

Tides of History: Utilizing Service-Learning to Prepare and Preserve Local Historical Resources for Climate Change

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Abstract

As storms become more intense and sea levels rise, coastal cultural institutions are seeking ways to protect and preserve their collections within the challenging context of limited budgets and human resources. These institutions are not alone in their consideration of climate change risk; coastal colleges and universities, which are also threatened, are striving to develop strategies of adaptation and preparation. Collaborations between institutions of higher education and local communities have developed general municipal climate change adaptation and mitigation plans, but historical and cultural resource preservation have not been a focus in this work to date. This article describes a service-learning collaboration between a public R1 university and a small local history museum in coastal Florida, including methods and outcomes of three major course projects, to model how student labor can help meet historical preservation and adaptation needs while also fulfilling the learning outcomes of a public history course.

Keywords: climate change, service-learning, public history, local history, community engagement



In 2017, Hurricane Irma made landfall in Florida as a devastating Category 4 hurricane, causing \$50 billion in damages and putting hundreds of historic structures and cultural resources in the state in jeopardy (National Hurricane Center, 2018). As storms become more intense and sea levels rise, coastal cultural institutions in Florida—and worldwide—are seeking ways to protect and preserve their collections within the challenging context of limited budgets and human resources. These institutions are not alone in their consideration of climate change risk; coastal colleges and universities are also threatened and are striving to develop strategies of adaptation and preparation. Collaborations between institutions of higher education and local communities have proven effective and productive at developing general municipal climate change adaptation and mitigation plans (Gruber, 2017), but historical and cultural resource

preservation have not been a focus in this work to date. This article will describe a service-learning collaboration developed in the wake of Hurricane Irma's landfall, between a public R1 university and a small local history museum in the Tampa Bay area, to illustrate the potential benefits and work that can be accomplished via such a partnership and provide a model for other institutions similarly threatened by climate change.

Background

The National Trust for Historic Preservation (2018) has identified climate change as a profound threat to America's cultural heritage, delivering complex repercussions for historic structures, collections, and preservation practices alike. For coastal communities, sea level rise and increased risk of severe storms represent the greatest dangers. Global sea levels have risen more

than 8 inches over the last century and are projected to rise an additional 12 to 48 inches by 2100 (Melillo et al., 2014). Even greater rates of change are predicted for areas where coastal subsidence is already naturally taking place, such as the eastern seaboard of the United States (Mitchum, 2011). Meanwhile, higher surface temperatures and moisture in the air are contributing to the formation of extreme weather events. A 2019 report by a team of World Meteorological Organization researchers predicted that tropical cyclones will become more frequent and intense over the coming century, presenting emerging evidence to suggest that this phenomenon may already be taking place (Knutson et al., 2019). Thunderstorms, which themselves may cause localized flooding, also are getting stronger and more common, with 76% of weather stations in the United States seeing an increase in extreme precipitation since 1948 (Brooks, 2013) and another analysis finding that extreme downpours are happening 30% more often (Trapp et al., 2007).

Like the communities in which they can be found, coastal historic structures and cultural resources are threatened by these rising seas and intense storms: with increased intermittent flooding that makes access more difficult, with damage to buildings and infrastructure, and, perhaps ultimately, with permanent inundation. At stake is our national history and memory; a 2018 study of 1,232 archives in the United States found that 98.8% were “likely to be affected by at least one climate risk factor” (Mazurczyk et al., 2018, p. 111). These small museums and archives “play an important role in protecting and preserving the historical record and also interpret[ing] the past to the public” (Doyle, 2012, p. 39) yet by definition have very few staff members and budgets of less than \$250,000 per year (American Association for State and Local History, 2007). The reality for most local cultural institutions is likely even more bleak: In one state, more than 50% of the 150 historical museums have an annual budget of less than \$25,000. Furthermore, according to a poll by the American Association for State and Local History, 15% of local historical societies are staffed entirely by volunteers, 25% by volunteers and a part-time staff member, and only 25% have more than one professional staff member (Doyle, 2012).

