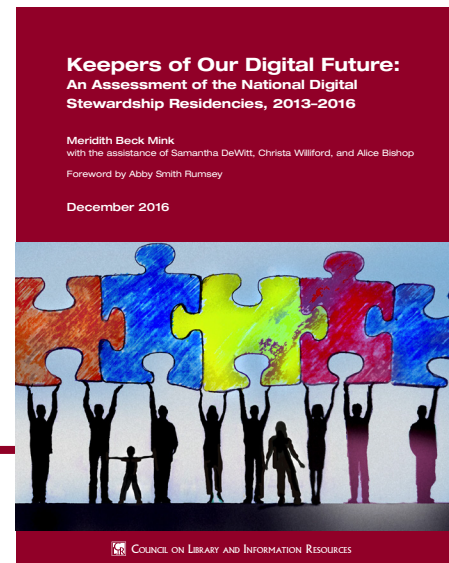


Supplementary Assessment of the National Digital Stewardship Residencies, 2016–2018

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REPORT ADDENDUM



Council on Library and
Information Resources

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Statement of Need

This assessment gathered data on the three most recent National Digital Stewardship Residency (NDSR) initiatives: AAPB NDSR, NDSR Art, and NDSR Foundations to Actions. Each of these programs started after the Council on Library and Information Resources (CLIR) collected data for an earlier assessment of NDSR programs active from 2013 to 2016. CLIR published a [report](#) summarizing findings from that assessment in December 2016.¹ After presenting findings and recommendations to the [Institute of Museum and Library Services \(IMLS\)](#), the granting partner for the NDSR programs, CLIR and IMLS officers determined that collecting additional data related to the three most recent initiatives was a priority, particularly given that AAPB NDSR, NDSR Art, and NDSR Foundations to Actions have placed residents in host organizations across the country, marking a departure from the regionally based programs that were the subject of CLIR's earlier study (see Appendix 1: NDSR program timeline, 2013–2019). The purpose of this addendum is to provide IMLS and the larger NDSR community with an evaluation of the effectiveness of this variation of the NDSR model.

Project Design

Data for this assessment of the distributed NDSR cohorts was gathered from program managers, residency supervisors, and current residents.² CLIR's research team contacted program staff for the three initiatives as part of the 2013–2016 assessment, but more specific data about how their programs progressed was collected through follow-up phone interviews in 2017 and 2018 (see Appendix 2: Interviewees). The team collected feedback from supervisors and residents through virtual focus groups. Participants received protocols in advance of the focus group discussions and had opportunities to provide individual, confidential feedback via email (see Appendix 3:

¹ *Keepers of our Digital Future*, available at <https://www.clir.org/pubs/reports/pub173/>.

² Terminology is defined on page 3 of CLIR's 2016 report. We use *program staff* or *program managers* when referring to individuals who have proposed, administered, and managed the different NDSR programs. The terms *mentor* and *supervisor* have been used interchangeably within the NDSR programs. We use *project supervisor* to describe the primary individual(s) assigned to provide oversight and support for residency projects. When referring to host institution staff who have been expected to assume a broader range of responsibilities on behalf of NDSR residents, including career guidance and professional development support, the team has used *mentor* and *mentorship*.

Study Methodology and Instruments).

The Distributed Cohorts, 2016–2018

IMLS funded the three NDSR initiatives assessed for this addendum through individual grants from the **Laura Bush 21st Century Librarian (LB21) Program** (see Appendix 4 for amounts awarded each program). The LB21 program aims to build a more diverse workforce of librarians by supporting professional development, graduate education, and continuing education to help libraries and archives. NDSR aligns with this aim in its mission to train professionals prepared to advance the nation’s capacity in digital preservation. In addition, NDSR aligns with the strategic goals of the IMLS **National Digital Platform**, a coordinated approach to building digital capability and capacity in libraries and museums across the country, by developing an experienced workforce of digital stewards.

For each NDSR initiative, the grant’s principal investigators and program managers were responsible for administering funds and operating the program. As with all NDSR initiatives, each proposal was designed to leverage capacity and to fulfill the aims of the organizing institutions; consequently, there have been variations in the way programs have been run and managed. However, there are several overarching similarities among the AAPB NDSR, NDSR Art, and NDSR Foundations to Actions programs that merited their assessment as a group. All three programs:

- placed residents in host organizations across the country, marking a departure from the regional programs that were the subject of CLIR’s original study;
- started after CLIR began collecting data for the original assessment;
- experimented with sustaining a cohort through virtual networking; and
- targeted specific types of host organizations with distinct digital preservation needs:
 - AAPB NDSR was intended for public media stations that need to develop capacity to preserve digital audiovisual content;
 - NDSR Art was designed for art libraries engaged in preserving digital artwork and archives; and
 - NDSR BHL was aimed at building capacity for collaboration in digital preservation among the members of the Biodiversity Heritage Library consortium.

AAPB NDSR

AAPB NDSR was funded by an IMLS grant to WGBH on behalf of the American Archive of Public Broadcasting (AAPB), a collaboration between the WGBH Education Foundation and the Library of Congress. A program management team composed of three staff

members led the initiative: Karen Cariani, director of WGBH Media Library & Archives, served as the project director; Casey Davis, project manager for the AAPB, served as project manager for AAPB NDSR; and Rebecca Fraimow, archivist at the WGBH Media Library & Archives, served as the NDSR program coordinator. The AAPB program further developed the NDSR model in three ways: (1) it was the first initiative to include host organizations outside of the north-east corridor, (2) its curriculum and resident projects were the first to focus on a thematic area (audiovisual preservation), and (3) all of its residencies were conducted at public media organizations.

AAPB NDSR solicited applications from potential host organizations through an open call that ran from October to December 2015. The program targeted public media organizations, as opposed to the broader range of archival and cultural memory institutions holding public media content, but potential hosts were not required to be partners of WGBH or contributors to the AAPB. Prospective institutions were provided with an application ([AAPB NDSR Host Application](https://aapbndsr.files.wordpress.com/2015/06/aapbndsr_host_application_form_revised.pdf)), instructions on how to submit their applications ([AAPB NDSR Host Application Instructions](https://aapbndsr.files.wordpress.com/2015/06/aapbndsr_host_application_instructions_revised.pdf)), criteria for host organizations ([Host Institution Requirements](https://aapbndsr.files.wordpress.com/2015/06/aapb_host_requirements.pdf)), sample project proposals, and other guidelines that were all made publicly available on AAPB NDSR's website.³ In addition to providing these documents, the program managers contacted applicant institutions individually to help them develop appropriate projects.

Program managers were responsible for the final selection of seven host stations that included CUNY TV in New York, NY; Louisiana Public Broadcasting in Baton Rouge, LA; Minnesota Public Radio in St. Paul, MN; KBOO Community Radio in Portland, OR; Howard University Television in Washington, DC; Wisconsin Public Television in Madison, WI; and WYSO Public Radio in Yellow Springs, OH.

