



Digitizing Hidden Collections
SYMPOSIUM

Learning from and Making Use of Digitized Hidden Collections

Proceedings from the 2022
Digitizing Hidden Collections Symposium,
October 12–13, 2022



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INTRODUCTION

DHC Symposium Proceedings

Hannah Scates Kettler, Iowa State University and Katie McCormick, Florida State University

Thanks to continued generous funding from the Mellon Foundation, the Council on Library and Information Resources (CLIR) has guided its “hidden collections” initiatives through several iterations, beginning with Cataloging Hidden Special Collections and Archives (CHC, 2008–2014), followed by Digitizing Hidden Special Collections and Archives (DHC, 2015–2020), and now continuing with Digitizing Hidden Collections: Amplifying Unheard Voices (DHC:AUV, 2021–present). Many have contributed to these programs as applicants, reviewers, and program officers, and these contributions have been instrumental in helping CLIR’s regranting activities evolve to become responsive and forward-facing.

Opportunities to meet in person to share, reflect on, and celebrate accomplishments have created significant milestones along the path toward a clear and currently relevant mission. An early **symposium for CHC recipients took place in Washington, DC, in 2010**, followed by another **in Philadelphia, PA, in 2015**. Participants shared information and lessons from their various cataloging projects and learned from one other in facilitative and supportive environments. A third Digitizing Hidden Collections Symposium—designed to mark the culmination of the 2015–2020 DHC program—was scheduled for 2020 but postponed due to the COVID-19 pandemic. Instead, an online event, **Celebrating Five Years of Digitizing Hidden Collections**, was held in 2020. Similar to the previous in-person gatherings, the 2020 program was designed to help DHC recipients share information and skills while cultivating a supportive professional community of practice for those working to create access to rare and unique collections.

As pandemic conditions eased and people became more comfortable being in public, the in-person DHC event was rescheduled: the **2022 Digitizing Hidden Collections Symposium** took place in Baltimore, Maryland, on October 12–13, 2022. The event centered on the theme “We digitized it—what’s next? Learning from and making use of digitized hidden collections.”

CLIR invited those who had participated in the DHC program’s 100 funded projects to build on their collective experiences, forge new connections, and present their work. The event created opportunities for both presenters and attendees to reflect on the current state and future potential of digitization practice in collecting institutions, including how the digital cultural record can better reflect the diversity of human thought and experience, how law and ethics affect strategies for access, and how technologies and standards can improve discovery and learning.

These were ambitious goals, but the 2022 symposium’s program lived up to the challenge, thanks in part to the extensive range of collections and session topics and to the wide range of contributors—from principal investigators, staff, and community collaborators working on

projects to other interested parties, such as digital library professionals, researchers, cultural heritage practitioners, and students. While attendees came from a variety of professional backgrounds, their common experience with CLIR's regranting program helped them build rapport with one another during the two-day event.

The program comprised 18 live sessions, including an opening keynote, 45-minute panels and demonstrations, a poster session, groups of 15-minute papers, and a closing panel discussion involving presenters representing three funded projects. Attendees were also invited to contribute demonstration videos representing lessons learned from their work, and teams representing three projects submitted short videos to mark the occasion. Participants in the symposium included 136 registrants, 51 of whom contributed presentations. Presenters represented 23 unique DHC projects.

This Proceedings document begins with the text of the keynote by Dr. Michelle Caswell, followed by seven papers, representing a sampling of the symposium presentations, and ending with an afterword by CLIR Program Officer Sharon M. Burney. An appendix lists all Symposium content and those who presented and contributed. Further information about and resources for all Symposium submissions can be found at <https://www.clir.org/pubs/reports/learning-from-and-making-use-of-digitized-hidden-collections>.

The committee that planned the DHC symposium sought to build upon the momentum and scaffolding built through the previous symposia and to focus on human-centered, ethical, and real-world impacts of cultural heritage digitization. The 2019 global pandemic and its social, technological, and political disruptions have underlined the need for a shared, full, and accurate understanding of human history. This shared understanding is necessary in order to inform both national policies and everyday perspectives on the ways people should care for one another. Content that reflects the breadth of human experience and that honestly reckons with past and present harms can play a vital role in weaving together a stronger social fabric as we move together toward an uncertain future.

More and more, custodians of cultural heritage are recognizing the significance of proactive digitization and the need to directly impact local communities even while using digital technologies to facilitate a broader global reach. The closing plenary exemplified this imperative to prepare simultaneously to make local and global impacts. Entitled "Real World Ripples: Current Events and Digital Collection," the panel discussed three projects that represented institutions and collections from the Global South, Russia, and the incarcerated in the United States. The panel engaged in a spirited and genuine conversation around intentional and authentic partnerships, as well as connections to local communities and generating positive change through work with scientific and cultural heritage. The symposium concluded with a call to action to celebrate the labor required to build and maintain digital collections, a reminder to lean on each other through challenging times, and an invitation for cultural heritage workers to continue their work while striving to do better for the better of everyone.

KEYNOTE

“So that Future Organizers Won’t Have to Reinvent the Wheel”: Activating Digital Archives for Liberatory Uses

Michelle Caswell, Professor of Archival Studies in the Department of Information Studies at the University of California Los Angeles (UCLA)

Grounded in the emerging field of critical archival studies, this talk will look toward the radical politics of independent, minoritized identity-based community archives to envision new liberatory possibilities for memory work.

Based on participant observation and interviews with users at community archives sites, the talk will explore how communities activate digital collections to build solidarities across and within communities, trouble linear progress narratives, and disrupt cycles of oppression. Caswell will introduce a new concept, *corollary records*, to describe the activation of archives that document a precedented moment in time, that is, a time in which the same or similar oppressions that are currently occurring have also previously occurred.

She will then argue that at their most useful, records can be activated in *corollary moments* in the present, so that community members can learn activist tactics and strategies and get inspiration to keep going. “We have been here before, we have survived this before, we have resisted before,” corollary records assert, “*here’s how.*” She will then give concrete examples of archives catalyzing liberatory uses of corollary records through artists and activist residency programs, advocacy efforts, and community-led mutual aid projects. Caswell will explore the temporal, representational, and material aspects of liberatory memory work, ultimately arguing that archival disruptions in time and space should be neither about the past nor the future, but about the liberatory affects and effects of memory work in the present.

Thank you. I want to thank Becca Quon and Nancy Adams and all the staff at CLIR for inviting me and organizing the Digitizing Hidden Collections symposium. It is an honor to be here today with you all.

I am Michelle Caswell, I am co-director of the UCLA Community Archives Lab, co-founder of the South Asian American Digital Archive.

I know that I am in a room full of recipients of the Digitizing Hidden Collections grants and I have massive respect for you all. I approach you all with a great deal of humility. You are out there every day doing the work of selecting, digitizing, and describing collections created by and representing

minoritized communities. Some of you do this at considerable personal costs and against the general stream of priorities at your institutions. I want to acknowledge how much labor and expertise and chutzpah that takes.

I know from my own work with the South Asian American Digital Archive (SAADA) how tedious digitization work can be, how exacting, and sometimes how isolating, but I also know how important it is and how rewarding it is when someone activates a record you digitized to see themselves in history and to work toward a better place in the present, to generate new scholarship, new art, and new political organizing.

Today, I will share with you some examples of digitized records being activated for new art and organizing and why these activations are so crucial for building a more just world in the present. I will take you on the journey I have travelled as a scholar and archivist and I will challenge you to ask yourself: Now what? Now that we have digitized and described and made accessible these incredible collections, now what? What do we do with them? How do we compel their use? And not just any kind of use, but how do we compel the liberatory uses of digitized records? And again, I approach this with humility, having not entirely figured it out myself, but, I hope, pointing us all into new directions beyond dominant archival rhetoric that has asked us to be neutral and impartial to the users of our collections or has very narrowly conceived of users as academic researchers writing published scholarship. Historians are absolutely important, but they are not our only important potential user group, as I hope I will show you in the next 50 minutes or so.

The title of my talk today is “So that Future Organizers Won’t Have to Reinvent the Wheel”: Activating Digital Archives for Liberatory Uses. The talk is based on two sets of work: First, my most recent book, *Urgent Archives: Enacting Liberatory Memory Work*, which came out in 2021 from Routledge Press. Specifically, part of today’s presentation is pulled from chapter three, which is called “From Representation to Liberation.” That chapter draws from my experiences as a co-founder and ongoing volunteer for and advisor to the South Asian American Digital Archive or SAADA, as well as with focus group interviews my research team and I conducted with users of six different community archives sites in Southern California.

Secondly, I will present some unpublished data based on interviews and focus groups my excellent graduate student researcher Anna Robinson-Sweet has conducted with people who narrate their oral histories to two different community archives: SAADA and the Texas After Violence Project, or TAVP. TAVP is a community-based archives that documents the stories of survivors of state violence in Texas. This latter research was conducted as part of an IMLS-funded project led by TAVP that employs community-engaged participatory action research to investigate participants’ motivations for participating in an online archive. That research asks: How does it feel to tell your story? How does it feel to have your story preserved indefinitely in a digital archive? Who might use these records and how? The answers to these questions build on the work I have been doing for the past decade on the emotional impact of archival use.

As some of you might know, my previous work has addressed the ways in which marginalized identity-based community archives counter the symbolic annihilation of oppressed communities, that is, the ways that predominantly white university and government archives have underrepresented, misrepresented, or completely ignored communities of color and LGBTQ+ communities (Tuchman 1978, 3–38; Caswell, Cifor, and Ramirez 2016). I have posited that

community archives counter symbolic annihilation with representational belonging, empowering people who have been marginalized by mainstream media outlets and memory institutions to have the autonomy and authority to establish, enact, and reflect on their presence in ways that are complex, meaningful, substantive, and positive to them in a variety of symbolic contexts. To assert, I am here, we were here, we belong here.

My more recent work builds on and goes beyond these previous findings. More specifically, I will address the relationship between liberatory appraisal and liberatory outreach, arguing that archives should build on recuperative and representational collecting initiatives to activate records to stop cycles of oppression. I will introduce the concept of *corollary records*, to show how records from similar moments in history can be activated in the present.

I will also argue that more robust and accurate representation of minoritized communities is a limited (and limiting) end goal for archives, however important. I argue that archives must aim for more than representation, leveraging the minoritized histories they have painstakingly recuperated for liberatory ends. Through strategic outreach with activists, artists, and other community members, archivists can ensure the records in their care are activated to stop oppression in the present. Ultimately, I argue that archives must pair liberatory appraisal with liberatory activation in order to resist the white temporal imaginary.

I know that many of you work for university archives at dominant institutions. Many of these institutions are stuck—when we try to challenge dominant practices within them we are often met with brick walls. These brick walls are fortified by white supremacy and hetero-patriarchy. I think that we can all turn to community archives for inspiration, for new theory, and for new strategies on how to dismantle these brick walls and envision and enact new liberatory ways of doing archives.

But first, I should clarify what I mean when I say community archives. Diverging from centuries of archival thinking about government and bureaucratic records, the past decade has seen the rapid expansion of inquiries into what we now call community archives. The first attempts to describe the community archives phenomenon emerge from the UK. Writing in 2009, Andrew Flinn, Mary Stevens, and Elizabeth Shepherd write “A community is any group of people who come together and present themselves as such and a ‘community archive’ is the product of their attempts to document the history of their commonality” (2009, 75). The same research team wrote “The defining characteristic of community archives is the active participation of a community in documenting and making accessible the history of their particular group and/or locality on their own terms” (2009, 73).

This definition is a great opening shot, but it requires some refinement in our current context, I think. More specifically, I argue that we cannot discuss the phenomenon of community archives in the US without addressing power inequities. Here we can broadly divide community archives into two categories—those that represent and serve dominant communities, such as some historical societies that are often invested in white supremacist histories as a way to maintain or increase local property values, and those that represent and serve underrepresented, marginalized, and/or oppressed communities. It is the latter group of community archives that my research addresses. We might call them, more specifically, minoritized identity-based community archives in which the history held in common coalesces around a shared history of oppression, be it white supremacy, hetero-patriarchy, colonialism, capitalism, ableism, and their complex intersections.

Furthermore, I think it is important to distinguish independent community archives from community-driven or community-accountable collecting projects located within dominant institutions. These efforts are incredibly important, but have different issues in terms of autonomy, independence, agility, sustainability, etc. So, to be absolutely clear, when I say “community archives” I mean “independent minoritized identity-based community archives,” which is clunky and doesn’t easily translate into a nice acronym.

And another point of clarification: Although this talk draws on my experiences as co-founder and volunteer for SAADA, I have not directly worked on the specific activation projects discussed herein, other than digitizing many of the collections from which the projects draw. That said, I am in constant conversation with SAADA’s executive director Samip Mallick, and I often provide informal advice on project ideas and implementation. As such, I cannot claim to stand entirely apart from the SAADA work addressed in this talk. I make no assertions of being an outside researcher (though I am a white outsider to the South Asian American community), but rather I am an integral component of the phenomena my work describes, in a manner consistent with participant observation as a research method. I also cannot claim ownership or take credit for most of the archival labor described herein and shift from using “we” to “they” pronouns in discussing the work of SAADA staff when appropriate.

I’ll get started where I usually do, with the South Asian American Digital Archive, or SAADA.

Speaking at a July 2020 community-wide open Zoom meeting, SAADA Executive Director Samip Mallick said, “As an organization, even though we are thinking about and engaging with the past, our work has really always been about the present, the now.” The meeting was called by Mallick in the midst of three intertwined crises: a global pandemic that has disproportionately devastated Black, Latinx, and Indigenous communities; the ongoing state-sanctioned murder of Black Americans brought to the fore by the murder of George Floyd; and inept, malfeasant, white supremacist national leadership in the White House. “We have some good news to share in the midst of this challenging time,” Mallick’s invitation promised.

The July 2020 meeting was an opportunity to celebrate the organization’s twelfth birthday, to announce a new grant from the Andrew W. Mellon Foundation that would help support the organization for the next two years, and to launch a fundraising campaign with supporters. It was also an opportunity to demonstrate the archives’ value by drawing on corollary moments from the community’s past to make sense of the seemingly senseless and increasing overwhelming present. At that moment, that meant activating records in SAADA’s collections to inspire action around three major events: the COVID-19 epidemic, the movement for Black lives, and the upcoming 2020 election.

“There is little doubt we are living through a historic moment,” reads the opening text of SAADA’s participatory initiative to document South Asian American experiences of the COVID-19 pandemic. Launched in April 2020, the project, **Letters from 6’ Away**, asks South Asian Americans to write a letter to their future selves about their experiences with the pandemic. With the creator’s permission, the letters are included in the archives and mailed to the creator in the future, “in hopefully better days ahead.” Participants respond to a series of prompts online, upload a photograph of themselves, designate degrees of privacy or publicity from a continuum of options

provided, and submit a mailing address in which they would like their letters to be sent back to themselves in the future. There is also a space to honor a loved one who has passed during the crisis.

The submissions are deeply personal and self-reflexive, yet collectively offer a window into a wider community ethos of grief, feelings of isolation, and the search for solace. In these letters, historic traumas surface and resurface as South Asian Americans learn to cope with the new reality. For example, in her public entry to the project, Samira Ghosh of Texas writes “I would remember the first news that we need to store food. My first instinct was to buy rice and salt at Gandhi Bazar [sic]. It was a reaction to a historic trauma that my community went through. Bengal had a big man-made famine post WW2 and rice and salt were in scarcity. I had heard stories of what my family went through. I was surprised that this deep-seated insecurity had surfaced.”

The Bengal Famine of 1943 emerges as a powerful intergenerational memory, being relived even though the writer herself had not directly experienced it. She continues that getting groceries delivered in the early days of quarantine “felt like Christmas morning.” For some participants, the pandemic surfaced deeply ingrained traumas and enacted circular temporalities as if history was repeating itself, oceans and decades away, in a vastly different context.

The letters are created to be read at a noncorollary moment in the near future. It is the hope that, in the future, when the pandemic has presumably subsided (or at least its demands on us are presumably different), that activating these records by reading them will reveal some new insight into what will then be that present moment.

The project builds community by providing a platform for letters to be shared with each other. But, more importantly, it underscores the affective importance of the creation of records to participants—those who write letters to themselves feel validated, heard, documented in the historic record, even if they choose not to share their letters with others. In the future, the project transforms records creators into records users as participants read their own letters from the not-so-distant past. In so doing, it inaugurates a cyclical temporality, catalyzing movement back and forth along a pendulum swinging back and forth between now, two and a half years ago, two and a half years from now.

After inviting attendees of the July 2020 community meeting to participate in the Letters from 6' Away project, Mallick then pivoted to the other crisis on everyone's minds: the proliferation of and impunity for state-sponsored violence against Black people. South Asian Americans have a complicated history with the American racial hierarchy, as many records in SAADA attest; some early immigrants from India aligned themselves with whiteness to varying degrees of success, while others passed as Black. The 1965 Hart-Celler Immigration and Nationality Act that enabled South Asians to immigrate to the US in larger numbers would not have been possible without the Civil Rights movement. Yet anti-Black racism remains an ongoing problem within the community, despite the efforts of many South Asian American activists.

For Mallick, the July 2020 meeting was an opportunity to further position SAADA as an organization committed to justice for Black people. Acknowledging complex histories, he drew connections between the ongoing Movement for Black Lives and corollary moments in history in which South Asian Americans were involved in activism for Black liberation. Yet, he also directly confronted anti-Black racism within the community and did not gloss over its history

of aspirational (mis)alignment with white supremacy. “In response to the murder of George Floyd, Breonna Taylor, Ahmaud Arbery and too many others, we are sharing stories from our community’s past that help engage our community today in the struggle against anti-Black racism,” Mallick said.

He then recounted **the story of H. G. Mudgal**, an Indian immigrant to Harlem in the 1920s, who became the editor of Marcus Garvey’s newspaper and an outspoken activist for Black independence. “H. G. Mudgal’s story is a reminder both of the historical possibilities and duties for South Asians to engage in solidarity with Black communities, but moreover, the urgency now for us to engage in those solidarities and to address anti-Blackness within our own communities,” he said. Mallick continued, “To be able to share these stories from the past, to be able to engage with contemporary discourse and dialogue and movements has been really rewarding and enriching for us an organization and I hope they help to move our community as well.”

Mallick’s comments reflect a temporality of urgency, in which records from the past are invoked to inspire contemporary political action. In this way, the 1920s are set up as a corollary moment to the 2020s, and records documenting H. G. Mudgal from the 1920s are set up as corollary records to those being created by South Asian American activists fighting anti-Black racism now. By catalyzing corollary records from corollary moments, Mallick showed precedent for South Asian American solidarity with Black Americans, evoking “historical possibilities,” as he put it, that align the community with the contemporary Movement for Black Lives. These activations forge a cyclical temporality that dispenses with the racial progress narratives of white time; instead of insisting that “it gets better” for minoritized communities, these efforts show how oppressive histories repeat, how “historical possibilities” can be invoked to forge affinities and solidarities in the present, how a precedent of anti-racist activism can inspire action for Black lives in the now. In this work, archives become urgently relevant and crucially contemporary. The current moment demands more from the archives than simply documenting these stories of solidarity in hopes some future users might find them. SAADA catalyzes these records into action to forge corollary moments across cycles of time and to create a temporality of urgency for the communities it serves and represents.

I will show you another example. Through its social media pages, SAADA also highlighted contemporary artwork that draws on archival records and historical knowledge for ongoing activism for Black liberation. In June 2020, for example, the organization highlighted a series of drawings by Shebani Rao, a contemporary illustrator whose prior work has used records in SAADA to depict South Asian American historical figures. Rao’s drawings, shared on the SAADA site, portray a variety of older South Asian American immigrants, “aunties and uncles” as younger South Asian Americans might characterize them, in a range of clothing styles and skin colors, talking about the murders of George Floyd, Breonna Taylor, and Ahmaud Arbery. In Rao’s drawings, these aunties and uncles place the murders of Black people by the police within the context of a long history of violence against Black communities and describe ongoing protests against this violence. “The mainstream news describes these protests as riots. Remember, even our struggle against the British—which Black activists in America supported—was also described as riots! Let’s be on the right side of history and support our Black community as they fight for freedom and safety!” The drawings end with a call to “Donate to end state violence against Black people TODAY!” and a list of websites of Black-led activist organizations and bail funds where such donations can be made (Rao 2020). The work is intended for younger generations of South

Asian Americans to pick whichever auntie or uncle image best resonates with them and to share it with their parents' generation.

Rao's posters invoke a corollary moment—Indian independence from colonial rule—to garner South Asian American support for the contemporary Movement for Black Lives. By showing how the word riot was weaponized against South Asians in a just struggle against British rule, Rao asks South Asian Americans to question the use of the term to describe protests against impunity for the murders of Black Americans. In so doing, Rao forges a solidarity across space, time, and community, creating a corollary moment between Black and South Asian communities. The posters also give language to younger South Asian Americans attempting to have conversations about anti-Black racism with their own family members. As such, they compel action.

Mallick's final announcement at the July 2020 meeting also conveyed the urgency of the past by forging yet another corollary moment with the present. Looking ahead to the November 2020 US presidential election, Mallick discussed a **video** SAADA produced in May 2020 featuring Rani Bagai, whose grandparents, Vaishno Das and Kala Bagai, were among the first immigrants from India to the US, arriving in 1915. I will play it for you now.

In this brief video Rani Bagai articulated a cyclical temporality, later echoed by Mallick at the community meeting, that refuses the logic of white racial progress narratives. Progress is not a given, the granting of an ever-increasing number of rights is not inevitable. Rather, these messages communicate: South Asian Americans did not always have these rights, their ancestors fought for them, they could be rescinded, we might have to fight for them again. Oppressive histories repeat themselves; the threat of this repetition looms large. In just two minutes, this video counters white temporalities that assume the inevitability and desirability of a just, post-racial future. Instead, we see a community weathering repeated attacks throughout history and using traces of the past to ward off the next attack in the present, drawing on records from corollary moments, in this case the 1923 dismantling of citizenship rights, to catalyze voter registration in 2020. There is a temporal urgency to the past here and to archival activations of the past.

In each of these three cases, SAADA is drawing on what I call corollary records from corollary moments to catalyze political consciousness and action in the now. Corollary records document reoccurring moments in time in which the same or similar oppressions get repeated. A corollary moment is a point in time with historical precedence. At their most useful, records can be activated in corollary moments in the present, so that community members can learn activist tactics and strategies and get inspiration to keep going. "We have been here before, we have survived this before, we have resisted before," corollary records assert, "here's how." By activating corollary records, SAADA's community members are, if only for a second, interrupting reoccurring oppressions by learning from previous generations of community members facing corollary moments. This is one way archives can dismantle systemic oppression and engage in liberatory memory work—by catalyzing the activation of corollary records in the past to inspire and strategize activism in the present.

These examples mark an important shift for the organization, a movement from collecting records for recuperative and representational purposes, what I would call a form of liberatory appraisal, towards using and encouraging others to use those records against oppression in what I call liberatory activation.

In the initial years of working with SAADA, Mallick, other volunteers, and I were stunned with the amount of materials we found that dated back before 1965, when US immigration law changed to enable greater numbers of South Asians into the US. Back in 2008 when we founded SAADA, we had read about California's early Punjabi-Mexican communities and heard rumors about a few anti-colonial activists along the West Coast of the US and Canada from the turn of the twentieth century, but we had no idea the wealth of records we would find once we really started to look (Leonard 1994). We feverishly digitized as many pre-1965 records as we could find, thrilled to fill in some of the gaps and silences we had found when we looked for South Asian American stories in mainstream repositories like the US National Archives and Records Administration and dozens of university archives.

Our initial aims were recuperative in the sense that we were trying to recuperate lost histories, pulling them back from oblivion into the community's consciousness.¹ Our work was also representational in the sense that we were trying to increase the amount and types of representations of South Asians in US stories about the past. Recuperative and representational collecting kept us busy for nearly a decade and, guided by a very broad appraisal policy, we discovered (and digitized) more than we had ever anticipated about South Asian American history.

Building on Duff and Harris's naming of "liberatory description," I characterize these initial recuperative and representational collecting impulses as forms of liberatory appraisal (2002, 285). In placing value in materials created by minoritized communities, in appraising them as worthy of retention and preservation, and in thinking about the affective, material, and political consequences of such decisions on the communities represented in such records, archivists engaged in representational and recuperative collecting can be said to engage in liberatory appraisal.

Still, for SAADA's staff and communities, representing brown people in US history has never been enough, as important as it is. For years, Mallick and community members have discussed how, if the archives only collected the records of the most prominent South Asian Americans, the collection would replicate the same forms of erasure it sought to combat. What good would a South Asian American archives be if it only validated the experiences of straight cis upper caste Hindu Indian men? Keenly aware of these archival silences, Mallick consciously sought out collections created by South Asian American people and organizations further minoritized by gender, caste, sexuality, region, religion, ability, and class.

Over the years, it became increasingly clear that, for SAADA's collection to be inclusive of those most minoritized within South Asian American communities, we would have to think outside of the box of dominant Western archival appraisal, catalyzing the creation of new records rather than searching for preexisting records to digitize alone.

In 2019, with support from the Andrew W. Mellon Foundation, SAADA launched the Archival Creators Fellowship Program, which partners with Fellows to create archival collections that reflect the histories and perspectives of some of the most marginalized groups within the South Asian American community: Dalit women; Indo-Guyanese immigrants; and queer and trans people are just some of the communities that have been included.²

¹ My use of the word *recuperative* here is indebted to Anjali Arondekar's "recuperative hermeneutics" and the limits of "archival recovery." Anjali Arondekar. 2009. *For the Record: On Sexuality and the Colonial Archive in India*. Durham, NC: Duke University Press, 1.