Historic and cultural heritage sites are not

alone in contemplating how best to preserve valuable resources and cultivate adaptation strategies to address climate change within a context of limited budgets and human resource challenges. A 2017 feature in the *Chronicle of Higher Education* identified more than 100 U.S. coastal colleges and universities at risk from sea level rise and storm surge; over a dozen were located in the state of Florida (Myers & Lusk, 2017). Such educational institutions, themselves on the front lines of climate change, play a critical role in addressing the crisis by cultivating awareness of environmental issues through their curricula while also providing a testing ground for new adaptation, mitigation, and intervention strategies that engage scientific as well as humanistic dimensions of life in a changing climate (Dyer & Andrews, 2014; UNESCO, 2017). The expansion of climate change education has led to an enhanced awareness of environmental threats on college and university campuses across the United States, and calls for administrators to develop strategies to ensure the safety and resilience of the learning environment itself (Anderson, 2012).

Although efforts to “green” campus operations—for example, by embracing clean energy options or expanding recycling opportunities—are meaningful contributions to the fight against climate change, the *Chronicle’s* study suggests that attempts to protect campuses themselves have been less successful. Such preparations require long-term strategic planning and a grappling with risk uncertainty represented by the range of possible outcomes in predictive data (Ellard & Swieter, 2015). Protecting or adapting existing campus structures, facilities, and material resources is a costly venture (Myers & Lusk, 2017) poorly timed, given the last decade has seen declines in state higher education budgets nationwide (Mitchell et al., 2018) as well as steep reductions in federal funding for climate adaptation and resilience activities under the Trump administration (Committee on the Budget, 2019).

Shared concerns and challenges about the ability to prepare for the risks posed by climate change in a resource-scarce environment unite vulnerable historic and cultural heritage sites with coastal colleges and universities. Although large-scale funding and long-term planning issues may be beyond the scope of individuals at these institutions to solve, each type of facility neverthe-

less has something valuable to contribute, whether it be knowledge or technology, people power or collections of significance. The pedagogy of service-learning speaks to these shared interests and mutual ability to contribute, and service-learning methods have been applied to issues such as sustainability and climate change education (Coleman et al., 2017; Gold et al., 2015) and urban planning (Gruber et al., 2017). However, historical and cultural resource preservation has not been a focus in climate change-related service-learning to date. *How to Make History*, a course I have taught as a collaboration with the University of South Florida (USF), the Gulf Beaches Historical Museum (GBHM), and the St. Pete Beach Public Library, illustrates the ways that service-learning partnerships between local historical organizations and nearby institutions of higher education can be mutually beneficial to all stakeholders, and how such a partnership can be executed by other coastal institutions facing the risks of climate change.

Partnership Formation

As a state, Florida is particularly threatened by climate change. Historically, it is the most hurricane-prone area in the United States, in terms of both the volume and intensity of the tropical systems that have made landfall over the past 150 years (NOAA, 2005). As storms become stronger and more frequent due to climate change, the risk of catastrophic damage and loss of life increases; the Tampa Bay Regional Planning Council (2009) has predicted 2,000 people dead and \$250 billion in economic losses from a direct hit of a Category 5 hurricane in the area. In addition to the acute threat of stronger storms, the insidious creep of sea level rise represents a significant danger to a state with low elevation overall, more than 1,200 miles of coastline, and an estimated 75% of the population living in coastal counties (Wilson & Fischetti, 2010, p. 4) that generate 79% of the state's total annual economy (Florida Oceans and Coastal Council, 2010, pp. 1–2). According to a 2013 report by the Florida Department of State Division of Historical Resources, just 1 meter of sea level rise will affect 16,015 historical resources in the state, from historic structures to archaeological sites to National Register locations (Florida Division of Historical Resources, 2013). With 228 colleges and universities in the state also at

risk, Florida is the perfect location for a case study on collaboration between institutions of higher education and historical resource partners in the community within a context of climate change risk.

