

# Documenting the Use of the Smithsonian Learning Lab Among Smithsonian Museums, Research Centers, and Other Programmatic Offices

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## Abstract

The Smithsonian Learning Lab (SLL) is a web platform that allows users to discover Smithsonian Institution (SI) digital resources, and use them to create and share collections tailored to their needs and those of their target audiences. Concurrent with the SLL's launch by the Smithsonian Center for Learning and Digital Access (SCLDA) in 2016, several SI Units started using the platform. This report presents eight case studies of SI Units using the SLL for distance learning, training, curatorial research, fundraising, and partnership-related initiatives. Units valued the SLL as a more efficient tool for organizing, sharing and customizing digital programs and initiatives for their target audiences at minimal cost. Units successfully used the platform for educational purposes as well as fundraising and curatorial purposes. After an initial facilitation from SCLDA, Units found the SLL manageable for independent use. This report highlights key projects across SI, defines specific benefits of the SLL for unit uses, and provides key findings on the SLL's role in enhancing institutional engagement with digital content.

*Keywords:* digital resources, distance learning, training, curatorial research, fundraising, partnership

## Introduction

Launched in 2016, the Smithsonian Learning Lab (SLL) is a platform for discovering, sharing, and using Smithsonian digital resources, such as images, videos, blog posts, and lesson plans. Created and managed by the Smithsonian Center for Learning and Digital Access (SCLDA), the platform includes over 2 million resources from all the Smithsonian Institution (SI) Units, and more than 20,000 user-uploaded resources. Users can discover these resources, create with them customizable collections, annotate them for further discussion, and upload their own materials from other resources. The SLL changes the way students, teachers, and educators interact with and use Smithsonian resources.

The SLL is a resource created for the benefit not only of audiences but also units and functions throughout the Smithsonian. Its potential also extends to the work of all SI Units for public-facing or public-engagement purposes. Over 20 Units have made use of the SLL, including but not limited to:

- **Museums:** Cooper Hewitt Smithsonian Design Museum (**CHSDM**), Freer and Sackler Galleries (**FSG**), Hirshhorn Museum and Sculpture Garden (**HMSG**), National Air and Space Museum (**NASM**), National Museum of African American History and Culture (**NMAAHC**), National Museum of African Art (**NMAfA**), National Museum of American History (**NMAH**), National Museum of Natural History (**NMNH**), National Museum of the American Indian (**NMAI**), National Portrait Gallery (**NPG**), National Postal Museum (**NPM**), and Smithsonian American Art Museum (**SAAM**)
- **Research Centers:** Smithsonian Early Enrichment Center (**SEEC**) Smithsonian Gardens (**SIG**), Smithsonian Latino Center (**SLC**), Smithsonian Libraries (**SIL**), and Smithsonian Science Education Center (**SSEC**)
- **Programmatic Offices:** Central Office of Advancement (**OA**), Smithsonian Affiliates (**SI Affiliates**), Smithsonian Enterprises (**SE**), and Smithsonian Institution Traveling Exhibition Service (**SITES**)

Unit initiatives address a wide range of disciplines and audiences that are making use of the SLL with teachers, students, docents, and lifelong learners. This report presents **eight** case studies of SI units that use the SLL in distance learning, training, curatorial research, fundraising and partnerships.

The research started with an internal review of all Units using the SLL, of which SCLDA identified **twenty-three** projects. SCLDA selected the following case studies for their exemplary use of the SLL to explore the platform's benefits for a variety of institutional and interdisciplinary work

Case studies were based on in-depth interviews with SI staff selected according to on categories of use of the SLL, availability during the research period, and a variety of institutional interdisciplinary

representations of SI. A discussion of the collections associated with the initiatives was also included. The illustrative case studies are representative of similar uses of the SLL across the Institution.

Following research protocol approval by the SI Human Subjects Institutional Review Board, we asked open-ended questions about the development and use of the SLL in a project, the role of SCLDA in project development, engagement with the SLL tools and features, and the overall value of the SLL to the Unit's project. We also discussed the Unit-Created and Target Audience-created collections associated with these projects, documenting their intentionality, use of metadata, use of tools, and use of digitized resources.

The goals of this report are two-fold. The first goal focuses on documenting the values of the SLL to SI Units as a platform for presenting and sharing institutional resources. The second goal is to lend insight to the Smithsonian Institution on how technology like the SLL benefits Units to enable museum staff, volunteers, and audiences anywhere to use Smithsonian resources to investigate issues and share ideas. SCLDA hopes to use this research as documentation of the value of the SLL to advancing Unit and pan-institutional work.

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## Case Studies

The following case studies are arranged by use.

- **Distance Learning**, in which Units use the SLL as a form of museum education to share teaching resources and foster digital learning
  1. *Online Courses with Smithsonian Enterprises: National Museum of American History, Office of the Provost*
  2. *Smithsonian Science How at the National Museum of Natural History*
- **Training**, in which the Units use the SLL as part of a professional development program for educators or volunteers
  3. *Teacher Workshops at Smithsonian American Art Museum*
  4. *Training Gallery Guides at the Hirshhorn Museum and Sculpture Garden*
- **Curatorial Research**, in which Units use the SLL to document and share research complementary to or in place of a physical exhibition
  5. *The Will to Adorn at the Center for Folklife and Cultural Heritage*
  6. *Written in Bone: A Collaboration with Smithsonian Institution Archives and National Museum of Natural History*
- **Fundraising**, in which Unit uses the SLL to introduce SI collections for marketing and donor cultivation
  7. *Online Fundraising with the Office of Advancement*
- **Partnership**, in which the Units use the SLL as part of their work with other Units or affiliated organizations
  8. *National Outreach through the National Art Education Association: Cooper Hewitt Smithsonian Design Museum, Freer and Sackler Galleries, National Museum of African Art, Smithsonian American Art Museum, Smithsonian Center for Learning and Digital Access*

## Distance Learning: Online Courses with Smithsonian Enterprises

### **SmithsonianX “Teaching Historical Inquiry with Objects” (and with National Museum of American History)**

**Use:** Distance Learning – Course, Training – Educators

**Units:** Smithsonian Enterprises (SE), National Museum of American History (NMAH)

**Audience:** More than 1,000 K – 12 Social Studies Teachers (United States, International)

**Benefits:** Efficient platform for publishing & sharing student work; Enabling educators anywhere to use Smithsonian resources to share ideas with anyone; Providing targeted audience with a platform for engagement with the Smithsonian

**Brief Summary:** For the Smithsonian edX course offered by SE and NMAH, “Teaching Historical Inquiry with Objects,” K – 12 social studies teachers used the SLL to create collections of Smithsonian resources to promote critical thinking in their classrooms.

#### **Full Summary:**

*What:* In the SmithsonianX course with SE and NMAH, [“Teaching Historical Inquiry with Objects.”](#) K – 12 social studies teachers learn how to use museum objects to promote critical thinking in the classroom.<sup>i</sup>

*Before:* In the first iteration of the course launched in October 2015, participants used the [Smithsonian Collections Search Center](#) to find and document objects to use for a history class discussion.<sup>ii</sup> SE Instructional Designer Alison Leithner noted this assignment felt less guided and presented a burden on the participants to create a visually appealing lesson plan.

*Work with SCLDA:* Leithner sought expertise from SCLDA, working with Learning Initiatives Specialist Ashley Naranjo regarding technical questions, functionality, and how to introduce the SLL with SCLDA resources.

*What they did in the SLL:* To help the participants try out their new critical thinking skills, Leithner developed a practical application assignment to use resources from the SLL to support a compelling question from history. Course participants used the SLL to search Smithsonian resources to 1) create and customize a collection around their chosen question; and 2) publish their collection with the hashtag #TeachingInquiry. SE Teaching Assistant Jennifer Fraker created a sample SLL collection that demonstrated how teachers could use the resources from all the museums and platform towards the C3 Framework for object-based learning.<sup>iii</sup>

*Collections:* Participants created eight topical collections during the second iteration of the course. In the third iteration of the course, a self-guided version running from October 4, 2016 to September 26, 2017, participants have created eighteen topical collections as of August 1, 2017. Teachers used resources from over fourteen SI Units to address a wide variety of historical topics with their collections, such as the Civil War, the Civil Rights Movement, management of natural resources, and the value of legal rights.

*Value:* According to Leithner, the value of the SLL was in creating a seamless user experience for teachers to create, access the collections, and use this new framework for teaching.

*Applicability Across the Smithsonian:* SCLDA staff recognized that the incorporation of the SLL into an existing initiative helped complement the work of the course and disseminate relevant materials to support the professional development provided by the MOOC. Smithsonian Enterprises brought exposure to the SLL and SCLDA, making connections across the institution and integrating the SLL as a tool to complement other SI initiatives. Other Units, such as Cooper Hewitt Smithsonian Design Museum, hope to include assignments like this one in upcoming distance learning courses.



## Collections Related to this Case Study

The screenshot shows a digital collection interface. At the top, there is a search bar and navigation icons. The title "Did the Industrial Revolution Make Life Better for Everyone?" is prominently displayed. Below the title, the creator's name "Jennifer Fraker" is shown. The collection is categorized under "Social Studies" and "Age Levels Intermediate (9 to 12 years old), Primary (5 to 8 years old)". A brief description states: "A collection focused on teaching the Industrial Revolution. The artifacts found in this collection are intended to be used as part of an Inquiry Design Model (IDM). Within the IDM, images could not only be used within staging the question, but also to help students build contextual knowledge under the supporting questions of (1) what changes were made in manufacturing, (2) how did society benefit from industrialization, and (3) what were the challenges society faced during industrialization? #C3Framework #TeachingInquiry". The collection contains 12 artifacts, including images of a steam train, a printing press, a spinning wheel, a sewing machine, a typewriter, a bicycle, a vintage car, an airplane, a light bulb, a mechanical press, and a factory interior.

Figure 1: Sample collection created by teaching assistant Jennifer Fraker for the course<sup>iv</sup>

The screenshot shows a digital collection interface. At the top, there is a search bar and navigation icons. The title "Which freedom is worth fighting for?: The American Revolution" is prominently displayed. Below the title, the creator's name "Kevin Day" is shown. The collection is categorized under "6 Favorites 1 Copy (view)". A brief description states: "This is an inquiry-based unit on colonial America for an 8th grade US history class, and my maiden voyage using the Smithsonian Learning Lab, the #C3Framework and #TeachingInquiry, and the guiding encouragement of my summer cohort, 'Teaching Historical Inquiry with Objects.'" The collection contains 12 artifacts, including images of a spinning wheel, a colonial interior, a historical document, a display case with clothing, a historical document, a historical document, a historical document, a historical document, a historical document, a historical document, a historical document, and a historical document.

Figure 2: Collection created by course participant Kevin Day for the course<sup>v</sup>

## **Harvard Extension School, “Smithsonian and the Twenty-First Century Museum: Leadership Strategies” (and with the SI Office of the Provost)**

**Use:** Distance Learning – Course

**Units:** Smithsonian Enterprises (SE), Harvard Extension School, Office of the Provost

**Audience:** Graduate students, Lifelong learners, Working professionals

**Benefits:** Efficient platform for presenting content; Improving course management; Archiving content for targeted audience

**Brief Summary:** For the Harvard Extension School course facilitated by the Office of the Provost and Smithsonian Enterprises, “Smithsonian and the Twenty-First Century Museum: Leadership Strategies,” SE Instructional Designer Alison Leithner created collections of Smithsonian resources to screen-share weekly web conference sessions, creating a virtual blackboard or textbook for student use.

### **Full Summary:**

*What:* In the Harvard Extension School course with the Smithsonian Office of the Provost, [“Smithsonian and the Twenty-First Century Museum: Leadership Strategies.”](#) graduate students examine museum leadership and change in the digital age, fundraising campaign strategies, and pan-Smithsonian initiatives for interdisciplinary research, new collaborations, and educational outreach.<sup>vi</sup>

*Before:* Leithner shared PowerPoint slides or individual links to support relevant moments in the lecture, taking up valuable class time as she transitioned through tabs on her computer.

*Work with SCLDA:* Having used the SLL in her previous work, Leithner tested out using it to consolidate all the links and resources in one collection. She sought technical expertise from SCLDA, working with Learning Initiatives Specialist Ashley Naranjo regarding functionality and embedding the collections into the course website.