² SAADA, Archival Creators Fellowship Program, <https://www.saada.org/acfp2019>. Funding for the project has been renewed and will continue through at least 2022 with six additional Fellows.

Here is one example, the Archives of Queer Brown Feelings, collected by Mustafa Saifuddin. I encourage you to go back and spend some time here.

Each of these collections has a significant oral history and storytelling component that depart from dominant archival practices; for example, they allow for participants to remain anonymous if they so choose, given the real threat of violence Dalit, trans, queer, and gender nonconforming community members face. SAADA is now in its third round of archival creator fellows and the work they have done has been staggeringly beautiful and simultaneously heartbreaking and life affirming and has added to the archives immeasurably.

The project reveals how, in the absence of robust preexisting documentation, recuperation alone is not enough. While it is crucial to catalyze the generation of new records that fill in gaps, in order to truly center minoritized communities, archives must respect silences, resist surveillance, and honor consent. This will mean changing commonly accepted practices and policies.

Our initial twin impulses of recuperation and representation were motivated by what I would come to describe as countering the symbolic annihilation of South Asian Americans with representational belonging. By finding, digitizing, and providing access to as many records documenting the early history of South Asian Americans as we could, we were countering the community's symbolic annihilation in history with a powerful assertion of existence and belonging.

Clearly, experiences of seeing yourself and your community in history after being excluded or misrepresented due to racism and/or hetero-patriarchy are emotionally powerful. Nearly every interview and focus group I have conducted with the volunteers, staff, users of, and donors to minoritized community-based archives over the past decade confirms the affective impact of robust representation after repeated and extended experiences of symbolic annihilation in mainstream archives. This affective impact, archives provoking the feeling of self-recognition in minoritized communities, can be an important emotional element of liberation. It is joyous to see yourself robustly represented after feeling symbolically annihilated. This joy is inherently political in a system designed to oppress.

It is important to note that symbolic and actual annihilation are intimately related. Symbolic annihilation both precedes and succeeds actual annihilation such that individuals and communities are rendered expendable, invisible, or nonexistent before they are subject to violence, particularly state-sanctioned violence. And then, after violence, such murderous acts are often rendered invisible or expunged from the record, magnifying and mimicking the violence itself. Every dehumanizing misrepresentation in archives that says "you are not quite human" and every archival absence that says "you are not important enough to collect" adds up to create the conditions that enable mass murder and/or genocide to occur. After such violence happens, every dehumanizing misrepresentation of that violence in archives that says "you deserved it anyway" and every archival absence of that violence says "your death is not important enough to note" also adds up to the conditions that justify mass murder and/or genocide, grant impunity for it, and enable it to occur again, setting us all up for the fallout next time.

Given this link between symbolic and actual annihilation, any discussion of liberatory archives must assert the importance of robust representation and recuperative collecting. Liberatory appraisal strategies such as these seek to center oppressed positionalities by assigning archival value based on the needs of oppressed communities; these needs may include valuing records

for evidentiary purposes as in the case of potential legal redress or, for affective purposes, in the case of countering symbolic annihilation with representational belonging. It matters if you can see yourself represented in history. It matters if others can see you represented in history. But still, representation is not the only or ultimate goal of liberatory memory work.

Too often recuperative collecting projects fall into a trap of respectability that is ultimately counter to the aims of liberation. A politics of respectability insists on collecting records that conform to dominant expectations about what a minoritized community should be (Lee 2016). This is true of many university-led projects that seek to recuperate the history of minoritized communities by documenting their prominent “firsts”—the first politician from a given community, the first business leader, the first actor. Filling archives with celebratory success stories from prominent leaders can reinforce harmful stereotypes that blame oppressed people for their own oppression; many Asian American community archives, for example, can undergird “model minority” myths that thinly veil anti-Black racism (Prasad 2001). Such collections, whether they are in dominant or community-led archives, are about inclusion within oppressive structures rather than about liberation from them. They pander to dominant groups instead of resist domination.

Furthermore, as many trans activists have noted, the heightened visibility brought about by increased representation can further expose vulnerable communities to violence and other forms of oppression. This paradox, simultaneously holding in tension representation and endangerment, visibility and invisibility, presence and absence, speaks directly to cyclical temporalities, as minoritized communities respond to repeating cycles of oppression and flashes of liberation. The desire or need to be seen and heard changes over time in response to the larger political climate. Visibility, one might ask, for whom? In this context, recuperative and representational collecting can be exploitative, extractive, and harmful, the result of oppressive appraisal practices, if downstream use is not considered.

Given this complexity, more representational collecting is not necessarily the result of liberatory appraisal, but it can be. Recuperative and representational collecting can be liberatory appraisal strategies if they are part of a larger liberatory project. Thus, liberatory appraisal is the process of determining the value of records in regards to their potential activation for liberation struggles. Contrary to the past century of dominant Western appraisal theory, liberatory appraisal considers the potential uses of records in making appraisal decisions and further asks whose uses and for what aims. In this sense, liberatory appraisal is intimately tied to liberatory outreach, as it is only in the activation of records that their full liberatory potential can be realized. Its undergirding assumption is that archives can catalyze particular kinds of use (political, artistic, activist) by modeling that use in their own practices and by targeting outreach efforts to groups engaged in liberatory work.

Archives, it has become increasingly clear to me, must leverage the recuperative and representational imperatives to activate corollary records across corollary moments in the present for liberation from oppressive systems. The work of archives and the work of activism, the work of representation and the work of liberation, cannot occur on separate but parallel tracks; they must be intertwined. I add here the notion of liberatory activation to describe those interventions in and uses of records that seek to dismantle systems of oppression and imagine and enact new possible worlds. It is not enough for archival institutions to collect records documenting minoritized

communities and/or activist movements with a vague notion of potential future use; these records must be activated by archivists and users for liberation struggles now. Archives, like many other cultural, social, and legal institutions, have a largely unrealized liberatory potential.

Realizing the imperative for liberatory archival activation changed how I did work for SAADA and how I discussed SAADA's work with others in the organization. After a decade of recuperative and representational work with SAADA, Mallick, myself, and other SAADA community members subtly began to shift focus from collecting more representative records to activating the significant body of records we have already collected towards liberatory ends. This is an ongoing journey. The projects described in this talk are important milestones in this pivot, but there is still a long way to go. These initiatives signal an important pivot towards liberatory activation and foreshadow future work.

SAADA's shift from liberatory appraisal to liberatory activation marks a new relationship to time for SAADA. First and most obviously, it reveals the maturation of the organization after more than a decade of collecting; now that we have a significant body of materials, we can encourage their use. But it does more than that, reshaping the role and responsibility of archives in cyclical, rather than linear time. In a cyclical temporality in which oppressive history repeats, the need, desire, and ability to be represented in archives fluctuates over time. This temporal construction resists the white temporal imaginary that asserts the linearity of time and the inevitability of progress. In catalyzing the activation of records to build corollary moments across time, space, and community, SAADA demonstrates that liberatory appraisal can propel the liberatory activation of records in the current moment. Liberatory activations will shift over time, as the political climate and needs of minoritized communities shift in response to repetitions of oppression. Refusing the stable logics of white temporality is a critical aspect of liberatory memory work, that must be enacted in tandem with material redistribution of resources, as I argue in my book.

I want to share with you now some quotes from interviews and focus groups with users of community archives and with people who have narrated their oral histories for inclusion in community archives. I think these quotes are illustrative of what potential users, that is users outside of the narrow dominant formulation of users as academic researchers, want from archives.

Back in 2017, my research team and I conducted some focus groups with users of Lambda Archives, an LGBTQ+ archives in San Diego. One such user, Angela Risi, a recent college graduate, spoke brilliantly about how archival materials can inspire new activism and teach key political strategies from the past. She said:

... I found the meeting minutes of when the Gay Liberation Front was proposed to be passed as a recognized student organization and it was approved.... That was one thing I was really impressed by, especially with activism happening today. I think that people think that activists who came before our time were this entity that had power and control and were official, but the records show it's just a handful of people to get together and scribble some things down on a notepad and that it evolves into something you could never have foreseen.... I don't know if [activists] are currently using [the archives] but I think certainly one way that they could use it is just as pure motivation to believe in the work that they're doing and see it is important, and ... also to learn how activism has and hasn't been successful in this specific context of the city of San Diego, what tactics have worked, what haven't....

She went on to address how strategies gay and lesbian communities historically used to fight police raids on gay bars could be used to fight police brutality today. Notice that the imagined use here, of organizers finding inspiration and strategies and tactics is almost wistful, right? Angela doesn't know if organizers are using archives, but she hopes they do.

More recently, the interviews and focus groups my graduate student researcher, Anna Robinson-Sweet, has been doing with South Asian Americans who told their stories to SAADA and formerly incarcerated people who told their oral histories to the Texas After Violence Project, confirm that members of other minoritized communities share this kind of wistful imagined use of archives by organizers.

For example, activist and artist Yalini Dream gave an oral history for inclusion in a SAADA project documenting Sri Lankan Tamil feminism. When asked why she decided to share her story for inclusion in an archives, Dream said:

... My hope and ideal is that in 20, 30, 40, 50, 60, 100 years that engagement with these [Tamil feminist queer] conversations will have grown and there will be greater interest in how these ideas percolated.... People feel like they have to reinvent the wheel over and over and over again and or people are put in a position where they have to learn as they go, which has been the position that I've been in for most of my political life and artistic life.... There's a gap in eldership for my generation within Tamil feminist queer community. So, I'm probably amongst the few Ilandai Tamil queer... folks my age who is actually engaging with and mentoring and supporting the leadership of younger folks. And I didn't have that for myself.... I felt that absence so wanted it for a younger generation.... Maybe this interview [I did for SAADA] could be mentorship access for younger generations so they don't have to feel like they're creating the wheel from scratch, that they can actually take things from where we've got them to ... and then, you know, dissect it, critique it, challenge it, evolve it, ... so we're not like getting stuck in the same place over and over again because of lack of access to information and ideas that have already been, hard fought to be part of the public discourse.

Here, we see a very specific imagined user and use for this oral history record: younger and future generations of Sri Lankan Tamil feminist queer activists who can learn strategies and tactics from now-current organizers and take their activism a step further because of it. The imagined uses are not vague, they are specific; the imagined users are not academics, they are community organizers. Yet, while wishes are clear, the language is circumspect: maybe, could be. There is a potential here that is not yet realized.

I will give you another example, this one from the Texas After Violence Project. Kirsten Ricketts gave her oral history about her experiences being incarcerated. She said:

So, that's why I agreed to do the video in the first place is because we so desperately need changes within our criminal justice system for those who are currently incarcerated, especially in the State of Texas; this is a horrible place to be incarcerated. And so, I just wanted to be as open, honest, and transparent as I could to make sure that that, you know, people might be drawn to stand up and do something for their loved ones as well.

The oral history was told and the record was created not for some unknown future apolitical user, but with a very specific political aim in mind—that listeners are activated to stand up and advocate for incarcerated people after listening to Ricketts’s story. The imagined use of the record compels action for material shift. Again though, the language is pregnant with potential. Might be. Not will be.

Here, I think, community archives practices can point all of us in the right direction. We are not just collecting, digitizing, and stewarding these records for some unknown users in some vague future that might never come. We must engage in liberatory outreach now, to connect organizers working for material liberation to the records in our care so that they may find inspiration, learn tactics and strategies, build on their predecessors’ work, and move beyond reinventing the wheel.

We can do this through concerted marketing and outreach efforts. We can identify organizers in our local areas, reach out to them, invite them into our archives, conduct workshops with them to engage them with our collections, craft policies that make them feel welcome. We can apply for funding to create artist and activist in residency programs so that we can pay community members to activate the records. I want to ask all of us, myself included: Now that we have digitized the records, what is our strategy for liberatory outreach?

I am asserting here that we must activate the digitized records in our care for material shifts. Here I identify two critical components of material redistribution for liberatory memory work: redistribution in society writ large and in the archival realm specifically. In the American context, liberatory memory work must support the activation of records for reparations for Black people and land reclamation for Indigenous people. Focusing more narrowly on archival practice, liberatory memory work must support the redistribution of resources from well-endowed predominantly white, elitist institutions to chronically underfunded community archives that serve and represent minoritized communities.

In 2016, I was part of a group of three American memory workers—Jarrett Drake and the now late activist and historian Doria Johnson (who is deeply missed), and myself—who formed a delegation to participate in the Nelson Mandela Centre’s international dialogue series on how to use memory-for-justice in post-conflict societies. Participation in this series posed a temporal challenge for us as Americans: how do you relate to memory workers in post-conflict societies, when you come from a society which is not only not post-conflict, but fully in the midst of a 500-year-old conflict that (at least in 2016) most white Americans do not even acknowledge? It became nearly impossible to relate to our colleagues from places like Bosnia, Rwanda, and Argentina, places where there had been a clear break, a regime change, an official reversal of policy, followed by a public accounting for crimes and, to varying degrees, a formal mechanism for reparations, redistribution, and/or justice.

To reflect on this disorienting experience, the three of us co-authored an essay that advocates for what we called a “liberation theology for memory work.” This brief essay helped us make sense of our experiences and laid the groundwork for this chapter by outlining temporal, affective, and material concerns. Our essay states:

“The past was never singular, nor will the future be. In order to generate these futures, memory work should be dangerous. It should seek not only to acknowledge past trauma, but to repair it. It should aim to upend hierarchies of power, to distribute resources more equitably, to enable

complex forms of self-representation, and to restore the humanity of those for whom it has been denied” (Johnson, Drake, and Caswell).

This frames the stakes of liberatory memory work, extending the boundaries of such work well beyond formal sites of knowledge production and transmission such as archives, libraries, and museums. What is at stake, ultimately, is not just how we remember the past, but how we distribute power—its temporal, affective, and material instantiations—in the present.

After this general outlining of the stakes of liberatory memory work, we then specified what this means for US memory workers. We wrote:

“In our immediate context ... [liberatory memory work] means using our skills as archivists, public historians, and academics to end the state-sponsored murder and mass incarceration of Black people and the continued genocide and displacement of Indigenous peoples, to dismantle systems of white supremacy, to actively resist the oppression of the most vulnerable amongst us, and to re-envision forms of justice that repair and restore rather than violate and harm individuals and communities” (Johnson, Drake, and Caswell).

Herein lies the tangible, material answer for the question of what liberatory memory work can accomplish—nothing less than the redistribution of wealth and land in support of Black and Indigenous liberation struggles.

Memory workers, and archivists in particular, can take a lead role in the movement for material reparations for the descendants of enslaved Africans in the US. There is much debate about what forms these reparations might take, including direct cash payments to the descendants of Africans enslaved in the US. As several prison abolitionists have made clear the deep connections between enslavement and the ongoing scourge of police violence and mass incarceration, any movement towards material reparation for Black Americans must be linked to dismantling the police and the prison industrial complex to have lasting material liberatory consequences.

If archivists think outside of the confines of neutrality and the constraints of professionalism, we can take part in this struggle. Archivists are experts on records. We can use our expertise in records to communicate their potential and their shortcomings, what got recorded and what did not, and why. We can activate the records in our care in support of efforts towards material reparations for descendants of enslaved Africans. We can provide space for descendants of enslaved people to publicize their legal claims for reparations, as archivists at Shift Design and the Texas After Violence Project did in 2019 in a public conversation with Tamara Lanier, who sued Harvard University for ownership of daguerreotypes taken of her enslaved ancestors (Texas After Violence Project and Shift Design 2019). If we are employed by institutions with such oppressive policies and procedures, we can refuse to abide by them and make our refusals public. We can also describe the records that we do have in ways that aid descendants in making legal claims.

We can mobilize the records in our care regarding previous successful claims to reparation to show that material reparations are not unrealistic dreams, but have historical precedent. Nazi records were used to figure out which Holocaust survivors were entitled to payment from the German Claims Conference (Claims Conference). US government records were used to figure

out which Japanese Americans were incarcerated during WWII and entitled to a cash payment (Hastings 2011). Cambodian archivists have activated records in their care to both convince UN officials to launch a tribunal and provide evidence to convict Khmer Rouge officials of genocide (Caswell 2014). Archivists have done this before. We can do it again, more concertedly, and on a larger scale.

I want to add to these imperatives a more specific demand for material redistribution as it pertains to the funding of archives. We need a redistribution of resources away from large predominantly white cultural institutions towards community-based archives representing and serving minoritized communities. As Bergis Jules has noted, foundations, government agencies, and high-net-worth individual donors have all, until very recently, excluded community archives from the funding sources on which mainstream museums and archives rely (Jules). White supremacy, as evidenced in extended divestment from the communities served and represented by community archives, extractive relationships with universities, and the biases of funding agencies, has caused the chronic underfunding of community archives. Meanwhile, funding structures based on the logics of capitalism and white supremacy have resulted in an overinvestment in predominantly white cultural institutions that house mainstream archives.

For example, I have seen an LA-based community archives launch a life-changing exhibition on a \$12,000 annual budget organized by an army of volunteers while, across town in an hour of traffic, the Getty Center spends millions conserving every last trace of white male detritus that very few, if any, people will ever touch, by design. Decisions about what to keep, how to describe it, and how to activate it should not be made solely by educated white people walled up in a white marble fortress in the hills of Brentwood; the BIPOC and LGBTQ+ communities that sustain community archives should have access to the same amount and sources of funding to make autonomous decisions about their own materials. The impact of such a reallocation would be astounding, as community archives would be able to pay for dedicated staff and infrastructure, extending their scope and reach beyond our current imaginations. Again, I think community archives can be guide posts for new practices and theories for all kinds of archives, but they can't do anything if they can't afford to keep their doors open.

In closing, the relationship between representation and liberation in community archives is not either/or; it can and should be both/and. Archives can counter symbolic annihilation through liberatory appraisal that robustly represents and re-centers the needs of the most marginalized and vulnerable communities without extraction or exploitation. Recuperative and representational collecting efforts can provide important material to counter symbolic annihilation with representational belonging and change dominant narratives of dehumanization that lead to the actual annihilation of BIPOC and LGBTQ+ communities. But archives should not stop there. We can push for liberatory use and outreach, activating corollary records in our collections to stop cyclical oppression in the now. Liberatory memory work implicates all aspects of the archival endeavor, from appraisal, to digitization, and description, and most importantly, to outreach. Our work is not over after digitization. Let's compel liberatory uses of the records we steward in the present, so that future generations of organizers don't have to reinvent the wheel.

Thank you! ●

References

- Caswell, Michelle. 2014. *Archiving the Unspeakable: Silence, Memory, and the Photographic Record in Cambodia*. Madison: University of Wisconsin Press.
- Caswell, Michelle, Marika Cifor, and Mario H. Ramirez. 2016. "'To Suddenly Discover Yourself Existing': Uncovering the Affective Impact of Community Archives." *The American Archivist* 79 (Spring/Summer): 56–81.
- Claims Conference. <http://www.claimscon.org>.
- Duff, Wendy and Verne Harris. 2002. "Stories and Names: Archival Description as Narrating Records and Constructing Meaning." *Archival Science* 2.
- Flinn, Andrew, Mary Stevens, and Elizabeth Shepherd. 2009. "Whose Memories, Whose Archives? Independent Community Archives, Autonomy and the Mainstream." *Archival Science* 9.
- Hastings, Emiko. 2011. "No Longer a Silent Victim of History: Repurposing the Documents of Japanese American Internment." *Archival Science* 11: 25–46.
- Johnson, Doria, Jarrett Drake, and Michelle Caswell. "From Cape Town to Chicago to Colombo and Back Again: Towards a Liberation Theology for Memory Work." Reflections on the 2016 Mandela Dialogues. <https://www.nelsonmandela.org/news/entry/reflections-from-the-2016-mandela-dialogues>.
- Jules, Bergis. "Architecting Sustainable Futures." <https://architectingsustainablefutures.org>. Community archives' struggles for fiscal autonomy are also described in Rebecka Sheffield. 2020. *Documenting Rebellions: A Study of Four Lesbian and Gay Archives in Queer Times*. Sacramento, CA: Litwin Books.
- Lee, Jamie A. 2016. "Be/longing in the Archival Body: Eros and the 'Endearing' Value of Material Lives." *Archival Science* 16: 33–51.
- Leonard, Karen. 1994. *Making Ethnic Choices: California's Punjabi Mexican Americans*. Philadelphia: Temple University Press.
- Prasad, Vijay. 2001. *The Karma of Brown Folk*. Minneapolis: University of Minnesota Press.
- Rao, Shebani. June 3, 2020. Graphics as shared on SAADA. <https://www.facebook.com/saadaorg>.
- Texas After Violence Project and Shift Design. August 3, 2019. "Archival Visions, Archival Liberation: A Conversation with Tamara Lanier." <https://texasafterviolence.org/?p=2735>.
- Tuchman, Gaye. 1978. "Introduction: The Symbolic Annihilation of Women by the Mass Media." In *Hearth and Home: Images of Women in the Mass Media*, edited by Gaye Tuchman, Arlene Kaplan Daniels, and James Benet. New York: Oxford University Press.

Author Bio

MICHELLE CASWELL, PhD, (she/her) is a Professor of Archival Studies in the Department of Information Studies at the University of California Los Angeles (UCLA), where she also holds a joint appointment with Asian American studies. Her work in critical archival studies engages how individuals and communities activate archives to forge identities, to produce feelings of belonging, and to organize against oppression. Caswell directs a team of students at UCLA's Community Archives Lab (<https://communityarchiveslab.ucla.edu/>), which explores the ways that independent, identity-based memory organizations document, shape, and provide access to the histories of minoritized communities, with a particular emphasis on understanding their affective, political, and artistic impact. In 2008, together with Samip Mallick, Caswell co-founded the South Asian American Digital Archive (<http://www.saada.org>), an online repository that documents and provides access to the stories of South Asian Americans. She is the author of two books: *Urgent Archives: Enacting Liberatory Memory Work* (Routledge, 2021) and *Archiving the Unspeakable: Silence, Memory and the Photographic Record in Cambodia* (University of Wisconsin Press, 2014), as well as more than three dozen peer-reviewed articles. Her work has defined and refined core concepts in critical archival studies, including archival imaginaries, community archives, imagined records, symbolic annihilation, radical empathy, survivor-centered archives, and feminist standpoint appraisal.

SELECTED PAPERS

The Art of Documents: The Digitization of Black Mountain College Ephemeral Materials as Exhibition and Interpretation Inspiration in an Art Museum Setting

Hilary Schroeder, Asheville Art Museum; Lydia See, Asheville Art Museum; Whitney Richardson, Asheville Art Museum; Corey Loftus, Asheville Art Museum

In 2017, the Asheville Art Museum received 408 documents from the family of Theodore Dreier Sr., a cofounder of Black Mountain College (BMC), an important experiment in education that occurred from 1933 to 1957 in Black Mountain, North Carolina. Consisting of course catalogs, community bulletins, event programs, letters, essays, and other printed matter personally collected by Dreier while at and following his departure from the college, the scope of these materials relates to individuals and events represented within and beyond the Museum's collection of artworks. In 2019, after years of registrarial limbo, the Museum began an intensive period of engagement with the documents, made possible by support from CLIR's Digitizing Hidden Collections grant. This process included reorganization of materials, cataloging and digitization, and critical investigation into the documents' presence within an art museum collection. Processing of the Theodore Dreier Sr. Document Collection (the "Dreier documents" or "the documents") has been undertaken by curatorial staff, graduate fellows, and interns and has generated compelling examples of how documents enhance exhibitions and object interpretation. This paper explores several projects from the past several years that serve as precedents for future pursuits. Engagement with the Dreier documents resulted in physical exhibitions, the development of digital exhibitions, and enduring web-based content. The documents foster greater interdisciplinarity within exhibitions and programming, bringing audiences into conversations that delve into diversity, design, intersections of media, and ideological impacts that extend the Black Mountain College legacy to the present. These explorations underscore the value of these materials to scholars and visitors and set in motion their continued use as interpretive tools in myriad settings physically and digitally.



FIGURE 1: Black Mountain College Logo & Statement, 1935, printed pamphlet, 9 × 5½ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.001. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

The projects explored here include the following, each detailing the significance of this collection from numerous viewpoints. Lydia See, the fall 2020 curatorial fellow and current gallery director and the inaugural Joseph F. Gross Endowed Curator at University of Arizona School of Art in Tucson, grounded the exhibition *Connecting Legacies: A First Look at the Dreier Black Mountain College Archive* in her background in archives. She discovered, through the cataloging and organizing of the documents in advance of digitization, stories of relationships in the documents that echoed artworks in the Asheville Art Museum's collection. Corey Loftus, fall 2021 curatorial fellow and current PhD student at New York University, tracked trends in marketing materials and creative outputs by artists responsive to the appeal and allure of the college's physical location. Associate Curator Whitney Richardson's multiyear exhibition project *Modernist Design from Bauhaus to Black Mountain* had important details crystallize upon pertinent discoveries within the documents as they underwent digitization, leading to not only stronger interpretation but also the inclusion of ephemeral materials alongside related artworks and concepts. Each of these exhibitions resulted in physical

manifestations in the Museum's gallery as well as virtual engagements that felt particularly relevant in the years of 2020 and 2021.

Connecting Legacies: A First Look at the Dreier Black Mountain College Archive, organized by Lydia See

Black Mountain College is an enigma. For every publication, exhibition, or lecture on the subject of Black Mountain College, there are a dozen stories unspoken. So many narratives echo the production of fabric by the human hand, wefts woven together onto the warp of place; every thread handwoven, every thread significant to the design. But when cloth becomes functional, a completed thing off the loom, we lose track of individual threads.