On September 10, 2017, Hurricane Irma made landfall in the Florida Keys as a devastating Category 4 hurricane. By the time the storm moved north over land toward Pinellas County, its strength had diminished to that of a Category 1 storm, and storm surge was negligible due to the eye moving inland, east of Tampa Bay (National Weather Service, 2017). Nevertheless, wind gusts of 100 miles per hour battered the region, downing trees and causing structural damage (Henry, 2017). On the barrier island of St. Pete Beach, the 1917 converted church that houses the collection of the GBHM sat shuttered, just 50 yards from the turbulent waves of the Gulf of Mexico and at only 3 feet of elevation. Although rising waters were initially believed to be the greatest threat to the museum's collection, the damage during this specific storm came from a roof leak. Aging roof tiles failed to hold fast in the high winds, and water penetrated the historic structure from above, damaging several exhibits and artifacts about pioneering beach families—some beyond repair.

The GBHM (Figure 1) has an extensive collection of nearly 10,000 historical documents that tell the story of the Pinellas Gulf Beaches, including photographs, early maps and navigational charts, yearbooks, letters, journals, real estate records, and postcards. The collection is housed in a historic structure that was the first church built on the Pinellas Gulf Beaches, erected in 1917. In 1952, the building was slated for demolition, but was purchased by Joan Haley, a journalist from New York who made the former church her residence. Upon her death in 1989, she deeded the building to the county, which replaced some windows and added climate control before opening the structure as a museum in 1993. Nevertheless, the building is highly vulnerable due to its age and location on a barrier island, and although Pinellas County is dedicated to maintaining this historic structure, resources with which to do so are scarce; Pinellas County staff is still down 25% over 2008 levels, property tax revenue in the General Fund (which funds most of the county's nonenterprise operations) is down 26.6% or \$102.2 million from 2007



Figure 1. The Gulf Beaches Historical Museum

levels, and the GBHM is but one building in a large portfolio of holdings (Pinellas County, 2015).

Therefore, whereas the GBHM is owned and maintained by the county, the museum is staffed entirely by volunteers, with a volunteer board responsible for collection development and preservation. Though the volunteer force for the GBHM numbers approximately 80 dedicated and passionate people, the museum nevertheless experiences the same top three challenges identified by the American Alliance of Museums (Zwerling, 2017) in a 2017 report on managing museum volunteers: capacity, availability/reliability, and training. This last factor—lack of professional development opportunities—is of particular concern at the GBHM, where only one volunteer is properly trained in AAM cataloguing standards. At the time of Irma's landfall, no collection development policy or disaster management plan existed in writing, though informal procedures were understood by those with institutional knowledge. Perhaps in part due to the age of the volunteer force—more than 90% of the GBHM's volunteers are 65 or older—few items in the collection had been digitized, and none of the digital files had been made public as of 2017. The collection catalogue, as well as the digital representations of the artifacts, existed on only one hard drive, which itself was not evacuated from the museum during Hurricane Irma.

As a volunteer at the St. Pete Beach Public Library, I became aware of the situation at the GBHM in the immediate aftermath of the hurricane when the library director, Betcinda Kettells, was bemoaning her inability, due to staffing shortages, to assist the museum with digitizing its resources to prevent future loss. As a trained historian and a faculty member in the Judy Genshaft Honors College at the University, I perceived an opportunity for institutional collaboration. Students in the Judy Genshaft Honors College represent every major on campus and have demonstrated academic excellence and a commitment to global citizenship and community engagement. The diverse interests of the students who enrolled in the course were integral to the creation of the partnership and its future success. With majors ranging from environmental science to education, communications to history, students would be able to bring their disciplinary skills to bear on the challenges facing the GBHM, merging the strengths of humanities and STEM perspectives while learning how to apply their training in a real-world context. Honors classes are interdisciplinary special topics courses and strive to utilize active learning approaches to illustrate for students how their area of expertise can contribute to an engagement with the subject at hand. Capstone honors courses specifically train students in group research methods and encourage experiential learning, so an on-site collaboration with the GBHM was in keeping with the pedagogical preferences of the College.