AAPB NDSR supported one cohort of seven residents from August 2, 2016, to May 26, 2017. The program managers and selected host partners solicited applications from residency candidates through an open call advertised on various archives' email discussion lists and the Library of Congress Digital Preservation blog between January and March 2016. Potential residents were required to submit an application ([AAPB NDSR 2016-2017 Resident Application Form](https://aapbndsr.files.wordpress.com/2015/06/aapbndsr_2016-2017_resident_application_form.pdf)), a resume or CV, a one-page cover letter, two letters of reference, and a video or online project that addressed the question, "Why are you interested in audiovisual digital preservation and/or preservation of public media?"⁴ AAPB NDSR made these materials

³ https://aapbndsr.files.wordpress.com/2015/06/aapbndsr_host_application_form_revised.pdf

https://aapbndsr.files.wordpress.com/2015/06/aapbndsr_host_application_instructions_revised.pdf

https://aapbndsr.files.wordpress.com/2015/06/aapb_host_requirements.pdf

⁴ https://aapbndsr.files.wordpress.com/2015/06/2015_aapb_ndsr_resident_application_edits.pdf

publicly available on its [website](#).⁵

The project team compiled resident application packages and ranked candidates before forwarding them to the AAPB advisory board for review and selection. The advisory board comprised individuals with expertise and experience in educating graduate students in digital audiovisual stewardship or in practicing audiovisual digital stewardship, and those with knowledge of and connections to public media stations, as well as people involved with NDSR programs in Washington, DC, New York, and Boston. (See Appendix 5 for a list of members of the AAPB NDSR Advisory Board.)

AAPB NDSR assigned mentors at the organizational, local, and national level to each resident: a mentor/supervisor at the host organization, a local archivist mentor, and an advisory board mentor. The expectations for these roles were laid out in [documentation](#) available on AAPB NDSR's website.⁶

Once the advisory board selected and appointed their top candidates, AAPB NDSR launched the seven residencies with a weeklong immersive training experience in Washington, DC. The residencies culminated in a final symposium on April 27, 2017, in Washington, DC. Residents also collaborated on a final deliverable, a technical preservation resource guide for public media organizations titled [The American Archive of Public Broadcasting Wiki](#).⁷

NDSR Art

NDSR Art was funded through an IMLS grant to the Philadelphia Museum of Art in partnership with the Art Libraries Society of North America (ARLIS/NA). The program management team consisted of two staff members: Karina Wratschko, digital initiatives librarian at the Philadelphia Museum of Art, is the NDSR Art program manager; and Kristen Regina, Arcadia Director of the Library and Archives at the Philadelphia Museum of Art, is the NDSR Art program director. The NDSR Art initiative adapted the NDSR model to art librarianship by designing residency projects and a curriculum focused on art information management. NDSR Art projects focus on digital preservation and stewardship of the arts, especially new media and digital documentation about art. Residencies were conducted at art libraries, museums, and organizations with ties to the arts community. The program created two 12-month residencies with four residents in each cohort (eight residents total) between 2017 and 2019. The first cohort's residencies ran from July 2017 to July 2018, while the second cohort's work spans July 2018 to July 2019. NDSR Art was designed to place residents at host organizations across the country.

Wratschko and Regina assembled a curriculum development task force made up of art information professionals who drafted a program curriculum addressing issues related to fair use, copyright,

⁵ <https://ndsr.americanarchive.org/resident-applications>

⁶ <https://ndsr.americanarchive.org/aapb-ndsr-overview/project-documentation/>

⁷ http://wiki.americanarchive.org/index.php/Main_Page

image rights management, digital asset management, and workflows for curating art-related data. (See Appendix 5 for a list of NDSR Art Curriculum Task Force members.) NDSR Art also convened an advisory board that included leading figures in the field of arts information management and art librarianship. The advisory board further developed the curriculum drafted by the task force.

NDSR Art targeted art libraries and museums but accepted proposals from organizations that worked on new media and arts information. Applications were solicited through an open call on the NDSR Art website, several relevant websites, and discussion lists, such as Audiovisual Archiving Jobs. Applicant institutions were provided with an [application](#), host application [guidelines](#), and other guidelines that were all made publicly available on NDSR Art's website.⁸ In addition to these documents, the project team conducted a host applicant webinar on August 18, 2017.

The call and selection process for host organizations was facilitated by the NDSR Art project team, while the advisory board selected the host sites. In addition to the strength of the project proposals, potential hosts were also evaluated on their ability to demonstrate support for the resident and qualifications of the proposed on-site mentor/supervisor. The project team, accompanied by local ARLIS/NA members, also conducted site visits with the finalists prior to their selection. The 2017–2018 hosts were the Minneapolis Institute of Art, the Philadelphia Museum of Art, the University of Pennsylvania, and the Yale Center for British Art. The 2018–2019 hosts are the Art Institute of Chicago, the Maryland Institute College of Art, Small Data Industries in Brooklyn, New York, and the Solomon R. Guggenheim Museum in New York.

Resident applications were solicited through an open call advertised on websites and discussion lists related to cultural heritage communities, such as Museums and the Web and the Code4Lib listserv. NDSR Art required applicants to submit an application, a resume or CV, a cover letter, and two letters of reference. In addition, applicants had the option to submit a video or online project that addressed the question, "Why are you interested in the digital stewardship of art information?" These [guidelines](#) were publicly available on their website.⁹ Applicants specified their top two choices of institutions and projects in their application forms.

The NDSR Art program managers, in partnership with representatives of host organizations, selected residents and assigned them to one of the available projects and corresponding hosts. As part of that process, staff at the host organizations reviewed applications and conducted interviews with candidates. As with other initiatives, the residencies started with a week-long training period in Philadelphia. In May 2018, NDSR Art residents contributed to a symposium

⁸ http://ndsr-pma.arlisna.org/wp-content/uploads/2017/06/Host_Application_form_fall_2017.pdf

http://ndsr-pma.arlisna.org/wp-content/uploads/2017/06/Host-Application-Guidelines_June-2017.pdf

⁹ <http://ndsr-pma.arlisna.org/info-for-residents/>

focused on born-digital art archives, titled “*Is This Permanence?*,” hosted at the Yale Center for British Art.¹⁰ The first NDSR Art cohort culminated in a capstone event on June 29, 2018, titled “*Preserving Media & Art Digital Art Information*.”¹¹

NDSR Foundations to Actions (NDSR BHL)

NDSR Foundations to Actions—or NDSR BHL—was funded by an IMLS grant awarded to Harvard University on behalf of the Biodiversity Heritage Library (BHL). The BHL is a consortium of natural history and botanical libraries that collaborate to digitize collections related to biodiversity. NDSR BHL extends the NDSR model in several key ways: BHL was responsible for identifying host organizations that could effectively support an NDSR initiative and designed a collaborative project for the residents that would benefit the BHL as a whole. Moreover, all NDSR BHL hosts were already consortium partners who were named in the grant proposal, so there was no call for proposals or application process for hosts.

The goal of NDSR BHL was to improve tools, curation, and content stewardship at the BHL. Mentors at the host organizations were responsible for overseeing discrete aspects of the collaborative project. Residents and host supervisors pursued their work through five sub-projects related to content analysis, crowd-sourced data, image discovery, digital library best practices, and user needs.

The five BHL consortium members that served as host organizations for NDSR BHL were the Chicago Botanic Garden, the Ernst Mayr Library at Harvard University’s Museum of Comparative Zoology, the Missouri Botanical Garden, the Natural History Museum of Los Angeles County, and Smithsonian Libraries. The initiative was led by the Ernst Mayr Library and coordinated by its librarian, Constance Rinaldo. Once the grant was awarded, individuals from the partnering organizations were named as supervisors and began meeting six months prior to the start of the residencies. During this initial phase of the project, the supervisors collaborated to determine the trajectory of the project, prepared for the residencies, and trained in digital project management and mentorship practices.