We see the yardage as a whole, for its prevailing use as a garment or dishrag or blanket, rather than the lifecycle of each thread which contributed to its woven structure.



FIGURE 2: Installation view of *Connecting Legacies*.

Connecting Legacies: A First Look at the Dreier Black Mountain College Archive, organized by Lydia See, fall 2020 curatorial fellow, intended to look more closely at the many individual, often unnoticed, threads of Black Mountain College through its primary source objects, and the digitization of the Dreier documents proved instrumental in this examination. By focusing the exhibition on several themes found within the Dreier documents and situating the ephemeral objects on view with objects from the Asheville Art Museum’s collection, we were able to offer viewers a holistic picture of what transpired outside of or adjacent to the most known narratives surrounding the college. These objects on view together create connections, each one a thread contributing to a nuanced tapestry of the people, materials, geographies, and ideas of Black Mountain College and its ongoing legacy.



FIGURE 3: Case detail from *Connecting Legacies*.

While scholars of Black Mountain College might have access to some of the materials contained in the Dreier documents by visiting archives or academic holdings of BMC ephemera at locations such as the Western Regional Archives in Asheville, North Carolina, many of these primary source objects do not exist in an accessible form outside of an archival finding aid or the rare digitized online collection, where access may be intimidating for those uninitiated in archival practice. This can be limiting to artistic or lay researchers who lack resources or context necessary to conduct research that is situated

outside of the dominant narratives about and from the college. An intention of *Connecting Legacies* was to situate this ephemera within the larger context of BMC, encouraging deeper inquiry into less accessible histories of the place (see figs. 2 and 3).

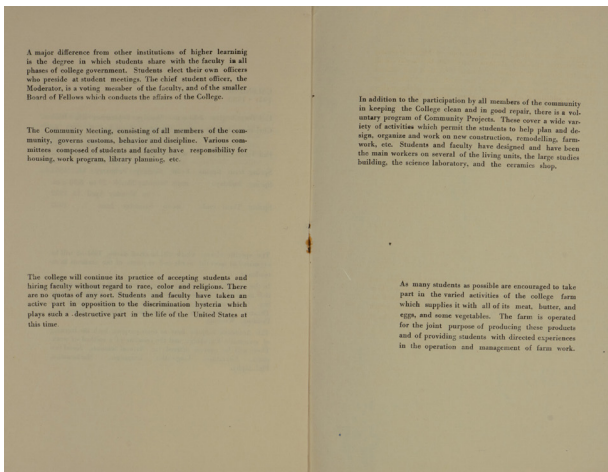


FIGURE 4: Page from Black Mountain College Bulletin Vol. 9, No. 3, 1951–1952, ink on paper, 9 × 6 inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.361. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

Highlighted in *Connecting Legacies* are materials focused on underrepresented narratives and the women and people of color of Black Mountain College. For instance, in the Summer Music Institute of 1944, almost 10 years to the day before the *Brown vs. Board of Education* Supreme Court ruling, Alma Stone Williams became the first African American student invited to BMC, as a visitor for the Summer Music Institute. Sylvesta Martin

became the first full-time student admitted the following year, and the following summer, musicians Roland Hayes and Carol Brice were welcomed to the college as its first African American faculty for the 1945 Summer Music Institute (though it would not be until the following year that the first full-time faculty of color were invited). Programs from their performances and college bulletins from the 1944 Institute sit curated alongside student artworks made around the same time in *Connecting Legacies*, as does the 1951–1952 Black Mountain College Bulletin Vol. 9, No. 3, opened to a page that reads (see fig. 4):

The college will continue its practice of accepting students and hiring faculty without regard to race, color and religion. There are no quotas of any sort. Students and faculty have taken an active part in opposition to the discrimination hysteria which plays such a destructive part in the life of the United States at this time.

In a section of the exhibition focused on relationships, artworks by artist couples like Josef and Anni Albers, who arrived at BMC together, and Ruth Asawa and Albert Lanier, who met as students at BMC, were hung in proximity to works and letters by lifelong friends Lorna Blaine Halper and Ray Johnson, whose friendship began and was solidified at the college. Arranged in a display case



FIGURE 5: Case detail of Black Mountain College course catalogs in *Connecting Legacies*.

nearby were Dreier documents such as bulletins and recruitment materials from the eras during which these relationships flourished and affected the artists' aesthetic development—illuminating the conditions within which, for instance, Anni Albers began the weaving workshop wherein Asawa studied, or the development of architectural plans for the school that likely impacted Lanier's career.

While arranging the items from the Dreier collection for *Connecting Legacies*, there were many moments of delight in discovery. On one wall, below photographs of students and powerhouse women of BMC, a case held 10 college catalogs in chronological order, including the initial college catalog (see fig. 5), prior to adoption of the recognizable Albers-designed circular seal (see fig. 1). Now, thanks to the digitization efforts made possible by DHC, the content of each of these catalogs (and the delight of discovering said contents thanks to detailed transcription searchable online) may be enjoyed by all.

Connecting Legacies encouraged viewers to find connections between the type of artworks visitors are used to seeing in a museum setting with the more unusual items from the Theodore Dreier Sr. Document Collection. The exhibition also invited the consideration of how the presence of primary sources impacts the experience of engaging with art, especially when placed in close proximity and with equal importance to one another. Through these connections and contextualized access made more democratic through digitalization, future research about the lesser-known legacies of Black Mountain College may be conducted with the same ease with which one may learn about the most notorious and well-known of its students, faculty, and visitors.

Learning from the Landscape, organized by Corey Loftus

The digitization of the Dreier documents provided the materials and perspectives necessary for the formation of *Learning from the Landscape*, an exhibition organized by Corey Loftus, fall 2021 curatorial fellow, and focused on the relationship between the school and its environmental surroundings. While cataloging the broad variety of documents and detailing their contents for digitization, central themes arose that sparked previously unexplored conversations with the Black Mountain College Collection. One prevalent theme pertained to the various ways the BMC community interacted with the surrounding landscape, whether choosing it as an artistic subject, working on the farm, or hiking local trails. Many students, faculty, and visitors traveled far distances (often by train) to reach the remote campus situated in the heart of the Great Craggy Mountains in southern Appalachia (see fig. 6). The

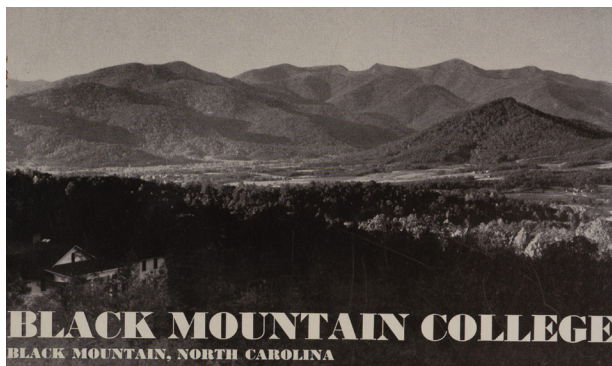


FIGURE 6: Black Mountain College Photo Booklet, 1938–1939, ink on paper, 6 × 9 inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.003. Courtesy of the Theodore Dreier Sr. Collection, Asheville Art Museum.

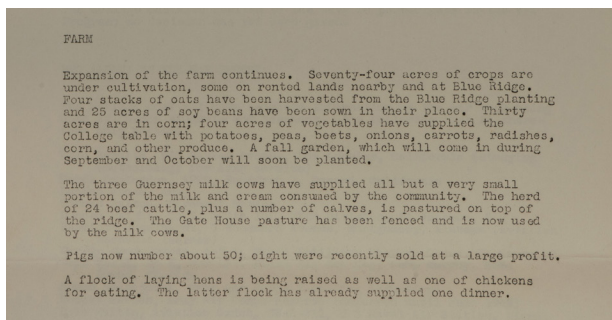


FIGURE 7: Black Mountain College Mid-Summer Report, 1942 (detail), ink on paper, 14 × 8½ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.076a-f. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

sprawling rural landscape possessed a certain magnetic energy that made an impressive backdrop for the development and incubation of intellectual interchange, artistic freedom, and collaborative spirit. Landscape was also a common subject for painting and a plentiful source of natural materials for artmaking. As such, BMC's setting was crucial to the college's modern and progressive educational project. The art and ephemera presented in *Learning from the Landscape* spoke to the multidimensional role the environment played relative to the tradition of artmaking as well as the identity of BMC.

To give a few examples, the digitization of the Dreier documents led to the discovery of numerous facts and stories pertaining to everyday life at Black Mountain College. Some of the most interesting details related to the college farm, an aspect of BMC's history deserving of further study.¹ College bulletins sometimes detailed the food from the College farm that was served in the cafeteria. According to the Mid-Summer Report in 1942, following the college's move to its Lake Eden campus (see fig. 7), among the plants harvested from the farm (and some rented land at the college's first location across the valley at the YMCA Blue Ridge Assembly) were oats, soybeans, corn, and a myriad of

¹ For instance, David Silver's work on BMC's farm history has contributed to the history of the financial struggles the college was known to face, including the desperation that led the school to auction off their livestock in the mid-1950s before closing down. Silver introduced these findings in his presentation "Burying a cow and other desperate stories about food and the farm during the last gasps of Black Mountain College, 1954–56" at the 12th annual Reviewing Black Mountain College Conference, co-hosted by the Black Mountain College Museum + Arts Center and the University of North Carolina Asheville in November 2021.



FIGURE 8: Faith Murray Britton, Untitled, not dated, watercolor on newsprint, 18 × 12 inches. Asheville Art Museum, Black Mountain College Collection, gift of the Black Mountain College Project and the children of Faith Murray Britton, 2012.26.018. © Estate of Faith Murray Britton.



FIGURE 9: Faith Murray Britton, *Matière Study*, circa 1941, magazine page and leaves on paper, 18 × 12 inches. Asheville Art Museum, Black Mountain College Collection, gift of the Black Mountain College Project and the children of Faith Murray Britton, 2012.26.021. © Estate of Faith Murray Britton.

vegetables including “potatoes, peas, beets, onions, carrots, [and] radishes” (Mid-Summer Report 1942: 2). The farm also supplied the dining hall with animal products, dairy, and “chickens for eating” (Mid-Summer Report 1942: 2). The documentation of the farm, its contents, and care, could also be used in further research to track the subsequent phases of growth and decline of the farm. One of the great joys of putting together a checklist for *Learning from the Landscape* was the chance to highlight connections between these detailed discoveries such as the crops that supplemented dining hall meals and the visual work in the Asheville Art Museum’s impressive collection. The exhibition included both ephemera and visual sources so that visitors could seek further connections of their own.

Faith Murray Britton’s untitled watercolor (not dated, see fig. 8) was one such example of a student artwork that might constitute a link between the agricultural and artistic labor integral to the student experience. The vivid watercolor painting depicts a leafy green cabbage and brightly rendered fruit. One wonders if the illustration was painted from a still life composed from foodstuffs actually grown at BMC. In a different artwork also included in the exhibit, Britton’s work reflects the materials of her environment in a totally different manner; her *Matière Study* (circa 1941, see fig. 9) for Josef Albers’s class features pressed leaves. Working with found materials offered a low-cost and creative solution for students studying art and design at Black Mountain College who often looked to natural sources for inspiration. The artworks and the documents back up this ingenuity.

In addition to associations with dining hall grub and student artwork, the relationship between BMC and the regional landscape of Western North Carolina also concerns its identity as a modern institution and creative retreat. Panoramic views of the mountains were mainstays of the college’s promotional literature that helped shape the school’s identity and determine the tone of campus life. In his book on BMC, Fielding Dawson described the community’s “awareness” of the world as constant and all encompassing:

During meals and concerts in the Dining Hall the frogs around the lake brought the lake to our tables and chairs because we heard them. Herons and egrets, standing in the shallows near the Pot Shop, gave perspective to distance

by being in the foreground of the Blue Ridge skyline, but across the lake from us. In that world, we wrote or painted or composed, and were inside our work, unaware of anything but it, we merged or blended in and became space immersed in local, cosmic distance, as it must have been with the first peoples. Walking along the road, a hill, in a field at the farm, just crossing a road, we went through it, and in an intuitive sense, there were almost corridors (Dawson 1991: 138).

The digitization of the Dreier documents and other materials in the ever-growing Black Mountain College Collection at the Asheville Art Museum will continue to fuel future research that broadens our understanding of life at Black Mountain College. Most importantly, these discoveries range from the moments we remember as famous highlights in BMC's history to lesser-known details that related to daily routines. Expanded use of the archives in this form will also bring new opportunities to form connections between textual and visual sources.

Modernist Design at Black Mountain College, organized by Whitney Richardson

The planning of the exhibition *Modernist Design at Black Mountain College* began several years before the CLIR Digitizing Hidden Collections grant was awarded, but receiving the grant made an exceptional difference not only in the final presentation of the exhibition, e.g., objects included; it also meant that the research and labels produced for the exhibition were far stronger and brought new scholarship to the study of the arts at Black Mountain College.



FIGURE 10: Mary "Molly" Gregory, Silverware trays, circa 1944, mahogany, pine, and reproduction contemporary linen, $2\frac{3}{8} \times 32\frac{3}{8} \times 10\frac{1}{2}$ inches; $2\frac{3}{8} \times 11\frac{1}{8} \times 11\frac{1}{8}$ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.12.13.01–02. © Estate of Mary "Molly" Gregory.

The premise of *Modernist Design at Black Mountain College* used objects in the Asheville Art Museum's collection to illustrate how the designs produced at Black Mountain College from 1933 to 1957 brought a Modernist aesthetic to the region around Asheville and the Blue Ridge Mountains. What made this effort possible was the 2017 gift from the Dreier family, which included furniture and craft objects from BMC in addition to the ephemera discussed above. While the furniture and craft objects were minimal (approximately 15 works) and straightforward to assess, the over 400 pieces of ephemera were more difficult to

comprehend and investigate. Theodore Dreier Sr., in addition to his role as a founder of Black Mountain College, acted as a fundraiser and sometimes mathematics and science professor until his departure in 1949. His role as treasurer—or perhaps his sentimentality—led him to collect and keep nearly every piece of ephemera produced by the college. The furniture was used by his family in their Martha's Vineyard home. The Museum's receipt of these objects was like possessing a treasure trove without having the proper time to explore.

The CLIR Digitizing Hidden Collections grant afforded a deep dive into these buried treasures, beginning with the ephemera becoming physically accessible for exploration. As curatorial fellow Lydia See pulled documents and organized them in archival boxes by type, Richardson was able to

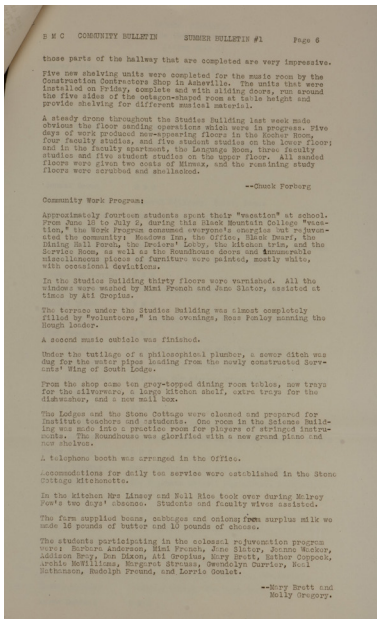


FIGURE 11: Black Mountain College Community Bulletin College Year 11 Summer Bulletin 1 Monday, July 3, 1944, page 6, ink on paper, 14 x 8½ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.159 A-E. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

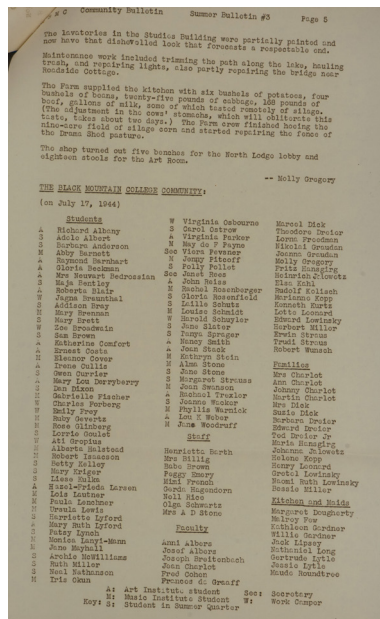


FIGURE 12: Black Mountain College Community Bulletin College Year 11 Summer Bulletin 3 Monday, July 17, 1944, page 5, ink on paper, 14 x 8½ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.161 A-D. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.



FIGURE 13: Mary “Molly” Gregory, Stool, circa 1944, stained oak, 15½ x 18 x 15 inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.12.03.01. © Estate of Mary “Molly” Gregory.



FIGURE 14: Lorrie Goulet, Untitled figure study, circa 1943–1944, oil on paper, 22½ x 15½ inches. Asheville Art Museum, Black Mountain College Collection, gift of the Black Mountain College Project and the Artist, 2012.26.54. © Estate of Lorrie Goulet.

look through the documents and access them with the exhibition in mind. As curatorial fellow Corey Loftus began to photograph and add documents to the database, one could fully see the scope of what the Asheville Art Museum had in its possession. Within these ephemeral documents were the creation dates of furniture and craft—a revelation! Before this, the Museum could only broadly date the works to woodworking instructor Mary “Molly” Gregory’s presence at Black Mountain College from 1941 to 1945. Now, the documents pinpoint the weekly meeting at which the artworks were announced as entering inventory, since they were used in everyday life. Some of those examples include the silverware trays (see fig. 10) in the Community Work Program section of Summer Bulletin #1 from July 3, 1944 (see fig. 11), coming from the shop of Molly Gregory. Another similar example came from the Community Bulletin announcement of the completion of 18 stools for the Art Room (see fig. 12). In Summer Bulletin #3 from 1944, just three weeks after the announcement of the silverware trays, the stools (see fig. 13) were presented at the recap of the Community Work Report. These stools became ubiquitous at the College and are seen in several photographs and artworks from the time (see fig. 14).

Other documents, like the Black Mountain College Photo Booklet, offered photographs of the built environment at the College, allowing the works in the Museum's collection to be seen in use and contribute to the scholarship on the degree to which the Bauhaus art school in Germany influenced style in Black Mountain, North Carolina. Notably, Josef Albers, head of the Art Department at Black Mountain College, and his wife, artist Anni Albers, were former students and instructors at the Bauhaus before coming to the United States in 1933. In a photograph from the interior of a Black Mountain College booklet (see fig. 15) meant to entice students to enroll, there is an image of Fritz and Anna Moellenhoff's living room. Though located at Black Mountain College's Greek revival-styled YMCA Blue Ridge Assembly campus in the 1930s, the space featured furniture designed at the Bauhaus in Germany in the 1920s. The Moellenhoffs immigrated to the United States in 1935 and were hired as faculty at the college at the recommendation of Josef Albers. While the influence of the Bauhaus arrived with the Alberses in 1933, including its methods of teaching architecture and design, the Moellenhoffs' presence—with their Bauhaus furniture—made that influence tangible. The wooden furniture pictured here was designed by Albers in 1926 for the Moellenhoffs' Berlin apartment. It was fabricated at the workshops of Trunk and Company—the furniture and design business of Anni Albers's father in Berlin.

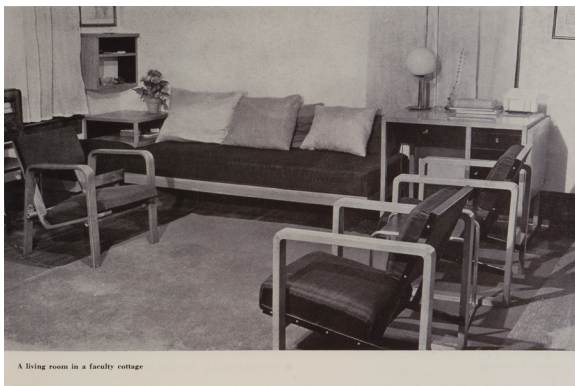


FIGURE 15: Biltmore Press (attributed printer), Black Mountain College Photo Booklet, 1938–1939, ink on paper, 6 $\frac{1}{8}$ × 17 $\frac{3}{4}$ inches (open). Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.003. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

Another excellent example of the Dreier documents' contribution to this exhibition and scholarship is a photograph of a student in their studio (see fig. 16) sitting on a chrome and leather upholstered chair, Thonet side chair model B32, first designed by Marcel Breuer in 1927 at the Bauhaus. Its construction embraced industrial processes and the mass production of household goods. This chair has been in production for almost 100 years, thereby proving the enduring nature of the modern designs that came out of the Bauhaus. Also visible in the photograph, sitting to the student's right is a wooden chair designed by Josef Albers and fabricated by Molly Gregory (see fig. 17). With the discovery of this image, these



FIGURE 16: Wilfred Hamlin, Black Mountain College Bulletin Vol. 1, No. 3, 1943, ink on paper. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.40.004. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

two chairs were reunited and set the stage, so to speak, for *Modernist Design at Black Mountain College*. The contrast of chairs, one mass produced in a factory and one hand crafted on campus, illustrated the range of furniture design used at Black Mountain College. It also revealed the unmistakable and lasting influence of the Bauhaus, passed on at BMC to the students.

Proof of the precise creation date and daily presence of the furniture at Black Mountain College exists in these documents given by the Dreier family. They are visual evidence of how and where these materials were used, which could not have been achieved without increased accessibility of the Dreier documents. The CLIR Digitizing Hidden Collections grant that made this exhibition of art objects fully grounded in the reality of their creation and existence.



FIGURE 17: Mary “Molly” Gregory, Lazy-J chair, circa 1941–1945, designer: Josef Albers, birch, brass, and leather, 26 ¾ × 17 ½ × 24 ½ inches. Asheville Art Museum, Black Mountain College Collection, gift of Barbara Beate Dreier and Theodore Dreier Jr. on behalf of all generations of the Dreier family, 2017.12.03. Courtesy of the Theodore Dreier Sr. Document Collection, Asheville Art Museum.

Histories Past Generating Histories Future

Through these three case studies’ unique approaches to the same material, possibilities for future continued research and sharing exists, as does a road map for similar materials outside the Dreier documents. Most recently, a set of letters from Mail art pioneer Ray Johnson, written while at Black Mountain College to departed classmate Lorna Blaine Halper, were organized into an insightful digital exhibition by Alex Landry, summer 2022 curatorial intern for museum diversity (see fig. 18).

These never-before-seen letters allow viewers to transport themselves into Johnson’s world at the time and, through the digital element of the presentation, quickly connect to works by other artists close to Johnson.

The efforts surrounding the Dreier documents reveal information that shifts standard curatorial trajectories. They provide contextual viewpoints while situating artworks historically in terms of broader trends and individual experiences. Relationships between people, places, ideas, and events are revealed, and specific dates can be applied to objects. In the paradigm of aesthetics at BMC, this ephemera captures broad reaching design choices and theoretical approaches inside and outside the classroom.

Unusual though not radical, the Dreier documents’ presentation alongside objects, both physically and digitally, represents a choice that acknowledges the



FIGURE 18: Screen capture of the 2022 digital exhibition *Dear Lorna, Love Ray*, featuring recently digitized letters from Ray Johnson.

importance of ephemeral materials in viewers’ understanding of artworks and art historical concepts. Primary source didactic solutions function in a “show, don’t tell” manner that replaces or complements more traditional interpretive labels. Additionally, these materials, which would

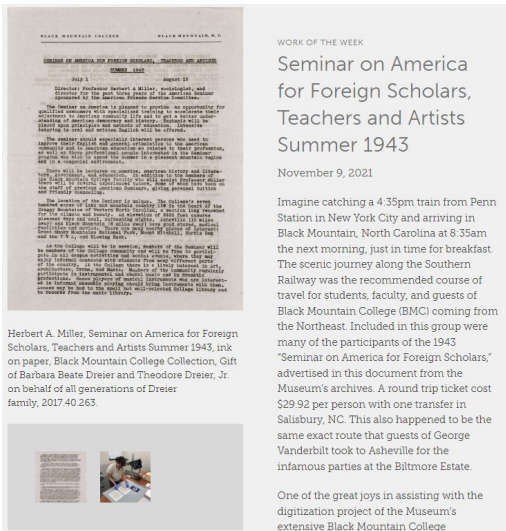


FIGURE 19: Screen capture of a **Work of the Week** blog post written by **Corey Loftus**, sharing her research on the Seminar on America for Foreign Scholars, Teachers and Artists in the Black Mountain College Summer 1943 Bulletin.

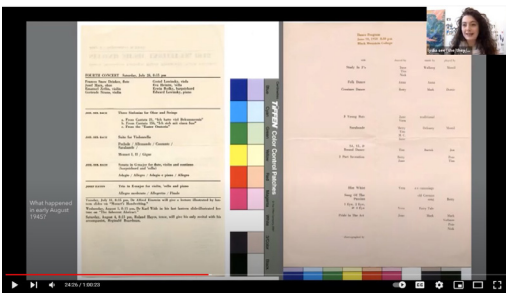


FIGURE 20: Screen capture of Lydia See's virtual Conversation with a Curator, available on YouTube at <https://youtu.be/FDhHd1lcOuk>.

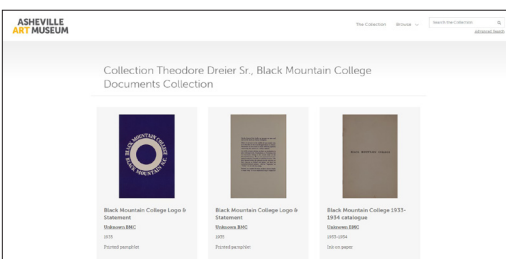


FIGURE 21: Screen capture of the Dreier document landing page on the Asheville Art Museum's online database, accessible at collections.ashevilleart.org.

normally remain relegated to an object file, are elevated in the fine art setting to a consideration of graphic design choices, a field of creativity that arguably goes acknowledged only in dedicated museums or exhibition.