Six months of relationship-building conversations and needs articulation with county staff and the volunteers of the GBHM followed, during which these organizations expressed their priorities for the partnership, as well as their concerns. The volunteers of the GBHM were particularly keen to have assistance with digitizing fragile artifacts, as well as developing new exhibits for the museum. Lack of knowledge about the digitizing process, the absence of a preservation plan for the GBHM, and concerns about intergenerational communication were challenges voiced by the community partners, which the author strove to address when she developed a capstone course called *How to Make History*. The class was designed to leverage USF's technology and students' interdisciplinary interests and labor to meet the preservation and adaptation needs of the GBHM while imparting useful skills to students, such as record-

ing oral histories, producing documentary photography, digitizing visual and print artifacts, cataloguing and contributing to an online historical archive, and using Adobe Photoshop and InDesign. Best practices in service-learning were utilized to ensure equity in the partnership between the institutions and to help students develop a real connection to the community they were serving. How to Make History is an ongoing partnership, with the course offered for the first time in spring 2018 and three additional times since.

Service-Learning Structure and Assignments

How to Make History meets at the GBHM for 8 weeks during the semester, and on campus at USF for the remainder of the term. Although being on campus is convenient, comfortable, and provides access to needed resources such as the library and the Digital Media Commons, spending extended time on site with the community partner is essential both to provide students with a deeper understanding of the GBHM's collection and needs and to ensure that the voice and agency of the partner institution are present throughout the collaboration (Figure 2). Scholarship shows that extended and sustained presence on site demonstrates commitment to the community partner and helps generate a sense of trust, while

deepening learning for students (Chupp & Joseph, 2010; Petri, 2015). How to Make History meets once per week for a 3-hour session that encourages extended engagement and focus. Generally, each meeting consists of two distinct components. The first hour of each session, modeled after a traditional classroom experience, is spent exploring assigned readings focused on the methods of public history and the content of local history, ranging from peer-reviewed research to instructional manuals. Weekly topics include subjects such as handling and storage of historical artifacts, conducting an oral history, and history-writing for the web. Volunteers from the GBHM were invited to attend all on-site class meetings, not only to share their perspective on past museum practices and the applicability of the topics discussed to the work of the museum, but also to learn alongside the students. During the remainder of each class period, students practice the topic or skills they just discussed, utilizing the time together for group work and to get one-on-one guidance with these tasks.

The skills students are learning contribute to their completion of three major course assignments intended to help the GBHM prepare for and respond to negative aspects of climate change: a SWOT assessment, artifact digitization, and the creation of online exhibits. SWOT (strengths, weaknesses, op-



Figure 2. Students on a Walking Tour

Note. University of South Florida students get to know the community via a walking tour with GBHM volunteer Elizabeth Britt.

portunities, threats) analyses are common tools in community-engaged teaching; often, they represent the final product that students deliver to their community partner (Harkins, 2017). In professional contexts, outside facilitators typically engage in a period of observation and experience and facilitate conversations with individuals inside an organization in order to determine its internal, near-term strengths and weaknesses and external, long-term opportunities and threats (Sarsby, 2016). Such SWOT assessments are useful in developing a strategic plan and priorities for immediate action. During the planning period for the partnership, the GBHM's volunteer staff described the lack of a preservation plan as a challenge the museum faced when preparing for climate change-induced risks. The SWOT analysis was proposed to the community partner as a first step in developing a comprehensive preservation and emergency management plan.

Given the scope of work to be completed in *How to Make History*, the timeline for completing the SWOT analysis for the GBHM was compressed into 4 weeks, during which students journaled their own observations about the museum, interviewed volunteer staff, and heard from two guest speakers from the fields of museum conservation and archiving. In order to make the work more manageable and focused, students were assigned to teams investigating the strengths, weaknesses, opportunities, and threats related to certain aspects of the museum's operation and context: environment (built and natural), collections, staffing, and communications. Not only is group work such as this an example of the complex, situation-driven teamwork that is a paragon of active learning approaches to education (Barnes, 1989; Sharan & Sharan, 1992), teams also enabled students to work on areas of personal interest and exercise knowledge and perspective from their major disciplines.