During the initial six-month phase of the program, the BHL supervisors were also involved in writing the job descriptions for their NDSR sub-projects and in selecting residents. NDSR BHL required applicants to submit a cover letter describing their interest in the collaborative project and top three project choices, a CV, and names of three references. **Project descriptions** were publicly available through the BHL blog and advertised online via library, archives, records management, informatics, museum studies, and computer science programs nationally.¹²

¹⁰ <https://britishart.yale.edu/research/research-programs/symposium-permanence-preservation-born-digital-artists-archives>

¹¹ <http://ndsr-pma.arlisna.org/2018/05/21/registration-open-ndsr-art-capstone-preserving-media-art-digital-art-information/>

¹² <https://blog.biodiversitylibrary.org/2016/08/>

NDSR BHL supported one twelve-month cohort of residents between February 2017 and January 2018. Residencies began with an immersive training week focused on the Biodiversity Heritage Library held at the Smithsonian Libraries in Washington, DC. NDSR BHL supervisors also collaborated during a final phase of the NDSR grant that lasted another six months after the residencies ended. During this phase, they produced a final report for the BHL community that summarized residents' work and provided guidelines for the future development of the BHL.

Findings

This section identifies the major successes and challenges of the distributed cohorts, based on feedback from assessment participants. Beyond placing residents across the country, there are several ways the distributed cohorts represent variations to the NDSR model. This section will explore the implications of the most significant structural differences among the programs for the benefit of the NDSR community and future stakeholders.

Overview of Major Findings

Successes

- Participants in the distributed cohorts expressed overall satisfaction with their experience and felt that their NDSR programs were largely successful.
- Immersion week, which participants perceived as critical in cultivating relationships between members of distributed cohorts, continued to be a valued element of the NDSR model.
- Residents felt connected to their peers and part of an effective cohort despite being located in different areas.
- Residents gained significant experience in virtual work environments.

Challenges

- Program leaders establishing new NDSR initiatives experienced difficulties gathering clear information and documentation about NDSR's model, mission, and expectations.
- Participants questioned the relevance and effectiveness of the mentorship component of NDSR, suggesting alternatives for how these roles are cast and who fills them. (See Additional Recommendations for NDSR Supervision and Mentorship, p. 20.)
- Residents of the distributed cohorts, like their peers in the NDSR programs from 2013 to 2016, desired more exposure to and applied practice with digital preservation tools and systems.¹³

[national-digital-stewardship-residency-ndsr-job-postings.html](#)

¹³ CLIR's earlier assessment of the first NDSR initiatives also identified a desire among earlier NDSR residents for more exposure to and hands-on practice with digital preservation tools and systems. See *Keepers of Our Digital Future*, pp. 36, 45, 49.

- Participants wanted stronger definition and clarity of the roles of resident, mentor, and supervisor.
- As was reported by earlier NDSR cohorts, some residents encountered delays in receiving paychecks and reimbursements from lead institutions.¹⁴

General Feedback

Most participants in the distributed cohorts were satisfied with their NDSR experience and echoed much of the feedback provided by earlier regional cohort members about the successes and challenges of the programs.¹⁵ The virtual cohorts facilitated strong collegial relationships among residents and represented a supportive, positive aspect of the NDSR experience.

Geographic diversity. Locating NDSR residents in different areas across the country was largely successful; physical distance between residents and between host organizations apparently did not introduce significant new challenges. A few residents expressed concerns about the limitations of the virtual support that was available for geographically distributed participants. In these cases, residents and supervisors desired closer proximity to other cohort members and suggested being within driving distance or placing two residents within the same region to facilitate more in-person interactions during the residency.

The three initiatives had moderate, yet uneven, success in meeting their goals for attaining geographic diversity among their cohorts. Host sites and lead institutions have remained concentrated in the Northeast. AAPB NDSR had host sites located in the Midwest (Madison, WI; St. Paul, MN; and Yellow Springs, OH), the Northeast (New York, NY; Washington, DC), the South (Baton Rouge, LA), and on the West Coast (Portland, OR). NDSR Art had more limited success in securing applications for host organizations from across the country. Ultimately, selected hosts were primarily located in the Northeast (two each in Philadelphia, PA, and the New York City boroughs; one in New Haven, CT; and one in Baltimore, MD) with one host in Minneapolis, MN, and another in Chicago, IL. NDSR BHL had hosts in the Midwest (Chicago, IL; and St. Louis, MO), the Northeast (Cambridge, MA; Washington, DC), and on the West Coast (Los Angeles, CA).

Visits to host institutions. Several managers involved in implementing the distributed cohorts described the value and importance of visiting potential or selected host organizations prior to the start of the residencies. The NDSR Art program managers, for example, visited all host organization finalists before making decisions about host appointments. They noted that site visits were

¹⁴ Residents in the NDSR DC cohorts reported problems with not receiving paychecks on time and our previous assessment made a recommendation regarding timely pay. See *Keepers of Our Digital Future*, pp. 31, 44.

¹⁵ Findings from our earlier assessment can be found on pages 27–42 of *Keepers of Our Digital Future*, with successes outlined on pages 27–28.

“immensely helpful” in evaluating whether an institution was “engaged and excited about the opportunity” and “if the resident would be in a situation where they could succeed.” Visiting potential host organizations is an added cost, but one that seems particularly valuable for implementing a distributed model where host organizations may be less familiar to NDSR organizers and advisors.

Immersion week. Opening the residencies with an immersive training period where residents gather in one place to establish cohort relationships and learn together is a critical aspect of the NDSR model from which all participants, including supervisors, benefited. Members of the distributed cohorts widely agreed that the immersion period of about one week was indispensable in establishing a strong rapport from the start of the programs. During the immersion-training period, residents of all three distributed cohorts were housed together—with private rooms—in lodging arranged through AirBnB. This shared-living experience was a particularly successful arrangement because it allowed the residents more time to interact informally and socialize with each other. Residents felt that shared accommodation (with private rooms) aided group cohesiveness.

Opportunities for personal interaction. Residents, administrators, and supervisors of the NDSR distributed cohorts agreed that having “touch points” or in-person check-ins with each other to continue to build their professional relationships during the residency term was crucial. Each distributed initiative incorporated scheduled in-person interactions, including the immersion week and required conference attendance. Rebecca Fraimow, the program coordinator for AAPB NDSR, planned three conference trips for residents in the first few months of the residencies to “establish cohesiveness of community.” NDSR Art, on the other hand, incorporated only one conference that residents were required to attend, but also provided travel funding for additional elective conference attendance.

Participants had varying ideas about what would be an ideal amount of in-person interaction among distributed residents. They generally wanted more face-to-face time than the programs could support, suggesting quarterly gatherings to as many as 6 meetings during the 12-month residencies. Although this is a significant cost that must be factored into program budgets for distributed initiatives, face-to-face cohort meetings can be effectively integrated with conference and symposia attendance and can include final capstone events. Earlier regional initiatives typically allocated \$1,000 per resident for professional development and travel expenses; program managers for the geographically distributed initiatives saw that this level of support would be insufficient for meeting the anticipated needs of their cohorts.

Professional development opportunities. The distributed cohorts had differing approaches to professional development and travel funding. AAPB NDSR paid for residents to attend three conferences over the course of the residency (the International Association of Sound and Audiovisual Archives annual conference, the Association of Moving Image Archivists annual conference, and

the Society of American Archivists annual conference) as well as immersion week, and provided residents with an additional \$1,000 in professional development funds. NDSR Art allocated \$1,000 in professional development per resident, plus earmarked additional funding for resident travel to immersion week, the ARLIS/NA Annual Conference, and enrichment sessions that took place at host organizations. One host organization for NDSR Art provided a separate stipend to supplement their resident's travel. Participants would not recommend that future NDSR residents within the same cohort receive varying professional development and travel support. NDSR Art residents and mentors were concerned that this system was not fair and would have preferred each resident to receive the same amount of funding.