Perhaps most exciting for the future of the materials digitized in this project are the virtual possibilities ahead of them. Already, these three exhibitions live on in the digital realm, though the physical presentations have ended. Visitors may explore blogposts that dive deeper into the documents as unique objects, ephemera in conversation with artworks, and the very process of bringing the documents to a larger public (see figs. 19 and 20). Curatorial staff, interns, and fellows have created video programming and virtual walkthroughs. The documents are now widely available and searchable with full transcripts, allowing scholarly and leisurely access to the materials without requiring further handling of these historic documents. Digital exhibitions and the Asheville Art Museum's publicly accessible online database (see fig. 21) in particular allow for repeated viewings of materials with ample time for deeper engagement that might not be possible in a faster paced gallery environment. Most importantly for our understanding of histories and visual culture, digitization of these materials has entered into a virtual space not limited or defined by the physical, allowing these new possibilities to exist alongside and in conjunction with traditional modes of presentation. In our current day and age, the physical and the digital feel equally as important and enduring, open for interpretation and experimentation in the same spirit as Black Mountain College itself. ●

References

Black Mountain College Mid-Summer Report. 1942.

Dawson, Fielding. 1991. *The Black Mountain Book*. Rocky Mount, NC: North Carolina Wesleyan University.

Author Bios

HILARY SCHROEDER (she/her/hers) is the former assistant curator at the Asheville Art Museum in Asheville, North Carolina, where she focused on art of the United States in the twentieth and twenty-first centuries. She received her bachelor's degree in art history with a minor in German studies from Macalester College, St. Paul, Minnesota, in 2012 and her master's degree in art history from the University of Georgia, Athens, Georgia, in 2015. Her recent research and curatorial projects span Black Mountain College, contemporary Cherokee art, and fourth wave feminism. In addition to her work in the museum field, she is an avid reader of science fiction/fantasy and a dancer and aerialist.

LYDIA SEE (she/they/y'all) is a multidisciplinary practitioner, educator, and curator of art + archives who is passionate about the uses of art for social justice + civic engagement. Lydia is

- northern by birth, Appalachian by choice, and is currently relocating to the ancestral lands of the Tohono O'odham Nation and the Pascua Yaqui Tribe (Tucson, Arizona);
- a serial collaborator, compulsive community builder, practicing studio artist, and educator of students from early childhood through end of life;
- a firm believer in the power of cultural access to transform lives;
- a curator within and without formal exhibition spaces.

In 2019, Lydia launched *Engaging Collections*, a residency and publication at the intersections of representation + art with libraries, archives, and special collections, with a grant from the Z. Smith Reynolds Foundation as part of their All for NC Fellowship. Lydia was a co-founder of the Six Feet and Cabbage School communities and has had a hand in developing programming, infrastructure, and strategic plans for myriad other initiatives and organizations.

COREY LOFTUS is a PhD student at the Institute of Fine Arts, New York University. She studies modern and contemporary art of the Americas with geographic interests in Cuba and Mexico. Corey's work focuses on women artists engaging feminist, queer, and disability studies to question the constantly negotiated experience of being in a body. Prior to her graduate studies at the Institute, Corey received her MA in the History of Art at Tufts University and BA at the University of Pennsylvania. Previously, she worked as a curatorial fellow at the Asheville Art Museum and in various roles at the Institute of Contemporary Art, Boston and the Institute for Contemporary Art at the University of Pennsylvania.

WHITNEY RICHARDSON is the former associate curator at the Asheville Art Museum, where she focused on decorative arts, design, and architecture. Most recently, she curated *Modernist Design at Black Mountain College* and was part of the team that curated *Intersections in American Art*, the Museum's major reinstallation and reinterpretation of the collection. Previously, she was at The Wolfsonian in Miami Beach as assistant curator and at the Art Institute of Chicago as assistant registrar of exhibitions and loans. Richardson received her BA in the History & Theory of Architecture from Columbia University in New York City. She holds her MPhil in the History of Design & Decorative Arts from Glasgow University in Scotland, specializing in the British Arts & Crafts Movement.

SELECTED PAPERS

Careful Considerations: Designing Workflows for Content Selection, Copyright, Privacy Concerns, and Cultural Competency

Abby Stambach, College of the Holy Cross; Corinne Tabolt, College of the Holy Cross; Lisa Villa, College of the Holy Cross

Digitizing the Deaf Catholic Archives: A Project to Open and Provide Access to a Collection of Print and (Audio)visual Materials which Document the History, Culture, and Religious Education of Deaf Catholics in the United States and Beyond was awarded a Council on Library and Information Resources (CLIR) Digitizing Hidden Collections grant in April 2022. This paper will introduce this hidden collection and describe prioritized areas of consideration as the project gets underway. These areas include the development of workflows to address such complex issues as content selection, privacy concerns, and permissions, while mindfully incorporating the nuances of Deaf culture in all processes.

An initial priority of the project design is configuring workflows to obtain permissions in order to make materials publicly available after digitization. The collection includes over 200 newsletters, with copyright holders varying from international organizations to individual church parishes. Another priority is to identify and manage personal identifiable information contained in items selected for digitization, such as birthdays, emails, and mailing addresses. Since this collection documents how Deaf Catholics practice their faith, personal stories are found throughout and those privacy concerns must be addressed as well. Workflows will be developed to review materials before they are made public in the digital repository. A takedown policy will be established to address any privacy concerns after the project is completed.

Throughout this project, we strive to be mindful and inclusive of the Deaf community as we work with materials outside our knowledge base. In particular, we seek the Deaf community's input for description and metadata, and how to address offensive or outdated terminology, especially as part of the collection's online presence.



REV. JOSEPH BRUCE, SJ, served as a resource and consultant for this presentation. His input was integral to the presentation and we acknowledge him as a contributor. Fr. Bruce, born deaf, attended Clarke School for the Deaf, a residential school where, during the days before support services, students were prepared orally without the use of sign language for mainstreaming into regular high schools. He attended Cathedral High School (Springfield, Massachusetts), entered the Society of Jesus in 1974, and

was ordained a priest in 1981. Fr. Bruce performed Deaf ministry in multiple American and Guatemalan dioceses until his assignment to work with the Deaf Catholic Archives. He is delighted to work with Holy Cross archivists and librarians, sharing his memories and knowledge of the collection. His priority now is to travel in order to collect as much material as possible and to help researchers locate the hidden treasures of Deaf Catholic history. Fr. Bruce received his BA from the College of the Holy Cross, MDiv from Weston Jesuit School of Theology (now Boston College School of Theology and Ministry), and MS in Special Education for the Deaf from Canisius College, where as an adult he was introduced to American Sign Language and Deaf Culture.

About the Collection

The Deaf Catholic Archives, referred to hereafter as the DCA, was founded by Rev. Joseph Bruce, SJ in the 1970s. At that time, Fr. Bruce was a Jesuit novice whose first assignment was to minister to people who are Deaf. Through this work, he was given a set of newsletters pertaining to Deaf Catholics. As a member of the Deaf community himself, he found the materials interesting and informative. Since computers were not readily available at the time, the practical difficulties of following conversations with hearing people, and a cultural hesitancy at the time to ask too many questions (so as not to appear “stupid” by hearing people) (Bruce 2022) meant that the only way to get information was by reading. Fr. Bruce continued to collect material about Deaf Catholics, using the collection as a personal library to better educate himself on how to best serve the Deaf Catholic community and as a reference while he was studying theology. Eventually, he realized that the information could only collectively be found within his own assemblage.

Fr. Bruce began storing the donations in a filing cabinet in his bedroom and called it the Deaf Catholic Archives. Referring to the materials as an “archives” was intentional because he wanted to “impress hearing people with something that cannot be found anywhere else” (Bruce 2022). Except for visiting his college archive as an undergraduate, he had little understanding of and no training about formal archives. However, he knew it was a specialized profession and wanted his own collection (and collecting efforts) to sound professional. The self-named “archives” had neither paid, professionally-trained staff nor a budget. General office supplies were used to organize the collection and were paid for out of pocket or with donations. Unlike a formal archive, the DCA did not have a permanent location. It traveled with its curator.

In 1990, Fr. Bruce was living with the Jesuit Community at the College of the Holy Cross, located in Worcester, Massachusetts. The DCA, which for a long time had been kept in his bedroom, was housed in the basement of the Jesuit residence. By that time, the collection had grown to 15 filing cabinets. Relocation of the Holy Cross Jesuit Community to a new residence forced Fr. Bruce to find another home for the collection. He contacted several institutions (none of which were Holy

Cross) and received either a negative response or none at all. A chance conversation with Rev. John Brooks, SJ, then president of Holy Cross, resulted in the donation of the DCA to the College's Archives & Distinctive Collections. Though Fr. Bruce's provincial assignments and ministry took him to other places in the world, he continued to send materials for the DCA to the College.

In 2015, Fr. Bruce returned to Holy Cross and his primary assignment was to curate the DCA. Between 1990 and 2015, the collection had been minimally processed for a variety of reasons. The collection was growing but access was very limited; discovery and searchability were nonexistent. Since 2015, significant progress has been made in both processing and promoting the collection in order to increase its usefulness and accessibility. Today, the DCA provides insight into the history of Deaf culture as well as an understanding of how Deaf Catholics practice their faith (culturally) in new ways, when traditional methods are insufficient. This unique collection documents the ways in which this subset of a mainstream community, unable to fully participate and therefore somewhat marginalized, adapted and organized to create a vibrant faith community within the greater Catholic Church that is both spiritually and socially fulfilling. A wide variety of materials can be found in the archives, such as documents, photographs, and ephemera from a variety of institutions across the globe including parishes and regional Deaf Catholic organizations.

Hidden Collections Grant

In 2021, CLIR announced a change to the focus of their Hidden Collections grant program and for the next cycle would fund projects that “deepened the public understanding of the histories of people of color and other communities and populations whose work, experiences, and perspectives have been insufficiently recognized or unattended.” Downtime caused by the COVID-19 pandemic offered an opportunity for the Holy Cross Archives & Distinctive Collections team to investigate possible grant-funded projects. The DCA was identified as a possible project at this time. After the call for applications was announced, the Archives team immediately agreed to submit a proposal for the DCA. The two-round application process was completed in 2021 and the grant was awarded in April 2022.

Content Selection

During the initial application process for the CLIR grant, the Holy Cross Archives team was mostly working from off campus. There was limited access to all archival collections and this affected the initial content selection process. The DCA is a large collection of about 188 cubic feet and consists of several series which are unique and require different considerations for digitization. There was too much material for the desired project; therefore, the scope was reduced for the final grant application. The grant team followed a list of criteria to create a more manageable project. Materials in the DCA were evaluated based on the following criteria: importance as recommended by Fr. Bruce; what might be popular or most useful; the condition of the original materials; privacy concerns and to what extent they would inhibit the full benefit or usefulness of the material; and of course, copyright. While not comprehensive, this digitization project will address all of the newsletters and a considerable number of publications in other series, as well as some scrapbooks that were determined to be the highest priority. The considerations and workflows that follow are based on the newsletters, but will be used and adapted as necessary for other items and future digitization projects.

Privacy

Since the collection documents how Deaf Catholics practice their faith, personal stories can be found throughout. Some materials contain personal identifiable information such as birthdays, emails, and mailing addresses. Other concerns were brought up by copyright holders. Decisions about which information will be redacted, and which items will be not available in full text or online at all, will be determined on an individual basis. In some instances, this could be at the series level. An example is the biographical files about specific individuals, many of whom are still living. The privacy considerations for these materials are complex and decisions regarding access could potentially slow down the project.

Furthermore, a takedown notice will be created and posted on various web pages created during the course of the project, such as the website where the digital images will live. Any privacy concerns will continue to be addressed during the course of the grant as well as beyond.

Copyright

Dealing with publications of any kind involves copyright considerations; the variety of materials in the DCA further complicated this task. Some content was in the public domain due to age. Examples include *The Catholic Deaf Mute* (1900–1905) and *The Ecclesiastical Review* (1893–1917). Some content, such as the *National Catholic Education Association Bulletin*, was published by an established publishing house or organization. This requires going through the standard permission request process. However, much of the material includes nonprofessional publications by individuals, nonprofit organizations, association chapters, religious orders, parishes, pastoral ministry offices, and dioceses or archdioceses. This requires determining who has ultimate authority to grant permission.

Determining Ownership

A conversation with the Judicial Vicar for the Diocese of Worcester revealed that according to canon law, in most cases authority for copyright belongs to dioceses and archdioceses. This is especially helpful given the number of parishes that have merged or closed. Schools for the Deaf experienced similar change as many became state-run or closed. In the case of some publications, there was overlap when the local IDCA chapter was in a parish or diocese. We needed to determine who had authority for the newsletter and who would be contacted, or whether it needed to be both. Another consideration was that over the years, pastoral ministry offices changed names, no longer existed, or became secular organizations serving the greater Deaf community and not just Catholics. Personnel certainly changed during the past 100 years, so identifying the right contact person was also part of the discovery process. Of course, orphan works always present a copyright challenge and some of those exist as well.

Copyright Permissions Workflow

The first step in the copyright permissions workflow was to establish a system to document and track the status of obtaining permission. A master spreadsheet was created for the newsletters that are to be digitized with the title, dates, primary organizations associated with the publication, secondary organizations, and contact information. The Catholic Directory¹ was used heavily for this, but Google searches and even Facebook served as additional sources of hard-to-find

¹ <https://www.catholicdirectory.com/>

information. The document *The Permission to Publish* was also consulted.² As the information gathering was underway, documents were annotated, and separate spreadsheets were created to isolate particular information. Next a “request to Digitize” letter was drafted for the organizations identified as the probable copyright holder. This letter defined the Deaf Catholic Archives, mentioned the CLIR grant, explained that some material had been identified with the organization and that the DCA wished to digitize it and make it available online, notified the recipient that an official request to digitize was forthcoming, and included an enclosure listing the titles and dates associated with the recipient.

While this preliminary permission letter did not solicit or expect responses, many recipients did respond. Written and verbal permissions were received from several organizations. However, they could not be considered official without the signed consent form provided by legal counsel. Requests for more information, notices of surprise that these even existed, and some rejections were also received. These responses were followed up with in a variety of ways. This included phone calls to explain the project in more detail, providing scans and other means of addressing requests to review material, answering such questions as “How did you get this item? How did you know it was us?” and happily receiving permissions but explaining this couldn’t officially count as an acceptance. A few cases resulted in lengthier conversations about potentially problematic content and the organization’s decision to deny permission for digitization and online access. The benefit of these unsolicited responses was the acquisition of current contact information to use for further communication. They also provided a means of identifying errors in the initial effort to determine copyright ownership. As always, this was all documented.

For a second round of communication to identified copyright holders, an “official request to digitize” was drafted. This was a cover letter which reminded recipients that they had received prior communication from the DCA regarding a forthcoming request, which was now enclosed. Legal counsel for the College of the Holy Cross assisted with drafting the official contract that permitted Holy Cross to digitize and provide online access to the materials in question. DocuSign was selected as the electronic signature platform if current, reliable email addresses were available. The contract was accompanied by an appendix, which was the same as the enclosure from the first letter and identified once again the titles and dates of the materials which had been associated with the organization. The appendix also provided a space for how the recipient wished to be identified for the repository’s copyright statement. It was determined that three contacts would benefit from translation, so a transcription service was used for those letters.

Obtaining official permission from organizations is still underway. Specifically, there are a number of organizations who did not respond to the initial letter so contact information is lacking for the person/people who can give permission to digitize.

Cultural Competency

Learning Deaf Cultural Competency

It is important to note that the Deaf community does not see deafness as a disability. Instead, they view themselves as a linguistic and cultural minority. Throughout the twentieth century, the Deaf

² Committee on Doctrine, United States Conference of Catholic Bishops, *The Permission to Publish: A Resource for Diocesan and Eparchial Bishops on the Approvals Needed to Publish Various Kinds of Written Works* (Washington, DC: United States Conference of Catholic Bishops, 2004).

community advocated and fought to change the prevailing mindset of the hearing majority that deafness is a disability. This is why they prefer to spell “deaf” with a capital D.

The members of the grant team are all hearing and have varying degrees of knowledge about the Deaf community. We recognized how important it was for us to become familiar with Deaf culture in order for the grant project to be successful. Fr. Bruce’s support and guidance were critical throughout the process. As a Deaf person, Fr. Bruce has shared invaluable instruction and nuances of Deaf culture and American Sign Language (ASL) that reinforce our intentions for mindfulness and for including members of the Deaf community as we work with materials outside our knowledge base. As founder and curator, he knows the collection better than anyone, including the provenance of each item. He is in contact with many of the individuals and organizations who have donated materials. Fr. Bruce travels the country collecting materials and promoting the collection as well as working with researchers who have learned of the Deaf Catholic Archives, guiding them how to use the existing resources as well as advising on the next steps to take after using the DCA’s materials. Furthermore, as the first Deaf Jesuit priest in the global history of the Jesuits (Kte’pi 2015, 106), he is a member of the very community the DCA documents, and can offer both personal and professional experience to help us understand and describe the significance of this collection.

Finally, it is crucial that members of the Deaf community are aware of this collection and have the opportunity to use it, contribute to it, and provide invaluable feedback about content, metadata, and background information that can only come from members of the community represented in a collection or archive.

Understanding What Is Needed

In order to engage the Deaf community, we have a robust outreach plan. This was developed as part of the initial grant application and has been further informed and strengthened by interactions with several Deaf individuals. Deborah Sinkis, a local Deaf woman, was interviewed by members of the grant team. She agreed readily with the importance of making people aware of the DCA, for a number of reasons. She states that “the information is not out there” and says “you have to know the history,” “to know what’s happening now,” and “to understand what was good ... and not so good” and “learn from it” so that members of the Deaf community are brought in as part of any process that involves Deaf people or interests (Sinkis 2022).

Making the Archives “Deaf-friendly”

Another aspect of our cultural competency includes becoming Deaf-friendly. Deaf-friendly means more than simply being welcoming and inclusive. Rather it is a specific group of behaviors that makes interaction and communication most comfortable and effective for the Deaf person. Some things to keep in mind include having Deaf-friendly faces to staff the archives. This means people should understand how to facilitate lipreading by smiling, situating themselves in an area with enough lighting, and having expressive faces. It also means arranging to have interpreters available upon request and making that option apparent. If an interpreter is present, it is essential to speak directly to the Deaf person and not direct conversation to the interpreter. If reading is part of the interaction, wait for a Deaf person to stop looking at a document and look at you before you begin speaking. It is helpful to wear dark clothing if you are signing but important not to assume every Deaf person knows ASL. Lastly, keep an iPad or paper and pen available as a backup communication.

Conclusion

The grant project is still in the early stages so present goals for the future may change or be adjusted along the way. It is hoped that the content of the DCA will be expanded and enhanced as one of the results of this project. This specifically includes adding more audiovisual content, digitizing the existing VHS tapes, and adding closed captioning when needed, especially to the videos that are only in ASL. Increasing the book collection related to Deaf Catholics and Catholicism as practiced and experienced by the Deaf community is another opportunity for expansion. It would also be beneficial to investigate conducting surveys and other forms of outreach as well as acquiring information about Deaf culture at other Catholic colleges and universities, particularly Jesuit ones. Finally, increasing biographical content about Deaf Catholics is another objective. Letters are especially desirable because they are rare among the Deaf community.

Perhaps the most important goal is to increase outreach efforts with the Deaf community and beyond. Some of these efforts will include creating more publicly accessible finding aids that are easily linked to materials digitized during the grant project. In addition, building collaborations with Gallaudet University, the only liberal arts college for the Deaf in the world, the National Institute for the Deaf, a college at the Rochester Institute of Technology, and other institutions serving the Deaf community will further expand the reach of the DCA while also ensuring it stays relevant to the community it documents and serves.

The CLIR grant to digitize parts of the DCA continues work begun fifty years ago by Fr. Bruce, but the grant will end and he may decide to retire someday. So it is important to make sure what has been started will be sustained. Future sources of funding must be considered, whether that be pursuing other grant opportunities, working with our institution's Advancement Office to secure donations, or petitioning to have the DCA receive its own line in the overall budget. Finally, it should be considered whether to make the current Project Archivist role for the DCA permanent, especially if Fr. Bruce vacates his position, and if so, whether it will be a member of the Deaf community or a hearing person.

Ultimately, the initial considerations for content selection, privacy, copyright, and cultural competency, combined with goals to expand, sustain, and provide ongoing awareness and access to this once-hidden collection, will help guide and inform any future work after the grant has expired. In so doing, the Deaf Catholic Archives will serve as a unique and valuable resource that continues to preserve and share the history while “amplifying unheard voices” (Council on Library and Information Resources, n.d.) of the Deaf community. ●

References

Bruce, SJ, Joseph (curator, Deaf Catholic Archives, College of the Holy Cross). 2022. Interview by Lisa Villa and Corinne Tabolt, May 25, 2022.

Council on Library and Information Resources. n.d. “Digitizing Hidden Special Collections and Archives: Amplifying Unheard Voices.” <https://www.clir.org/hiddencollections/>

Kte'pi, Bill. 2015. “Catholicism.” In *The Sage Deaf Studies Encyclopedia*, edited by Genie Gertz and Patrick Boudreault, 106. Thousand Oaks, CA: Sage.

Sinkis, Deborah. 2022. Interview by Lisa Villa, June 20, 2022.

Author Bios

ABBY STAMBACH, head of Archives & Distinctive Collections of the College of the Holy Cross, is responsible for the oversight of the College Archives, manuscript and rare book collections, and digital scholarship activities. Since her arrival in August 2019, she has been diligently working toward making the unique resources of the college readily accessible to students, faculty, and others through robust digital collections. Abby received her MSIS from the University of Albany and her BA from Gettysburg College.

CORINNE TABOLT (she/her) is the collections manager at the Gunn Memorial Library & Museum in Washington, CT. Prior to that she was the archival assistant at the College of the Holy Cross and collections and interpretation assistant at Adirondack Experience: The Museum on Blue Mountain Lake. Corinne received her MLIS from Kent State University and her BA in Archeological Studies from the State University of New York College at Potsdam.

LISA M. VILLA is the digital scholarship librarian at the College of the Holy Cross. She manages CrossWorks, the institutional repository for Holy Cross, supports scholarly communication services and programs, and assists with efforts for outreach and engagement. Having held a variety of positions in the Holy Cross Libraries, she is excited to work more closely with the Archives and Distinctive Collections department as their digital initiatives expand. Lisa received her MLIS from the University of Rhode Island and her BA from the College of the Holy Cross.

SELECTED PAPERS

Cleared for Takeoff: Digitizing the World's "Most Experienced Airline" and Creation of an Aviation Portal in DPLA

Gabriella Williams, University of Miami; Jacqueline Wachholz, Duke University; Leah Tams, Duke University; Scott Williams, Digital Public Library of America; Adriana J. Millares, HistoryMiami Museum

The creation and launch of a subject-based portal, "Cleared for Takeoff: Explore Commercial Aviation," which features Pan American World Airways materials digitized from collections at the University of Miami, HistoryMiami Museum, and Duke University, alongside commercial aviation resources from the Digital Public Library of America's (DPLA) partner network, provides an important tool for researchers. The portal aims to enable students, teachers, scholars, other researchers, and aviation enthusiasts to easily discover and build connections across aviation collections nationwide. It includes an interactive Pan Am timeline exhibition, as well as a primary source set (PSS) and classroom lesson plan for instructors. The records, advertisements, and artifacts that were digitized and the primary sources that were carefully curated demonstrate the profound and ubiquitous impact Pan Am had on the world, as well as its substantial influence on globalization and modernization. Issues such as feminism and gender roles, diversity and racism, colonialism and environmentalism are among some of the overarching themes that have been fleshed out through this project. In 2018, these four institutions were awarded a Digitizing Hidden Collections grant from CLIR to expose these important collections and contextualize them alongside other important commercial aviation records from other institutions nationwide. The grant partners discuss the challenges of creating such an innovative research tool, the lessons learned, and potential avenues for future sustainability of the project.

Institutions

The University of Miami Libraries (UML) comprise the main library located on the Coral Gables campus, as well as five subject libraries. Founded in 1978, UML's special collections are vast and include an impressive array of scholarly resources, comprising over 10,000 linear feet of materials. Over 15 percent of that linear footage is taken up by Pan Am alone, and that collection is also supplemented by a number of aviation-related adjacent collections such as Eastern Airlines. Recently, UML also became home to the Jay I. Kislak Collection of the Early Americas, Exploration & Navigation, an eminent cumulation of materials that document the history of the Western Hemisphere and North/South poles. These two collections actually complement each other nicely, given Pan Am's history of pioneering air routes throughout the world.

UML has also successfully leveraged outstanding distinctive collections through a robust digital initiatives program. UML digital collections now comprise 36 exhibits and over 130 collections and are continually growing. Of those, over 46 are from Special Collections, and the Pan Am digital collection receives the most traffic. UML also hosts HistoryMiami Museum's first digital collection.

HistoryMiami Museum (HMM) is located in downtown Miami, Florida. It was founded as an association in 1940 and has been operating as a museum since 1962. HMM is the largest regional history museum in South Florida and their mission is to safeguard and share Miami stories of the communities, individuals, places, and events found in the city. The museum houses over 20,000 objects that help tell these stories. HMM also maintains an aviation subcollection that contains over 1,500 items, including artifacts from Pan American World Airways as well as Eastern Airlines and National Airlines. The museum's Pan Am collection was donated to them by the Pan American Historical Foundation and contains over 800 cataloged objects. Currently, HMM has three Pan Am- and/or aviation-themed exhibitions, including one that is on display at Miami International Airport in the J Terminal.