*What they did in SLL:* To support weekly web conference sessions for the course, Leithner developed collections of related resources to screen-share during the lectures.

*Collections:* Leithner created six topical collections for the first seven weeks of the course to discuss the history of the Smithsonian and museum projects. Leithner chose historical resources from seven Units supported by key topics of the lecture. For example, [the collection for the Week 1 lecture](#) featured portraits of James Smithson, John Quincy Adams, and Joseph Henry, a photocopy of Smithson’s will, and archival images of several museums over time. In later collections, Leithner incorporated additional Smithsonian content currently not found in the SLL, such as websites, images, and videos. Leithner also used the description to link to the Harvard course website, where all the course materials and resources

describing the Smithsonian-Harvard Extension School partnership are publicly available. These collections are published and publicly available for anyone to view, copy, and modify.

*Value:* Leithner noted students appreciated the ability to see the resources being discussed and being able to go back and access the materials as lifelong learners. According to Leithner, the value of the SLL as a visual tool was the ability to house all of the Smithsonian resources for display during the lectures in one place, which students could also access at their own leisure.

*Applicability Across the Smithsonian:* SCLDA acknowledge Leithner's unique approach to using the platform as a presentation tool, replacing a PowerPoint or slide presentation.

## Collections Related to this Case Study

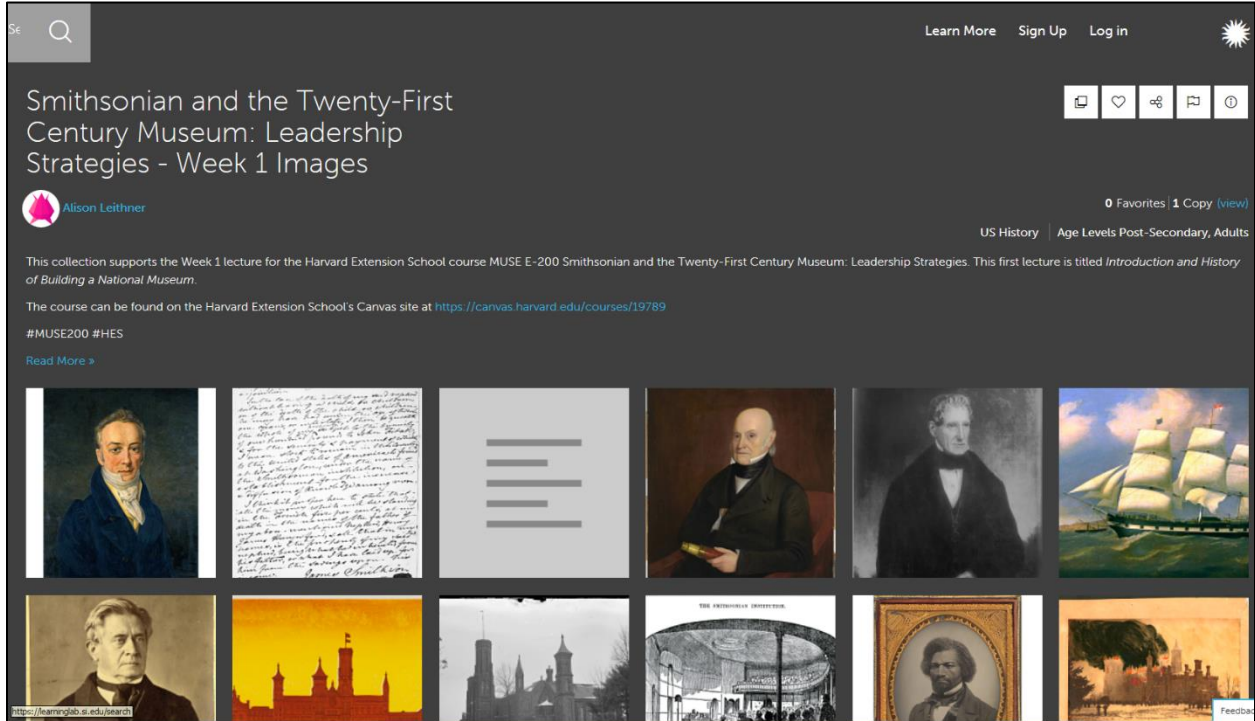


Figure 3: Collection created by Alison Leithner for Week 1 of the course<sup>vii</sup>

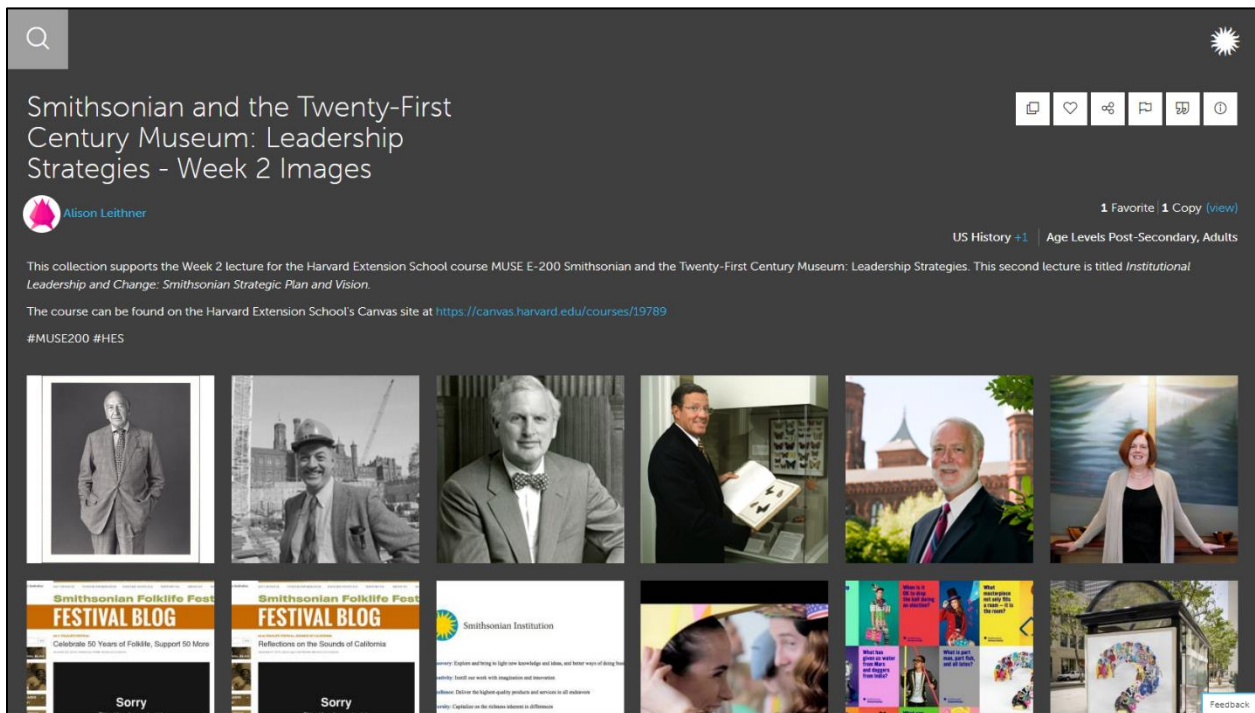


Figure 4: Collection created by Alison Leithner for Week 2 of the course<sup>viii</sup>

## Distance Learning: *Smithsonian Science How* at the National Museum of Natural History

**Use:** Distance Learning – Broadcast

**Units:** National Museum of Natural History (NMNH)

**Audience:** Middle-School Teachers

**Benefits:** Expanding target audience for promoting webcast; Publishing content at minimal cost; Creating educational activities & packaging materials for teaching resources

**Brief Summary:** Expanding the traditional audience for the webcast *Smithsonian Science How*, NMNH Science Content Developer Devin Reese created interdisciplinary collections of Smithsonian resources, offering educators a guide to educational activities.

### **Full Summary:**

*What:* The free, interactive, TV-style webcast program *Smithsonian Science How* showcases the museum’s scientists, research, and collections for middle school audiences in the classroom setting.

*Before:* On [the program’s webpage on NMNH’s website](#), show host Maggy Benson and science content developer Devin Reese provide compilations of resources that complement the webcasts.<sup>ix</sup> However, on their webpage, there is no way to annotate and let the user know how to use these resources for learning opportunities. In addition, Reese noted they “are not in a position to be taking [these activities/collections] into schools,” lacking the relationships with schools/educators outside their current audience to share new educational resources.<sup>x</sup>

*Work with SCLDA:* Inspired by her experiences with the SLL during beta-testing, sharing feedback on the platform, and her working relationship with SCLDA staff, Reese decided to explore using the platform to expand the program’s audience.

*What they did in SLL:* To support their archived webcasts with classroom activities, Reese created interdisciplinary learning collections that used Smithsonian-wide resources.

*Collections:* Reese piloted six collections in the SLL to correspond with episodes. These collections include the archived video of the corresponding webcast; quizzes and discussion questions to analyze the content presented in the video; classroom activities with art, history, or current events connections; independent projects for students; and links to additional resources on the *Smithsonian Science How* webpage.

*Value:* Benson noted that the SLL provides another audience, one that might not be reached through the *Smithsonian Science How* website and outreach mechanisms. According to Reese, the SLL collections serve as a webcast “extra,” offering teachers a curated, interdisciplinary guide to using the archived webcasts for a variety of classroom experiences.

*Applicability Across the Smithsonian:* SCLDA noted *Smithsonian Science How*’s experimentation with the SLL helps to further publicize their program, meeting their mission of national outreach. Other programs across the Smithsonian, like National Air and Space Museum’s (NASM) *STEM in 30*, also use archived content on the SLL to support teachers more fully.<sup>xi</sup>



## Collections Related to this Case Study

This Smithsonian Science How learning collection, from Q7rius at the National Museum of Natural History, is part of a distance learning program at <http://qrius.si.edu/explore-science/webcast>. This collection focuses on the end-Cretaceous extinction event that included dinosaurs. Targeted at middle schoolers, the collection invites students into an authentic understanding of the evidence for and causes of the mass extinction. Paleobotanist Dr. Kirk Johnson is featured as an expert explainer. The collection includes an interactive webcast video with discussion questions, cross-cutting activities, an independent project, and other resources for teachers and students.

**Key Terms:**  
*paleontology, dinosaur, fossil record, mass extinction, asteroid, Cretaceous period, K-T boundary...*

Read More >

The screenshot shows a grid of 14 resource thumbnails. The first row includes a photo of a man in a hat, a ScienceHow! guide, a video thumbnail titled 'Solving the Dinosaur Mystery', a pink 'X' diagram, a screenshot of a webcast, and a fossil. The second row includes a photo of a man, a dinosaur skeleton, a screenshot of a webcast, a video thumbnail titled 'DINOSAURS IN OUR BACKYARD', a classroom scene, and a volcanic eruption.

Figure 5: Collection created by Devin Reese for archived webcast "Solving the Dinosaur Mystery with Kirk Johnson"<sup>xii</sup>

This Smithsonian Science How learning collection, from Q7rius at the National Museum of Natural History, is part of a distance learning program at <http://qrius.si.edu/explore-science/webcast>. This collection focuses on the science of mummies. Targeted at middle schoolers, the collection invites students into an authentic understanding of how mummies form, both naturally and culturally. Physical and forensic anthropologist Dr. David Hunt is featured as an expert explainer. The collection includes an interactive webcast video with discussion questions, cross-cutting activities, an independent project, and other resources for teachers and students.

This collection was created to support the 2016 CCSSO Teachers of the Year Day at the Smithsonian.

**Key Terms:** *physical anthropology, archaeology, skeletal remains, mummification, burial practices, decomposition, culture...*

Read More >

The screenshot shows a grid of 14 resource thumbnails. The first row includes a photo of a man in a lab, a ScienceHow! guide, a video thumbnail titled 'Mummy Science', a 3D model of a mummy, a photo of a mummy, and a Smithsonian Science News article. The second row includes a video thumbnail titled 'The story of a 19th century boy buried in an iron coffin', a blue document icon, a photo of a mummy, a question mark icon, and another blue document icon.