The primary goal of the SWOT analysis for the GBHM was to familiarize students with the museum's operations while providing volunteer staff and county officials with a clear and comprehensive understanding of the institution's current state and potential future, particularly in light of climate change. Ongoing challenges with humidity and temperature control, improper storage of artifacts, and an aging volunteer force were weaknesses immediately apparent to students, but identifying strengths such

as the volunteers' dedication and local knowledge, breadth of the collection, and location of the museum in a historic district helped make clear the need to balance change with maintaining the identity of the organization. Meanwhile, climate change-induced sea level rise and extreme weather dominated the discussion of external and future-oriented threats, providing students a chance to brainstorm opportunities emerging in that context—such as stabilizing damaged artifacts, developing a disaster management plan, and getting younger volunteers involved in the digitization effort. The first two semesters the class was offered, students worked on crafting a thorough and professional SWOT analysis; in the most recent semester, students utilized the SWOT assessments made by their peers to craft a preservation plan for the museum, following guidelines from the American Association of Museums. Next semester, students will be tasked with developing a disaster management plan, a project identified in the SWOT analysis as having great importance for the museum's future in a changed climate.

Students also have utilized the results of the SWOT analysis to inform the most significant preservation project of the class: artifact digitization. Although the field of public history initially viewed digitization primarily as a means of expanding access to a collection, there is a growing acceptance of digitization as a preservation strategy (Conway, 2010; Matusiak & Johnston, 2014). Digitization is not intended to replace a physical collection, but it can ensure the preservation of a visual representation of the artifact and all of the information it contains—a vital function in a changed-climate context where unpredictable storms and flooding increasingly threaten collections (Tansey, 2015). Although there is and was much digitization to be done at the GBHM, the manageable expectation was set that each student would be responsible for digitizing nine artifacts of increasingly greater complexity over the course of the semester. This target takes into account the significant amount of preparation required for students to participate in this process. Students and GBHM volunteers first learned best practices for handling fragile artifacts from an employee at a local art museum who donated her time and expertise in preparation and conservation. Next, the staff of the Digital Media Commons at USF hosted a workshop training students to

employ scanners and DSLR cameras to digitize at industry–accepted quality and resolution, and to utilize Photoshop to ensure the digital image matched the appearance of the original artifact. Finally, students learned the Islandora interface in order to upload their digitized artifacts to the Pinellas Memory Project (PMP), where they also generated extensive metadata for each item, using required style and vocabulary. The majority of students had no experience with the tools or methods of professional archiving and digitization; through this project, they gained an appreciation for the profession as well as experience that may be valuable as they seek careers or embark on personal digitizing projects for family or friends.

Given the limitations of their workload, students were required to participate in prioritizing GBHM artifacts for digitization, taking guidance from the strategic plans of the National Archives (2014) and the International Federation of Library Associations (McIlwaine et al., 2002) and utilizing information from their own SWOT analysis to inform their selections on the basis of item value, risk, and use. Value took into account informational, artifactual, associational, evidentiary, and monetary value; risk considered the condition of the artifact, its inherent material composition, and environmental risk; use referred to the popularity of the item among both researchers and casual visitors to the GBHM. Evaluating the artifacts this way not only created priorities for digitization; it also helped students and museum volunteers think more deeply about motivations and priorities for collection development, preservation planning, and disaster management in a changing climate by identifying the items in the collection that were most essential to the mission of the GBHM. Over the course of four semesters, students have digitized more than 450 artifacts, including a diary written by an early female pioneer in 1911, hand–tinted postcards from the 1890s, 19th–century nautical maps, and original oil paintings produced by veterans staying at a local rehabilitation facility during World War II (Figure 3).

Students uploaded these digital artifacts along with metadata identifying and reflecting research about the items to the PMP, a free online archive operated by the Pinellas Public Library Cooperative. Adding the St. Pete Beach Public Library as a collaborator

in How to Make History enabled the GBHM to present its digitized artifacts in a more broadly accessible format by providing a foray into the PMP. Though a relatively new venture, the PMP hosts digitized historical artifacts from libraries, museums, and archives representing six municipalities in the Tampa Bay area. The administrators of the PMP have immediate plans to link it to the Sunshine State Digital Network, which itself feeds into the Digital Public Library of America; this would make the digital collection of the PMP more visible and easily searchable, and increase access not only for local community members but also for researchers worldwide (R. Landa, personal communication, February 28, 2020).