Duke University's John W. Hartman Center for Sales, Advertising & Marketing History is an intellectual center within the David M. Rubenstein Rare Book & Manuscript Library. The Library acquired the J. Walter Thompson Company Archives in 1987, and to this day this collection continues to be the largest advertising agency archives in the world. The Pan Am account files came with the J. Walter Thompson collection. Duke established the Hartman Center in 1992 and has continued to proactively document the history and process of advertising from the industry perspective, collecting records from ad agencies, trade associations, and people who have worked in advertising in a wide variety of roles. The Hartman Center is also focused on documenting outdoor advertising, direct marketing, and the experiences of women and people of color in advertising.

Pan Am History

From the time of its inception in 1927, Pan American World Airways was America's preeminent, and for a long time only, international airline, establishing air routes throughout the world and achieving many aviation records, including being the first airline to cross both the Pacific and Atlantic oceans. In fact, it was the closest to a nationalized airline the US has ever had and played an integral role in WWII and other military operations. Pan Am was well known for its luxury and frills, something that is quite evident in Pan Am's marketing and advertisements, and the culture and impact of Pan Am can still be felt today. Pan Am connected the world through increasingly larger and faster aircraft, and it is easy to see how the airline truly "shrank the world," as the company was fond of saying, and brought society closer together.

At the time of the airline's bankruptcy, the Pan Am archive contained over 85,000 boxes of material. Pan Am was fastidious in archiving its nearly-seven-decade history. After Pan Am dissolved in 1991, the University of Miami Special Collections received all the paper, photographic, and audiovisual records. Subsequently, HistoryMiami Museum and the Smithsonian Institution received many of the cultural artifacts and 3D objects. Duke University had already acquired Pan Am's marketing materials through their acquisition of ad agency archives. All three institutions had experienced some of the same organizational, preservation, and discoverability issues with their respective Pan Am collections; thus there was ample opportunity to collaborate on future projects.

Digitizing Pan Am—Part 1

UML has received two digitization grants for the Pan Am Archives. The first digitization project began in 2017 with a grant from the National Historical Publications & Records Commission (NHPRC). This project built on a previous processing grant that UML was awarded, also from NHPRC, to enhance access and use. Although the processing grant made the physical collection more accessible, the collection still was not available online, so digitization was the obvious next step.

The NHPRC grant was an 18-month project with UML acting alone to digitize the Printed Materials Series, which is the most used series among the 19 subject groupings in the collection. A total of 60 boxes were outsourced for digitization, as well as 10 boxes scanned in house. UML also designed three thematic digital exhibits that were added to their [Pan Am site](#). Additionally, all of the digitized material was harvested into DPLA to broaden access and discovery. This project laid the groundwork for the CLIR grant project.

Collaboration

Upon successful completion of the NHPRC grant, UML staff knew they wanted to supplement their digital collection with materials found in other repositories elsewhere. HistoryMiami Museum became a natural choice since it is local and has the cultural artifacts and 3D objects. Duke University has notable Pan Am advertisement holdings that complement UML's Pan Am records. Since UML had already worked with DPLA to harvest the existing Pan Am digital collection from the previous grant, we used that as a catalyst to jumpstart our grant proposal and continue our work with them. So, the four institutions together pursued a Digitizing Hidden Collections grant from CLIR. Discussion about a potential collaboration began in 2015, and the partners agreed to submit a proposal for the 2017 CLIR Digitizing Hidden Collections grant cycle. The application made it to the second round but was ultimately turned down. In early 2018, UML and Duke had a lengthy discussion with CLIR grant staff about how to improve the application and reapplied for the 2018 grant cycle. The revised proposal scaled back UML's contribution by 30,900 images and shortened the grant period from three years down to two. The requested amount also was reduced from \$448,000 to \$275,000, and the team refocused the grant narrative to highlight globalization of air travel with Pan Am and its globally diverse destinations.

CLIR Grant

For this project, UML digitized 69 boxes of Pan Am records, which were outsourced to Backstage Library Works for scanning. HistoryMiami contributed over 500 artifacts, which UML photographed. UML is also hosting the museum's new digital collection since the museum does not have the capacity to do so on their own. Additionally, Duke contributed over 6,600 advertisements that they digitized through Backstage. Bringing all three collections together, we then created a commercial aviation-themed subject portal in DPLA, along with a digital exhibit, primary source set, and a classroom teaching guide for educators.

Digitizing Pan Am—Part 2

For the CLIR grant project, it is important to note that UML took a different approach to scanning the records and assigning metadata to the digital assets. Unlike the previous NHPRC grant,

UML's materials were processed at the folder level because they have a mixture of documents, correspondence, reports, photographs, and other items that would have required an excessive amount of time if the items were scanned individually. In order to save time, UML took a More Product/Less Process approach and treated each folder as a digital object, using minimal folder-level metadata rather than describing each discrete item. Since all objects have a corresponding text file (created through OCR), it was more efficient to rely on the system's search capabilities to discover individual items. Additionally, UML developed sponsor statements that were included in the metadata to sort the digital holdings by grant, which subsequently helped us with the digital infrastructure of the portal.

Object Digitization

UML coordinated with HistoryMiami Museum to photograph all of the objects the museum contributed to the project. The digital productions technicians at UML handled all of the photography of the 500 artifacts that were captured for HistoryMiami. Dr. Drew Wofford, an aviation historian who worked for the University of Miami Libraries and also volunteers for the museum, chose the items from among over 800 cataloged items. Wofford selected the items based on potential historical significance and uniqueness; these items included a wide array of things such as uniforms, dinnerware and silverware, model airplanes, luggage, jewelry and pins, and more. Wofford also went to great lengths to provide detailed descriptions of each item. The biggest challenge for UML was integrating the Museum's metadata into the library's system, which presented several hurdles in terms of crosswalking and converting their associated metadata and enriching it to comply with library standards. Additionally, many objects were multipiece items, for instance a toiletry kit, which added an additional layer of complexity with regard to item capture and description.

Scan Totals

During the first digitization project, UML had a total of 113,684 pages, of which about 30 percent was scanned in house. The totals for the CLIR grant are fairly comparable, but with much less in-house production. The UML Digital Production Lab also photographed 545 cultural objects and scanned an additional 945 oversized materials and vendor corrections. Together, both digitization grants included 230,666 images in the collection in total, representing almost 7,100 distinct digital assets. This is by far UML's biggest digital collection to date, though it is only about 10 to 12 percent of the entire Pan Am archive. Because the Pan Am archive is UML's most used collection, it was important to maximize the collection's accessibility and supplement it with more digitized materials from other institutions that could fill in some contextual gaps.

Advertising Contribution

Duke University's Hartman Center drew from several primary collections in its repository. The J. Walter Thompson ad agency (JWT) had the Pan Am account from 1942 to 1974. Four different collections within the JWT archives were tapped to supply Pan Am advertising for the CLIR grant: the Domestic (US-based), Frankfurt, International, and Competitive advertising collections all hold related print advertisements. In addition, the Wells Rich Greene ad agency had the Pan Am account from 1982 to 1988, and that collection also resides in the Hartman Center.

Leah Tams was hired as Duke's Pan Am CLIR grant intern, and she selected ads based on preset criteria. Because the ads were being outsourced to Backstage Library Works for scanning, the selected images had to be able to fit on their scanners, so no oversized ads were included. Duke also elected not to send advertisements printed on newsprint due to the fragile structural nature of the paper. Similarly, magazine ads that required attention from the preservation department before scanning were excluded, and Tams was trained by the preservation department to identify preservation issues. Hartman Center staff wanted to capture the truly international nature of Pan Am while also being as inclusive as possible. As a result, ad selection was not limited by language—over 15 languages are represented by the ads in Duke's advertising contributions to the project.

Advertising Metadata

The Hartman Center has already launched at least seven previous web projects focusing on advertising, so Duke already had a good understanding about what metadata is most useful to describe print ads. Duke commonly includes date, company name, product name, tagline, and format. For this project, it was also important to include two additional fields that would support the unique information found in Pan Am print ads. Firstly, any travel destination mentioned in a print ad was noted in the location metadata field. Some ads may promote just one route or location, but others may include quite a few. In one 1946 print ad promoting Pan Am's Clipper Express shipping service 42 different destinations were noted. All of those locations were included in the metadata for that print ad, and now researchers can click on any one of those cities in the metadata to see other ads that include the same location. For instance, there are 122 results for Guatemala as a Pan Am destination.

Similarly, it was important to include aircraft make and models when noted in Pan Am print ads. Aviation scholars and enthusiasts will be particularly interested in being able to search by plane type. A 1957 print ad celebrating the thirtieth anniversary of the Clipper features 17 different plane models that were used over the course of those first 30 years of service. Researchers can now click on "DC-4" to see that there are 23 results that describe that particular aircraft.

Finding Related Content in DPLA

The materials from UML, HMM, and Duke specifically digitized and selected for inclusion in the DPLA commercial aviation portal are supplemented by thousands of related records from institutions across the DPLA network. DPLA was able to leverage an in-house system originally built to identify related records for the [Black Women's Suffrage](#) portal and apply the same approach to Pan Am and commercial aviation materials. The first step was executed by the Pan Am metadata team at UML and Duke. They compiled a list of hundreds of search terms that they suspected would return related records in the DPLA corpus. The queries were rough approximations of what the team thought would be relevant but were intentionally overly inclusive. These queries were then reviewed and refined through a collaborative and iterative process with DPLA staff.

Building Queries

After the Pan Am metadata team worked together to develop an initial list of terms and queries, DPLA constructed a Google Sheet for the team members to review and provide feedback on the efficacy of the tags being applied to the DPLA corpus. One section listed each specific query/tag combination (e.g., "aviation_boeing_307"). These would link to the query results in the DPLA

portal so the review team could quickly navigate from the spreadsheet to the search results. The team paged through results and where appropriate, logged changes for DPLA staff to make. For example, the team identified that the query for ‘boeing 307’ was pulling in nonrelevant results and that the query should be wrapped in double quotes. DPLA then tweaked the queries and reevaluated those changes on a subsequent iteration.

Review & Refinement

The final results of modifying the specific example of ‘boeing 307’ reduced the number of related items from more than 6,000 to 17. After the first iteration, the changes fell into the following four broad categories.

Global Exclusions

These were terms that the team identified as wholly irrelevant to the records we were trying to include. If any item records contained one of these terms, it was automatically excluded from the set of related records.

Modify Existing Queries

While reviewing the list of queries, the team found that existing queries needed to be modified by either adding an exclusion term to the query or changing the specific query terms. An example of adding an exclusion term would be an original search term of ‘boeing 737’ that needed exclusion terms of ‘military’ and ‘department of defense’ so that the records returned were limited to commercial aviation.

New Queries

The team also discovered that the initial list of search terms was incomplete and added new queries to pull in additional related records.

Investigations

These were the most time-intensive problems the team tackled. One example of problems we encountered was a query that appeared to be working correctly but was not returning a specific record which we expected. Another example was identifying and fixing specific edge cases where we needed to pull in individual records that could not be included using term queries.

Item Aggregation

By the end of this process, the team had developed approximately 350 individual queries to identify specific related content as well as to exclude nonpertinent content (e.g., military or noncommercial aviation). Moving forward, when new relevant content is added to DPLA, it will automatically be tagged by one of these queries and added to the DPLA commercial aviation portal. For example, DPLA added a Pan American World Airways poster from the David Rumsey Map Collection to the aviation portal because its title was a match for the “pan_american_world_airways” tag query. DPLA continues to automatically add this kind of related content to the aviation portal on a weekly basis as they update and add records to the corpus. Most of the process was completed by summer 2021, and by October 2021, when the project was initially complete, the portal included roughly 31,000 items. Because of the automation process and DPLA partners continually adding new content, we are pleased that the portal has now grown to include approximately 41,000 items as of October 2022.

Portal Overview

The **portal** has three main parts to explore: the homepage, the associated primary source set, and the interactive timeline. In bringing so much collection material together from so many different institutions, we wanted to make sure that there were multiple points of entry for people who want to explore the materials. On the homepage at the center there is a search box, allowing site visitors to search using keywords and phrases. Additionally, there are also some preselected topics that we determined would be of high interest to visitors. These preselected topics are represented by the tiles on the bottom half of the screen and include:

- Aircraft
- Airports
- Advertising
- Pan American World Airways
- Pilots and Flight Attendants
- Early Commercial Aviation

In addition to those main entry points, there is also an option at the top of the portal homepage to “Browse by Partner.” This option allows visitors to see all of the portal material aggregated from a particular institution that matches the query parameters set up by DPLA. As of October 2022, over 450 institutions have material in the commercial aviation portal.

Another key feature of the portal is the associated primary source set, or PSS. The goal of the PSS, whose landing page is on [a] slide [in our presentation], was to bring together a much smaller group of carefully curated material from the three grant partners, provide some basic context, and then provide discussion questions and classroom activities for students (primarily K–12). Each question highlights items from the three grant partners, putting them in conversation with each other and encouraging students to critically analyze them.

The final aspect of the commercial aviation portal is the interactive Pan Am timeline. The timeline can be accessed from the homepage of the portal by clicking on the “Pan Am Timeline” link at the top. Much like the PSS, the goal for the timeline was to exhibit material from the three grant partners and put items in conversation with each other while also showing them in a relatively digestible format. The timeline begins with the founding of Pan Am in 1927 and ends with its merger with Delta in 1991. Visitors can navigate the timeline by using directional arrows, clicking on a tile at the bottom, and/or dragging the timeline itself to progress. Each slide features at least one item from Miami, Duke, or HistoryMiami. It was a challenge to select which items would be featured in the timeline and PSS, especially with tens of thousands of items to choose from our three institutions. It took many hours of planning, discussion, and evaluation to arrive at our final product, but they do a wonderful job of bringing material together from disparate institutions in a meaningful way.

Project Challenges

With any grant or digital project there are some challenges or hurdles to overcome. COVID-19 brought two particular setbacks for this project. UML staff experienced a furlough during 2020, so it was difficult for them to work together in a timely fashion on the project. Duke was about 75 percent finished on item selection and metadata creation when the March 2020 closure occurred.

The Duke library reopened with a skeleton crew in July 2020, and the Pan Am intern was able to extend her time and finish the selection process, albeit about four months behind schedule. After Duke's selected ads were sent to the vendor for scanning there was another issue. Backstage Library Works suffered a data breach attack in February 2021, just weeks before the Duke scans and originals were slated to be returned. Duke's files were going through the quality control check at the time. Backstage had to stop work on all projects and make sure their work was recoverable. Their recovery and careful checks on the work for Duke took months, so the final files weren't returned until late May 2021.

Finally, the last notable hurdle for this grant project related to the launching of an online exhibit in the DPLA commercial aviation portal. Once all files and metadata were uploaded into the portal, the final task to complete the project was to create an online exhibit and primary source set with a teaching guide, both of which were noted as deliverables in the grant proposal. Unfortunately, in April 2021 DPLA informed the grant partners that their exhibit creation tool was being updated and could not be used during the time left to complete the grant project. DPLA also did not have an estimated delivery date for a new tool. The curation team could and did move forward with creating the primary source set and teaching guide, but needed to come up with a workable substitute for an exhibit. Leah Tams, who returned to Duke to help with the exhibit and teaching guide, suggested an illustrated timeline for Pan Am using Northwestern University's Knight Lab web tool [Timeline JS](#). Using scanned items from all three institutions found in the DPLA site, Tams built the timeline and it became a very successful and logical substitute for an online exhibit. ●

Author Bios

GABRIELLA WILLIAMS is the digital projects librarian at University of Miami Libraries (UML) and has been working on grant-related digitization projects since she began her employment there in 2017. She holds a BA in political science from the University of Iowa and an MLIS from Florida State University. In addition to her ten years' experience at Embry Riddle Aeronautical University, Gabriella offers a strong background in commercial aviation history, having served as the project manager for UML's first digitization grant from the National Historical Publications & Records Commission. She also served as the project manager and primary investigator for their second digitization grant awarded from the Council on Library and Information Resources.

JACQUELINE WACHHOLZ is the director of the Hartman Center for Sales, Advertising & Marketing History, part of the David M. Rubenstein Rare Book & Manuscript Library at Duke University. Before becoming director in 2004, she was the reference archivist for the Hartman Center. She was the illustration editor for the *Advertising Age Encyclopedia of Advertising*, published by Fitzroy Dearborn in 2002. Prior to coming to Duke, she was an archivist at The History Factory and worked with corporate collections from Sears, Prudential, Goldman Sachs, and GATX. She holds an MLIS from The University of Texas at Austin and a BA in Art History from the University of Minnesota.

LEAH TAMS is the accessions coordinator at Duke University's David M. Rubenstein Rare Book & Manuscript Library. She holds a BA in history and mathematics from the University of Mary Washington and an MSLS from the University of North Carolina at Chapel Hill. She has worked on numerous digitization and public history projects and has previously held positions at the Smithsonian Institution Archives, the National Museum of American History, and the Rubenstein Library's John W. Hartman Center for Sales, Advertising & Marketing History.

SCOTT WILLIAMS (non-presenting contributor) is a senior software engineer at the Digital Public Library of America (DPLA). Before coming to DPLA, Scott worked with museum data at the Yale University Art Gallery and the University of Pennsylvania Museum of Archaeology and Anthropology. He holds degrees in history and computer science from Miami University of Ohio.

ADRIANA J. MILLARES (non-presenting contributor) is the object collection curator at HistoryMiami Museum. She holds a BA in Art History from Southern Methodist University and a Museum Studies Certificate from Florida International University. Adriana started as an intern with HistoryMiami during her last year as an undergraduate, before beginning full time in 2005. She is now responsible for the care and management of over 30,000 collection items. As a museum professional, Adriana has dedicated her career to building, preserving, and providing access to the museum's collection.

SELECTED PAPERS

Digital Collections for Multiple Audiences: Transcription, Translation, and Storytelling

Annabel Pinkney, Science History Institute; Michelle DiMeo, Science History Institute

Through our CLIR Digitizing Hidden Collections grant, *Science and Survival: Digitizing the Papers of Georg and Max Bredig* (awarded 2020), the Science History Institute is bringing an important archive to multiple digital audiences. The Bredig Papers are an intimate family collection that covers Georg Bredig's scientific training under the founders of physical chemistry, followed swiftly by his forced retirement and the demise of his career and very way of life under the Third Reich. Today, local communities across the US are curious about their heritage and the challenges faced by their immigrant parents, grandparents, and great-grandparents. Scientific networks were often used to negotiate escape routes for those fleeing Nazi-occupied Europe, making the Bredig collection of interest to both scholarly and public audiences.

Yet while processing and digitizing collections is often sufficient for scholarly audiences, our Google Analytics and end-user interviews taught us that public audiences need more. Additional resources must be invested in transcribing archaic handwriting, translating foreign languages into English, and interpreting the large body of historical content into a digestible narrative story. This paper explores how we gathered data about our target audiences and what strategic decisions we made upon analyzing them. We will discuss hiring a professional translator, building a custom UI for viewing transcriptions and translations, as well as creating online magazine articles, public programming, and collaborations with both local and European community groups. We seek to answer the question "we digitized it—what's next?" by showing that such projects shouldn't end with digitization.

Introduction

The CLIR DHC grant for *Science and Survival: Digitizing the Papers of Georg and Max Bredig* has allowed the Science History Institute to make publicly accessible thousands of previously unknown photographs, letters, telegrams, and documents from an intimate and important family archive. Unlike many other archival collections of German-Jewish scientists that were seized and destroyed by the Nazis, Georg Bredig's papers miraculously survived and have now been digitized, transcribed, and translated. This project pays testament to the many Holocaust stories that may never be known and helps give voices to silent memories that trauma and loss may prevent from ever being told. In addition to providing item-level discoverability for roughly 3,000 items of correspondence, photographs, and works of art, the CLIR grant also allowed the Institute to transcribe and translate into English approximately 1,000 manuscript items in the collection.

However, while providing free online access was an important first step, it would not have accomplished the goal of true accessibility. Additional work was needed to interpret and contextualize the archive. The Bredig Papers collection contains correspondence in multiple European languages, often handwritten in rapid scrawls and outdated German scripts that make the content unreadable even to native German speakers today. As such, the Institute knew that digitization itself would not be enough to engage the wide range of audiences who could benefit from these powerful stories.

In this paper, two members of the Science History Institute's CLIR DHC project team discuss how they used digital surrogates in creative ways to engage a much wider public audience with this important archival collection. Since this was the Institute's first large-scale digitization project with a significant transcription and translation component, the Digital Collections librarian conducted user testing to improve the public interface through an iterative design process. Next, the project team collaborated with the Institute's Museum and Facilities departments to install an exhibition on the building's street level windows to raise public awareness of the collection. Associated public events, online magazine articles, and a forthcoming video have packaged and interpreted the archive to ensure educators, students, and community groups have access to these resources.

The Papers of Georg and Max Bredig

Georg Bredig (1868–1944) was a pioneering scientist in the field of physical chemistry who held important academic positions in Europe until his career was ended by the Nazis in 1933. Fearing that his archives would be destroyed, he shipped his books and papers from Germany to the United States in 1938 where they were received by his son, Max (1902–1977). “Under no circumstances do I want it to be wasted/lost, given away or tossed! It should give witness over my life's work,” he explained to his son in an accompanying letter.

Max Bredig held onto the collection after his father's death in 1944 and would later add his own wartime papers and correspondence to the steamer chest that housed the collection in the Bredig family's basement. Max's son and Georg's grandson, George Bredig, then inherited the collection after the death of his parents. Noticing extensive correspondence with many Nobel laureates in chemistry and physics, he sought a suitable archive to house the collection. George Bredig sold the collection to a Pennsylvania-based autograph dealer in 2018, who reached out to the Science History Institute as a potential home for this collection.

The Institute purchased the Papers of Georg and Max Bredig in 2019, recognizing that that it was the perfect addition to the robust collections in the Institute's Othmer Library of Chemical History. The Science History Institute is a free library and museum in center city Philadelphia whose mission is to expand knowledge and challenge perspectives in the history of chemistry, engineering, and the life sciences. The Othmer Library holds thousands of rare books and manuscripts dating back to the fifteenth century; over 50,000 historical photographs; more than 1,200 oral histories with STEM practitioners; and over 7,000 linear feet of significant archival papers. Known for its award-winning magazine and podcast, *Distillations*, the Institute was the perfect place not just to preserve and provide access to the Papers of Georg and Max Bredig, but also to tell engaging stories from them.

Upon receiving the Bredig Papers, the Institute's chief curator of manuscripts and archives rehoused and processed the collection, creating an online finding aid (Science History Institute Archives, 2020). The collection can be described in two halves. Materials dated before 1933 detail Georg Bredig's scientific training under the leaders of the European school of chemistry, Svante Arrhenius, Wilhelm Ostwald, and Jacobus van't Hoff, and his own rise to international prominence in the emergent field of physical chemistry. The collection not only contains correspondence with these three men, all awarded the Nobel Prize in chemistry, but many letters from renowned scientists such as Ernst Cohen, Niels Bohr, Ernst Rutherford, Fritz Haber, Max Planck, and Walther Nernst.

The post-1933 material tells the very different story of the demise of Bredig's career and his life under the Third Reich. These documents reveal, in highly intimate and often harrowing detail, the Bredig family's struggle to survive the horrors of Nazi-occupied Europe; to secure humanitarian



FIGURE 1: Driver's license belonging to Max Albert Bredig (1902–1977), issued in Berlin on January 20, 1937. Photo courtesy of the Science History Institute.

aid, visas, and offers of employment for themselves and their colleagues; and to seek and ultimately find refuge in the United States. Significant items include more than 450 documents related to the Aryanization of family assets; Georg and his son-in-law Viktor Homburger's arrest during Kristallnacht; telegrams sent from Georg's daughter and son-in-law from an internment camp in Gurs, France; and letters from chemist friend Alfred Schnell and his wife, Eva, written from their hiding place on a Dutch farm and delivered to America via the Red Cross. The letters reveal that personal and professional connections readily transformed into a survival network in this time of need. By digitizing the archival

collection of father and son German-Jewish scientists we have made freely available new primary sources that reveal the impact of the Holocaust on mid-twentieth century scientific thought, networks, and enterprise.

Transcription and Translation in the Digital Collections

In order to fully transcribe and provide English translations for all German correspondence in the Bredig collection, the Institute needed a subject expert with specialist language and paleography training. Thanks to funding from the CLIR DHC grant, the Institute hired, for a two-year period, a project curator with a PhD in German Studies whose dissertation focused on the works of German-Jewish authors. Human transcription and translation were preferable in this case to reduce machine error, provide accurate interpretation of nuanced social topics, and build an understanding of the collection that could support the development of related public programming.

Upon hiring this project curator, several unexpected questions arose that challenged the internal library team to develop an in-house transcription and translation style guide to maintain consistency throughout the project. The project curator's workflow was to read the letters and create

plain text files of the transcriptions and translations for ingest into the Institute’s digital repository. It soon became clear that style guidelines needed to be developed in conversation with the library’s technical team to address a range of issues, including how to handle HTML style formatting, page breaks, and special characters. Since the application did not previously support the inclusion or display of transcription and translation data, customizing both the backend and frontend of the repository became necessary.

The Science History Institute’s Digital Collections is a custom Rails application developed and maintained in house by a team of two software developers. The application provides public access to a variety of the Institute’s collections, including archival documents, library books, born-digital materials, oral histories, and museum artifact collections. Having a custom local application with a dedicated staff of developers allows the Institute to create features and custom designs that address specific business needs and use cases. This flexibility afforded the opportunity to pursue the addition of transcription and translation data in the application.