Figure 6: Collection created by Devin Reese for archived webcast "Mummy Science featuring Dr. David Hunt"<sup>xiii</sup>

## Training: Teacher Workshops at Smithsonian American Art Museum

**Use:** Training – Teachers

**Units:** Smithsonian American Art Museum (SAAM)

**Audience:** K-12 Humanities Teachers

**Benefits:** Publishing content at minimal cost; Creating educational activities & packaging teaching materials; Efficient platform for sharing content & materials

**Brief Summary:** For the SAAM Teacher Workshops, Teacher Programs Coordinator Elizabeth Dale-Deines creates collections to organize preparatory materials and resources for teachers to use in the classroom.

**Full Summary:**

*What:* The Smithsonian American Art Museum offers professional workshops throughout the year to inspire educators to use artworks to provoke inquiry, spark creativity, and shape understanding of American culture in humanities classrooms.

*Before:* In previous years, Dale-Deines found it difficult to continue conversations with teachers outside the museum. Print materials from the workshops would easily be lost, damaged, or difficult to share.

*Work with SCLDA:* Following her introduction to the SLL during its development, Dale-Deines independently experimented with the platform to develop topical collections for the workshops.

*What they did in SLL:* Following each workshop, Teacher Programs Coordinator Dale-Deines publishes a related collection on the SLL, sharing the link with the participants and making these materials available to anyone on the platform.

*Collections:* Dale-Deines has built fourteen topical collections as of June 30, 2017, and plans to continue doing so in the coming school year. Now, she is able to include all these documents, artworks, and related resources from across the Smithsonian in one location. All these materials are then packaged and ready to use as activities in the classroom. For example, in her collection "[Finding Themes in American Art](#)," Dale-Deines includes several artworks from Smithsonian American Art Museum and National Portrait Gallery collections, additional web resources to provide context, and worksheets with activities to accompany the artworks.



*Value:* Rather than creating an entirely new website or creating a PDF document or a handout packet that may not make it to the teacher's hands, museum educators like Dale-Deines are able to act quickly and to send a link that can be updated easily. Supporting teacher professional development, the SLL makes it easy to save and share primary resources for her target audience to carry out these strategies. According to Dale-Deines, the SLL lowers the threshold for engaging and supporting teachers, saves paper, makes lots of different resources accessible, and organizes the workshop materials with richer context.

*Applicability Across the Smithsonian:* SCLDA staff acknowledged SAAM's creative use of the SLL to create useful resources for use during professional development, but that may also be repurposed for the classroom. National Portrait Gallery (NPG) and National Postal Museum (NPM) have also incorporated the SLL into their teacher workshops, detailing classroom applications of the SLL and helping teachers examine digitized primary resources.

## Collections Related to this Case Study

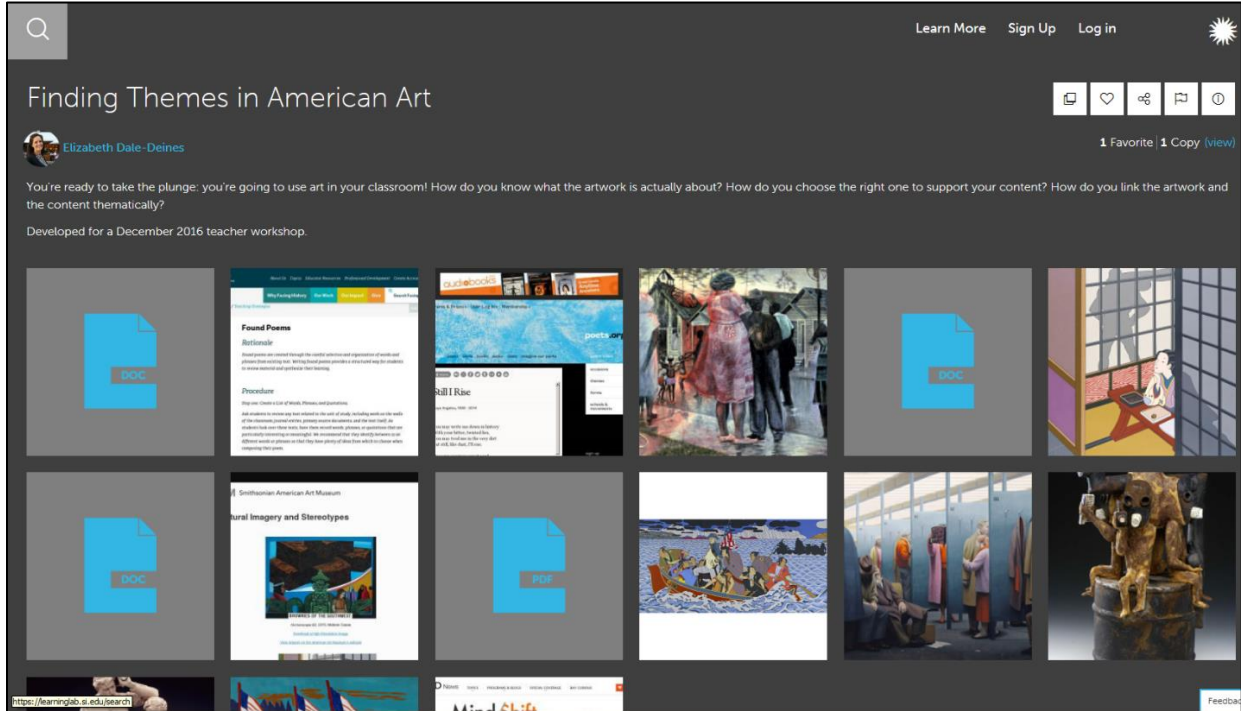


Figure 7: Collection created by Elizabeth Dale-Deines for December 2016 teacher workshop<sup>xiv</sup>

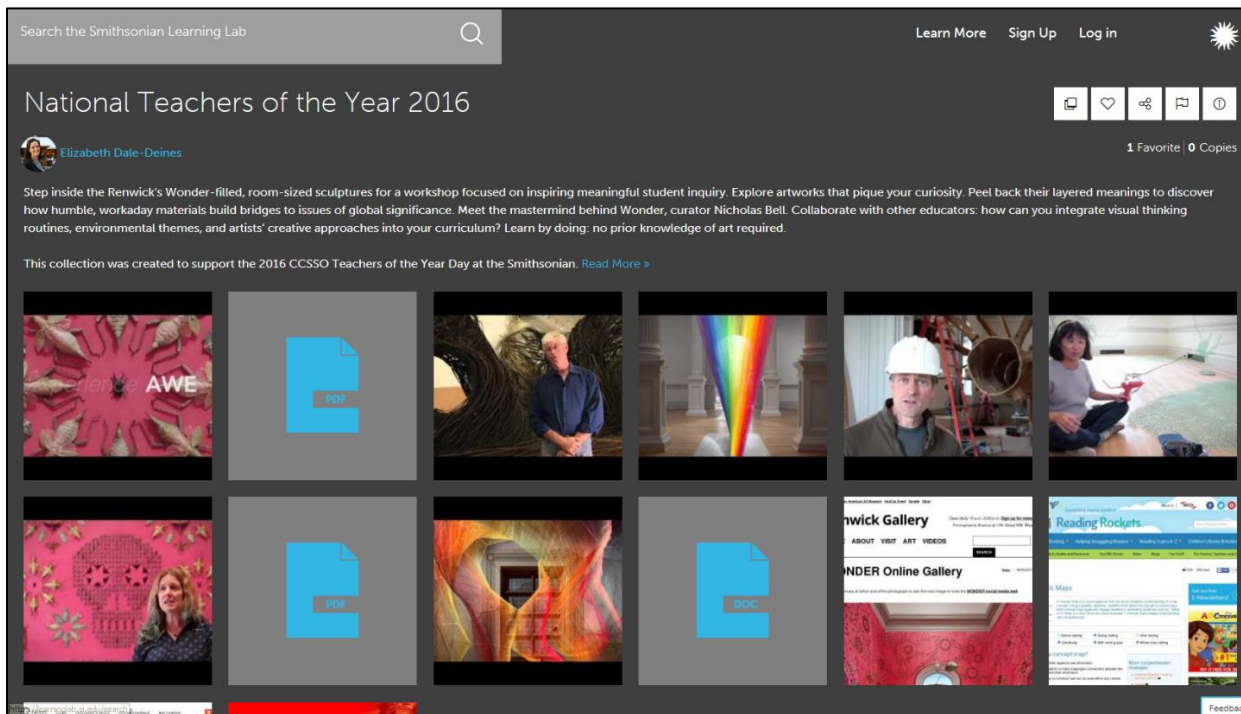


Figure 8: Collection created by Elizabeth Dale-Deines for 2016 CCSSO Teachers of the Year Day workshop<sup>xv</sup>

## Training: Training Gallery Guides at the Hirshhorn Museum and Sculpture Garden

**Use:** Training - Volunteer

**Units:** Hirshhorn Museum and Sculpture Garden (HMSG)

**Audience:** SI Volunteers

**Benefits:** Publishing content at minimal cost; Platform to enable volunteer work; Enhancing in-person visitor experience; Immediate access to collections from anywhere

**Brief Summary:** As part of the training at the HMSG, Gallery Guides created thematic collections of museum resources to brainstorm tour plans of the galleries.

### **Full Summary:**

*What:* Gallery Guides at the HMSG Garden are knowledgeable and welcoming volunteers who help visitors engage with the artwork. Guides represent a variety of ages and skillsets, giving tours and engaging visitors informally to think critically about art. As part of the training program for Gallery Guides, trainees plan their own tours by researching the HMSG collection.

*Before:* In previous training sessions, Guides used Google Docs templates to put together their own tours by including images of artworks and then questions or facts to stimulate conversation while on tour.

*Work with SCLDA:* Having experimented with the platform herself, Gallery Guides Coordinator Ashley Meadows invited SCLDA staff to present the SLL in the summer 2016 training session.

*What they did in SLL:* Meadows thought that Gallery Guides could use the SLL as a new tour planning tool to select resources, add in notes or questions, and share additional images or links that correspond with the artworks. Younger guides, with more technological experience, were eager to learn and experiment with the platform for developing their tours.

*Collections:* During summer 2016, Gallery Guide trainees developed six collections exclusively using HMSG resources. They also uploaded images of additional HMSG artworks not available on the SLL, as well as web resources of the HMSG and additional images/websites related to themes of the collection.

*Value:* While Meadows has not continued to use the SLL in subsequent training sessions, she said the SLL gave Gallery Guides a new option and template for organizing their tours and ideas. It also provided an outlet to publicly share tour themes and ideas, exploring the HMSG collections through a specific lens.

*Applicability Across the Smithsonian:* SCLDA noted that for volunteers, the SLL allows for a personalized search through the collections that supported practitioners working with the public as opposed to curators. Other SI docent training programs could similarly make use of the web-accessible platform to supplement gallery experiences or learn more about the Smithsonian collections.

