from the list of research involving human subjects that requires Institutional Review Board (IRB)'s approval, we sought and received UCM IRB's authorization to conduct said interviews and received written consent from our interviewees. This choice was made to prioritize proper ethical and professional standards and to ensure the interview subjects understood the intent and nature of the research project, and assuming that this data would be used for public purposes. However, it is worth noting that this step was taken in the wake of an ongoing national debate among scholars over the efficacy and appropriateness of IRB oversight on oral history projects (Oral History Association, 2009; White, 2017). While IRB protocols generally require anonymizing the subjects' identities, it is the nature of the study that dictates de-identification decisions and procedures. Thus, this project generally would not require IRB approval though we did so to further protect the rights and welfare of the human subjects involved in our research.

As it is relevant to our community-engaged approach, it is also worth noting that our results were shared with the interviewees and their community during the exhibit in Coulterville and received very positive feedback. Following said new guidelines on oral history and having received their prior and informed consent, we thus decided not to anonymize the community members who were identified as prime interview subjects for this project, John Shimer and Alberta Jeffery Garrett. Shimer is connected to an eponymous ranch that was settled as a homestead by his family in the nineteenth century. His grandfather was a successful blacksmith in historic downtown Coulterville. Garrett is the descendent of a former proprietor of the historic Jeffery Hotel, a landmark building on Coulterville's Main Street which has been the victim of

numerous fires throughout its history. Garrett's grandparents were connected to the early development of nearby Yosemite National Park.

The Oral Histories focus area was driven by a series of research questions meant to help contextualize or nuance established economic, mythological, ecological, and social narratives tied to local and regional history. How are the extensive economic changes seen in this region over time understood and recalled in the individual and collective memories of its current inhabitants? What are the relationships between those memories, stories and local lore to heritage tourism, which is identified as a significant driver of Coulterville's present and future economy? What role do local and regional mythologies play in these dynamics? How do economic changes and local mythologies relate to long-term social changes over the same timeframe? And similarly, how have individual and collective imaginaries of the environment and local landscapes shifted with the changes described above? While these research problems informed the questions asked during the oral history interviews, it was also a priority among team members to refrain from leading the interview subjects toward or away from particular interpretations or conclusions. Thus, while the oral history portion of the project was driven in part by research questions informed by established practice and historiography, the family histories and genealogies, specific firsthand memories, family stories and other knowledge about local history detailed during these interviews was as much a product of the interviewee's legitimate knowledge and position as it was that of the researchers involved.

The oral history interviews were recorded on digital video at a site in Coulterville identified by community collaborators as ideal for all parties. Each interview lasted approximately one hour, and researchers then edited the interviews into a series of video clips using video editing software. Each clip represented a response to an individual question from the interview, giving current and future researchers organized baseline data for future use. Copies of all oral history data, including both full interviews and all individual clips, were given to the NMCHC to include in their oral history collections.

The thematic narratives compiled from these interviews illuminated how individual, collective, and family memories are connected to the larger historical narratives, places, and records investigated elsewhere in this project. With their connections to mythologies about local iconic people and places, and a long-changing economy from one dependent on early gold mining to one that seeks to improve through heritage tourism, these narratives enabled this project to bring to light the resilient ways in which this community coped with, and has remembered significant historic events in its boomtown past. The oral history component to the *Historic Coulterville Digital Preservation Project* illuminates how oral histories (while often interesting in their own right) can be used to great effectiveness as part of larger, multidimensional projects. For instance, both Garrett and Shimer discussed memories of the Jeffery Hotel and each offered unique perspectives, for example, Garrett's largely factual and familial information about the history of ownership among the Jefferys, and Shimer's broader social perspective of the hotel's Magnolia Room as a gathering space. Yet even these two stories exist within larger structures of collective memories. When combined with historic archival material found elsewhere in this study, a more layered story about the history of Coulterville emerges.

Digital Documentation of Coulterville Main Street Historic District

The historic buildings in Coulterville are under constant threat of fire, age and decay, demolition, and even remodeling, all of which can alter or destroy the historic integrity of the structures. Striving to provide community-engaged solutions to these earnest problems, this area of focus was driven by research questions such as: How can digital documentation contribute to build a strong constituency interested in Coulterville's long-term preservation? What best practices can be leveraged to promote public awareness on the significance of Coulterville's built heritage? To preserve and promote the historic architecture of Coulterville as a living legacy of this once bustling mining town and an important source of heritage tourism revenues for the community, we created a digital record of eight historically significant structures located within the Coulterville Main Street Historic District, which is listed in the National Register of Historic Places and recognized as a California Historical Landmark (National Register of Historic Places, 1982). The eight structures were selected in consultation with the NMCHC's president and several community members during meetings at the museum where we learned about the community's interest in historic preservation as a drive for economic and tourism development and cultural appreciation. The selected structures included the Jeffery Hotel, the ruins of the Wells Fargo Building, the restored Coulterville Hotel (today's home to the NMCHC), the Rose Cottage Bed and Breakfast, the Coulterville General Store, and Whistling Billy (an 1890's steam locomotive located next to the NMCHC) (see **Figure 3**).