The team’s plan was to develop the existing application interface and build new features to accomplish three main objectives: first, to store transcription and translation data in the digital repository; second, to optimize navigation of the site to make the data easily locatable for users as

well as enable efficient staff workflows; and third, to provide full text searching of both German transcription and English translation text. The Institute’s technical team sought to address these goals in an iterative fashion, using multiple rounds of user testing and research between development cycles to ensure that users could intuitively operate the new features.

This process began with three individual user interviews. The library director asked each user to look for translation data and observed while they navigated the Digital Collections application. After silently observing their actions during a series of prompts, she then asked each user to share their experiences with other digital repositories that include translations. The interview results informed the project team where users expected to find translation data on the collection webpages, what similar resources they had used in the past at other institutions, and whether certain features would be useful when conducting research, such as downloading the full text of each translation and transcription.



FIGURE 2: Digital Collections updated record interface with Transcription and Translation tabs. English Translation is displayed.



FIGURE 3: Digital Collections staff interface Transcription and Translation input fields.

The Digital Collections librarian then investigated transcription and translation projects conducted by peer institutions. The intention of the investigation was to explore where and how other institutions had incorporated transcription or translation information on their webpages. This peer analysis revealed that other institutions either did not format their transcriptions to match the original document, or they used an advanced encoding schema, such as TEI. The peer examples also rarely included both a transcription and translation, but only one or the other. Despite the realization that our endeavor was somewhat unique, these peer examples provided ample inspiration and direction for the design of new features on the Science History Institute’s Digital Collections site.



FIGURE 4: Digital Collections search results interface. Results depict a German-language text search.

Following the first round of user interviews and the investigation of peer work, the technical team embarked on an initial stage of application development. Four significant features were built at this time. First, new data fields were built for the transcription and translation textual data. Each field supports simple html tags—such as bold and italics—and Unicode characters. The text input into these fields, both German transcriptions and English translations, is indexed and fully searchable. Second, a German language tool was installed to analyze the transcription text. The tool takes German stemming into

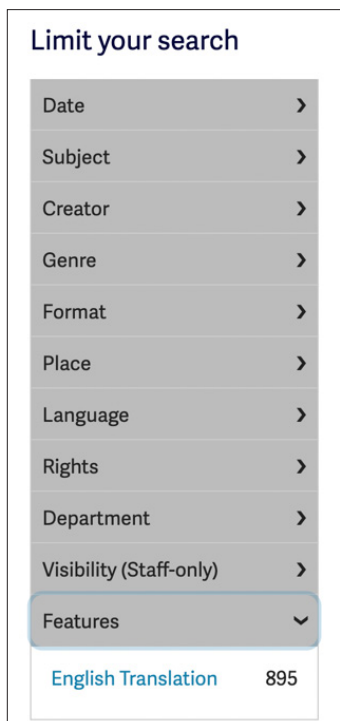


FIGURE 5: Digital Collections refinement options bar with features tab expanded.

account, splitting compound words before indexing, which in turn provides more accurate search results. Third, the public record interface was updated to include new tabs for users to toggle between the item’s description, transcription, and translation. The fourth and final new feature is a facet in our “Limit Your Search” menu that allows users to refine their results by availability of an English translation.

To confirm the efficacy of the new features, an additional round of user testing was conducted by the Digital Collections librarian. In this round, subjects were recruited from three generalized personas—researchers, educators, and the public—with eight total users being interviewed. Each user was led through a series of prompts to observe how they navigated, searched, and used the site’s new features. The prompts were followed by a brief interview to further explore how each user typically conducts their research, teaching, or casual searching. Though the usability testing produced varied feedback, users were universally able to locate, navigate, and appropriately utilize the new features.

Following the second round of user testing, the technical team improved the German language analyzer to ensure that the transcribed German materials would be less overwhelming in the

search results. The team also added a PDF download option for both the transcriptions and translations. Finally, an interface was drafted in which the transcription and translation will appear next to the digitized object in the repository's image viewer. This feature is not yet live as more testing is desired before it will be made public.

Storytelling to Engage Public Audiences

While the digitization, transcription, and translation of the Papers of Georg and Max Bredig improved accessibility to this important archival collection, the CLIR DHC project team recognized that the daunting quantity of items in the collection was another obstacle for a casual user. A keyword search could yield hundreds or thousands of results, and additional historical, biographical, or cultural knowledge is sometimes needed to understand the context. Therefore, as a concluding attempt to optimize the accessibility of the collection, the Institute turned to public storytelling, social media, and community events to share and interpret this poignant history of science story with both local and international audiences.

The signature interpretive project crafted from this digitization grant is an exhibition of Bredig materials curated and installed on the Institute's front windows. Also entitled *Science and Survival*, the outdoor exhibition features select enlarged reproductions of photographs and correspondence from the Bredig Papers. Located in the heart of Old City, Philadelphia, only a few blocks away from Independence National Historic Park, this free installation on the building's façade now can reach new or unexpected audiences, including tourists and casual pedestrians. While the archival collection is extensive, the 12 windows provided a helpful constraint for public storytelling. The project curator teamed up with the Institute's director of curatorial affairs, who collaborated with our in-house facilities team, consultant exhibit designers, and printers to create a compelling narrative. The story here focused exclusively on the family's survival correspondence, beginning with Georg Bredig's letter to the Daniel Sieff Research Institute in 1937, expressing his fear that his library might be destroyed under the Third Reich; followed by 1941 letters from his children, Max Bredig and Marianne Homburger, concerning negotiations to immigrate to the US; and eventually concluding with a 1943 family photograph in Colorado inscribed "Happy Ending." The exhibition also includes a key that identifies each source and a URL linking to the Digital Collections for those interested in exploring the content further.

To celebrate the exhibition opening, the Institute hosted an evening lecture by the project curator and displayed two cases of original archival documents from the collection. Printed reproductions of postcards from the collection were available for visitors to take home. The library director extended personal invitations to Jewish museums, community organizations, and local synagogues, and many individuals from these institutions were present in the audience of over 100 visitors on opening night. Many of those who could not attend personally responded to the library director's email to acknowledge both the importance of this collection beyond just the history of science community and also how rare it is that such a complete personal and professional archive would survive the Holocaust.

After the launch of the exterior exhibition, the project team worked with the Institute's audiovisual operations manager to create a short narrative video called *Science and Survival* (Science History Institute, 2023). The short video enabled the team to use more images than

could fit within the 12 windows and allows this haunting story to live on long after the panels are deinstalled in spring 2023. The video also gives the Institute a chance to share the exhibition with important individuals who cannot attend in person, including members of the Bredig family who reside out of state. In honor of Holocaust Remembrance Day in January 2023, the video was posted to Vimeo and circulated to the Institute's entire electronic newsletter readership.

The project team will continue to monitor feedback and evaluations to ensure that it succeeded in engaging different types of learners and public audiences through these multiple storytelling platforms.



FIGURE 6: Image of Science and Survival, exhibition display. Photo courtesy of the Science History Institute.

Results and Next Steps

In addition to the qualitative user interviewers described above, the project team has been using quantitative evaluation tools across the two-year timeline of this grant: May 2021 through April 2023. Using Google Analytics to monitor website traffic, the team observed steadily increasing interaction with the digitized collection during the first year of the project. From the online launch of the Bredig collection in May 2021 through September 2022, the monthly count of users accessing the collection homepage grew from less than 20 users per month to approximately 40. Despite the upward trend, the total count of users was relatively low in comparison to other pages in the Digital Collections. It ranked as the 35th top accessed page during this period.

Notably, these same analytics show that awareness and usage of the digitized Bredig collection has increased with the production of related storytelling projects. The collection exhibition was installed in October 2022. Public events and social media promotion took place throughout October, November, and December of 2022. During these three months, the Bredig collection webpage rose to the 17th top accessed page of the Digital Collections. By continuing to use public storytelling platforms that link back to the digitized collection, the project team anticipates website analytics data will continue to reveal increasing engagement with these resources.

Conclusion

Digitized and cataloged cultural heritage materials hosted online can be viewed by any individual with an internet connection. This, however, does not mean an item's content, and consequently its cultural or intellectual value, is readily imparted or necessarily accessible to any individual who happens upon it. New digitization and cataloging projects often privilege collections that will help shape the historical record in some new way and usually prefer mass digitization of an entire collection. However, the ability to use such newly available primary sources is still difficult for many people if they are not trained in the historical context, languages, and idiosyncrasies of archival research. To design an online collection and storytelling products that truly serve the needs of multiple audiences, any digital library project team should be in conversation with

diverse user groups at multiple times throughout the project's lifecycle. Through user testing, interviews, peer research, and Google Analytics data, the Science History Institute's CLIR DHC project *Science and Survival* worked to combat language barriers, implement a user-friendly interface design, and interpret the complexities of the collection for local and international audiences. ●

References

- McDaniel, Jocelyn. 2022. "Georg Bredig: Scientist, Humanist, and Holocaust Survivor." *Distillations*, December 1, 2022. <https://sciencehistory.org/distillations/georg-bredig-scientist-humanist-and-holocaust-survivor>.
- Raab Collection. 2023. *Now We Struggle*. The Raab Collection, LLC. <https://www.raabcollection.com/bredig-archive>.
- Science History Institute. 2023. *Science and Survival*. Video. January 24, 2023. <https://vimeo.com/791858266>.
- Science History Institute Archives. 2020. *The Papers of Georg and Max Bredig, 1891–1968*. <https://archives.sciencehistory.org/repositories/3/resources/86>.
- Shea, Patrick H. 2021. "Escape from Nazi Terror: Chemist Max Bredig's Race to Save Family and Friends from Catastrophe." *Distillations*, February 23, 2021. <https://www.sciencehistory.org/distillations/escape-from-nazi-terror>.
- Streva, Virginia. 2019. "Science History Institute Receives Rare Archive Smuggled from Nazi-era Germany." *PhillyVoice*, July 2, 2019. <https://www.phillyvoice.com/science-history-institute-rare-archive-nazi-era-germany-georg-bredig/>.
- Walder Foundation. 2019. "Georg Bredig Archive." *Grantee story*. November 1, 2019. <https://www.walderfoundation.org/news/georg-bredig-archive>.

Author Bios

ANNABEL PINKNEY is the digital collections librarian for the Othmer Library of Chemical History at the Science History Institute. She oversees the Institute's digital collections repository, reproductions service, and digitization. Annabel earned an MSLIS from the University of Illinois, Urbana-Champaign and a BA in chemistry from the Ohio State University in Columbus, Ohio.

MICHELLE DIMEO is vice president of collections and programs and Arnold Thackray Director of the Othmer Library. She was most recently the associate library director at the Hagley Museum and Library. Previously, she held the position of director of digital library initiatives at the Institute, overseeing the construction and launch of our Digital Collections platform. She first fell in love with the Othmer Library's collections when she held an Allington short-term research fellowship in 2014.

Michelle earned a PhD in history and English from the University of Warwick and a certificate in curation and management of digital assets from the University of Maryland. She is the author of *Lady Ranelagh: The Incomparable Life of Robert Boyle's Sister* (University of Chicago Press, 2021), part of the Institute's Synthesis book series.

SELECTED PAPERS

Entomo3D and the Student Experience in Developing Organizational Capacity

Erin Chung, Virginia Tech; Eva Deisa, Virginia Tech; Katrina Enriquez, Virginia Tech; Nathan Hall, Virginia Tech; Jill Sy, Virginia Tech

The Virginia Tech Insect Collection (VTEC), founded in 1888, is the oldest and largest entomological collection in Virginia and a historical collection representing Appalachia's insect biodiversity. Its more than half-million specimens represent the rich diversity of the eastern United States. VTEC is an exceptional repository of pollinators, endangered and native species, once common but now disappearing due to habitat loss. VTEC was underfunded and hidden from view since discontinuation of state support in 1992. Revitalization began in 2015 with a National Science Foundation grant to fund conservation infrastructure and stabilization through storage upgrades and preliminary digitization for approximately 3 percent of its holdings. Since VTEC is too large to digitize within the scope of a single Hidden Collections grant, our project focuses on comprehensive digitization of ecologically and economically critical native pollinators and endangered and threatened species native to Appalachia. This two-year project digitizes, describes, and provides access to 15,000 pinned insect specimens through high resolution photos and 400 high resolution 3D models.

The specialized technical skills necessary for the 3D modeling in this project come from students in the Creative Technologies program in the Virginia Tech School of Visual Arts. This program trains students in 3D modeling as it is taught in video game design and animation. Graduate students were solicited through a stipend (paid by the grant) and full tuition (paid by the University Libraries and the School of Visual Arts) for a graduate degree to qualified applicants. We also hired undergraduate students as wage employees. Students are engaged in technology processes throughout the project and learn complex curatorial tasks, digitization protocols, catalog structure, technical metadata, and documentation. Participation provided the students with a professional portfolio to help them in their search for future employment.

This project also presented the University Libraries' digital library development, digital imaging, and preservation teams with new technical challenges that are unique across the spectrum of academic libraries. In the absence of firmly established best practices for managing 3D data across disciplines, we developed a technical plan adopted from established reference models such as OAIS, and based on research stemming from the IMLS-funded 2018 LIB3DVR project. Entomo3D presents a real-world test of our findings.

In navigating the challenges of the past few years, the students who contributed to the project helped increase capacity at Virginia Tech for future large scale 3D projects and have also developed a unique and marketable set of skills and experiences. Our paper includes a collection of their personal narratives as well as a discussion of challenges in building institutional capacity during this period.

Introduction/Background: Student Employees

Whereas some academic libraries hire contingent labor heavily from an i-school or library school on campus, Virginia Tech does not have one. We were, however, able to use the same strategy by collaborating with the Creative Technologies program in the Virginia Tech School of Visual Arts (SOVA). We were therefore able to leverage student labor and providing experiential learning opportunities for students.

While the CLIR grant paid for stipends for two graduate students in SOVA and one graduate student in Entomology for two years, tuition and fees are disallowed costs. The dean of Libraries, the director of SOVA, and the head of the Entomology Department each paid for one tuition and fee waiver via cost share, and in return we hired graduate students from the SOVA and Entomology programs.

The grant solicitation encourages the participation of people with diverse perspectives in project activities. Since there was limited opportunity to provide diverse perspectives or narratives for a scientific collection, we decided to address this recommendation by prioritizing hiring personnel from underrepresented minorities. During the grant application process however we did not think the institution would allow more than a commitment to just advertising with community and cultural centers on campus, so that was our initial plan. Our hiring advertisement was scheduled to go out in March 2020. As a result of the COVID lockdown, we were not sure how many potential applicants would see it or what the following academic year would even look like.

Over the summer, we discussed these positions with the Creative Technologies program director. Jointly we were able to prioritize recruitment of students who were able to do the work and who were excited and interested in the project and additionally who were from underrepresented minorities in their program in order to diversify the pipeline and create debt-free educational opportunities for this demographic. Throughout the duration of the project, Virginia Tech University Libraries has been able to hire one Indian American woman, one Chinese man, one Korean woman, two Filipino American women, one Latvian woman, one white American woman, one white American man, one Korean American woman, one Okinawan American woman, and one Afghan American woman. In the Department of Entomology, co-PI Paul Marek hired a Colombian woman.

Student Experience

The specialized technical skills necessary for the 3D modeling in this project come from students in the Creative Technologies program in the Virginia Tech School of Visual Arts (SOVA). This program trains students in 3D modeling as it is taught in video game design and animation industries. As mentioned above, graduate students were solicited through a stipend (paid by the grant) and full tuition (paid by the University Libraries and SOVA) for a graduate degree to qualified applicants. Undergraduate students were also hired as wage employees for production. Students are engaged in technology processes throughout the project and learn complex curatorial tasks, digitization protocols, catalog structure, technical metadata, and documentation. Participation provided the students with a professional portfolio to help them in their search for future employment. The University Libraries' relationship with SOVA is similar to the relationships between many LIS programs and academic libraries—the library provides work

experience and funding for students, and the academic program provides a talent pipeline. In the following sections, four of the students who were on the project over the course of last year each provide a narrative about how their academic work intersects with their work on Entomo3D and their professional goals.

Younghee “Erin” Chung

I am a graduate student of Creative Technologies at Virginia Tech. My specialty is visualizing stories on storyboards, but also I can do 3D modeling and animation. I had an experience in game development as well where I produced many different 3D characters, assets, and animations, as well as optimizing those 3D assets; therefore, this project with Nathan was a perfect fit for me.

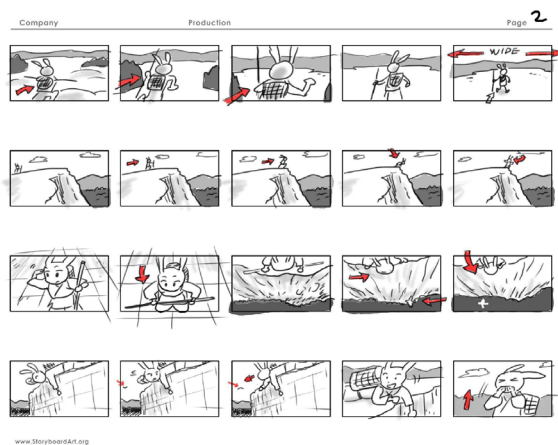


FIGURE 1: Storyboard by Erin Chung.

Although the workflow was quite familiar to me, this project made me understand how archiving was an important process and solidified my skills in other areas of 3D, along with being cooperative and improving communication with other members while working remotely. For my ideal future profession, I always dreamed of being a story artist since I was very young. I love writing stories, drawing characters, and expressing them through visual images like animation and films. (see fig. 1)

A storyboard is a 2D image work—it has less focus on 3D, but I want to work at 3D animation studios so my 3D skills and the experience from this project built a great foundation for me as a story artist. They broadened my perspective and knowledge so I have confidence in communicating with future colleagues who do 3D work. Most importantly, I can get bigger inspiration for writing stories.

A storyboard is a 2D image work—it has less focus on 3D, but I want to work at 3D

Katrina Enriquez

I’m a recent graduate of Virginia Tech where I received my BFA for Creative Technologies. I concentrated in 3D modeling and animation. Before anything else, I would describe myself as a storyteller. As someone who creates 3D environments for personal projects, the image in figure 2 for example, and for work, I genuinely love the idea of being able to conceptualize spaces that usually only exist in my imagination and being able to share that with others through my art. Being a part of this project has expanded my technical skills, where I am able to switch styles—in this case, I was able to learn more photorealistic practices which I can apply to my future art.

Most of my pieces are emotional. I am a highly sensitive person so I am able to draw a lot of feelings and inspiration out of the mundane, some through nature, music, and memories. For this particular piece, I was inspired by my childhood home in the Philippines. I grew up playing piano and I wanted to capture the kind of solemn feeling I would have every time I would play it.

In terms of future goals, I hope to pursue a career that involves 3D environments. This can range from positions in the gaming industry, for research, animation studios, as well as exhibit design



FIGURE 2: Space design concept by Katrina Enriquez.



FIGURE 3: Materiality study by Jillian Sy.

spaces for museums or events. I hope to learn and grow as an artist to my fullest potential and hopefully be able to inspire others through my work.

Jillian Sy

From the start of my undergraduate program, I was drawn to 3D modeling and it became the primary medium of my work. While I was learning the basics of modeling, I realized that I really enjoyed making environments whether they were regular rooms or surreal landscapes. It wasn't until I took a class in my junior year that I discovered texturing with Substance 3D Painter. Substance is a program from Adobe and it allows you to make photorealistic or stylized textures. This became a new way of storytelling for me because when I textured something, I felt like I could add so many more details about an object, like how old or how used it was, through adding layers

of dust or signs of wear. With history being one of my favorite subjects, texturing also allowed me to explore the history of an object and make intentional choices based on that.

The image in figure 3 is a model of my memory box, which was the focus of my senior project. I'm a very sentimental person and I've kept mementos and trinkets since childhood. Some call it hoarding, but I consider it as collecting and it brings my path to full circle because I've gone from collecting all these material objects to looking at the materiality of an object. I hope to pursue work that allows me to be excited over textures—over the details that I think really elevate storytelling or reveal a lot about a piece.

Eva Deisa

I'm currently pursuing my MFA in Creative Technologies at Virginia Tech. I am an interdisciplinary 3D artist, which kind of means that I do a little bit of everything when it comes to 3D. I do 3D modeling, 3D texturing, 3D animation, and environment creation. The main software I use is Maya, ZBrush, and Substance 3D Painter. I would say that the greatest challenge that I've overcome doing this project is different software integration and troubleshooting. It's been hard doing all of that by myself. Here (<https://www.youtube.com/watch?v=1kd-sg3EHsg>) you can see one animation that I have created during my time at Virginia Tech. In recent years I've been fascinated by virtual reality installations so that is what I am exploring right now.

Fall 2022 was my last semester, which means that I was really focused on my thesis. My thesis involves creating a production pipeline for virtual reality installations that is centered around a humanoid character animation. The skills I'm perfecting besides the ones I mentioned earlier are

recording motion capture animations of myself, creating realistic virtual environments, and combining all these skills into a game engine for a virtual reality experience.

The conceptual framework of my thesis is analysis and critique of modern-day routine and how we get stuck in a loop and then we sometimes snap out of it. An example that I use often to illustrate this is the feeling of when you drive home from work sometimes and you just have no idea how you got there. The main question that I'm trying to explore is where is our mind when it's not present?

As for why I even got into the 3D realm and chose that to be my career path, the main reason is because I just think that there are infinite possibilities of creation when it comes to 3D because you have this infinite space, right? You have no limitations of physics, no gravity, no restrictions at all. The 3D realm is not occupied by anybody else; that is yours and you can do whatever you want and you can go as weird as you want. Nobody's going to say anything because it's only you and your infinite world and you just create. It's very liberating but sometimes a little bit overwhelming because you know when somebody tells you that you could do anything you want or you can draw anything you want, we kind of get stuck sometimes, at least I do. Sometimes I want to be told what to make and I'll use my skills to do it.

So the unlimited possibilities is what drew me into 3D, and unlimited possibilities is what drew me to this project as well. When I learned that we can use the skills, that we have to do such a big service to the community, to make all of these bugs that are sitting in boxes in our entomology collection available for anyone in the world to see and interact with—it was really exciting because for the first time I had the opportunity to work on something that is serving a purpose outside of myself, as my personal practice is so internal, and so self-analyzing, and just purely artistic.

But the Entomo3D project is something that we do for other people and that feels very purposeful. This has also been the first time that I worked with a team of people, which is sometimes scary because we've all had really bad group projects in school that give us nightmares. At first I was a bit nervous but this has honestly been one of the best teams I've ever worked with because of the way that we troubleshoot and help each other out, working through the many problems we have and improving our workflow. It's all pretty amazing. It is such a big contrast from working alone because of having other people who all contribute their great ideas and solutions.

This experience is something that I will hold on to for a long time because it was so new and fresh and I learned so much from this. The main takeaway is that the 3D realm can be used in infinite different ways and not only for animation creation—because usually when people find out what I do the first question they ask is if I'm going to work for Disney or Pixar. For the longest time I was under the impression that those would be among my options but the Entomo3D project and the Digitizing Hidden Collections conference have opened my perspective to other possibilities.

Institutional Capacity

The grant program solicitation emphasizes development of local institutional capacity, including the professional development of all staff involved. Jillian Sy, Eva Deisa, Erin Chung, and Katrina Enriquez all attended the 2022 Digitizing Hidden Collections Symposium and presented a poster and as a panel. This travel was partially funded by the University and partly by grant funds. The poster covered technical processes and workflows while the panel was what led to this paper. This

was the first professional conference for any of the students and they were excited to find people who were interested in their skill sets and to find new ways that their skills could be applied.

One challenge is with skill retention. After spending a year on the project, students learn a lot, but these skills and experiences are lost when they graduate or take another campus position. This revolving door of skills is somewhat mitigated by an evolving set of documentation which includes videos and written guides to support training. The students continuously add to this documentation as they learn new methods or find ways to clarify instruction. Maintaining relationships with the SOVA faculty has also been helpful, as they sometimes tutor the students in the required technical skills for the position. However, the skill retention issue was exacerbated when the faculty 3D texture artist who supervised the students left the university to pursue an exciting opportunity in the gaming industry. Due to the number of faculty lines concurrently open, filling the position took more than a year, during which I supervised the students myself. This was not ideal since I do not have the 3D technical skills, thus the best I could do was to facilitate their group problem-solving.

In spite of this challenge, the students formed a good team and engaged in group problem-solving and peer mentoring. Throughout the project, students have identified problems and offered solutions and efficiencies. One former graduate student, Tianyu Ge, was particularly invested in automating as many steps as possible. All of the students have identified and remediated gaps in training and process documentation.

Maureen Saverot, a former wage employee who worked her way up to a faculty position, discovered that turning specimens upside down to photograph them essentially ruined the data because the photogrammetry software detected the bend in the wings caused by gravity pulling them in the opposite direction, and the stitching was therefore impossible. This issue was addressed by adjusting the camera setup to shoot from below.

Another challenge was with acquisition of software and hardware. While we have sufficient funding to provide computers, and while allocated space for the photogrammetry, much of the work evolved to be remote due to the pandemic. Therefore, the students often worked from personal computers on shared drives because it was more accessible. Some of the software that the students can use on their personal computers, however, is not yet approved for use on university computers. Students have had access to free academic licenses for classes, but this is problematic after they graduate and the license expires. We try to identify the software they use and have it installed on a lab computer which they can remotely access through Splashtop. This is important in order to sustain production in spite of attrition. The challenge is that the students come and go and have different favorite tools.