## Collections Related to this Case Study

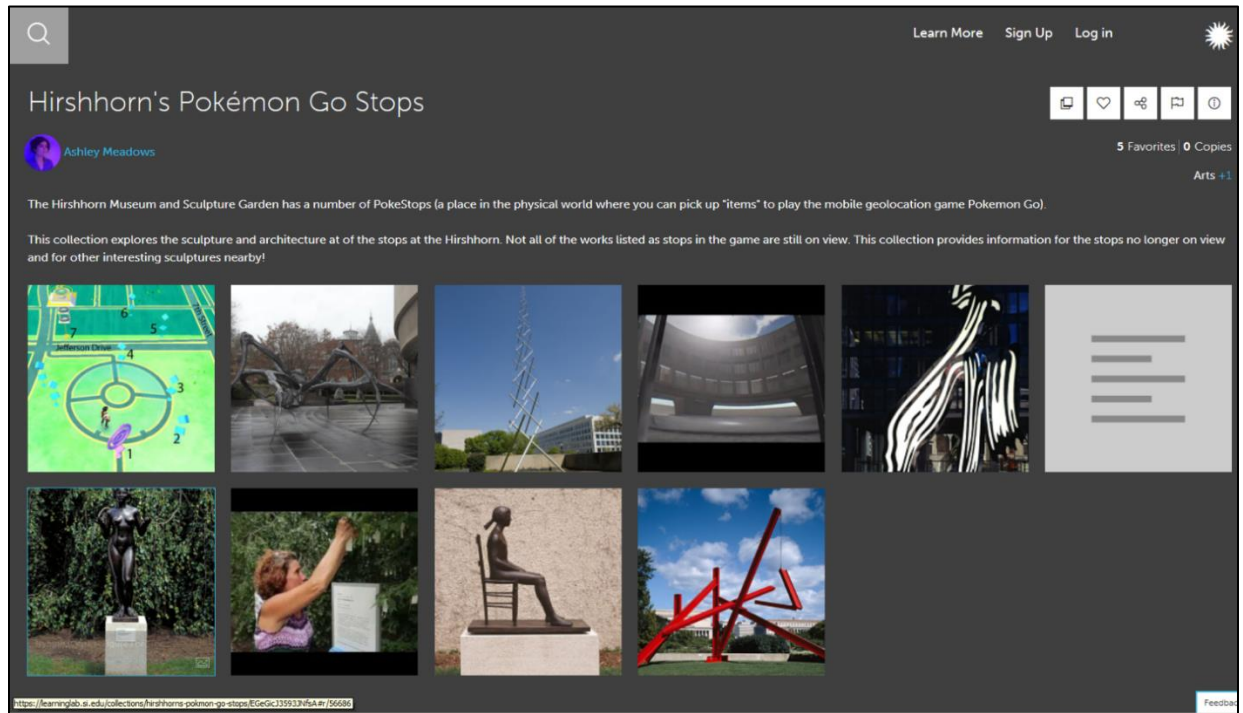


Figure 9: Collection created by Ashley Meadows as a tour of the Pokémon Go locations at the Hirshhorn<sup>xvi</sup>

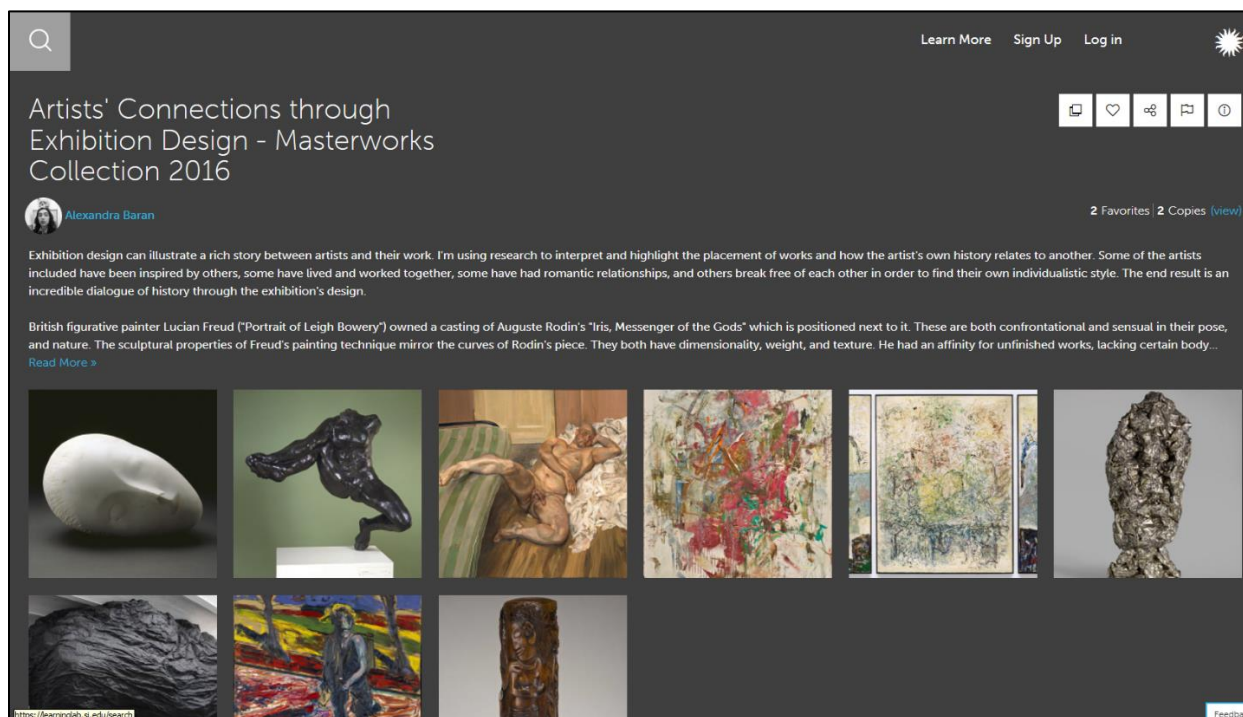


Figure 10: Collection created by Gallery Guide Alexandra Baran to tour the Masterworks Collection at the museum<sup>xvii</sup>

## Curatorial Research: *The Will to Adorn* at the Center for Folklife and Cultural Heritage

**Use:** Curatorial - Community-Based Research, Partnership - External, Training - Students

**Units:** Center for Folklife and Cultural Heritage (CFCH), SI-Affiliated Museums (Institute for Texan Cultures, DuSable Museum of African American History, Michigan State University Museum, Museum of the African Diaspora), Mind-Builders Creative Arts Center

**Audience:** Museum educators, At-risk high school students across the United States

**Benefits:** Publishing content at minimal cost; Advancing curatorial research through public participation; Platform for media-rich student work; Introducing skills for working with museum digital materials

**Brief Summary:** Student interns across the United States trained to become curators by creating collections with Smithsonian resources and sharing their research on African-American sartorial identity.

### **Full Summary:**

*What: The Will to Adorn: African American Dress and the Aesthetics of Identity* is a multi-year collaborative cultural research and public presentation project initiative by Project Investigator Diana N'Diaye at CFCH.<sup>xviii</sup> Community-based cultural practitioners and community scholars work to document the diversity of African American identities through cultural clothing, accessories, and hairstyles.

*Before:* In previous years, summer programs with student interns conducted field research assignments, conducting oral history interviews, analyzing material culture, writing blogs, and organizing photos. But they didn't have a way to share this research publicly, nor did students have a way to develop new skills for digital curation.

*Work with SCLDA:* Prior to the start of the summer program, museum educators at each of the project sites attended a two-day workshop where SCLDA hosted a training workshop on the SLL. SCLDA then presented an introduction to the SLL via webinar for the students and museum educators following the start of the program.

*What they did in SLL:* Building on the project's core interest of training community researchers to be curators, N'Diaye focused this summer's research skills on digital curation. Using the SLL, students learned how to create metadata, develop digital collections, and contribute to the ongoing collaborative research for *The Will to Adorn*.

*Collections:* As of August 4, 2017, student interns from Michigan State University Museum created seven collections on the SLL. These collections feature personal narratives with objects from the Smithsonian

collection, exploring how modern understanding of identity through style compare with clothing, accessories, and products from history. The final collection, [“Millinery in Black Aesthetics.”](#) features student research on black female milliners, as well as images and descriptions from members of a local cultural center of Detroit, Michigan,

*Value:* According to N’Diaye, the SLL as a public research resource allows students to engage in digital curation, communication, and the use of museum resources.

*Applicability Across the Smithsonian:* Extending the work of *The Will to Adorn* to a new audience, the SLL gives the affiliate museums way to access the collections, work with the Smithsonian online resources, and share their research with each other and the public. SCLDA noted the creative collaboration possibilities for student-led curation with projects, teaching students necessary skills to work with museum resources.



## Collections Related to this Case Study

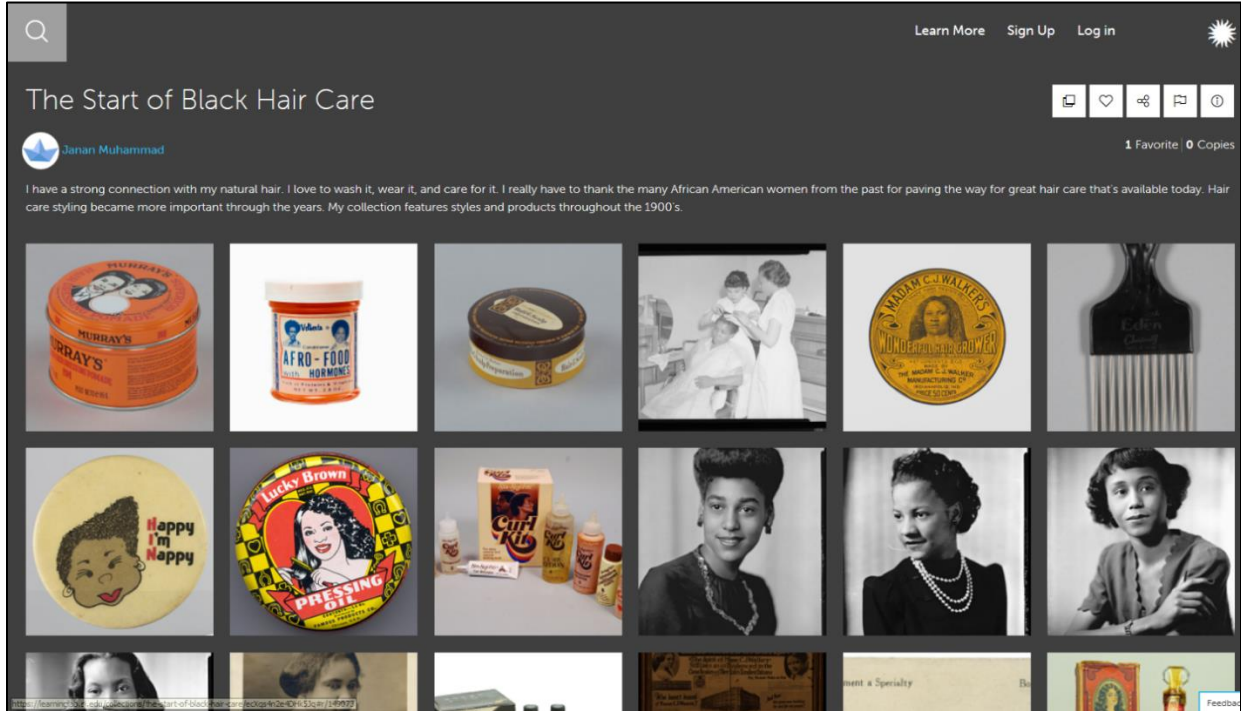


Figure 11: Collection created by Janan Muhammad for her internship at Michigan State University Museum<sup>xix</sup>

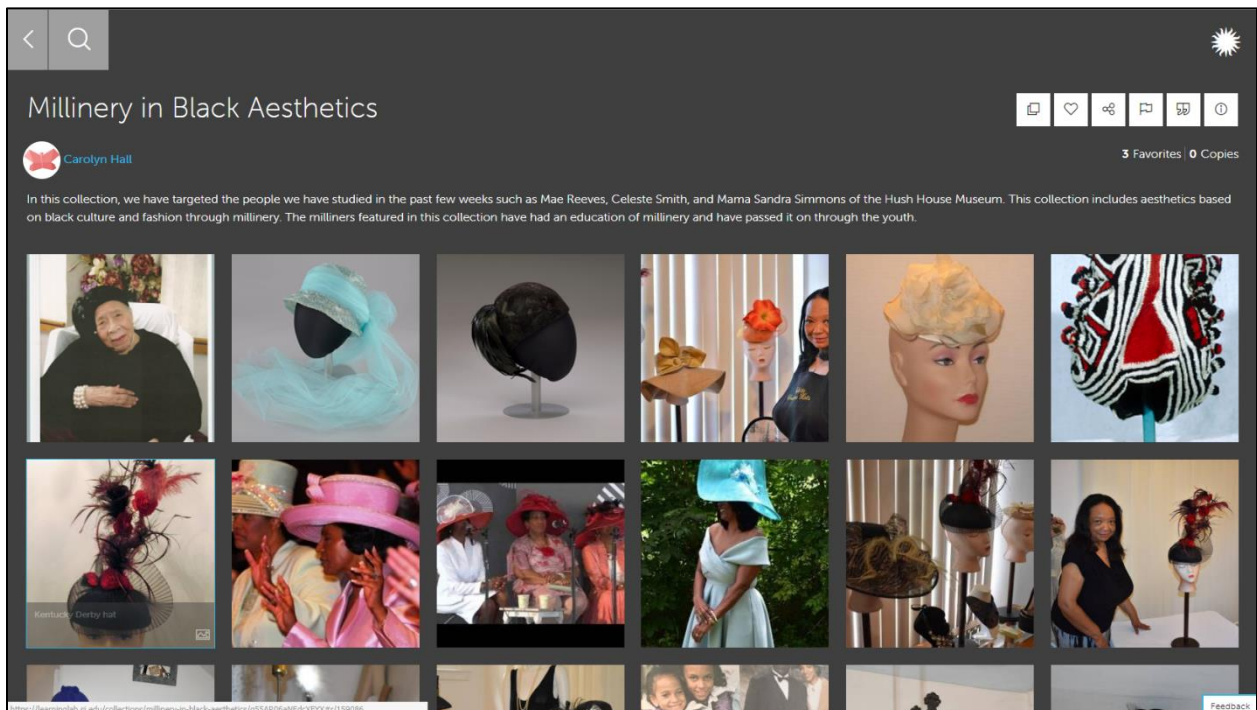


Figure 12: Collection published by Carolyn Hall on behalf of the interns at Michigan State University Museum<sup>xx</sup>