However, the goal of uploading digital artifacts to the PMP was not just to improve general accessibility of the GBHM’s collection; it was a specific response to climate change risk. Housing digital artifacts both on GBHM computers and on the PMP provides an extra layer of protection from the risk of servers being compromised by storms or water intrusion, by diversifying the location of the stored data (Haskins, 2019). Based on information from the nearest local measuring station (8726520), researchers anticipate an increase from the current 4–6 days per year of high–tide flooding in southern Pinellas County to 25–127 days per



Figure 3. Digitizing Artifacts at the Gulf Beaches Historical Museum
Note. University of South Florida students David Martinez and Michael Schuller collaborate on scanning the only extant copy of the 1929 city charter for Pass–a–Grille, the beach town where the GBHM is located.

year by the year 2050 (based on two models of low vs. high emissions). By 2100, the number of high-tide flooding occurrences is predicted to be 254–365 (Sweet et al., 2018). Such “sunny day flooding” will make the GBHM physically inaccessible to visitors; the online archive provides an alternative way to view highlights of the collection at such times, while also protecting the digital data at a safer server location.

In a similar vein, students developed digital exhibits to address the challenge of climate change–induced inaccessibility and to diversify both the audience for the museum’s displays and the historical narratives they conveyed. An initial step in beginning the exhibit curation process was identifying topics of current and ongoing interest to the local community that were underrepresented in the GBHM’s collection. In addition to readings on local history, students got to know the community through a bus tour, walking tours of two neighborhoods, and informal conversations with a broad spectrum of residents. These intimate interactions provided sparks of curiosity and leads on potential research projects.

Individual reflection, classroom discussion on observations made in the community, and explorations of personal areas of academic expertise allowed students to find others with similar interests and form small teams of three to six people. Group investigation, as an accepted strategy deployed in service-learning, promotes positive interdependence, increased face-to-face interactions, individual and group accountability, improved interpersonal skills, and opportunities for group processing (Johnson et al., 1990). In *How to Make History*, teams were tasked with developing a research question about an aspect of contemporary local history, conducting investigative research, writing compelling narratives geared toward public consumption, conducting at least one oral history interview, and supporting their work with multimedia evidence (in the form of historical artifacts from the collection of the GBHM as well as contemporary self-produced documentary photography). Finally, the groups were required to share their work with the public through a well-designed, cohesive webpage of their own creation, under the class’s main website, Gulf Beaches Today (<https://sites.google.com/honors.usf.edu/gulfbeachestoday>).

While creating digital exhibits over three semesters that cover a range of topics

pertaining to local contemporary history, multiple groups have also sought to explore and share information about the impacts of climate change on the community via this assignment. In addition to online exhibits about hurricanes, erosion, and the changing fishing industry, one group’s focus was on the red tide of 2018. The worst incidence of red tide in over a decade, this toxic bloom of *Karenia brevis*, a species of algae, lasted 16 months, cost Florida businesses more than \$90 million in lost revenue, and killed countless fish and marine mammals (Fears & Rozsa, 2018). As climate change increases water temperatures and causes larger rain events that flush fertilizers and nutrients from soil into the Gulf of Mexico (Hallegraeff, 2010), algal blooms have already become more common and are expected to become even more frequent in the future (Watson et al., 2010).

The student team conducted research, documented the algal and fish-kill event with their own photography, and recorded oral histories with two marine biologists, a physician, and a restaurant owner and city commissioner—all of whom reside in the community—to create a compelling exhibit (<https://sites.google.com/honors.usf.edu/gulfbeachestoday/red-tide-2018>) focused on how the historic Red Tide bloom was impacted by human activity and, in turn, impacted human activity itself in the local community. The engaging digital exhibit not only represents a commemoration of an event that will have significance in years to come; it also serves as a means of educating the public about another dimension of climate change–induced environmental changes. The exhibit’s location online enabled students to share their environmental history story with a broader and more diverse constituency, including those who may have stayed off the beaches thanks to red tide. Likewise, the classes’ other online exhibits will continue to provide access to the history of the Pinellas Gulf Beaches even when climate change makes physical access to the GBHM more difficult.