While we have sufficient funds to purchase any technology required, we are often delayed by university procurement processes. IT Procurement and Licensing Solutions will not allow the purchase or installation of software until the end-user license agreement has been approved by the Office of University Legal Counsel and until the vendor completes the Higher Education Community Vendor Assessment Toolkit (HEVCAT). Each of these processes can take multiple years to complete, which has been a significant source of delay for the project. After several years we learned that the University Libraries administration can agree to accept risk, which is a simpler process, but still less than ideal.

Conclusion

In spite of challenges with attrition, procurement, and the pandemic, the partnership between the University Libraries, the School of Visual Arts, and the Department of Entomology was a highly successful collaboration in terms of developing an innovative fundable project, and in creating experiential opportunities for undergraduate and graduate student employees. It is still too early to understand the educational opportunities and differences of the 3D models themselves relative to the traditional study of pinned physical specimens. Understanding this difference will be essential to long-term value and continuation of funding. ●

Author Bios

ERIN CHUNG Is an MFA candidate in Creative Technologies, with a graduation date of May 2023. She is a graduate assistant on the Entomo3D project.

EVA DEISA completed her MFA in Creative Technologies at Virginia Tech in December 2022. She is a former graduate assistant on the Entomo3D project.

KATRINA ENRIQUEZ completed her BFA in December 2021. She worked on the Entomo3D project from 2021 until 2023.

NATHAN HALL is a co-PI on the Entomo3D project. He was director of digital imaging and preservation at Virginia Tech until March 2023. As of April 2023 he is the associate dean for distinctive collections and digital strategies at Penn State University Libraries.

JILL SY completed her BFA in Creative Technologies at Virginia Tech in December 2021. She has worked on the Entomo3D project since 2021.

SELECTED PAPERS

History, Technology, and Hard Work: A Field Guide to Digitizing a Large Garment Collection at a Small Institution

Amanda Cacich, Mount Mary University; Marshall Lee, Mount Mary University; Dan Vinson, Mount Mary University

Similar to a “verbal article,” we are proposing a presentation wherein we discuss the brief history of what it took to apply for the Hidden Collections grant at our institution, what transpired between receiving the great news and the grant start date, and then how things progressed for us from that point forward. We would also look live at our Omeka site and discuss the technical know-how required to get us to where we are today. We would also aim to answer a question we often ask ourselves: “With 10,000 items available, how can we communicate the strengths and unique character of our collection using a fraction of those items?” After the presentation, we envision a “think-pair-share” section so the audience can formulate questions, gather with partners to potentially generate more, and then share with the group. Our aim is to inspire other institutions that may have costume or similar collections that they aren’t sure how to approach.

While our CLIR grant project involves much collaboration, each member of our creative team, consisting of the curator/stylist, project assistant, photographer, and archivist, often works autonomously. After workflows were beginning to take root last year, everything began to flourish. In this spirit, the authors of this paper each wrote accounts of their part of the process, with the principal investigator (PI) also standing in for the initial archivist, who left the university in July. These labeled accounts are written in first person, while the history section and final two sections are more inclusive.

Dan Vinson, Principal Investigator

A Brief History

Let’s start from the very beginning. The Fashion Department at Mount Mary University (then Mount Mary College) was founded in 1965, making it the first four-year Fashion Design degree program in the country. Sister Aloyse Hessburg, fresh out of graduate school, was chosen to lead the brand-new department. The fledgling program quickly gained a number of advocates working for its benefit. One of these was Aileen Ryan, fashion editor for the Milwaukee Journal. Ryan wasted no time in connecting Sister Aloyse to influential people in New York City. Based on advice from designer Charles Kleibacker, the Fashion Department began collecting historic costumes.

The Fashion Archive of today is the result of nearly 60 years of collecting. With roughly 10,000 objects spanning from the late eighteenth to the twenty-first centuries, the collection is a priceless resource. The strengths of the Fashion Archive mirror the uniqueness of Mount Mary itself: Milwaukee area figures, female designers, and couture treasures. It features Dior, Balenciaga, Givenchy, Valentina, and Bonnie Cashin, among many others. The wealth of handmade, high-quality garments calls back to the original couture focus of Mount Mary's Fashion program. And it all harkens back to the centuries old tradition of the School Sisters of Notre Dame (SSND) who founded Mount Mary College. The SSNDs came to America with the express purpose of educating women, particularly in the needlework arts.

Why were we so anxious to digitize the Fashion Archive? Well, there are a few reasons. Although the Midwest has its share of historic costume collections, there are not any of similar size and significance in the upper Midwest. Furthermore, Mount Mary University has an active Fashion Design degree program. This means that the Fashion Archive is not just a resource for studying fashion history, but a chance for students to examine couture techniques and decades of construction methods from masters of the craft.

The Mount Mary community is full of historically marginalized groups. The museum and fashion fields have typically been spaces of privilege with significant gatekeeping to deny access to outsiders. Over the past 20 years, the Mount Mary student population has undergone a dramatic shift. Recently designated a Hispanic-Serving Institution, over 35 percent of its student body is Hispanic and 66 percent identify as women of color. Additionally, 45 percent are first-generation college students, with many of that number coming from immigrant families. Sixty-five percent of students are eligible for Pell grants to fund their university education.

Flash forward to 2017. A dean won a small grant from the Stella Jones Foundation. This pilot grant collection was 32 Hubert de Givenchy garments, photographed by an adjunct professor in the Fashion Department who knew textile history and a bit about photography. Our IT Department set up Omeka, an open-source online exhibition platform, and Filezilla, a file transfer program, while the grant bought a computer with sizable memory, lights, and also photography software with a 360° output option. Spinning garments with high-definition zoom capability was our goal from the outset. Most historic costumes are not photographed this way. We looked at similar online collections to match or exceed their styles of display. The team's philosophy was and is to give users the most detailed views possible of each item.

The adjunct, the university archivist, and the library director started a workflow and digitized for a summer. In the end, this pilot Omeka exhibition turned out well enough, although the zooming capability wowed no one. Once the new (now previous) president was firmly in place, we planned to apply for a CLIR grant to digitize much more. While our 2019 proposal was not accepted, our 2020 one was, happily.

Metadata Choices

For the proposal, we had to choose a metadata schema and controlled vocabulary. We struggled to find a useful schema, as most did not specialize in objects. We explored the Visual Resources Association Core (VRA Core), among others, but apparel entries or even textiles generally were not specific enough to be a good choice. While reading some articles about institutions that had

digitized garment collections, Dan came across Costume Core. Based on Dublin Core, it was designed by a professor with a lengthy history in digital visual arts collections and it aimed to address the very metadata schema gap we had. Choosing a controlled vocabulary was challenging for similar reasons. We ultimately arrived at the Getty Research Institute's Union List of Artist Names (ULAN), as a spot check of lesser-known fashion designers from our Fashion Archive yielded decent results in the ULAN compared to other options.

On the Eve of the Grant

Learning we had won the grant set a number of things in motion: needing to hire a curator/stylist, a photographer, and fashion students; finalizing the space for photography and updating photography software; and taking stock of supplies on hand that we thought might work. Each of these brought challenges. Grant hiring was new to Dan, and there were unexpected hoops to jump through. Since we had a photographer in mind who had already worked at Mount Mary fashion shows, he was hired as a contractor. The university's photo studio was the ideal space to shoot in, but it came with baggage from before the pandemic. The software purchased by the previous grant needed updating, as did the computer with lots of memory, since it had been essentially sitting idle since early 2018. The pilot grant had also purchased some lights, a backdrop, a camera, and, most importantly, a turntable. There were other supplies in the room that no other players wanted to take ownership of. All these challenges got sorted out just in time. As outlined later, once the project began, the photography studio was a challenge to keep secure. With Public Safety's help, we cleared this up. Additionally, one of the storage spaces for the Fashion Archive, which happened to contain many of the most valuable garments, would occasionally have chairs or tables shoved in it for storage. It is located just outside a large meeting room, and this was a practice for years, apparently, and without a curator, there was nobody to say anything. Dan finally found the right person with Buildings and Grounds to stop this practice.

The necessary technology was supposed to be ready by the time we began the project, but our IT Department experienced frequent staff changes and shake-ups that spring that left them unable to see to grant-related issues. It took extra time to get Omeka updated to the current version, as well as to get the additional software our photographer wanted installed on the studio computer. As we experimented with Omeka themes, it also took time to get those downloaded. We are using Omeka Classic, which is server-based and hosted on campus. IT locks downloading as a matter of practice, so we have to rely on them for downloads and updates.

Dan called several meetings with the creative team to establish workflows. Within the first two months, solid content was arriving online regularly. The wider CLIR team of consultants, consisting of the Fashion Department chair, fashion executive fellow, and dean of the School of Arts and Design, began to meet in the fall. The full team was integral in exploring Omeka as well as troubleshooting, as our initial grant archivist continued teaching himself various aspects of the platform. He taught himself everything he learned either through experimentation or through Omeka documentation and forums. He took meeting feedback and tweaked and then asked for feedback again. We finally agreed on a theme and site structure in October.

Without a web developer, open-source Omeka has its limitations. We had to create workarounds, chiefly regarding the 360° view placed inside an iframe. Zooming is only available in full screen mode and, in fact, within the iframe the zoom does not work. So, we had to create code that opens

the 360° view in a new tab. This is fine, unless a visitor does not see the link. And there are a couple of nuances to using the 360° view controls that will escape some. Overall, however, despite its major learning curve early on, Omeka has worked out well for our project.

Amanda Cacich, CLIR Grant Curator/Stylist

Hit the Ground Curating

When I started as curator/stylist in July 2021, I had three main priorities: determine what supplies were needed, figure out a workflow with the other team members, and get to know the Fashion Archive. The supplies needed could be divided into two categories: materials for photography and materials for storage. Due to my background working with costume collections, I was immediately able to identify what storage supplies to order. Part of the stated goal of the grant is to leave the collection better than we found it. To this end, we invested in fresh archival tissue, materials to make padded hangers, and labeling supplies.

For photography supplies, there were three Dorfman adjustable dress forms from the 2018 pilot grant. I did some initial trials mounting garments on these. While these soft mannequins worked well for small-sized clothing, they were not going to be the best choice for larger pieces. We ordered two more of the soft type and three larger fiberglass mannequins from Mannequin Mall. This system has worked well for us due to the variety of eras and designers in our collection. Having eight mannequins to work with has been essential to maintaining our workflow.

Speaking of workflow, the CLIR grant team discussed early how to efficiently move garments and information between the various key players. How could we keep track of which garments were ready to be photographed? How would photographed items and descriptions make their way onto the Omeka site? Due to some technical difficulties with our IT Department, we finally decided to use Google Drive so all team members could access the documents. The photographer and I created a standard Google Sheet that would move through various folders as the garment was prepped, photographed, and uploaded to Omeka. I create the sheet for each item. I input all descriptive information and relevant provenance from our collections database, PastPerfect. I also include instructions for photography, including desired detail shots. This is saved into a folder called “To Photo.” Our photographer refers to this sheet once the dressed mannequin is in the studio and on the turntable. He makes note of when the garment has been photographed and moves the sheet to the folder called “To Web.” From there, our archivist takes all the information, along with the image files, and uploads it to Omeka. We’ve finessed the process along the way, but the basic formula has remained the same for the past 15 months.

With supplies accounted for and a workflow arranged, I now had to make decisions on what pieces from the collection to feature. Since the most recent curator left over eight years ago and there have been significant changes in the faculty and staff of the department, not many people were knowledgeable of what was in the Fashion Archive. In order to make informed selections, I needed to familiarize myself with the collection. I ran into my first challenge when searching the collections database. The locations listed for items were vague and unhelpful. Many objects did not have records at all. This meant that I could not just perform a quick search for different designers or eras because the information generated would not necessarily be correct.

Fortunately, I had two project assistants, both Mount Mary fashion students, assisting me at this time. They quickly began a large inventory project. I created a more sophisticated location system and went to work labeling shelving units and cabinets. Once various sections were inventoried by the students, I updated locations in PastPerfect using the system I had created. I also created new object records when necessary, digging through old catalog records to get donor information. This has been a long and tedious process, and we still are not finished. However, I feel much more confident in my knowledge of the Fashion Archive and my ability to prioritize garments to photograph.

Selection Process

One of the aspects of this process that people are most curious about is how garments are selected for photography. Highlighting the voices of minorities and underrepresented communities has always been the highest priority. During my assessment of the Fashion Archive, special note was taken of opportunities to tell forgotten or ignored histories. The result has been a strong emphasis on female designers, as it represents both a strength of this particular collection as well as a group whose contributions to fashion have largely been overlooked. Furthermore, several female designers had relationships with Mount Mary University. The most notable are Pauline Trigere and Bonnie Cashin. As an all-women's university with a sixty-year-old Fashion Design program, Mount Mary is uniquely qualified to tell the stories of female designers.

Another opportunity was to emphasize designers or personalities with connections to Milwaukee and Wisconsin. Three of the most significant so far are a large collection of garments worn by chanteuse Hildegard; hats created by milliner Frank Olive, a favorite at the Kentucky Derby; and clothing from legendary childrenswear designer Florence Eiseman. All three have roots in Milwaukee, and their work is barely represented online.

To maximize efficiency, I try to prepare all garments in a collection as much as possible before photography. The first step is identifying all items. This happens in a few ways. First, I do a search in the database. Knowing that all garments might not have database records, I search through catalog records to find keywords or names. I make sure each garment has a database record, creating one if necessary, with accurate information and location detail. The initial grant archivist also enhanced catalog records when possible. Once I've compiled a list of all garments within a collection, I relocate the items to the main workroom for the project assistants and I begin physical preparation.

Each item gets a new archival tag, an accession label made of twill tape and sewn inside, and a padded hanger or fresh archival tissue inside its box. Items are arranged by accession number so they are easier to find in the future. During this stage, I create a spreadsheet to track which items within the collection have been photographed and when. I also use this spreadsheet to track when the items are returned to storage.

Marshall Lee, CLIR Grant Photographer

Pre-setup and Challenges

There were a number of hurdles to be overcome when I started working on the CLIR project. The proof of concept was completed years before in 2018 through an earlier grant. Another

photographer oversaw the purchasing of the equipment and software and created the first shooting process. This adjunct professor did not have a professional photography background, and that added some challenges into the remount of the project when I joined the team.

As Dan mentioned previously, an early challenge was the university's photo studio. The pilot grant gear had been there for three years without supervision while the studio was used by many different departments, including Marketing, and a photography course, with people with varying degrees of studio photography knowledge. The grant equipment was intermingled with university-owned photographic equipment. Due to the laissez-faire management of the studio, the room and equipment were not clean or organized. I inventoried, cleaned, and tested the equipment, a process that lasted several weeks. The room was fully cleaned, old white paper backgrounds were removed, some new items were purchased, and software updated.

Another difficulty was integrating our new needs while using gear and software purchased in 2018. The original 360° Iconasys program lacked some basic editing functions, so we added software that could handle our new archival level process. The pilot grant camera and lighting were bought on a tight budget. Based on my years of experience, I made the decision to upgrade to a higher quality lens and buy an AC adaptor to eliminate battery use. We are slowly upgrading the lamps to LEDs that match the color temperature, replacing the old constant lights with soft boxes that were purchased when fluorescent lamps were the norm. The previous white paper background was changed to a neutral gray, and a gray card was purchased to assure the correct white balance. Adobe Lightroom was added, as the Iconasys program could not work with RAW (or TIFF) files. I use this to color-correct and crop all the images. I make a JPEG copy of these files to work with Iconasys for the 360° spin.

With three separate programs open on our studio computer working with 37 images (with each image around 23 MB), I got the rare chance to watch a computer work in slow motion. To increase efficiency, we upgraded our computer RAM. This took a while to purchase and set up with our IT Department, who was stretched thin.

Once we figured out the process for a standard garment over the first couple of months, the project ran smoothly and quickly. Things changed when we eventually moved to accessories within our collection: hats, shoes, purses, and flat pieces. Through trial and error, set pieces were bought, built, or found to properly display these accessories and the lighting was adjusted accordingly. After tackling a variety of objects we feel confident in handling similar challenges.

An ongoing struggle has been adapting to, rather than solving, certain problems. With our team spread across the campus in three different buildings, communication can be difficult. The curator/stylist and I do not have campus phones in our work areas, and cell phone service can be spotty in our basement work spaces. Balancing my own desire for perfection with the reality of limited time and resources is a never-ending endeavor. It is tempting to spend hours fully cleaning dust off each garment, but in the interest of the grant it makes more sense to not aim for magazine-level perfection. By spending somewhat less time on each individual garment, we can digitize more.

Photography Process

Unless in use briefly by a campus department, the unused half of the studio is mostly open for staging of garments before and after they go on set. The project assistants or the curator/stylist bring items from our storage through a tunnel that extends about 500 feet into another campus building. This includes two turns and two ramps. The dress forms are dressed in the studio and garments are steamed, cleaned, and styled as needed by the project assistants or the curator/stylist. At this point garments are ready to be shot.

I usually work alone in the studio. To create a 360° spin shot I first move the garment onto the set and place it on the center of the turntable. This is a 21-inch turntable, USB-controlled, from Iconasys. The lighting consists of six hot lights on stands with attached soft boxes; four in front of the garment and two lighting the backdrop. Each one contains four fluorescent lamps and one LED cobb light; all at 5500k. Lighting is adjusted if needed. Using the Iconasys Shutter Stream 360° software, I check camera position and focus and adjust as needed. Once everything looks good, I take a single image with the gray card in the shot (currently we use a Canon Rebel SLR camera with a 24mm prime lens). This image is checked for focus and saved as a RAW file.

The garment is now ready for its main photography. After removing the gray card and rechecking the focus one last time, the automated process can be started. The program moves the turntable 10° and snaps an image. The program creates 36 23-MB, RAW images. Upon completion, I check the focus one last time. Because the software is a bit lacking, I need to open all 37 images in Adobe Lightroom. Once there I work on the gray card image. I take the white balance, adjust lightness/darkness, and crop the image. These settings are then applied to the other 36 images. At this point I am able to see the spin by scrolling through all 36 images. If anything gets cut off or goes out of frame in the spin, the crop can be readjusted. If everything looks good, I will export the 36 images as JPEGs at around 3000 KB file size each.

The next step is using the Iconasys 360° View Creator software to make the HTML5 code needed to display the spin on a website. I import the 36 JPEG images and adjust the output sizing. We want the final image to display no larger than 400 px × 600 px on the web page. The location and color of the controls may need to be adjusted. If I am happy with the look, I let the program process the images and create an HTML5 output folder. At the end of the shooting day, all output folders are deposited in FileZilla, where the grant archivist uses them for Omeka. If there is an additional 360° series needed (for example: remove the coat and shoot another 360°) I restyle the garment and shoot that set of images. For some garments there will be one or more detailed images of something noteworthy, such as buttons, a closure, or stitch that cannot be easily seen in the rotation. These single images are set up and photographed manually. The lighting and camera position may have to be changed for these images. In addition, holding open the garment to see interior stitching or seams may require studio gear and restyling. This is where my product photography background comes in handy. Using clamps, monofilament, wire, wooden sticks, gaffer tape, and makeup sponges we try to display what needs to be seen while hiding all these materials holding it in place. This is all done in a way not to damage the garment.

Upon completion of the day of shooting, file management comes into play. All archival images (high-resolution RAW images) get copied to a backup hard drive and then the originals get moved to a “backed up” folder. The JPEG copies are also stored in another folder to save time if another

spin copy is needed. The copied HTML5 folders are also moved to a storage folder to save time in case another spin copy is needed quickly. The photographed garments are removed from the set by the project assistant or curator/stylist and taken back to storage. We expect to get between 10 and 20 percent of the project done during the grant period. Another set of garments is always on the way to be photographed.

Moving Right Along

Around the five-month mark, content was flowing and everyone excelled in their work. IT had stopped imploding and a key member who had left returned in December. This was good, as he was the Omeka administrator! We had a few fashion-inclined donors visit the CLIR spaces. Occasionally students stopped by the studio, located in a high-traffic hallway. The full CLIR team then began to focus on how to promote the project both on campus and more widely. *Mount Mary Magazine*, which gets sent to thousands of alumni, among others, featured the project in the Spring 2022 issue. In early spring we presented our progress to the university's corporate Board of Trustees. We have received research questions. Unfortunately, settling in also meant a touch of complacency with spending.

Around six months in, after digging and asking some questions of people he thought were monitoring, Dan became aware that spending in three key areas was far outpacing the proposal. Dan and the university's grants manager finally began receiving up-to-date numbers consistently from the Business Office. After consulting with the grants manager, who left in April, in the spring of 2022, we ended up instituting a work slowdown. (The grants manager returned in June.) We had been operating rapidly for several good months. Great for content, but not for the budget. Spending did slow fairly well, and when one of our two project assistants, both Mount Mary Fashion students, graduated in May, we decided not to add another. Luckily, our other project assistant is staying with us for another year!

In late spring, a university air quality test yielded high levels of particulates in the main Fashion Archive storage space and the photography studio. These were not dangerous particulates, but still cause for concern. The university initially planned to jump right into a major cleaning of both spaces with Buildings and Grounds staff, but, luckily, the curator/stylist and photographer were able to successfully pause this. Among their concerns: Where exactly were 10,000 pieces going to be safely stored during cleaning? How would they be stored? How would they be transported? What chemicals would be used? After eventually meeting with the curator/stylist and photographer, who explained the need for strategic and careful cleaning, the administrators decided to postpone. They have held other meetings with the wider team to plan properly. HEPA filter machines were placed in each space for the short term, and a mindful, professional cleaning will likely take place over the winter interim.

When the CLIR grant archivist, who helped craft the both proposals and worked on the grant for over a year, left in July, it created a major backlog for garments waiting to go online. The PI simply could not keep up. Luckily, our new archivist began remotely last month and is doing very well!

Next Steps and Hopeful Outcomes

In addition to continued digitization, marketing the project and the Fashion Archive is key. This has been challenging. Just when a video marketing initiative was supposed to take root last summer, the leadership of Mount Mary's Marketing Department changed. Despite the size of this grant, the CLIR project never quite seems to be a high priority for the university. Another hope we had for promotion was through Recollection Wisconsin, a digital hub for dozens of Wisconsin institutions. Recollection Wisconsin also feeds into the Digital Public Library of America. They harvest metadata four times per year. We thought everything was ready in the spring, but it turned out we were not populating two required fields and the harvest failed. Through a lot of backtracking, our initial archivist populated the subject and item type fields. Unfortunately, he had not gotten very far when he left in July. The PI continued this work for the next two months, but did not finish before the September harvest. The next harvest is in March, and we will be ready.

Our long-term goal is to make researchers, academics, and students aware of the Fashion Archive as a resource for study and inspiration. We'd like to engage with other institutions about lending pieces from our collections for exhibit and promote our collection to fashion and textile scholars. If these plans come to fruition, a curator position would need to become permanent. A new, climate-controlled storage location would be an ideal outcome. This new facility would have a full photo studio for continued digitization and spaces for handling the collection, processing new donations, and hosting researchers.

In the short term, we aim to finally create videos with the Marketing Department for each stage of the workflow; our curator will submit a proposal for the annual conference of the influential Costume Society of America held in May; we will explore becoming a partner in the Google Arts and Culture platform; we plan to update publish this paper as an article in the future, and we will continue highlighting hidden garments from marginalized or forgotten fashion designers.

Epilogue

Our CLIR grant funding concluded on May 31, 2023. The authors of this paper, along with our second grant archivist, Laura Vavrosky, wrote and published a journal article of the same title based on this content in the *Journal of Digital Media Management*. It is available by subscription only, but you can read the [abstract online](#). The publisher of the journal contacted us after Amanda's symposium presentation last October. ●

Author Bios

AMANDA CACICH is the curator/stylist for the Council on Library and Information Resources grant. She has an MS in Museum Studies with an emphasis on Dress and Textile Histories from the University of Glasgow. She has worked with textile collections in the US and UK, with experience as a registrar, exhibition specialist, and curator.

MARSHALL LEE has a varied background. He has a degree from the University of Wisconsin–Milwaukee in Technical Theatre through the Professional Theatre Training Program. He has worked as a product photographer, a photography wet-lab manager, audio and video set-up, and currently shoots archival photography of live theater, dance, music, and fashion events. He is the photographer for this grant project.

DAN VINSON is the principal investigator (PI) for Mount Mary University's Council on Library and Information Resources grant and the director of the Library. An archivist at heart, he earned his MLIS from the University of Wisconsin–Milwaukee, as well as a Certificate in Archives and Records Administration.

SELECTED PAPERS

Land, Wealth and Power: Digitizing the California Land Case Files

Mary Elings, University of California, Berkeley; Adrienne Serra, University of California, Berkeley

In 2021, the Bancroft Library at UC Berkeley launched a large-scale digitization project to preserve and provide online access to more than 127,000 pages of California Land Case Files dating from ca. 1852 to 1892. These records tell an important story about the distribution of land, and social and legal justice in California following statehood in 1850, when all Spanish and Mexican land grants holders were required to prove their land claims in court. A lengthy process of litigation followed, which resulted in many early Californians losing their land. The Land Case Files are heavily used by current land owners, genealogists, historians, and environmentalists to understand the land, its uses, and ownership over time.

The digitization project Land, Wealth and Power: Private Land Claim Cases in California 1852 to 1892 (Mary Elings, principal investigator) was awarded a 2019 Digitizing Hidden Special Collections and Archives grant. We launched the project amid pandemic restrictions and limited on-site work hours. The materials had to be carefully inspected for special handling and digital capture conditions, and many of the materials required conservation to ensure they could be safely digitized. When complete, this project will significantly improve researcher access to the collection online. With over 90 percent of the documents handwritten, the Bancroft is also exploring community engagement strategies to transcribe and translate the records to extract the full text of these documents to unlock even greater research potential, particularly in areas of digital scholarship.