## Curatorial Research: *Written in Bone*: A Collaboration with Smithsonian Institution Archives and National Museum of Natural History

**Use:** Curatorial – Unit Research, Partnership - Internal

**Units:** National Museum of Natural History (NMNH), Smithsonian Institution Archives (SIA)

**Audience:** Middle-school teachers and students

**Benefits:** Advancing curatorial research; Improving management of digital resources; Publishing content at minimal cost; Archiving exhibition research and content

**Brief Summary:** Using the SLL, SCLDA, NMNH, and SIA collaborated to archive the popular exhibition *Written in Bone* for a new audience of teachers and students.

### **Full Summary:**

*What:* "Written in Bone" was a popular exhibit at NMNH on view from 2009 to 2014. Curated by Douglas Owsley and Karin Bruwelheide, the exhibit examined history through forensic anthropological investigations of 17th-century human skeletal remains at historic Jamestown and St. Mary's City, Virginia, and Anne Arundel County, Maryland.

*Before:* Following the exhibit's closure in 2014, the Skeletal Biology team at NMNH [maintained a general website](#) with some resources regarding the exhibition.<sup>xxi</sup> However, the outdated website lacked high-resolution images, videos, and non-SI collections on loan to NMNH for the exhibition.

*Work with SCLDA:* SCLDA approached NMNH to work on making the media from *Written in Bone*, particularly the lessons from the website, accessible in the SLL.

*What they did in SLL:* Because many of the objects from *Written in Bone* were loaned from other institutions, it was inappropriate for NMNH to store images of non-SI collections in their digital archives. Instead, NMNH partnered with SIA to archive the media from the exhibition as documentation of an institutional projects. Working with SIA and SCLDA, Data Management Specialist Katie Barca and team prepared all the images and metadata from the exhibition to be included as part of the SLL resources. Barca then transferred all the digital materials and metadata to SIA, where the materials could then be ingested into the collections server and into the SLL.

*Collections:* Over 120 resources from *Written in Bone* were added to the SLL, labeled with the exhibition's title. SCLDA consulted with NMNH's Anthropology team to develop two collections for teachers on forensic anthropology and skeletal biology. These collections were introduced to middle-

school social studies teachers in Pittsburgh, PA, as part of SCLDA's multi-year professional development program.

*Value:* Fostering the research's longevity, Barca noted that the SLL helped to continue the work of the *Written in Bone* exhibition. "For our project," she said, "it's just a way for the exhibit that took a lot of time and funds and effort to continue to live on."

*Applicability Across the Smithsonian:* Not only does this case study show the ways in which the SLL can complement existing museum resources or exhibitions, but SCLDA hopes this archival process may have future application to NMNH or other Units seeking to document work of multiple institutions. With SCLDA's expertise working with teachers, the content from NMNH, and the archival expertise from SIA, the SLL "allowed the different Units to work together on a common goal."

## Collections Related to this Case Study

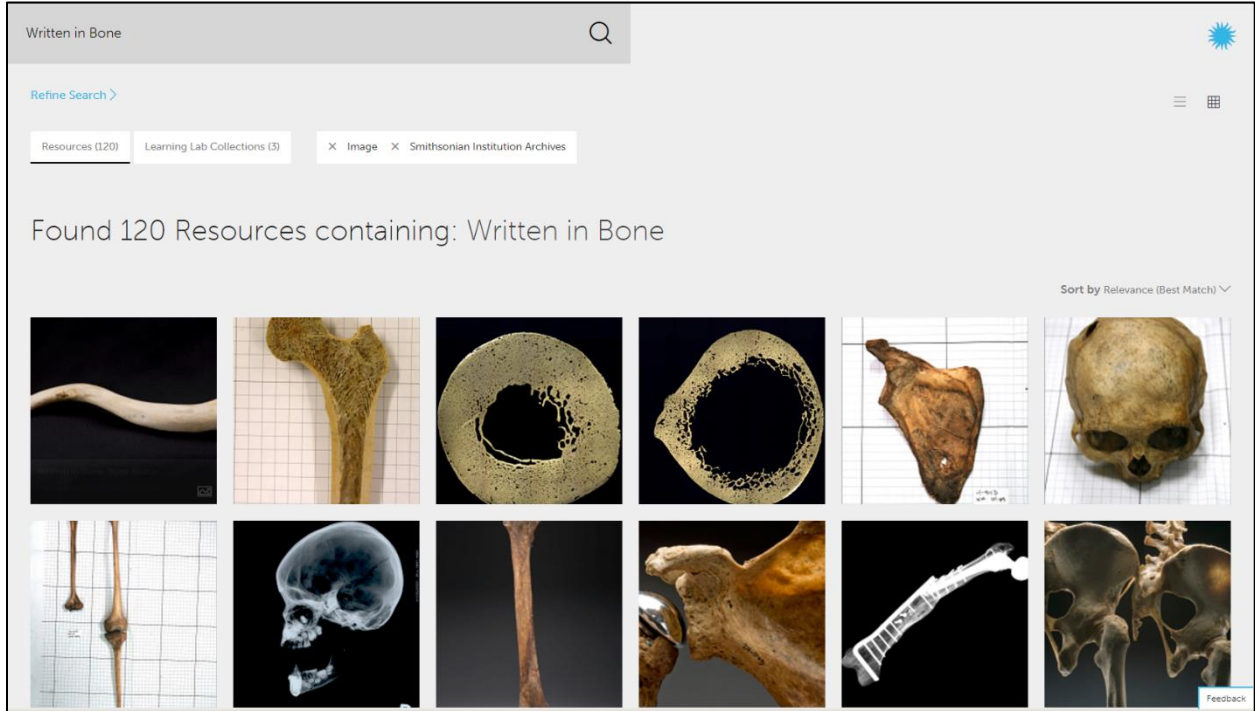


Figure 13: Search for "written in bone" resources added to the SLL<sup>xxii</sup>

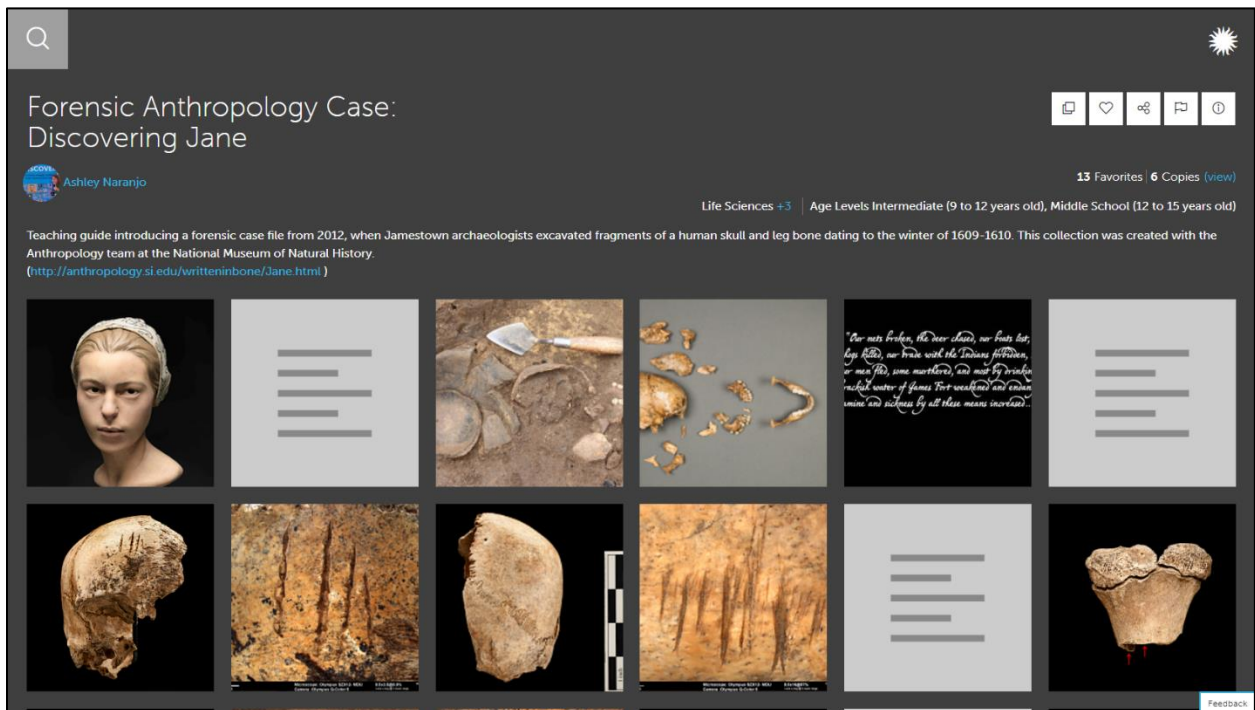


Figure 14: Collection created by Ashley Naranjo with the "Written in Bone" resources<sup>xxiii</sup>

## Fundraising: Online Fundraising with the Office of Advancement

**Use:** Fundraising – Online Marketing

**Units:** Office of Advancement (Central)

**Audience:** SI donors

**Benefits:** Efficient and time-saving platform for sharing content; Improving donor engagement; Presenting interactive content for targeted donor base

**Brief Summary:** Engaging potential donors in all the Smithsonian has to offer, the Online Fundraising team creates thematic collections with Smithsonian objects to encourage donations for email campaigns.

**Full Summary:**

*What:* As Associate Director of Online Fundraising, Lara Koch manages email campaigns and activities to engage donors in supporting the institution with a financial donation. For Koch, successful fundraising requires ensuring potential donors feel like they are a part of the Smithsonian and its mission.

*Before:* Without the SLL, Koch suggested that OA might have included images or links to various artifacts with these campaigns. But those items wouldn't have had offered the same interactivity or personal opportunity for donors to explore the collections themselves.

*Work with SCLDA:* Upon coming into her position, Koch personally researched the SLL as a possible tool for revamping online fundraising. Following an introductory workshop to the SLL, Koch consulted with SCLDA for technical expertise and embedding the collections into her campaigns.

*What they did in SLL:* On the landing page for each email campaign, donors first see an embedded SLL collection associated with a holiday/event theme. Beneath the collection, donors could then choose to contribute to the Smithsonian.

*Collections:* Koch has created four thematic collections in the SLL for the landing pages of email requests: Valentine's Day, Earth Day, Independence Day, and the second season of Smithsonian's *Siddoor* podcast. These topical collections included unique objects and topics, like stamps or food history, to broaden potential donors' understanding of the Smithsonian through non-traditional themes.

*Value:* Koch noticed a significant increase in donations following the introduction of the SLL to the emails, with sixty percent of funders for each campaign being first-time donors. Over fifty percent of potential donors on the email campaigns surveyed had never visited the Smithsonian. "That to me," she said, "is making it necessary that we pivot the conversation away from 'come to see the Hope Diamond,

Old Glory’ into the ‘Smithsonian’s at your fingertips.’” The SLL offers the Office of Advancement a quick, easy, and interactive tool to share the collections, educate, and connect possible donors with the rich collections of the Smithsonian.