Logistical Concerns, Outcomes, and Future Directions

The major course projects—conducting a SWOT analysis to inform a disaster management plan, digitizing artifacts, and creating online exhibits—represent a meaningful contribution to the GBHM’s attempts to mitigate the impacts of climate

change, without a significant outlay of capital for either partner. Aside from a \$40 flatbed scanner capable of 600 dpi resolution (the archival industry's standard), all other technology and software required for these projects was already owned by USF and accessible to students through the Digital Media Commons. The Pinellas Public Library Cooperative sponsors data storage for the PMP, allowing the digitized artifacts to be stored and shared without cost to the GBHM or USF, and Google Apps enables students to create free Google Sites for their digital exhibits. A minigrant of \$500 from the Office of Community Engagement and Partnerships at the University of South Florida funded the bus tour and field trips; in the future, funding will be sought to reimburse students for mileage, since they were responsible for their own transportation to the GBHM.

Although the financial cost of these projects is minimal, a partnership like this does require an investment of time and labor. Following Hurricane Irma's landfall, museum volunteers, representatives from the Pinellas Public Library Cooperative, and the USF faculty member met at least once a month (with several phone and email conversations in between) to determine the parameters, goals, and logistics of the collaboration. Though representing a significant investment in time and trust, service-learning scholarship identifies this as essential for ensuring an equitable and ethical partnership (Jacoby, 2003). When the How to Make History class was initiated in spring 2018, the museum did need to furnish a volunteer to familiarize students with the workings of the GBHM and provide access to their collection. The time commitment totaled 24 hours in a semester, distributed over eight class meetings on site at the GBHM. The investment of student time and labor was significant, but by embedding the projects in a capstone class where research and service were part of the course learning outcomes, student work was acknowledged and valued as graded components of the class. The integration of service-learning projects into How to Make History is supported by scholarship that demonstrates how community partnerships can provide students with unique opportunities to conduct applied research in ways that can reinforce course content and make it more relevant to students (Hamon, 2002; National Survey of Student Engagement, 2008; Stark, 2013).

The payoff for this labor has been tremendous and multifaceted. From the perspective of the GBHM, the primary goals of the collaboration were to digitize fragile artifacts to preserve them from the threat of climate change. Monica Drake, operations manager for Heritage Village and the GBHM's liaison with Pinellas County, stated,

With only a volunteer staff, the student commitment to helping the Gulf Beaches Historical Museum is invaluable. They have brought their perspectives and technological know-how to bear on preserving artifacts; producing new and critical sources of information from local and often historically ignored communities; and helping the museum address the realities of a changing climate. (Personal communication, June 14, 2021)

Over the course of 3 years, more than 450 artifacts have been digitized and archived (<https://pinellasmemory.org/islandora/object/clearwater%3Astpetebeach>) on off-site servers to reduce the risk of data loss in case of flooding or catastrophic loss at the museum. Although this represents a small fraction of the museum's overall collection, the students' SWOT analysis helped identify the most at-risk, valuable, and useful artifacts, which were prioritized in the digitization effort. Students have created 14 online exhibits (<https://sites.google.com/honors.usf.edu/gulfbeachestoday>) that highlight and expand the museum's collection while helping preserve the history of the at-risk island community and improve accessibility as part of the preservation plan of the GBHM, which they helped create. In spring 2021, staff from USF's Digital Heritage and Humanities Collection created a 360-degree virtual rendering of the museum (<https://arcweb.forest.usf.edu/dhmc/GulfBeachesHistoricalMuseum/VirtualTour/>) that, in upcoming semesters, students will enhance by embedding digital exhibits within the three-dimensional environment while continuing to digitize artifacts for the Pinellas Memory Project archive. As a future direction for this partnership, the 360-degree virtual museum will enable the GBHM to meet its goals of digitizing its collection, creating new exhibits, and remaining accessible to a broad public in a changed climate, while also documenting the appearance of the museum itself in case of catastrophic loss.