In 1851, the US Congress passed An Act to Ascertain and Settle Private Land Claims in the State of California, which required all holders of Spanish and Mexican land grants to present their title for confirmation before the Board of California Land Commissioners. The Documents Pertaining to the Adjudication of Private Land Claims in California or Land Case Files, held by Bancroft Library, document these land claims. The case files tell an important story about California land use, ownership, and the environment, and help us understand the distribution of land, wealth, and power in the state and the concept of justice in early California.

“Q: Don’t you think that the government of the United States has treated the old Californians very unjustly in these land cases, in compelling them to sue for their titles at so much expense, and exposing them to the lawless inroads of the squatters?”

A: We certainly do consider that the government is to blame for all these things; the government of the State or the general government, we don't know which. Even to this day we are being robbed; the land is not ours, neither is the grass, nor are the cattle; the squatters hold all, and may even take our lives if we give them the least excuse."

—Antonio Suñol, testifying as a witness, July 27, 1860, in *United States vs. Andres Castillero*, BANC MSS Land Case Files 420 ND vol. I, page 4744

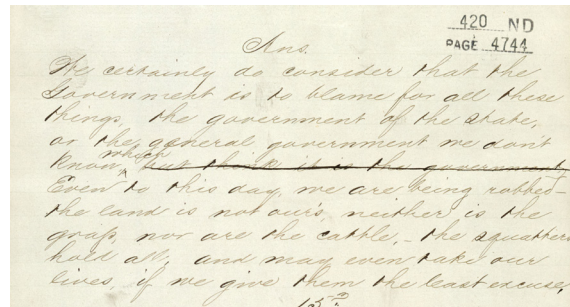


FIGURE 1: Excerpt from *United States vs. Andres Castillero*, Bancroft Library, UC Berkeley, BANC MSS Land Case Files 420 ND vol. I, 4744.

This response by Antonio Suñol, a Mexican California landowner testifying as a witness in a land case for a fellow *Californio Ranchero*, exemplifies the experience of many Mexican Californians in the years following the US annexation of *Alta California* in 1848. After some 70 years spent building an insular pastoral society in a distant, sparsely populated frontier, these early colonizers suddenly found themselves on the receiving end of a new form of colonization. While it pales in comparison to the atrocities wrought on the indigenous populations of California, the *Californios* also, in turn, lost their lands, communities, and entire way of life to outsiders during this process, often tragically and sometimes violently.

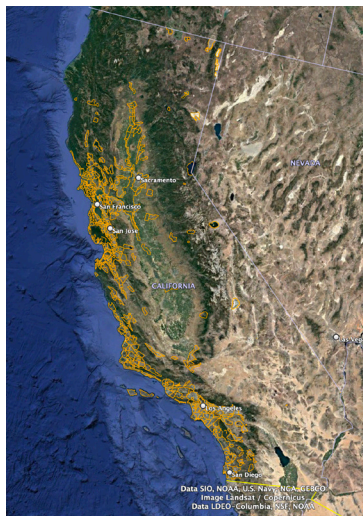


FIGURE 2: Map of Mexican Land Grant boundaries in *Alta California*, as of 1846. Hughes, Tracey, GIS Coordinator, Social Sciences & Humanities Library, UC San Diego. *Spanish and Mexican land grants in California*, 2009. Screenshot of GIS shape file. Electronic Cultural Atlas Initiative (ECAI). <https://ecaidata.org/dataset/spanish-and-mexican-land-grants-in-california>.

The Documents Pertaining to the Adjudication of Private Land Claims in California, circa 1852–1892, a large manuscript collection held by the Bancroft Library at UC Berkeley, bears witness to many of these tragic stories through the legal bureaucracy of the US Federal Government. It is a corpus of documents for 840 individual land claims in what became the State of California, spread across 875 bound volumes, and totaling approximately 130,000 pages. Consisting of transcripts of the court proceedings, witness testimonies, and documents presented as evidence, this collection provides rich details about the people and places caught in the crosshairs of American expansionism in the mid-nineteenth century.

At the end of the Mexican–American War, the signing of the 1848 Treaty of Guadalupe Hidalgo established that privately held land grants in Mexican territory ceded to the United States would be “inviolably protected.” Three years later, in 1851, the US Congress passed An Act to Ascertain and Settle Private Land Claims in the State of California, which required all holders of these land grants to present their title for confirmation before the Board of California Land Commissioners. This Act placed the burden of proof of their title on landholders and initiated a complex process of



FIGURE 3: A typical scene on California ranchos. Ferran, Augusto, *Vaqueros lassoing steer* ca. 1849. Oil on canvas, the Bancroft Library, UC Berkeley, BANC PIC 1963.002:1350-FR.

an invaluable primary source documenting land use, ownership, and the environment in pre-statehood California, digitizing the entire collection has been a goal for the Bancroft Library for more than 20 years.

In April 2020, the Bancroft Library at the University of California, Berkeley was awarded a Digitizing Hidden Special Collections and Archives grant to finally make this important project possible. This was the third submission to the CLIR program, with previous submissions to digitize the Land Case Files made in 2016 and 2018, both of which were declined. The third proposal, submitted in 2019, focused on the voices of the early Californians represented in the records, many of whom were divested of their land, wealth, and power in the wake of statehood, and the importance of making these important and heavily used records freely and openly available to researchers in digital form.



FIGURE 4: Selection of materials from the collection.

in prosperity and power of California after American statehood, and provides evidence of their disenfranchisement by the US Federal Government (Robinson 1948, 91–109). There are hundreds of fascinating stories within these documents, soon to be accessible like never before.

Following the April 2020 award, the funds became available to spend in July 2020, which was a particularly challenging period as the Bancroft Library was in the midst of a full-scale pandemic lockdown and a campus-wide hiring freeze was in place. Despite this, we received a hiring freeze exception to launch a search in June 2020 for a two-year digital project archivist to manage the

litigation, with most decisions appealed all the way to the Supreme Court. This lengthy legal process required lawyers, translators, and surveyors, and took an average of 17 years to resolve, with a few cases litigated all the way into the 1920s–1940s.

The vast majority of the documents in Bancroft's collection are handwritten, and many are fragile and damaged after nearly 150 years of heavy use by historians and researchers of all kinds. The Land Case Files were placed on permanent deposit in the Bancroft Library by the US District Court, San Francisco in 1961 and, in the over six decades since then, researchers have been required to visit the reading room to access this collection. As

The awarded project, titled *Land, Wealth and Power: Private Land Claims in California, ca. 1852–1892* (Mary Elings, principal investigator), is a significant boon to the access and preservation of California history. The grant project's current theme of “amplifying unheard voices” is a fitting one, as this collection records the testimony of a people largely excluded from the explosive growth

day-to-day project, which entailed condition review and professional conversation treatment, as well as the image capture of approximately 127,200 pages by an imaging vendor. An offer was accepted in September but, due to relocation, the selected digital project archivist, Adrienne Serra, did not start work until January 2021, at a time when most library staff were still working remotely.

The documents in this collection comprise an assortment of handwritten transcripts of court proceedings, formal court documents, correspondence, and materials presented as evidence. The diversity of the physical materials posed certain challenges for handling and image capture, from fragile tracing paper, brittle pages, ribbons and seals, and pages of many different dimensions, both loose and bound in a variety of styles and orientations. Most Land Case volumes typically contain a leather-bound folio, often with ribbons woven through the binding and holes of several pages, and ultimately attached to the final page with a wax seal. This is usually followed by a stack of loose documents. Many documents are attached together with staples or grommets or tied together with ribbons or string. Original Spanish and Mexican documents dating back as early as the 1820s were sometimes included as evidence in the cases, as well as hand-traced facsimiles, which are now very delicate and brittle. There are also many instances of pages affixed to other pages with wax seals or glue.

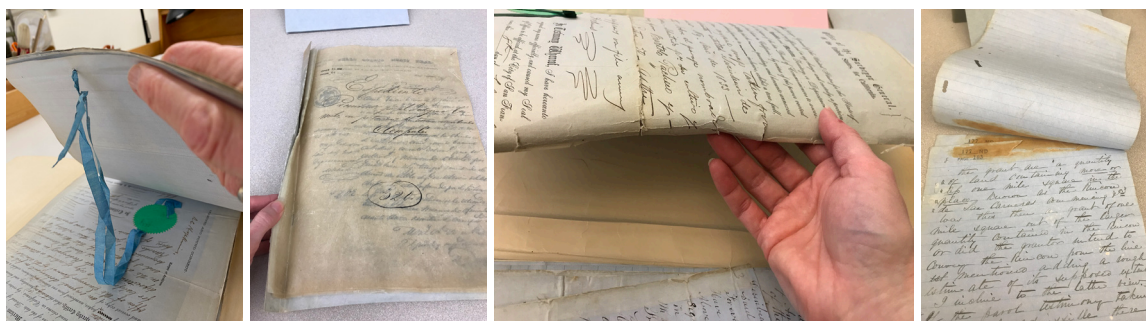


FIGURE 5: An assortment of pages from the Land Case Files needing conservation or special handling for digitization.

Combined with the frequent handling by researchers, many documents were in need of serious conservation treatment to stabilize them for handling during digitization. Mary Elings, the principal investigator, led conservation planning in 2019 and launched an internal effort in January 2020 to triage the cases prior to sending the physical documents to UC Berkeley Library's Conservation Lab for treatment. From January 2020 to January 2021, Bancroft collection management staff reviewed all cases for condition issues and flagged those needing treatment by the Conservation Lab. Despite heavily restricted on-site hours due to the pandemic, the Bancroft team conducted a survey of the 875 volumes in the collection to assess the extent of conservation treatments needed to prepare the materials for digitization. A total of 234 volumes were flagged for treatment.

In January 2021, conservators were approved to work on site under special emergency employee status to begin these conservation treatments, with a needed completion date of June 1, 2022. The Conservation Lab worked with the project principal investigator, Bancroft curators, the digital project archivist, and the digitization vendor to develop treatment protocols to inform the extent of treatment needed. These treatments included flattening and separating leaves where text was

obscured, mending tears, reinforcing cracks, and removing metal grommets and ribbons to disbind certain documents where text was obscured or whose brittle leaves would be damaged during digitization. The conservators completed the project ahead of schedule in March 2022, totaling 633 hours of treatment for 188 items.

Out of 840 cases, 25 had been previously digitized, and of those, only 10 were available online. Four of these needed to be rescanned, bringing the project to a total of 819 cases and 854 volumes for digitization. To prepare the Land Case files for capture by the photographer, all of the volumes had to be inspected page by page and flagged with specific handling and capture instructions. The digital project archivist started limited on-site hours in March of 2021, working to review materials, communicate with the Conservation Lab and Bancroft staff, and review and prepare the fragile materials for digital capture.

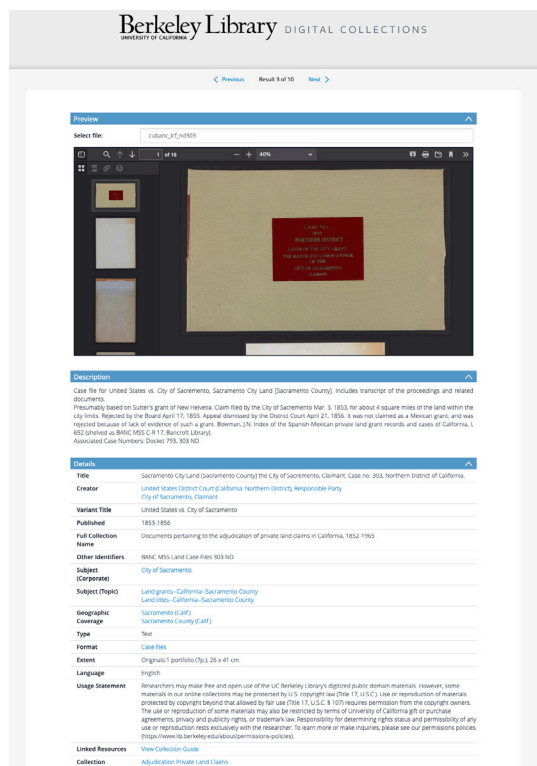


FIGURE 6: Screenshot of a Land Case File with updated descriptive metadata, now available online. By making the California Land Case Files more readily accessible in digital form, we expect to see a significant increase in their use for both traditional research and emerging scholarly methods. This long-awaited project will provide researchers with more opportunities to continue to tell the story of California, the West, and its communities. The digitization project will be fully completed in March 2023, with direct URLs to each Land Case file added as digital object records to the **online collection finding aid**. The digital collection will be available online through the UC Berkeley Library digital collections site at **adjudication private land claims**.

Digital imaging of the materials began in November of 2021, with weekly shipments of volumes prepared by the digital project archivist and sent to the digitization vendor at an offsite UC facility. Our long-standing imaging vendor, Backstage Library Works, uses a Phase One IQ180 camera on a copy stand with a variety of cradles to capture uncompressed images of each page at 400ppi. Despite the challenging nature of the materials, the photographer has maintained an average of 3,000 captures per week. Imaging is expected to be completed in December 2022.

The Backstage Library Works staff perform initial image processing and quality control, producing archival master TIFF files of each page and combined PDFs for each volume. Monthly batches of these files are sent to the Bancroft via portable hard drive, where the digital project archivist performs quality assurance and prepares the PDF files for upload to UC Berkeley's Digital Asset Management System, TIND DA. The PDFs, as well as the master TIFF files and all associated technical metadata, are transferred to local servers with SHA-256 checksum files and uploaded for long-term digital preservation in Merritt, the digital preservation repository from the University of California Curation Center (UC3).

In June 2022, standards for the enhanced item-level metadata for the digitized cases were reviewed and implemented. Starting with preexisting descriptive metadata exported from the detailed EAD finding aid for the manuscript collection, the names of claimants, grantees, and patentees are being reformatted to comply with MARC cataloging standards, including searches for complete names, birth and death years, and conversions to name authority files where they do exist. Start and end dates and date ranges for the documents, geographic name authorities and subject headings, as well as descriptive summaries of the cases transcribed from an associated index are also being added.

Digitization of the collection will mean a huge improvement for patron discovery, access, and research, but hopefully is not the end of the road. Over 90 percent of these documents are handwritten, and the ability to make this handwritten text machine-readable and keyword searchable would unlock even greater research potential, particularly in areas of digital scholarship. Current optical character recognition (OCR) technology for handwriting yields limited results, if any. We tested a machine learning pipeline on a few samples but the results did not justify further exploration at the time. As research in machine learning and artificial intelligence continues to expand, that may change in the future.

In the meantime, the Bancroft Library is exploring strategies for transcription projects of these materials, possibly through collaborative undergraduate/graduate student class projects, crowdsourcing through engagement with regional history groups, or a future hybrid approach including text recognition using artificial intelligence/machine learning. ●

Reference

Robinson, W. W. (William Wilcox). 1948. *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip [and] Homesteads*. Berkeley: University of California Press.

Author Bios

MARY W. ELINGS is the interim deputy director and head of Technical Services for the Bancroft Library at UC Berkeley. Ms. Elings is responsible for collection services for rare books, archival, and special collections that establish and maintain physical and intellectual control over Bancroft's collections in order to support research and teaching access. Her current research focus is on Computational Archival Science and developing "research ready" digital special collections to facilitate computational research. She speaks and writes regularly on these topics.

ADRIENNE SERRA has 10 years of experience working in archives and special collections, with a focus on digitization projects. Prior to working as digital project archivist for the Bancroft, she headed the digitization lab at Virginia Tech Special Collections. She received bachelor's degrees in Art History and Journalism from the University of Florida and her MLIS from Florida State University with a focus in Archives and Museum Studies.

Afterword

Sharon M. Burney, CLIR Program Officer

As the curtain draws to a close on the Digitizing Hidden Collections Symposium, the echoes of its theme resonate with a poignant and strategic question: Where do we go from here?

The symposium's panels and projects have revealed the complex tapestry of cultural heritage preservation against the backdrop of the tumultuous currents of our era. Individuals engaged in cultural preservation inhabit a landscape characterized by unprecedented environmental challenges, disruptive technological shifts, and socio-political upheavals. Our event united a diverse array of GLAM professionals, each a custodian of treasures that represent unique threads through the intricate archival history of our global community. The symposium's power lay not only in the individual presentations but in the chorus of archivists, librarians, curators, academics, data experts, and community advocates that converged to deliberate upon some truly remarkable projects. This collective assembly functioned as a fertile ground where new insights gently blossomed and collaborative strategies took root.

This collaborative ethos must guide our onward journey in the realm of cultural heritage preservation. In an era marked by climate disasters and politically motivated attacks on academia, libraries, and other knowledge organizations, our compass must point resolutely toward cooperative methodologies for digitizing and sharing collections of all kinds. A clarion call, urgent and unyielding, impels us to be intentional and inclusive in every action we take. The survival of our legacy demands that we construct a foundation of equitable preservation—one that champions every voice, perspective, and fragment of human experience. It is within the realm of intention that we pave a road toward a more comprehensive future, one that invites everyone to join the expedition and ensures that all narratives are safeguarded for use along the way.

As we stand at a crossroads in our collective journey, the renewal of the Digitizing Hidden Collections: Amplifying Unheard Voices program signals yet another stride towards an intentionally inclusive destiny. Within the layered folds of these thousands of newly digitized materials resides our culture, and it is within the encompassing embrace of that culture that our humanity will flourish. With every purposeful stride we take, we reinforce the intricate fabric of our shared heritage, weaving narratives that transcend time, magnifying voices that could otherwise fade into obscurity. The very core of our intent holds the power to mold a future where preservation becomes a gesture of unity, culture transforms into a symphony of diversity, and heritage stands as a guiding light, illuminating the path for generations to come.

Appendix: 2022 Digitizing Hidden Collections Symposium Content and Presenters and Contributors

Note: Further information about and resources for all Symposium submissions can be found at <https://www.clir.org/pubs/reports/learning-from-and-making-use-of-digitized-hidden-collections>.

The Afterlife of BiblioPhilly

Lois Black, Lehigh University; Dot Porter, University of Pennsylvania

Amplifying Indigenous Oral Histories: Treaty Elders Council

Sheldon Krasowski, Office of the Treaty Commissioner

Amplifying Unseen Voices: Digitizing American Sign Language Poetry

Elizabeth Call, Rochester Institute of Technology; Joan Naturale, Rochester Institute of Technology; Ella Van Holtum, Rochester Institute of Technology

The Art of Documents: The Digitization of Black Mountain College Ephemeral Materials as Exhibition and Interpretation Inspiration in an Art Museum Setting

Hilary Schroeder, Asheville Art Museum; Lydia See, Asheville Art Museum; Whitney Richardson, Asheville Art Museum; Corey Loftus, Asheville Art Museum

Assessing the Program Revision and Implementation

Jesse Johnston, Archives Research and Consulting Group; Ricardo Punzalan, University of Michigan School of Information

The Border in Print: Digitizing Periodicals in the US-Mexico Border Region

Mikaela Selley, Recovering the US Hispanic Literary Heritage Program; Nicolas Kanellos, Recovering the US Hispanic Literary Heritage Program; Carolina Villarroel, Recovering the US Hispanic Literary Heritage Program

Careful Considerations: Designing Workflows for Content Selection, Copyright, Privacy Concerns, and Cultural Competency

Abby Stambach, College of the Holy Cross; Corinne Tabolt, College of the Holy Cross; Lisa Villa, College of the Holy Cross

Charting the Course for the Western Water Archives

Lisa Crane, The Claremont Colleges Library

Cleared for Takeoff: Digitizing the World's "Most Experienced Airline" and Creation of an Aviation Portal in DPLA

Gabriella Williams, University of Miami; Jacqueline Wachholz, Duke University; Leah Tams, Duke University; Scott Williams, Digital Public Library of America; Adriana J. Millares, HistoryMiami Museum

Community Engagement, and the Building and Burning of Bridges

Caitlin Goodman, Swarthmore College (formerly Free Library of Philadelphia)

Digital Collections for Multiple Audiences: Transcription, Translation, and Storytelling

Annabel Pinkney, Science History Institute; Michelle DiMeo, Science History Institute

Digitizing the Unseen Civil Rights Movement: The Ed Pincus Film Collection at the Amistad Research Center

Brenda Flora, Amistad Research Center; Phillip Cunningham, Amistad Research Center; Laura Thomson, Amistad Research Center; Christopher Harter, Amistad Research Center

Digitizing Vascular Plant Specimens from a Country at War

David Giblin, University of Washington, Burke Museum; Steffi Ickert-Bond, University of Alaska Fairbanks, Museum of the North; Eric DeChaine, Western Washington University

Early State Records for 26 US States and Territories West of the Appalachians: A Digital Record from European Contact to Early Statehood Based on the Library of Congress' Microfilm Collection Epitomizes Significance of Content "Hidden" Now Enhanced

Kathleen Richman, LLMC; Richard Amelung, Saint Louis University School of Law; Joyce Savio Herleth, Saint Louis University School of Law

Emerging Pathways for the Transcription of Scientific Field Notes

Jacqueline Dearborn, Biodiversity Heritage Library; Colleen Funkhouser, Biodiversity Heritage Library; Katie Mika, Harvard University; Sonoe Nakasone, Smithsonian Institution; Bianca Crowley, Biodiversity Heritage Library; Martin Kalfatovic, Biodiversity Heritage Library; Riccardo Ferrante, Smithsonian Institution

Entomo3D and the Student Experience in Developing Organizational Capacity

Erin Chung, Virginia Tech; Eva Deisa, Virginia Tech; Katrina Enriquez, Virginia Tech; Nathan Hall, Virginia Tech; Jill Sy, Virginia Tech

Fisk Forever: Digitizing Materials by and about Fisk University and Expanding Access to Digital Collections at a Small, Private HBCU

DeLisa Minor Harris, Fisk University; Brandon Owens, Fisk University; Matthew Norwood, Fisk University

Get Glue On It (GGOI): A Nontoxic Coating Protocol for Creating 3D Models of Shiny Lithic Artifacts

Allison Fashing, University of Idaho; Chloe Dame, University of Idaho; Jes Holler, University of Idaho; Savannah Johnson, University of Idaho; Leah Evans-Janke, University of Idaho; Jylisa Doney, University of Idaho; Marco Seiferle-Valencia, University of Idaho

Hidden Labor in Hidden Collections: Digitization of Medieval Manuscripts across Multiple Midwest Institutions

Michelle Dalmau, Indiana University Bloomington; Kara Alexander, Indiana University Bloomington; Caitlyn Hastings, Indiana University Bloomington; Elizabeth K Hebbard, Indiana University Bloomington; Sarah Noonan, St. Mary's College

History, Technology, and Hard Work: A Field Guide to Digitizing a Large Garment Collection at a Small Institution

Amanda Cacich, Mount Mary University; Marshall Lee, Mount Mary University; Dan Vinson, Mount Mary University

IIIF Manifests 101: How to Find and Work with IIIF Materials

Josh Hadro, IIIF Consortium; Glen Robson, IIIF Consortium

IIIF Manifests 201: What You Can Do with IIIF Manifests Beyond Image Viewers

Josh Hadro, IIIF Consortium; Glen Robson, IIIF Consortium

Land, Wealth and Power: Digitizing the California Land Case Files

Mary Elings, University of California, Berkeley; Adrienne Serra, University of California, Berkeley

Linked Open Dime Novels; or, 19th Century Fiction and 21st Century Data

Matthew Short, Northern Illinois University; Demian Katz, Villanova University

Open-Source Tools for Digitization, Preservation, and Access in Audiovisual Collections

Catriona Schlosser, CUNY Television

Preserving Public Media through CLIR Digitization Grants

Michael Kamins, New Mexico PBS; David Saiz, New Mexico PBS; Torin Andersen, KMUW; Miranda Villevik, WGBH Educational Foundation; Casey Davis Kaufman, WGBH Educational Foundation

Preserving the Video Record with the Guerrilla Television Network

Dan Erdman, Media Burn Archive; Sara Chapman, Media Burn Archive; Adam Hart, Media Burn Archive; Cecilia Smith, University of Chicago Library

PrisonPandemic: Scaling and Adapting Document Management During COVID-19

Joanne DeCaro, University of California, Irvine; Alexis Rowland, University of California, Irvine; Elvia Arroyo-Ramirez, University of California, Irvine; Keramet Reiter, University of California, Irvine; Kristin Turney, University of California, Irvine; Naomi Sugie, University of California, Irvine; Gabe Rosales, University of California, Irvine; Mariela Villalba Madrid, University of California, Irvine

Revealing Visual Culture: Enhancing Metadata to Increase Image Discovery

Skye Lacerte, Washington University; Andrea Degener, Washington University

“So that Future Organizers Won’t Have to Reinvent the Wheel”: Activating Digital Archives for Liberatory Uses

Michelle Caswell, Professor of Archival Studies in the Department of Information Studies at the University of California Los Angeles (UCLA)

Southern Roots of American Judaism: Shedding Light through Digitization

Leah Worthington, College of Charleston; Tyler Mobley, College of Charleston; Meaghan Cash, College of Charleston; Brenna Reilley, College of Charleston

Thoughts and Reflections on Entomo3D’s Workflow

Youn Hee Chung, Virginia Tech; Eva Deisa, Virginia Tech; Tianyu Ge, Virginia Tech; Jillian Sy, Virginia Tech; Katrina Enriquez, Virginia Tech

Uncovering CUNY’s Audiovisual Heritage

Kelly Haydon, CUNY-TV

What the Seals Taught Us

Elizabeth Knott, Yale University



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