Using this community-based participatory approach to historic preservation, we hope that our 3-D data can further assist the Coulterville community and Mariposa County staff in identifying potential structural



Figure 3: 3-D models of General Store (left) and Jeffery Hotel and adjacent buildings (right).

issues in those buildings early so actions can be taken to repair or stabilize, as necessary, or in promoting the town's rich heritage via social media and museum exhibitions. For instance, the iconic Jeffery Hotel burned partially in 2014 and no digital record existed of the building at that time (Jardine, 2014). We thus created 3-D scans for the current state of the Jeffery Hotel and surrounding buildings using a FARO Focus 3D X120 terrestrial laser scanner that documents the existing structures with incredible detail and accuracy, preserving the buildings in a high-resolution 1:1 scale 3-D model. In addition to the 3-D scans, numerous photographs were taken of the structures to enhance the texturing of the models. The scanning of these structures served to "inform and involve" both the viewer and the community by not only preserving the data, but also by informing the viewer of the importance and history of the built heritage (International Association for Public Participation, 2017). The value of these 3-D models lies not only in their ability to be remotely accessed via the internet, but in their creating a snapshot in time of Coulterville in 2015, and also in their acting as the foundation for future reconstruction (either digital or physical) of Coulterville's past. Due to their accuracy and precision, these 3-D models can support engineers and historic preservationists in their efforts to track the stability and condition of the buildings over time or to reconstruct them in the eventuality of an accidental loss or destruction.

Public Outreach and Information Dissemination

In order to disseminate the methods and results of the research completed in the Fall of 2015 with the residents of Coulterville, the exhibit *Coulterville's Heritage in the Digital Age* was designed as a four-week informative display with interactive events which were free and open to the public and hosted at the Coulterville International Order of Odd Fellows Hall (see **Figure 1**). The exhibit showcased the concept of the project, each of its four focus areas, the web portal (see **Figure 2**), and the future goals and projects informed by this work. Residents of Coulterville, local heritage institutions, and the general public were invited to attend the opening events, as were members of the Gold Rush Country Historic Museum Alliance (HMA), a network of over a dozen museums across the San Joaquin Valley and Sierra Nevada Foothills. Combined, their attendance and active participation in the events provided the project with valuable feedback and ways to move forward. Visitors to these events and the exhibit were delighted with the results of the work and the fact that the project took the time to share with them what local residents had viewed the students working on around town for the past few months.

The exhibit demonstrated that the use of technology might have an equalizing effect in attracting a more diverse group of rising local and community-level heritage practitioners. The exhibit provided the opportunity for residents to gain hands-on experience with the equipment, the software, and the end results of the project, which both the elderly residents of Coulterville and the school age children enjoyed immensely. Students of all gender roles demonstrated an equal interest in the various technologies used in this project and the potentials they hold for not only heritage documentation, but research and community improvement. Local elementary and high school students saw what type of research is available at UCM. Several local students became very excited at the prospect of not only being able to study at UCM using innovative technology, but being able to focus their research in their own backyard and hometown and thereby give back to their communities. The local residents generated ideas on how to move forward and are eager to share their personal knowledge of the area for future projects. According to Bauman, NMCHC staff were inspired by the UCM collaboration and have already begun conducting additional oral histories. Some residents shared their experiences with this project in meetings with county supervisors where they discussed how this type of collaborative project meets the needs of their community and should be encouraged and actively sought out. The enthusiastic willingness of the residents of Coulterville and Mariposa County to continue working with UCM demonstrates we created a genuinely community-engaged collaboration.

Critically, for the graduate students and undergraduate volunteers from UCM, this project provided the chance to network with local heritage practitioners. Many of the attendees at the exhibit sought our advice on how to similarly move their institutions forward using the project's methods. Representatives from the museums of the HMA brought their cataloging and conservation questions and concerns and emphasized that the issues and concerns present at the NMCHC are widespread. The majority of the concerns brought forth by these local museums are a direct result of lack of access to technological training and resources. This has led to the development of the *CHN* (discussed below). The few criticisms received were that information regarding the project was not made widely available to residents and that residents saw students working but did not know why they were in town. This was perhaps owing to the UCM team's focus on technological information dissemination rather than extensive physical presence and personal communication with representatives from the JMGC and NMCHC rather than with the community at large. The new initiatives which have stemmed from this pilot project in Coulterville have taken this to heart and now the university members regularly attend local community town hall meetings, the semi-annual HMA meetings, and focus on methods of information dissemination for which the local residents have expressed preference, such as listserv newsletters. This level of personal and face-to-face interaction has since proven to be critical in maintaining the positive relationships that have been established over the past few years with these more isolated communities who have a tendency to view larger institutions as distant or removed from them and their concerns.