Betcinda Kettells, director of the St. Pete Beach Public Library, wrote that “the goal of the class, from the library’s perspective, was to digitize local materials and connect with a county-wide vehicle to share the materials via the Internet” as a direct response to Hurricane Irma. Yet, according to Kettells, “the class accomplished so much more . . . the accomplishments of this class were not only wide-ranging in scope but will last for generations” (personal communication, July 30, 2018, p. 1) as the collaboration seeks to preserve the museum’s collection through a period of great flux caused by climate change as well as teach the community about environmental and cultural risks and how public history projects can help address them. Each semester the course has been offered, students have shared the work they completed with the public through a presentation at the St. Pete Beach Public Library (Figure 4).

In addition to disseminating helpful information about the risks of climate change and the importance of disaster management planning and digitization, the public presentation strives to increase awareness of and access to the digital resources of the GBHM. Future directions for the partnership include expanding on these public presentations with student-led workshops at the library to teach local residents how to digi-

tize and store online their own family artifacts. Since the entire community served by the library is itself on a barrier island at risk due to climate change, and public history as a discipline is concerned with the everyday experiences of ordinary people, this effort would be a way of advancing and expanding the goals of the How to Make History course by making the practices of the class accessible to the general public. Already the existing public presentations have garnered the attention of the mayors and city commissioners from local municipalities such as St. Pete Beach, Treasure Island, and Madeira Beach, who have not only praised the students’ work but have since sought out additional collaborations with USF to help their communities prepare and adapt for climate change. How to Make History received coverage from the local newspaper *The Island Reporter* and won a SirsiDynix 2019 Power of Libraries award (<https://www.sirsidynix.com/power-of-libraries/>), with the course professor receiving USF’s Outstanding Community-Engaged Teaching award for 2019 as well as the Florida Campus Compact Engaged Scholarship faculty award for the State University System in 2018.

The service-learning strategies deployed to complete the course projects not only benefited the GBHM and surrounding community; they provided students with the



Figure 4. Presentation at the St. Pete Beach Public Library

Note. University of South Florida student Nada Blassy delivers a portion of the end-of-semester class presentation to a public audience at the St. Pete Beach Public Library.

opportunity to develop critical competencies through experiences in the classroom and museum setting (Paulson & Faust, 1998). Students' feedback about the course via the Student Assessment of Instruction Survey supports this assertion. One student wrote,

This course was different than any other course I have taken at USF because I could tell the immediate effect that it had on the community. There is clearly a difference from learning about the world in a classroom and actually going out into the world and getting hands-on experience with the topic that you are learning. This is a class that I will never forget, and I was able to utilize my strengths to help the class.

Another commented, "This Honors Capstone project has been super informative and full of community based [*sic*] engagement. It has deepened my understanding and appreciation for history and the artifacts that all tell stories that reflect the past" (University of South Florida, 2018). Future directions include developing and implementing an evaluation tool to assess the impact of the course on students' awareness of climate

change risk, knowledge of basic tenets of public history, and attitudes related to service-learning.

Cultivating an interest in local history among a younger generation will be essential in preparing, protecting, and remembering coastal cultural resources in the face of climate change. Nonprofit organizations—whether small-scale museums and archives or colleges and universities—will need vocal allies to ensure that proper long-term planning is taking place at the federal, state, and local levels of government, and resources are being directed to support the preservation and adaptation work of vulnerable institutions. Hanging in the balance is our community's collective memory. Documenting local history is especially important in helping keep a record of the past and a sense of current identity in places that are changing rapidly due to climate threats, and where communities may be contemplating managed retreat. In the interim, service-learning partnerships between coastal cultural institutions and institutions of higher education can begin the labor, leveraging their existing resources to accomplish and model preservation, adaptation, and commemoration strategies for the community at large.



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