*Applicability Across the Smithsonian:* While designed with educators in mind, SCLDA notes how the use by OA shows how customized experiences with the collections can help users discover all the Smithsonian has to offer. Using the central advancement office as an example, development officers can follow Koch’s lead to quickly curate and share resources to bond with potential donors.

## Collections Related to this Case Study

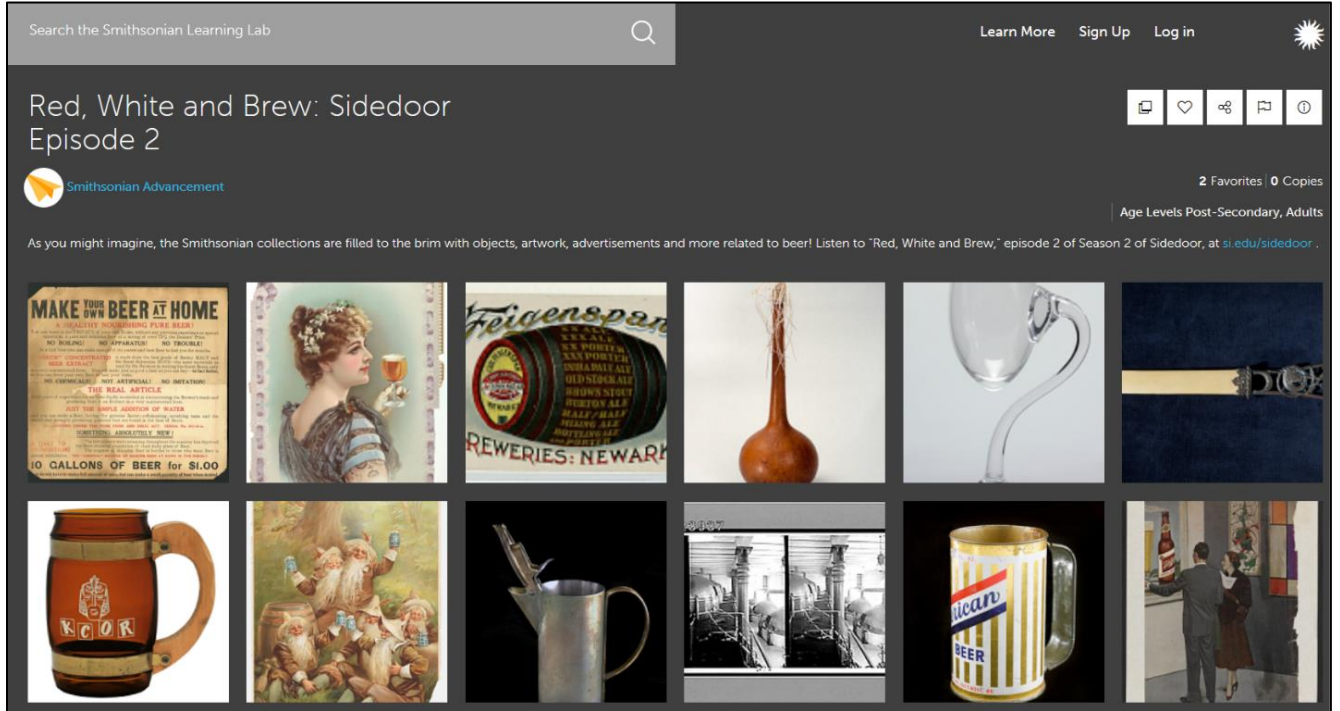


Figure 15: Collection created by Smithsonian Advancement for an episode of the Sidedoor podcast<sup>xxiv</sup>

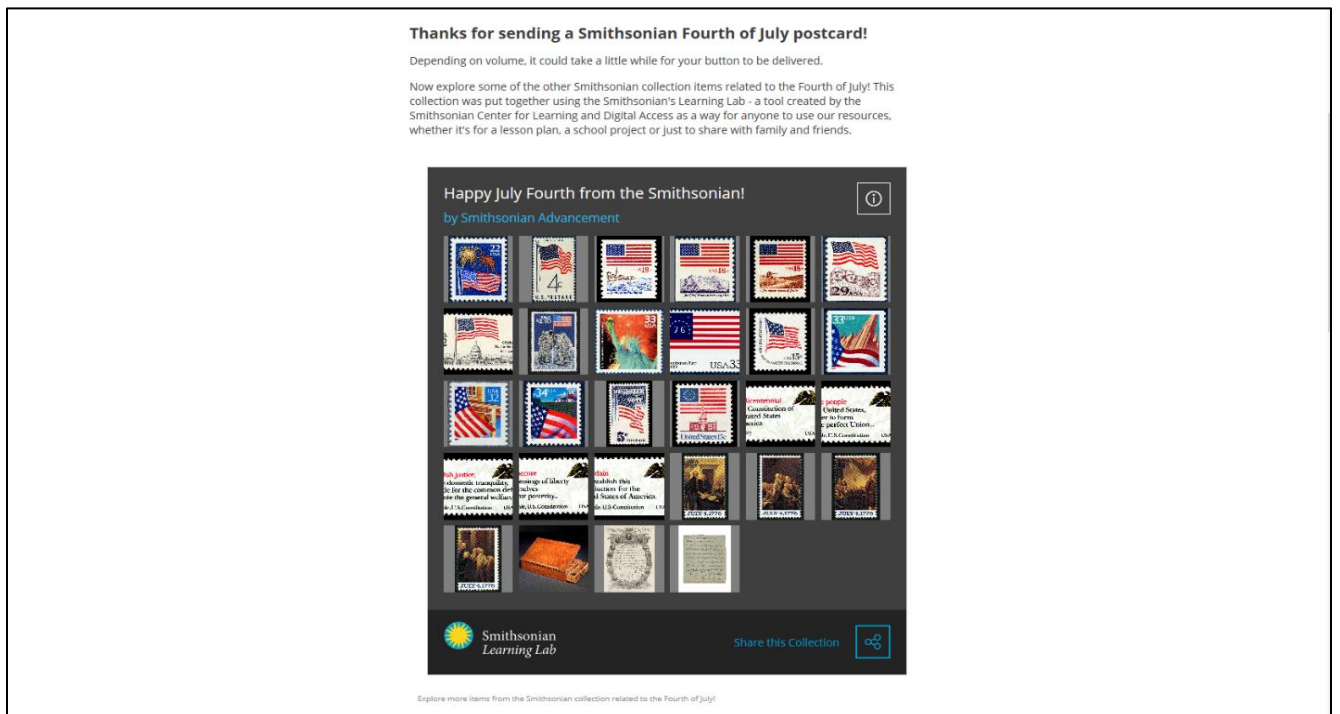


Figure 16: Landing page for Fourth of July email campaign, featuring a collection created by Smithsonian Advancement<sup>xxv</sup>



## Partnership: National Outreach through the National Art Education Association (Multiple SI Units)

**Use:** Partnership – External, Partnership – Internal, Training – Teachers, Distance Learning – Webinar

**Units:** Cooper Hewitt Smithsonian Design Museum, Freer and Sackler Galleries, National Museum of African Art, Smithsonian American Art Museum, Smithsonian Center for Learning and Digital Access

**Audience:** Visual art educators (K-12, United States, International)

**Benefits:** Efficient platform for sharing content; Packaging teaching materials to meet needs of educators; Providing targeted audience with a platform for engagement with Smithsonian resources; Fostering pan-institutional and external partnerships

**Brief Summary:** Smithsonian educators leveraged the SLL in presentations at the National Art Education Association convention. Presentations at the national convention created a unified Smithsonian presence that highlighted museum resources and strategies for a target audience.

### **Full Summary:**

*What:* The National Art Education Association (NAEA) is the leading professional membership organization exclusively for visual arts educators, with whom the Smithsonian Institution signed a Memorandum of Understanding in 2016. As part of this memorandum, SCLDA facilitated collaborations between Smithsonian units and the professional organization to demonstrate model uses of museum resources and artworks to align with the needs of art educators.

*Before:* Members of the NAEA may have been familiar with one unit or attracted to specific content, but through this partnership and the use of the SLL, art educators were introduced to related resources from the entire Smithsonian collection.

*Work with SCLDA:* In January 2017, SCLDA hosted a webinar for NAEA members, featuring presentations from museum educators at the Freer and Sackler Galleries and the Smithsonian American Art Museum. Using the SLL, these educators demonstrated the ways digital museum resources can support creative art instruction. At the 2017 National Art Education Association National Convention, SCLDA coordinated with four other Smithsonian museums to host sessions using the SLL to highlight museum resources and strategies for engaging students. SCLDA served as a liaison among the museum educators and the NAEA coordinators, providing the technological expertise to match the content expertise of the staffers.

*What they did in SLL:* Each Smithsonian museum educator hosted sessions using the SLL to share their collections and expertise in responding to artworks and design principles. In total, Smithsonian educators

presented sixteen different presentations, creating a cohesive Smithsonian presence at the convention. For example, Elizabeth Eder, Education Director for the Freer and Sackler Galleries, partnered with SCLDA for two presentations at the NAEA Convention, [“Responding to Asian Art within the AP Art History Framework”](#) and “Focus Group on the Terracotta Army Museum Collection.”

*Collections:* Smithsonian educators provided an overview of how to create personalized Smithsonian SLL collections and presented collections that each museum educator created during the 2016 webinar, and twelve collections at the convention. Freer and Sackler Galleries presented two collections at the convention, one of which is publicly available on the SLL. Directly tied to the Advanced Placement Art History curriculum, NAEA, and national history education standards, this collection focuses on an artwork from the Freer and Sackler Galleries with supplementary web resources. The second collection, currently under review, uses images and resources from the UNESCO World Heritage Site in China, Emperor Qin Shihuang’s Mausoleum Site Museum, for an activity about the emperor’s cultural values, history, and traditions. Eder noted how the collections elicited feedback from the audiences at NAEA, learning from the educators how they might use collections like these in classroom experiences.

Educators who attended the webinar and the convention also created their own collections using Smithsonian resources. Most notably, Fairfax County, Virginia art teacher Jean-Marie Galing [has created thirty-five collections](#) because of her introduction to the SLL in the NAEA webinar.<sup>xxvi</sup>

*Value:* Eder noted that Freer and Sackler Galleries Education continues to use the SLL in its own projects and initiatives, calling the platform a “one-stop shop for assets across the Smithsonian.” Eder found the SLL to be a robust learning tool, helpful for delivering content to her audience of educators.

*Applicability Across the Smithsonian:* SCLDA noted that the SLL serves as “a connecting thread between all of these different Units” for the NAEA partnership, and is interested in building similar relationships with other professional organizations. For the SI units, it has provided a collaborative institutional partnership for museum educators to share their content and SCLDA to recruit and market the presentations. For the audience, the SLL has “provided this portal into all the possibilities that were available from the entire Smithsonian rather than just one Unit or rather than just one educator.”