NDSR BHL distributed reimbursements for professional development and travel funds to host organizations as needed. Residents and mentors could apply for support but were not informed of how much money was designated for these purposes. BHL residents wanted more transparency about how program managers made professional development funding decisions. One resident noted that her host organization did not seem prepared to support her applications for reimbursement; she received reimbursements “weeks and months late because no one knew who was in charge of dealing with that.”

Communication. Clear, timely, and consistent communication between program managers, residents, and supervisors continues to be crucial to effective operation of the NDSR programs. While participants in the distributed cohorts did report some problems with effective communication, they were no greater than those encountered by members of the regional NDSR cohorts. Overall, in fact, participants in the distributed programs were very satisfied with the communication from AAPB, Art, and BHL program staff. Residents in the distributed cohorts reported frequently reaching out to each other for support and help with problem solving. Virtual collaboration tools were especially useful in this regard. Slack was unanimously considered an extremely successful tool for daily communication and was used by all residents of the distributed cohorts and some supervisors. Participants also reported using—although not universally—Google Hangouts, Skype, and GoToMeeting for general communication, and Trello for virtual project management. As noted in CLIR's original report, Twitter continues to be an effective tool for interaction with the larger NDSR alumni community.

Virtual work environments. In the case of NDSR BHL, the host organizations had extensive experience in virtual teamwork and networking through their longstanding involvement in other BHL projects. Trish Rose-Sandler, the data projects coordinator and NDSR mentor representing the Missouri Botanical Garden, noted, for example, that virtual collaboration was “something we've been doing for years in BHL, so it's very natural for us.” Mentors and host organizations, as well as overarching professional organizations or consortia, that already have experience with virtual work environments may

therefore be better prepared to ensure NDSR residents are supported in future distributed cohorts.

Given that virtual work environments are increasingly common among the developers of national and international digital collections and repositories, providing NDSR residents with virtual work experience is a clear advantage of the distributed model. One NDSR program manager astutely noted that residents need “support with professional development and those sorts of softer things because the rest of what you learn is really specifically for your project.” This comment echoed feedback from both CLIR’s original assessment and from others connected to the distributed cohorts, where participants noted a wide variability in the digital preservation skills acquired through the different residencies.¹⁶ Work experience, professional environments, and improved communication skills continue to be fundamental components of what the programs offer to all residents.

Cohort and Mentorship Experience by Program

Most participants agreed that the distributed model provided a sound cohort experience. Participants often provided each other with significant professional encouragement and engaged in mutual learning, suggesting that there was solid peer-to-peer support. The most effective tools supporting the virtual cohorts were Slack, the immersion week, and travel to conferences for in-person interaction. However, the three distributed cohorts each took different approaches to supervision and mentorship, as outlined below.

AAPB NDSR

Most of the AAPB residents, host mentors, and project team were satisfied with the efficacy of the distributed cohort model. Rebecca Fraimow, program coordinator for NDSR APPB, felt that success of an NDSR initiative has more to do with engaged host organizations and strong project proposals than with geographic location. The AAPB resident cohort primarily communicated via Slack. Early in the residency, the cohort met in person three times at conferences. Throughout the residency, the AAPB cohort participated in webinars. A few residents were ambivalent about the concept of virtual cohorts, suggesting that having at least two residents in one city might be more effective because they could meet in person to provide more intensive project, professional, and personal support.

As described earlier, AAPB NDSR assigned three mentors to their residents: a mentor/supervisor at the host organization, a local archivist mentor, and an advisory board mentor. AAPB NDSR host institutions were required to provide one full-time staff member

¹⁶ Participants in CLIR’s earlier assessment of the NDSR programs reported that the residencies were very effective in contributing to residents’ professional development, including building skills in the areas of project management, networking, public speaking, and interviewing, among others. Similar to residents of the distributed cohorts, earlier residents reported that their expertise in the field of digital stewardship generally increased, although the nature of these skills varied significantly by project. See *Keepers of Our Digital Future*, pp. 33–35.

who could serve as the primary mentor for residents and who was expected to commit a percentage of their time and attention to the NDSR project. The host mentor was essentially a project supervisor who was expected to, among other tasks, be the main “point person” for the resident on the NDSR project, attend immersion week, and conduct a formal professional review of the resident at the midpoint and at the conclusion of the residency. The local archivist mentor was established to provide guidance and support to the resident related to the local archival community in the region where the residency was located. Finally, the advisory board mentor was intended to ensure that the resident was supported and engaged in continuing their digital preservation education as they become immersed in a public media environment not directly tied to the preservation community.

Despite developing a three-tiered mentorship structure and documentation that articulated the role of each mentor, the AAPB mentorship structure was not perceived as especially effective. Residents wanted mentors at any level with specific knowledge in digital preservation to answer questions and help address challenges. Advisory board mentors and local archivist mentors were not seen as essential or supportive compared to the primary, host mentors. Many residents and mentors noted that there was very little contact between advisory board mentors and AAPB residents. There was a perception that well-established advisory board members lacked the time and capacity to mentor residents, while the residents felt uncomfortable advocating for more support from them because of the board members’ prominent positions in the national community of digital preservation professionals. For these reasons, the three-pronged mentorship structure did not support residents as fully as program leaders intended.

Residents suggested that a better way to provide the specific expertise they needed would be to create a small mentorship group available to all members of an NDSR cohort. This mentorship group would be composed of particularly engaged members of the NDSR community who are deeply knowledgeable in digital preservation.

AAPB hosts were generally satisfied with their NDSR experience and with their residents’ individual projects, but mentors at the host sites did not necessarily feel like they were part of a cohort. Host mentors (who had responsibility both for mentoring the resident and for supervising the residency project) appreciated being invited to immersion week but had little contact with each other afterward. There was a clear desire for more communication and “sharing along the road,” or in the words of one host, “creating shared solutions to shared problems.” As another host noted, “I felt a little bit like I was just working in a vacuum. I would have appreciated feedback, input and sharing from other mentors.” Given that all the host organizations were public media stations, there was potential to leverage AAPB NDSR to address shared challenges in digital preservation across these sites. One host mentor, for example, noted that they wanted more opportunities to communicate with the other hosts, “I think we were all dealing with similar issues and could

have been able to help each other more throughout the project.” Some hosts noted that it was not until the end of the residencies that they learned what work had been done on the other AAPB projects. They wanted to understand the challenges faced at other stations throughout the entirety of the NDSR experience.

NDSR Art

The first cohort of NDSR Art was very satisfied with the distributed cohort model. NDSR Art residents primarily communicated via Slack each day and held biweekly meetings using GoToMeeting. After immersion week at the Philadelphia Museum of Art, residents engaged in monthly virtual training sessions, attended several conferences together, and visited each other’s host organizations. All NDSR Art residents were required to attend the annual ARLIS/NA conference in New York in February 2018. Residents and mentors reported that virtual communication across the program was clear, consistent, and frequent; however, they asserted that face-to-face meetings were still essential to building cohort connections.