Future Directions

To sustain the connection between local residents and UCM (including its faculty and students) and the future of community-engaged scholarship, several new projects are linked to this initial pilot project: a) the *John Muir Geotourism App*, b) a digital collections management project called the *Community Heritage Network*, and c) additional historic preservation initiatives ongoing in nearby Waterford, CA and in Mariposa County.

The *John Muir Geotourism App* (JMGA) aims to provide students, both in the classroom and during fieldtrips, with Muir's manuscripts and custom media content produced by UCM and to inspire them to study the unique natural environments and historic places of California related to John Muir. In 2016, due in part to a presentation made by JMGA team members, a resolution was passed by the Stanislaus Council of Governments to rename California State Route 132 the *John Muir Highway* in honor of the "Founder of National Parks" and of the 100th anniversary of the founding of the National Park Service being celebrated that year. The JMGA project will be completed by December 2018, and aims to renew public interest in natural and cultural places along the *John Muir Highway*.

The *Community Heritage Network* (CHN), born out of the interactions that the students had with a number of smaller local museums following the work in Coulterville, is working to advise and train these local museums on how to best preserve their collections and work with them to analyze the feasibility of a centralized collection management system hosted at UCM or other linked institution. Such data management facility would not only enhance preservation, but facilitate data accessibility for 'non-academic' communities in order to foster a more collaborative relationship between institutions and the public.

This centralized point of access would integrate the collections at the numerous underfunded museums and history centers surrounding UCM into a linked data and publicly searchable repository of California heritage material. The CHN began in 2016 by working with the underserved local museums and history centers that have organized themselves into the HMA to address their individual concerns and goals. The general cataloging workflow document and several other primary museum management documents the project developed with the NMCHC were shared with several other local museums in a workshop we organized in May 2016, and are also hosted on the CHN webpage accessible through UCM's World Heritage program website (<http://worldheritage.ucmerced.edu/projects/community-heritage-network>). This project is also currently informing research questions relating to sustainable digital preservation methods and how increased and sustainable access to technology can affect contributions of underrepresented populations to heritage narratives.

Conclusion

The above case study demonstrates that when a university engages fully with members of the surrounding community, both sides benefit. The focus on historic preservation aligns with local and regional goals of economic and tourism development and historic and cultural appreciation. It serves JMGC goals to bring more visitors to Coulterville and NMCHC goals to preserve the study and disseminate local history. Through direct work with UCM, the expertise of the NMCHC volunteer staff was improved in terms of accession, preservation and public presentation skills. Another benefit to NMCHC, as told to Thornburg, was that their new

acquisition of the historic Wells Fargo building (which is attached to the NMCHC) happened in part because of the UCM collaboration.

Benefits accrued to IH graduate students who received innovative methods training that emphasized a community engagement framework. Beyond the valuable experience of developing short-term research projects in conjunction with local community partners, the project offered graduate students important opportunities to present their research results to the public, and to network with local community members and organizations. PhD student and author of this paper, Christopher Caskey recalled the process as both an opportunity to add to his methodological toolbox while re-thinking his approach to research in general.

Historians often ask themselves what they owe to their sources in terms of agency, context, truthfulness, etc. For most historians, such questions still remain abstract since the sources are almost always no longer living. But when conducting community-engaged scholarship and utilizing methods like oral history, where the research subjects are still living, the questions become very real and very pressing and as a researcher I had to ask how those involved with this project as research subjects would judge the final product. Such experiences have changed the way I think about even traditional archival sources, approaching them as once-living individuals, thinking about how they might read my scholarship and forcing myself to keep an open mind and open heart as I interrogate them.

Another PhD student and author of this paper, Marieka Arksey has since graduated from the doctoral program at UCM and is now the Collections Manager for the Office of the Wyoming State Archaeologist, managing the University of Wyoming Archaeological Repository.

My professional background had, up until this project, been with large national and international-scale museums. It was my time working with the NMCHC, an institution with little resources but surrounded and supported by a very close-knit community, that reminded me of why I became interested in collections management in the first place.

Benefits also accrued to the university more broadly as community members shared their appreciation for the students' efforts and lauded the UCM for connecting its research mission to surrounding communities. In addition to the clear benefits to the university and the community, the community-engaged research and training initiatives discussed in this paper provide an example of the potential for community-university research collaborations to benefit students at all stages of their academic careers. The practical experience and skills to conduct responsible research gives them a competitive edge in the job market and in academia. Linking the classroom to community projects and priorities in higher education ensure that students carry with them an appreciation and respect for the knowledge and experience of local community members.

Lessons learned during this project are benefiting both UCM researchers and the community, as both continue to learn to navigate and strengthen a relationship which both sides have found to be rewarding. The resulting successes of the project and the future initiatives are a testament to the open-minded determination of students, faculty and community members to embrace and fully engage with the tenets of community-engaged research.

Competing Interests

The authors have no competing interests to declare.

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