## Collections Related to this Case Study

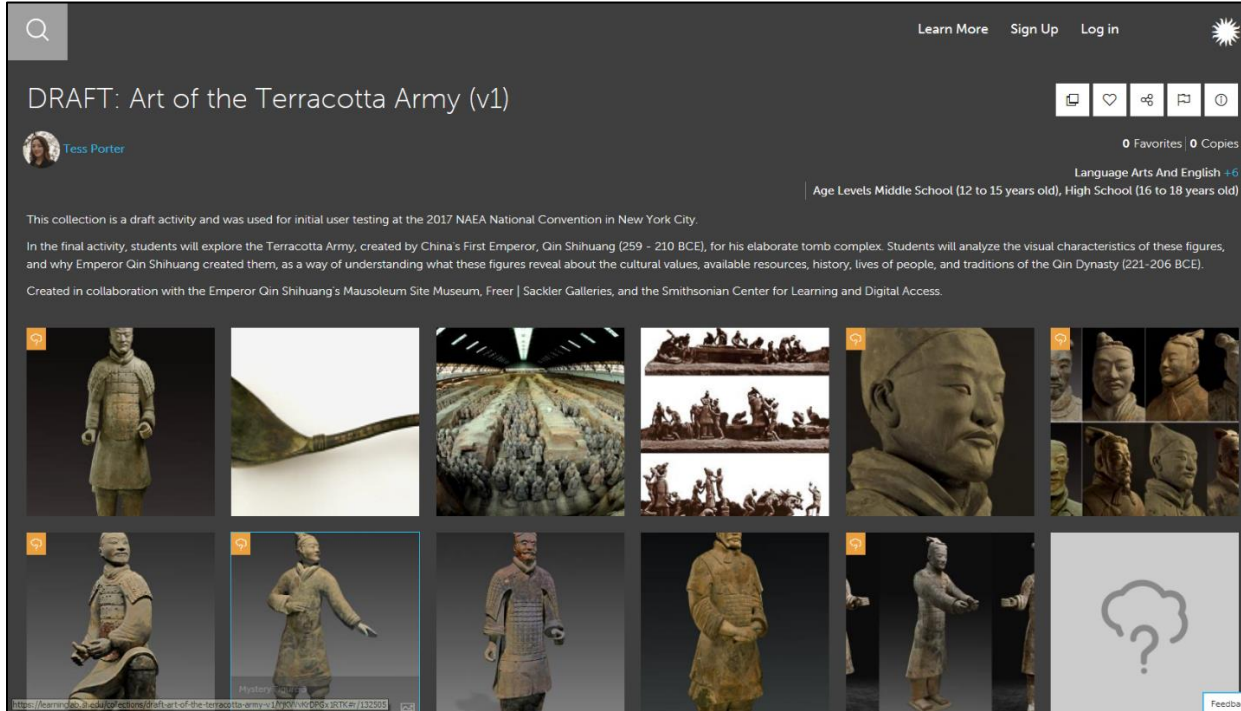


Figure 17: Collection created by Tess Porter for the Freer and Sackler Galleries presentation at NAEA 2017<sup>xxvii</sup>

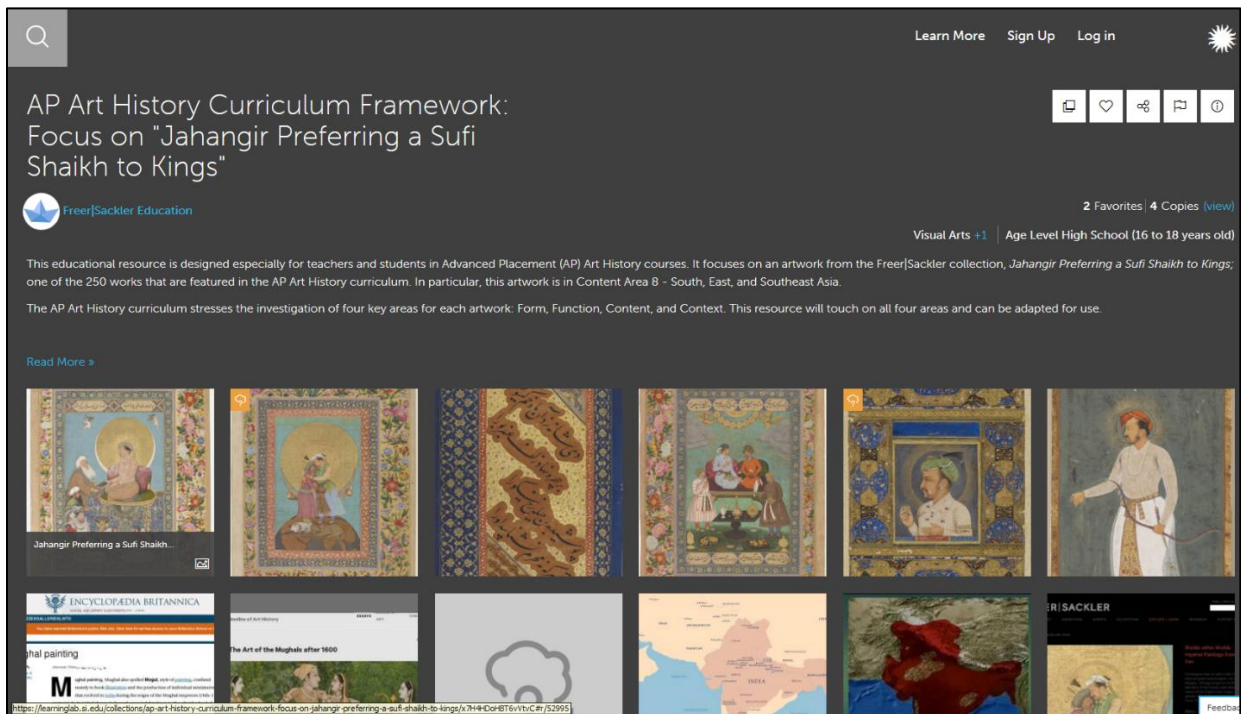


Figure 18: Collection created by Freer | Sackler Education department for presentation at NAEA 2017<sup>xxviii</sup>

## Conclusion

### **Types of Unit Initiatives:**

Types of Unit initiatives involving the SLL described in this report include:

- Training opportunities for educators, students, and Unit volunteers, enabling educators and staff, anywhere, to use Smithsonian resources to share ideas
- Online coursework through internal and external partnerships, providing targeted audiences with a platform for engagement with Smithsonian resources
- Publishing content at minimal cost, including accompanying national partnerships, embedding teaching resources, archiving curatorial exhibitions, communicating public relations, and engaging communities in research activities

The research highlights several new uses for the platform that made it easier and more efficient for SI Units to implement their projects. Units created and shared collections of resources by taking advantage of the entirety of the SI digital repository and by uploading relevant external resources. They profited from the unique tools offered by the SLL to customize these collections to the needs and uses of their target audiences. In so doing, they demonstrated a broader potential of the SLL, strengthening the outreach of and engagement with both SI resources and Unit initiatives.

### **Key Findings:**

This research into the use of the SLL suggests several new uses for the platform to share institutional work and resources from the Unit and its audiences. The purpose of the study was to examine how SI staff use the SLL to support projects across the institution. Findings addressed the following questions:

*How do other Units characterize the SLL and its assets?*

- Units primarily described the SLL as a tool or resource for pan-institutional search of the Smithsonian digital resources.
  - “It’s a resource for digital collection, curation, research and presentation that allows users throughout the world to be able to access many of the Smithsonian collections not only in terms of digitized objects but also other kinds of digital assets.” – CFCH
  - “The Learning Lab is a fun, beautiful, and realistic way for me to open up and make the Smithsonian’s collections available to everyone.” –OA
  - “It was a visual tool that we used in the course...The Learning Lab is an educational tool where users collect objects in a way that makes for a seamless user experience for their students or in the classroom.” –SE
- Primary values of using the SLL for the units or audiences include the following: publishing content at minimal cost, efficient platform for organizing and managing materials, and sharing work with target audiences.

- “A way for that [exhibit] to continue to live on...the SLL can provide [the resources] all in one place.” –NMNH
- “A user-friendly functional way to show the depths of the Smithsonian beyond what’s here, beyond whether or not you could ever come here, and showing the true breadth of what we have.” –OA
- “Enabling us to reach a larger audience than we might because it enables us to outside the building, do more digital outreach...It’s cost-saving for us because we’re not developing our own platform.” – FSG

*What elements of the SLL are units using to create collections?*

- Fifty-two (52) unit-created collections associated with these case studies were documented using a checklist, identifying criteria across the following five categories: type of collection, intentionality, metadata, tools, resources, and collection metrics. Units make use of the entirety of the resources in the SLL, using Unit resources alongside those of the Institution to constitute their collections. In addition, many Units uploaded additional resources to these collections, including additional web resources, web resources of the Unit, and web resources of SI not found in the SLL.<sup>xxix</sup>

*How does the SLL serve the needs of the units to pursue project development?*

- Described by units as a visual or digital tool, the SLL was used primarily to create topical collections (a group of resources without instructional guidance to provide background information or context) to support in-person visitor experiences and existing initiatives. The SLL replaced other tools, such as paper worksheets or Collections Search Center, or amplified the project’s audience outreach.
- While project representatives, units, and their audiences expressed great interest in the SLL, they voiced need for improvement on the following issues: more time to invest in using the SLL; more user-friendly functionality; improved metadata associated with resources; and direct access to audience and user metrics.
  - HMSG noted that the metadata for HMSG collections was not helpful to the Gallery Guides’ intentions. “All the metadata for that artwork, the accession number – a lot of details that are helpful for a museum to know about an artwork, but none of it was useful to us in trying to facilitate a conversation about it.”
  - SE noted the difficulty in sharing additional web resources in the SLL as one of the reasons the Harvard Extension School course did not continue using the platform. “If I wanted to show a video that was not already in the collection, doing the Screenshare and then having to link out to the video and then opening the video in another page and then having to go back it was really cumbersome and it did not create a seamless experience for our students. So it looked too bulky and it wasn’t nice.” She noted a similar issue with uploading websites and the lack of interactivity with a website available in the SLL.
  - NMNH desired several advanced features within the SLL, including revealing answers to quiz questions, filtering resources, intuitiveness on moving through a collection,

changing thumbnails for images, direct access to metrics on users interacting with the *Smithsonian Science How* collections and syncing with the Q?rius natural history collection items.

- SAAM noted that “just planning the lessons that I need at the quality that I want them to be takes up the vast majority of the planning time that I have available.” Staff called for a side-by-side tool to compare artworks, noting it as one of her quickest teaching tools and a powerful learning opportunity.

#### *How does SCLDA help Units use the SLL?*

- All units spoke highly of their working relationship with SCLDA. A majority of these Units were early adopters of the SLL, participating in hands-on workshops or beta testing. From there, they sought some technical expertise from SCLDA in the use of tools and features of the platform, but primarily worked independently from SCLDA to develop collections. Most Units viewed their projects as “experimentation” or “piloting” opportunities, testing out the ways in which the SLL could be used.
- Most project representatives voiced interest in continuing work with the SLL, and recognized its value to their unit and audiences. They expressed interest in style guides from SCLDA, exploring other units’ uses of the SLL, and promotional advice for sharing their collections with audiences.
  - SAAM expressed interest in leveraging the work and research of SCLDA to look at other units’ SLL collections, receive feedback from teachers on successful collections, and receiving suggestions on how to use digital resources.
  - OA noted an interest in exploring the data to see how many people clicked through to the featured collections. “Is there a way that we, you know, the analytics could see how many people clicked through the collections that we’re featuring? I’m sure you guys [SCLDA] are just as data nerds as we are, so I would love to find a way to be able to put those elements together to really be able to get an idea of behavior.”

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## Notes and References to Related Collections

<sup>i</sup> This Massive Open Online Course (MOOC), offered by NMAH and SE through the Smithsonian-edX partnership, gives middle and high school teachers new techniques to engage and motivate students with an inquiry-based approach to learning. Course information can be found at <https://www.edx.org/course/teaching-historical-inquiry-objects-smithsonianx-ed1-1x-1>.

<sup>ii</sup> The Smithsonian Collections Search Center, <http://collections.si.edu>, is an online catalog containing most of the Smithsonian major collections from the museums, archives, libraries and research units. Designed for researchers, the Collections Search Center contains over 10 million catalog records and over 2 million images, videos, audio files, podcasts, blog posts, and electronic journals.

<sup>iii</sup> The College, Career and Civic Life Framework, also known as the *C3 Framework* for Social Studies State Standards, encourages critical thinking, problem solving in the social studies classroom. Kathleen Owings Swan, C3 Lead Writer and Project Director, co-taught the course with NMAH Manager of Youth and Teacher Programs Naomi Coquillon.

<sup>iv</sup> Fraker, J. (2016, July 16). Smithsonian Learning Lab Collection: Did the Industrial Revolution Make Life Better for Everyone? Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/oYxzyN6yPs4zyU5p>.

<sup>v</sup> Day, K. (2016, July 24). Smithsonian Learning Lab Collection: Which freedom is worth fighting for?: The American Revolution. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/6LtFeAJuzdziPKUf>.

<sup>vi</sup> Offered by the Harvard Extension School in spring 2017, “Smithsonian and the Twenty-First Century Museum: Leadership Strategies” used the SI Institutional Strategic Plan, National Campaign, and Grand Challenges Consortia for interdisciplinary research as case studies of museum leadership and change. Course information and syllabus can be found at <https://canvas.harvard.edu/courses/19789>.