NDSR Art assigned two mentors to each resident: a primary, host mentor/supervisor who oversaw the NDSR project; and a secondary mentor who was a member of the Art Libraries Society of North America (ARLIS/NA). NDSR Art host mentors were generally satisfied with their NDSR experience, but, like the AAPB NDSR mentors, they did not feel integrated as a host cohort. To facilitate communication with one another, NDSR Art host mentors also took advantage of Slack, had regular check-ins with each other that were facilitated by the program manager, and participated in both immersion week and visits to other host sites. In-person time was helpful to the overall success of the program: as one host mentor said, “the time in person was very important to get us started in the projects and build relationships between us that we could carry forward.” However, most of the host mentors’ participation in NDSR was at the project level through interactions with their resident, rather than with other mentors or with the broader NDSR community. Most of these mentor/supervisors would have liked program leaders to facilitate and encourage formal professional development for the mentors as well as the residents. Since all host organizations were art organizations, any curricular resources or activities related to digital preservation for art collections could also be useful for the permanent staff. Consequently, there would have been more room to engage mentors in shared learning experiences throughout the NDSR residency term.

Either the host organization or the program manager identified the secondary mentors—ARLIS/NA members located in the same city as the residency—and assigned one to each resident. The NDSR Art project team initially hoped to work with local ARLIS/NA chapter chairs to find volunteers willing to be local mentors, but this strategy did not prove as efficient or effective as direct outreach to ARLIS/NA-affiliated professionals already known to program participants. Each ARLIS/NA mentor served as a liaison to the local art community and ARLIS/NA chapter. This structure was designed

to provide additional support to help residents network locally and regionally.

In general, NDSR Art participants supported the concept of assigning an ARLIS/NA member as a local mentor, but the overall effectiveness of these supplemental mentors was less clear. Since CLIR's assessment of the distributed cohorts took place before residents attended the annual ARLIS meeting, residents felt that the potential for interactions with these mentors and the overarching professional organization could still be realized. On-site host mentor/supervisors were not necessarily members of ARLIS; several of these host mentors agreed that collaborating with a professional organization had potential to be a useful element of the NDSR model for distributed cohorts but could be more fully developed and tested.

NDSR BHL

The BHL initiative was structured differently from previous NDSR initiatives in terms of both cohorts and mentorship. All residents worked on projects that contributed to a larger collaborative effort to improve curation and the content stewardship of the BHL. One resident commented that this configuration "helped facilitate cohesiveness tremendously," while another felt that the collaborative project was essential to the success of the virtual cohort itself. Working on related projects with collaborative goals and outcomes ensured that residents did not become entrenched in their own daily tasks and fostered a sense that the residents were all "coworkers." NDSR BHL residents communicated with each other through Slack, Skype, and Google Hangouts.

The program's design required BHL hosts to work together intensively, including collaborating before and after the residencies on setting goals and assessing outcomes related to their NDSR initiative. One host referred to the NDSR BHL supervisors as "the whole of the project team," suggesting a shared sense of purpose. The BHL supervisors not only contributed to a larger project that benefited their organizations and the consortium, but also came together before and after the residencies to help shape their project's design, select the residents, and write a final report summarizing a vision for the future direction of the digital library. The initial six-month phase of pre-residency collaboration allowed the group to develop a shared approach to mentorship and project management. This structure increased communication among mentors, who felt they were part of their own cohort. This level of collaboration was consistent with the experiences of regular contributors to the Biodiversity Heritage Library; at least one mentor noted that participating in the NDSR program brought her even closer to her colleagues in the BHL consortium.

The NDSR BHL iteration of the NDSR model has the potential to foster stronger connections among host mentors and to cultivate greater institutional investment in a national collaborative initiative. The professional development benefits for residents were also unique. One resident found that her work within the BHL network

allowed her to engage more deeply with content specifically related to biodiversity. She reported learning a lot about natural history organizations and media, which allowed her to discuss that material in greater depth and with greater confidence in professional presentations.

General Feedback on the NDSR Mentorship Model

Section 4.1.7. of CLIR's original report defined NDSR's overall mentorship structure, including how mentorship expectations and directives have varied within each program. Feedback from the distributed cohorts raises additional questions about the concept and model of mentorship itself, which is explored in this section. Several respondents questioned whether the mentor and project supervisor or manager should be the same person, and whether the role and title of mentor in the NDSR model, as a whole, needs to be reconsidered. Overall, there was concern that management and mentorship are too often conflated in the NDSR model, when both are distinct concepts and roles.

Residents from both the distributed and regional cohorts wanted mentors. However, their perceptions of their hosts' commitment to and capacity for mentorship varied significantly. Similarly, hosts across NDSR programs agreed that mentorship within NDSR initiatives is desirable, but individuals assigned as mentors varied in their willingness, ability, and available time.¹⁷ Several participants in the current assessment pointed out the critical distinction between mentorship and management: where management involves shepherding a project from design to completion, setting goals, and ensuring that deliverables are met, mentorship involves a broader form of guidance related to residents' life and career goals. A good supervisor or manager can help an NDSR resident complete their project in a timely manner, whereas a good mentor guides the resident in making professional development choices, facilitating connections and networking, and sharing insights gleaned from their own career experiences. Despite some NDSR programs assigning multiple mentors to residents with different roles, both project supervisors and residents understood that the host staff member assigned to the resident was expected to engage in both management and mentorship. Echoing comments made by several participants, one NDSR supervisor astutely noted, "I think many of us have found it a little hard to play both roles . . . I wonder if we're shortchanging them slightly by trying to play both roles." Overall, many hosts have stated that they did not have the bandwidth to supervise an NDSR project, maintain their regular work, and be an effective mentor.

¹⁷ Residents interviewed in CLIR's earlier assessment reported a significant range in levels of satisfaction with their mentorship experience, while host mentors/supervisors expressed a similarly wide range in their own willingness to guide their resident beyond the project and provide more intensive career support. See *Keepers of Our Digital Future*, pp. 38–39.

Conflating mentorship and management stems from calling on-site project supervisors *mentors* in early iterations of the NDSR model. While the use of the term *mentor* signaled that on-site staff assigned to residents had a unique set of responsibilities that encompassed the professional development of the resident as well as the oversight of the resident's project work, several participants involved in the distributed cohorts were uncertain whether *mentorship* and *mentor* were the appropriate terminology given how the role developed in their experience. One program manager said, "I don't know if *mentorship* is the term we would use if we weren't following the vocabulary of the program." Another participant remarked that the term suggested a teaching relationship, which might be misleading. In many cases, the resident brought significant expertise to the host organization so the relationship was more reciprocal, functioning more as a partnership or collaboration; as one host noted, the relationship is "not a one-way path." Several participants suggested that using *fellow* and *fellowship* could be more appropriate for the residency experience because it is more comparable to an academic fellowship than to a medical residency.

As with previous NDSR programs, participants encountered difficulties creating and ensuring strong mentorship interactions. Ultimately, mentorship depends upon the rapport between two individuals and cannot be mandated or directed entirely by program administration or documentation. Practical suggestions for improving the mentorship component of the NDSR model include: separating the roles of program manager, project supervisor, and mentor completely; including mentorship training for host representatives during immersion week; and having an extended period of training and a discussion on mentorship before the start of residencies.

The structure of NDSR BHL also provides a useful exemplar for mentorship. NDSR BHL supervisors were the only NDSR participants to train explicitly in mentoring practices. This training, which took place during the six months before the start of the residencies, also fostered increased communication among supervisors and provided a sense of the cohort and cohesiveness of the group. Building on the BHL example, future programs could structure time before the start of residencies or during immersion week to train hosts in mentorship. Even if programs ultimately decide to assign two people—a project supervisor and mentor—to each resident, preparation for mentorship could be a valuable professional development component for NDSR hosts.

Perspectives on a National Model

Since CLIR's original assessment, NDSR community members have made progress toward developing a national governance and support structure for NDSR. Symposia were held in April 2017 and May 2018 to address the challenges of developing a national model more fully, including creating standardized guidelines based on CLIR's 2016 evaluation, developing sustainability strategies, expanding the geographic reach of NDSR, fostering a digital

preservation community of practice, and raising awareness of the NDSR program. Drawing from the contributions of participants in the 2017 symposium, former residents Rebecca Fraimow and Margo Padilla created the *NDSR Handbook and Toolkit*.¹⁸ This document contains standard best practices and guidelines for the operation of an NDSR program. In addition, Fraimow and Padilla have posted documents related to **NDSR sustainability** and **a coordinated national model** reflecting the input of community stakeholders.¹⁹ The distributed cohorts themselves represent a national expansion of NDSR, since they have brought the program to new regions and embedded it within more specific fields, such as audiovisual and art preservation.

Nevertheless, the national-level coordination of NDSR still needs further development. While the **NDSR website** is a milestone, it needs to be regularly updated. Several participants in CLIR's follow-up study wanted to see NDSR's centralized web presence expanded in significant ways:

- List all NDSR residencies, projects, and people in one place (rather than simply providing links to individual initiatives' websites).
- List the themes of each initiative and provide copies of grant proposals.
- List project descriptions and outcomes.
- Maintain a list or database with names, contact information, and areas of expertise of NDSR alumni.

Like participants in the regional initiatives, participants in the three distributed projects found it too difficult to track down information about former residents' projects. One host noted that with existing program websites, "it was hard for me, even as a participant, to get a sense for all the different residencies and their outcomes." Participants wanted the ability to quickly identify specific NDSR projects, trace themes that bridge multiple projects, discover project deliverables, and compare NDSR programs across years and cohorts. Moreover, participants wanted NDSR's online presence to provide meaningful context for past projects helpful for understanding the evolution of projects and residencies, including the challenges hosts and residents have faced over time, the specific outcomes of NDSR projects, and how these outcomes affected work at host institutions following residents' departures. For NDSR as a whole to be a useful resource for people in the field, stakeholders must be able to recognize and comprehend more fully the overall impact of the partnerships NDSR has created.

Notably, residents' blog posts do not seem to have been particularly effective for sharing information on project progress, challenges, and outcomes. One host said that to really understand all the different residencies and outcomes, "I would have had to worm hole through internet blogs to see tactile information about how

¹⁸ https://ndsrprogram.files.wordpress.com/2017/10/ndsr_handbook_and_toolkit2.pdf

¹⁹ Nancy McGovern drafted the initial version of the Sustainability document.

many projects there have been, how many participants,” and other important information.

Host representatives suggested that they wanted more “sharing along the road” from the leaders of current and future initiatives, and across cohorts and programs. Sometimes, deliverables of a specific project were shared only at the very end of the residency; this delay led to a sense of secrecy or mystery around projects and outcomes, even within programs or within a single cohort. Several participants suggested that a database of NDSR community members would allow current and future participants to identify and contact alumni with knowledge in specific areas. One person referred to this as an “NDSR phonebook” that would allow community members to seek out suitable experts and mentors.

For the most part, leaders and participants in each new NDSR initiative have benefited from lessons learned by previous managers, supervisors, and residents. Some leaders of the distributed cohorts, however, felt that even several years after the creation of the first residencies, they really had to “think through the nuts and bolts” of the model to create a new program. As of 2017, the *NDSR Handbook and Toolkit* is publicly available and provides many sample documents including host institution guidelines, resident applications, and a sample budget and curriculum. These tools should be shared with all future stakeholders and be updated regularly.

Building public awareness and creating a recognizable “brand” are still critical and growing needs as NDSR programs expand across the country. It is not yet clear, for example, if the logo on the *NDSR Handbook and Toolkit* will serve as an official logo for the overall initiative. Each individual program’s leadership has unique branding, allowing for potential confusion and a lack of a coherent identity as NDSR programs spread across the country. A single national-level NDSR logo used across all programs, and in conjunction with program-specific branding, could be an effective way to associate all future initiatives as part of the same community.

Participants reported that there was less familiarity with the NDSR concept and model outside of the Northeast corridor, where it was established. Feedback from program managers and supervisors of the distributed cohorts suggested that there needs to be an expanded understanding of the opportunity that NDSR presents for potential residents and host organizations across the country. In the case of NDSR Art, the program was delayed slightly because the initial call for proposals from host institutions did not yield enough responses of sufficient quality. Several participants noted that stronger marketing outside the Northeast corridor and promotion of the NDSR mission nationally would likely increase the diversity in host organizations and result in better projects. One way to convey the opportunity that NDSR presents is to point to project outcomes, and to demonstrate prominently on the NDSR website the impact the program has had on host organizations and residents’ careers. Maintaining a list of papers and projects produced by residents and recent alumni would demonstrate the broader public impact of the programs.

Recommendations

The following recommendations, drawn from assessment participants' feedback, are designed to inform the development of future initiatives. Specific recommendations for distributed cohorts are followed by additional recommendations for the national coordination of all NDSR programs.

General Recommendations for Distributed Cohorts

- **Distributed cohorts should plan for and incorporate ample in-person opportunities.** Strong relationships among cohort members and program cohesiveness rely on face-to-face interaction throughout the residencies. This may include—but is not limited to—immersion week, compulsory conference attendance, and a final capstone event.
- **All residents should be provided a specified and sufficient amount of funding for travel and professional development in a timely manner.** Residents should not have to negotiate reimbursement on a case-by-case basis without an understanding of what resources are available to them.
- **Distributed cohorts should share project progress, outcomes, and deliverables throughout the residencies.** Sharing “along the road” should be coordinated by program managers and involve all residents, their supervisors, and mentors. A more robust national NDSR website with a member-only portal would be a particularly effective way for programs to share among themselves.
- **Methods, platforms, and expectations surrounding official virtual communication should be identified and implemented before residencies start.** Residents of the 2017–2018 distributed cohorts most consistently recommended and used Slack as a tool for daily communication. A schedule for regular conference calls or video chats should be communicated to all stakeholders at the outset of each residency cycle.
- **Program managers should be prepared to leverage the NDSR experience for the benefit of host organizations as well as residents.** Host organizations often share the same challenges and questions related to digital stewardship, and they can learn from one another over the course of a residency. Especially when the NDSR programs are geared toward specific themes or issues, host organizations should expect to emerge with a group of peer organizations with which they can collaborate on addressing future digital stewardship challenges.

Recommendations for Administration of Distributed Cohorts

- **Sufficient funding for travel should be earmarked in NDSR grants.** Program administrators and grant principal investigators

should budget for expenses related to travel for conferences and other in-person meetings. As a guideline, program administrators should budget for at least two mandatory trips per resident for face-to-face cohort meetings, in addition to providing discretionary funds for professional development activities residents wish to pursue on their own.

- **Lead institutions must make a dedicated administrative commitment to run an NDSR initiative effectively.** It should be made clear in advance to all participants exactly what role the lead institution will play. The responsibilities of lead institutions may include but are not necessarily limited to: providing health insurance, dispensing paychecks, providing office space, and providing parking or transit passes for participants in program meetings. Administrative policies and procedures should be clarified for both hosts and residents before residencies begin. Past residents have reported multiple instances of late salary and benefits payments because of ineffective administration from lead institutions.
- **Program administrators should identify relevant conferences during the residency before the program starts.** This information should be included in the program's administrative timeline. Any mandatory conference attendance should be communicated at the start of the residencies to all program participants.
- **Future initiatives should consider collaborating with a national professional organization.** When the initiative is focused on a specific area of digital preservation, such as audiovisual or art preservation, program administrators should consider partnering with a relevant professional organization. Members of the professional organization may be especially suited to serve as mentors. Both residents and mentors might benefit from such collaborations. For example, a mentor might arrange for the professional organization to offer the resident a complimentary conference registration at the organization's annual meeting. Professional organizations stand to gain valuable insight into pressing digital stewardship issues directly related to their field, which could be explored at annual meetings or in publications for their membership.