<sup>vii</sup> Leithner, A. (2017, January 11). Smithsonian Learning Lab Collection: Smithsonian and the Twenty-First Century Museum: Leadership Strategies - Week 1 Images. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/hdjymBUHHVd7m34j>.

<sup>viii</sup> Leithner, A. (2017, January 30). Smithsonian Learning Lab Collection: Smithsonian and the Twenty-First Century Museum: Leadership Strategies - Week 2 Images. Retrieved August 4, 2017, from <http://learninglab.si.edu/q/ll-c/Lgh1g8M8DG6s2Juh>.

<sup>ix</sup> For more on *Smithsonian Science How* webcasts and teaching resources, please visit <https://qrius.si.edu/explore-science/webcast>.

<sup>x</sup> Quotes have been edited for clarity and context.

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- <sup>xi</sup> *STEM in 30* is an interactive classroom program at NASM consisting of 30-minute live webcasts that engage middle school students in STEM (Science, Technology, Engineering, Mathematics) topics. More information on the program can be found at <https://airandspace.si.edu/connect/stem-30>.
- <sup>xii</sup> Science How, S. (2017, March 30). Smithsonian Learning Lab Collection: Mass Extinction - Solving the Dinosaur Mystery. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/DwfNka2TVt8prsqm>.
- <sup>xiii</sup> Science How, S. (2016, February 29). Smithsonian Learning Lab Collection: Mummy Science – Natural and Cultural Preserved Remains. Retrieved August 8, 2017, from <http://learninglab.si.edu/q/ll-c/Mx8oYUD9zcHs2Kyt>.
- <sup>xiv</sup> Dale-Deines, E. (2016, December 05). Smithsonian Learning Lab Collection: Finding Themes in American Art. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/5mFRAN38q6sGq6jf>.
- <sup>xv</sup> Dale-Deines, E. (2016, April 28). Smithsonian Learning Lab Collection: National Teachers of the Year 2016. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/W2ANoDr5gXzy0yW0>.
- <sup>xvi</sup> Meadows, A. (2016, July 15). Smithsonian Learning Lab Collection: Hirshhorn's Pokémon Go Stops. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/EGeGicJ3593JNfsA>.
- <sup>xvii</sup> Baran, A. (2016, July 23). Smithsonian Learning Lab Collection: Artists' Connections through Exhibition Design - Masterworks Collection 2016. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/ogwdYCCfh3Jkn0Hq>.
- <sup>xviii</sup> Through the work of museum, academic, and community scholars and practitioners, *The Will to Adorn* explores African American identities through cultural aesthetics, dress, and adornment. This research has been shared and curated through Smithsonian public programs, including the 2013 Folklife Festival program, an exhibition, and various publications and online materials. More information on the project can be found at <http://www.festival.si.edu/2013/will-to-adorn/project/smithsonian>.
- <sup>xix</sup> Muhammad, J. (2017, June 27). Smithsonian Learning Lab Collection: The Start of Black Hair Care. Retrieved July 28, 2017, from <https://learninglab.si.edu/q/ll-c/ecXqs4n2e4DHk5Jq>.
- <sup>xx</sup> Hall, C. (2017, June 27). Smithsonian Learning Lab Collection: Millinery in Black Aesthetics. Retrieved August 4, 2017, from <https://learninglab.si.edu/collections/millinery-in-black-aesthetics/g55AR06aNEdcXFYX>.
- <sup>xxi</sup> More information on the *Written in Bone* exhibition is available at <http://anthropology.si.edu/writteninbone/>.
- <sup>xxii</sup> Naranjo, A. (2015, November 04.) Smithsonian Learning Lab Collection: Forensic Anthropology: Bone Basics. Retrieved August 8, 2017, from <http://learninglab.si.edu/q/ll-c/Cf7cmocA>.
- <sup>xxiii</sup> Naranjo, A. (2015, November 04). Smithsonian Learning Lab Collection: Forensic Anthropology Case: Discovering Jane. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/rAHu8gjAT97xVTJJ>.
- <sup>xxiv</sup> Advancement, S. (2017, July 03). Smithsonian Learning Lab Collection: Red, White and Brew: Sidedoor Episode 2. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/GH0AbqUaa6mnEKiR>.



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<sup>xxv</sup> Advancement, S. (2017, June 29). Smithsonian Learning Lab Collection: Happy Fourth from the Smithsonian. Retrieved August, 1, 2017, from <https://learninglab.si.edu/collections/happy-july-fourth-from-the-smithsonian/TBDExFgd9hgsqnBV>.

<sup>xxvi</sup> All of Jean-Marie Galing's collections are available on her SLL profile at <https://learninglab.si.edu/profile/3654>.

<sup>xxvii</sup> Porter, T. (n.d.). Smithsonian Learning Lab Collection: DRAFT: Art of the Terracotta Army (v1). Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/YjKVVvKrDPGx1RTK>.

<sup>xxviii</sup> Education, F. (2017, January 24). Smithsonian Learning Lab Collection: AP Art History Curriculum Framework: Focus on. Retrieved July 21, 2017, from <https://learninglab.si.edu/q/ll-c/x7H4HDoHBT6vVtvC>.

<sup>xxix</sup> See Appendix for more information on this question.

## Appendix: Documentation of Collections

Following the interviews, related collections to each project were identified and sorted into the following categories: Unit-Created and Target Audience-Created. Collections were documented between June 15, 2017, and July 25, 2017. These findings only reflect the 52 Unit-Created collections that correspond with seven of the case studies.<sup>1</sup>

*Table 1: Case Studies*

Case Study	Number of Collections
Teacher Workshops at Smithsonian American Art Museum	14
National Outreach through the National Art Education Association <sup>2</sup>	14
Online Courses with Smithsonian Enterprises	7
Smithsonian Science How at the National Museum of Natural History	7
Fundraising and Donor Cultivation with the Office of Advancement	4
Training Gallery Guides at the Hirshhorn Museum and Sculpture Garden	3
Written in Bone: A Collaboration between Smithsonian Institution Archives and National Museum of Natural History <sup>3</sup>	2

<sup>1</sup> The “The Will to Adorn at the Center for Folklife and Cultural Heritage” case study had no unit-created collections.

<sup>2</sup> These collections were created by the following Units: CHSDM, FSG, NMAfA, SAAM, and SCLDA,

<sup>3</sup> These collections were created by SCLDA with assistance from the Anthropology team at NMNH.



## Types of Collections

Collections in the SLL typically fall in one of three categories: *topical collection*, which is a group of resources without instructional guidance; *student activity*, a collection designed for a student to use independently; or *teacher collection*, which includes resources with strategies on how to use the collection for instruction. Users can select which types of collection they have created under “Educational Features” and the dropdown “Educational Use.” For collections that had not selected an Educational Use, the collections were assigned one according to the resources and strategies included in the collection.

Of the 52 collections, a majority of the documented collections (n=33) were identified as topical collections. Twenty-five collections were categorized as teacher collections. Only three collections were identified as student activities, with tools for self-guided work.<sup>4</sup>

## Intentionality

When publishing a collection, users can add a description of what a collection is about and how it may be used. This description tells other users about the purpose or intentionality of the collection. We established an initial rubric to analyze the descriptions, looking for information that described the following: purpose for developing collection, possible audience, and how a user may use the collection. Collections fall into three categories: *Yes* (clearly articulated intentionality), *Somewhat*, (had a description but lacked clear intentionality) and *No* (had no description). The analysis of the 52 collections revealed:

- 73% (n=38) had a clearly articulated intentionality in the description.<sup>5</sup>
- 15% (n=8) had a description but lacked clear intentionality for users unfamiliar with the collection.
- 12% (n=6) had no description at all: two collections from OA, two collections from HMSG, and two collections from SAAM.

## Metadata

Collections metadata on the SLL helps users find collections and filter their search results. Of the 52 collections, 33 collections included additional metadata.

- 85% (n=28) of these collections included “Age Level” metadata, applying one or more categories from the eight options: N/A, Preschool, Primary, Intermediate, Middle School, High School, Post-Secondary, and Adults. Six of the seven case studies applied “Age Level” metadata.
- 72% (n=24) of these collections included “Subject” metadata, applying one or more academic subjects to the collection from six major options: Language Arts and English, Mathematics, Science, Social Studies, Arts, and Other. Six of the seven case studies applied “Subject” metadata

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<sup>4</sup> Some collections were included in multiple categories.

<sup>5</sup> All percentages have been rounded to the nearest whole number.

- 61% (n=20) of these collections included “Educational Features” metadata, applying one or more of the four categories of educational features: End User, Time Required, Educational Use, and Language. Five of the seven case studies applied “Educational Features” metadata.
- 36% (n=12) of these collections included “Standards” metadata, applying one or more of the standards from the three choices provided: Math Common Core, English, and Next Generation Science Standards.<sup>6</sup> Three of the seven case studies applied “Standards” metadata: NAEA, Smithsonian Science How, and the SE MOOCs.

## Tools

Over half (52%, n=27) of the collections used tools of the SLL in their collections to annotate at least one resource. Only one case study did not use any of the tools in any collection (Office of Advancement).

- 77% (n=21) of these collections featured the info/text tool, adding description, notes, or other relevant information to a resource. Six of the seven case studies applied info/text tool.
- 52% (n=14) of these collections featured the hotspot tool, highlighting a specific point or area on a resource. Six of the seven case studies applied the hotspot tool.
- 52% (n=14) of these collections featured the quiz questions tool, providing question/response opportunities for users. Four of the seven case studies applied quiz questions tool.
- 7% (n=2) of these collections featured the sorting tool, an activity within a collection that has users sort resources into specific categories. Two of the seven case studies used the sorting tool.

## Resources

### Using Unit Resources

Interestingly, 22 of the 52 collections (from five of the seven case studies) do not make use of the corresponding Unit resources.<sup>7</sup> Users uploaded resources or used items from a variety of Smithsonian Units to support their collections.

### Using Smithsonian Resources

Of the 52 collections, 30 collections make use of the pan-institutional Smithsonian collections available on the SLL for the collections. This table provides the source of resources included in collections not from the Unit creating the collection.

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<sup>6</sup> In addition, two collections from the case study “National Outreach through the National Art Education Association” included relevant standards in the description, but not as metadata.

<sup>7</sup> Collections developed by SCLDA but for another Unit (see case studies “Written in Bone” and “National Art Education Association” were considered to be using Unit resources and noted as such in the data. For “Online Courses with Smithsonian Enterprises,” collections were considered to be using Unit resources if they used resources from the corresponding Unit/resource provider – in this case, NMAH.

Table 2: Where Resources Originated by Resource Provider

<b>Resource Provider</b>	<b>Number of Collections (Not from the Unit Creating the Collection)</b>
National Museum of American History	10
Smithsonian Institution Archives	8
Cooper Hewitt Smithsonian Design Museum	7
National Portrait Gallery	7
National Air and Space Museum	4
Smithsonian American Art Museum	4
Archives Center – NMAH	3
Art Inventories Catalog	3
Freer and Sackler Galleries	3
National Postal Museum	3
Smithsonian Education	3
Anacostia Community Museum	2
Archives of American Art	2
Hirshhorn Museum and Sculpture Garden	2
National Museum of Natural History – Anthropology	2
National Zoological Park	2
3D Smithsonian	1
Archives	1
National Anthropological Archives	1
National Museum of Natural History	1
National Museum of Natural History – Invertebrate Zoology	1
Smithsonian Center for Learning and Digital Access	1
Smithsonian Channel	1
Smithsonian Field Book	1
Smithsonian Institution Libraries	1
Smithsonian Mag RSS	1
Smithsonian Science	1
Smithsonian Videos	1

Uploading Resources

Forty-two collections uploaded additional resources to create their collections. These resources, which included images, websites, articles, and learning strategies, could be uploaded via URL or as a file.

*Table 3: Uploaded Resources by Type*

<b>Type of Resource</b>	<b>Number of Collections</b>
Additional web resources (videos, images, websites, articles, etc.)	19
Documents	11
Images	20
PDF	13
PowerPoint	2
SI web resources (videos, images, websites, etc.)	16
Unit web resources (videos, images, websites, etc.)	14
Videos	2
Time-lapse	1