Additional Recommendations for NDSR Supervision and Mentorship

- **Supervisors should be integrated into the cohort model.** The cohort model is an essential part of the NDSR experience that should be extended more systematically to the supervisors of residency projects. Host organizations face common challenges related to digital preservation and could benefit more from the NDSR experience through increased communication across participating organizations and among program managers. To date, NDSR programs have focused more on residents' professional development and expertise, but leaders are in a good position to provide more opportunities for host representatives by

extending the standard elements of NDSR—such as regular check-ins, enrichment sessions, training, and conference participation—to project supervisors.

- **Project manager and mentor roles should be distinct.** Each resident should be assigned a supervisor based at their host organization who manages their residency project; the resident should also have access to at least one other person who can provide professional development and career advice.
- **Participants need dedicated mentorship in the field of digital preservation.** Residents, supervisors, and projects would greatly benefit from guidance from individuals with a high-degree of expertise in digital preservation. These individuals do not need to be located on site or at host organizations or be assigned specifically to each resident. Instead, they could form a digital preservation advisory group that provides advice to all members of a cohort, or all participants in contemporaneous cohorts across programs. Former residents and hosts would be ideal candidates to serve on a rotating digital preservation advisory group.
- **Mentors should be committed to and knowledgeable about mentorship.** Mentors need to be accessible and engaged in the mentoring relationship. Former residents and hosts are ideal candidates for mentoring roles. Future initiatives might pursue the idea of having members of national professional organizations serve in supplementary mentoring roles.

Further Recommendations for a Coordinated National Model

- **Expand the NDSR web presence.** Community members need timely information related to all current and past initiatives, participants, and projects. The outcomes and products of projects and collaborations need to be highlighted more clearly.
- **Implement a shared online community space.** In addition to the website, an online space for internal communication and collaboration open to all cohorts would help engage all past, current, and future NDSR participants. This should include a directory of NDSR alumni with their areas of expertise.
- **Replace residency blog posts with digital white papers.** Residents' experiences should be shared in a format that will remain more accessible over time than blog posts, such as in a final white paper. Twitter, a platform that already has a robust NDSR presence, may be more useful than blogs as a means for residents to share their immediate thoughts on their residency experiences as their work progresses.
- **Update NDSR vocabulary.** Replacing the term *mentor* with *supervisor* or *project manager* would help clarify the distinct roles related to management and mentorship. Some recent participants have suggested that *fellowship* and *fellow* may be more appropriate terms than *residency* and *resident*, but since this substitution would entail the replacement of the “NDSR” acronym with “NDSF,” the

- resulting confusion may override the benefits of the adjustment.
- **Invest in strategic marketing.** A coordinated national model requires a coherent brand. As programs multiply and are implemented across the country, recognition would be greatly enhanced through the creation of a distinct logo and style guide. In addition to branding, the model needs to be promoted more effectively throughout the United States.
 - **Leverage the NDSR alumni network more effectively to support future initiatives and the national model.** Alumni represent a highly knowledgeable pool of individuals who could actively serve as mentors and expert advisors. The community as a whole would benefit from drawing on their expertise more frequently and publicizing their achievements and work in the field. The current NDSR Advisory Group is an important step forward, but this group will need to be refreshed on a regular basis and expanded as responsibilities grow.

Conclusion

The assessment activities for this addendum confirm the value of the NDSR model for participants and the wider community. The model clearly has the flexibility to work successfully at the national level with host organizations and residents located across the country. The cohort experience remained vital to the recent distributed programs, with most residents reporting strong collegial experiences with their peer groups despite the distances between their host locations. These cohort relationships were cemented during immersion week and in subsequent meetings at conferences. Moreover, the distributed model provides NDSR participants—both residents and their supervisors—with an opportunity to gain experience in digital working environments as that mode of work becomes increasingly common.

In November 2017, an advisory group was formed as the official coordinating body for the NDSR programs. The group's stated aim is to "foster and promote national efforts to improve digital stewardship across disciplines through strategic initiatives, partnerships, research, cohort-based experiential learning, and standards development."²⁰ It currently consists of seven elected members (see Appendix 6). Since its establishment, the advisory group has organized a number of events aimed at supporting new initiatives and the community's broader vision for digital stewardship, including hosting the webinar "Blueprint for digital stewardship: How to create the next NDSR," an online Q&A session via Twitter, and an informal happy hour at the 2018 Archives*Records conference. The national-level coordination that the advisory group is beginning to provide is critical as NDSR programs expand across the country. *The NDSR Handbook and Toolkit* is an excellent example of community members' work to guide future program staff, residents, host institutions, and supervisors. The NDSR advisory group has taken responsibility for

²⁰ <https://ndsr-program.org/mission-statement-guiding-principles>

maintaining this and other documentation for the program and for making it available on a central website.

CLIR's initial assessment—*Keepers of Our Digital Future*—and the present study provide several avenues that the NDSR Advisory Group may decide to pursue. Going forward, the NDSR community would benefit most from bolstering the current website to more visibly highlight the outcomes of individual NDSR projects and the products that have resulted from host organization or cohort collaborations. Sharing alumni achievements in an easily accessible format would significantly help promote the value of NDSR programs to funders, professional organizations, future hosts, and potential applicants. A directory of alumni that indicates areas of expertise would also be valuable to participants and would make it easier for future initiatives to leverage the NDSR alumni network. Alumni are a highly knowledgeable pool of individuals who could actively serve as mentors and expert advisors. The community as a whole would benefit from drawing on their expertise more frequently and publicizing their achievements and work in the field.

APPENDIX 1:

NDSR program timeline, 2013–2019

2013–
2014



IMLS-Library of Congress
Cooperative Agreement, 2011

NDSR Pilot

- Association of Research Libraries
- Dumbarton Oaks Research Library
- Folger Shakespeare Library
- Library of Congress
- Maryland Institute for Technology in the Humanities
- National Library of Medicine
- National Security Archive
- Public Broadcasting Service
- Smithsonian Archives
- World Bank Group Archives

2014–
2015



IMLS-Laura Bush 21c
Librarian Program, 2013

NDSR Boston

- Harvard Library
- MIT Libraries
- Northeastern University
- Tufts University
- WGBH

NDSR-NY

- American Museum of Natural History
- Carnegie Hall Archives
- The Museum of Modern Art
- The New York Art Resources Consortium
- NYU Libraries

2015–
2016



IMLS-Laura Bush 21c
Librarian Program, 2013

NDSR Boston

- Harvard Library
- MIT Libraries
- JFK Presidential Library
- Joseph P. Healey Library
- State Library of MA

NDSR-NY

- Brooklyn Academy of Music
- CUNY TV
- NY Public Radio
- Rhizome
- Wildlife Conservation Society



IMLS-Library of Congress
Cooperative Agreement, 2014

NDSR-DC

- American Institute of Architects
- Martin Luther King Jr. Memorial Library
- Government Publishing Office
- National Library of Medicine
- U.S. Senate Historical Office

2016–
2017



IMLS-Library of Congress
Cooperative Agreement, 2014

NDSR-DC

- Association of Research Libraries
- Food and Drug Administration
- Georgetown University Libraries
- The Sheridan Library, Johns Hopkins Univ.
- World Bank Group Archives



IMLS-Laura Bush 21c
Librarian Program, 2015

AAPB NDSR

- CUNY TV
- Howard University TV
- KBOO Public Radio
- LA Public Broadcasting
- MN Public Radio
- WI Public TV
- WYSO

2017–
2018



IMLS-Laura Bush 21c
Librarian Program, 2016

NDSR Foundations

- Chicago Botanic Garden
- Ernst Mayr Library, MCZ
- MO Botanical Garden
- LA County Natural History Museum
- Smithsonian Libraries

NDSR Art

- Minneapolis Institute of Art
- Philadelphia Museum of Art
- University of Pennsylvania
- Yale Center for British Art

2018–
2019

NDSR Art

- Art Institute of Chicago
- Maryland Institute College of Art
- Small Data Industries
- Solomon R. Guggenheim Museum

APPENDIX 2: Interviewees

Leslie Bourgeois*Archivist*

Louisiana Public Broadcasting

Margaret Bresnahan*Digital Media Coordinator*

Minnesota Public Radio

Rachel Chatalbash*Senior Archivist*

Yale Center for British Art

Selena Chau*Digital Archives Manager*

LA Philharmonic

Eddy Colloton*Assistant Conservator*

Denver Art Museum

Alicia Esquivel*Resident, Chicago Botanic Garden*

NDSR BHL

Rebecca Fraimow*Archivist & NDSR Program Coordinator*

WGBH Media Library & Archives

Marge Huang*Digital Archivist*

Philadelphia Museum of Art

Marissa Kings*Resident, Natural History Museum
of Los Angeles County*

NDSR BHL

Erin Lee Barsan*Resident, Minneapolis Institute of Art*

NDSR Art

Frances Lloyd-Bayne*Head of Collections Information Management*

Minneapolis Institute of Art

Adam Lott*Content Management Specialist*

Allied Vaughn

Pamela McClanahan*Resident, Smithsonian Libraries*

NDSR BHL

Kate McManus*Cataloging and Metadata Librarian*

University of Minnesota-Twin Cities

Katie Mika*Resident, Ernst Mayr Library at Harvard*

University's Museum of Comparative Zoology

NDSR BHL

Cate Peebles*Post-Graduate Researcher*

Yale Center for British Art

Kristen Regina*Arcadia Director of the Library and Archives*

Philadelphia Museum of Art

Ariadne Rehbein*Resident, Missouri Botanical Garden*

NDSR BHL

Constance Rinaldo*Librarian*

Ernst Mayr Library at Harvard University's

Museum of Comparative Zoology

Trish Rose-Sandler

Project Manager
Center for Biodiversity Informatics at Missouri
Botanical Garden

Coral Salomón

Resident, Philadelphia Museum of Art
NDSR Art

Carolyn Sheffield

Program Manager for the Biodiversity Heritage Library
Smithsonian Libraries

Leora Siegel

Senior Director, Lenhardt Library
Chicago Botanic Garden

Elise Tanner

Resident, Philadelphia Museum of Art
NDSR Art

Erin Yanke

Program Director
KBOO Community Radio

Ann Wilkens

Media Archivist
Wisconsin Public Television

Karina Wratschko

Digital Initiatives Librarian
Philadelphia Museum of Art

APPENDIX 3:

Study Methodology and Instruments

To follow up with the experience of participants in the distributed cohorts, CLIR’s research team gathered data from program managers, residency supervisors, and residents. Data were collected through six virtual focus groups using Adobe Connect (one focus group was held for the supervisors and residents of each cohort). The participants in these focus groups were given protocols

in advance (shown below and on the following page) and had the opportunity to provide private or anonymous feedback via email. Each of the program managers for the NDSR distributed initiatives was contacted as part of CLIR’s initial assessment, but specific information regarding the administration of their programs was collected in follow-up phone interviews.



NDSR Distributed Cohorts Resident Focus Group

Cohort, Cohesiveness & Communication

1. What specific activities—during immersion week or otherwise—were essential to building connections to your cohort?
2. Overall, did you receive adequate guidance and communication from program administrators during the residency?
3. What was most challenging about being geographically distant from your cohort?

Mentorship & Professional Development

4. Who played the most important role in supporting your project work and professional development?
5. In what specific ways did the program managers support and guide you through the residency? How could administrative support be improved?
6. Please characterize the kind of mentorship you received from your supervisors and mentors.
7. Being as specific as possible, what should NDSR mentorship entail beyond project supervision? Are there specific ways that mentors should be expected to advocate for residents?

Concluding Questions

8. What are the most effective ways that future NDSR programs can support virtual cohorts?
9. What aspects of your NDSR experience do you think will prove most valuable to your career?
 - What aspects of your NDSR experience have you emphasized in job interviews?



NDSR Distributed Cohorts Mentor Focus Group

Cohesiveness & Communication

1. Overall, how would you characterize the communication from the program managers to the host institutions?
 - What was successful about how program managers structured communication?
 - Are there specific ways communication could have been improved?
2. What activities were essential to building connections and relationships among host organizations and mentors? How were these connections facilitated?
 - Do you feel that you were part of an NDSR cohort and community?
 - What specific things can future NDSR programs do to strengthen relationships between mentors and across host institutions?

Mentorship & Project Work

3. Being as specific as possible, what should NDSR mentorship entail beyond project supervision?
 - Are there specific ways that mentors should be expected to advocate for their residents?
 - Are there alternatives to the mentorship model that might be more suitable for NDSR?

Overall NDSR Experience

4. What role do you think NDSR alumni and national leaders of this program can take to make NDSR more of a success?
5. Are there specific ways that NDSR can refine the residency model to sustain the momentum of the residencies or make the experience more meaningful for host organizations?
6. Can you envision ways that NDSR could be a catalyst for host organizations across the country to create lasting partnerships and collaborations?

APPENDIX 4: NDSR Programs, 2013–2018

Program	IMLS Log Number	Funding	Shared Costs	Award Recipient	Award Year	Residency Term(s)	Number of Residents	Residency Length	Stipend Per Resident	Professional Development Funds Per Resident	Benefits Provided
NDSR LC Pilot		\$440,000		Library of Congress	2011	2013-14	One cohort of 10	9 months	\$23,508	Varied	No
NDSR Boston	RE-06-13-0055-13	\$498,385	\$210,364	Harvard Library, in partnership with MIT Libraries	2013	2014-15, 2015-16	Two cohorts of 5	9 months	\$27,300	\$1,000	No
NDSR-NY	RE-06-13-0057-13	\$498,135	\$187,634	METRO	2013	2014-15, 2015-16	Two cohorts of 5	9 months	\$36,036	\$1,500 in 2014-15; \$1,000 in 2015-16	Yes (separate grant brokered by METRO)
NDSR-DC		\$500,000		Library of Congress	2014	2015-16, 2016-17	Two cohorts of 5	12 months	\$40,000	\$1,000	No
AAPB NDSR	RE-06-15-0039-15	\$450,126	\$163,351	WGBH	2015	2015-16	One cohort of 8	10 months	\$29,977	\$1,000	Yes (residents will be eligible for the same benefits as a regular full-time contract employee, as per the benefit plans of the host institution)
NDSR Foundations into Action	RE-40-16-0082-16	\$370,756	\$129,739	Biodiversity Heritage Library partners, led by the Ernst Mayr Library of the Museum of Comparative Zoology, Harvard University	2016	2017	One cohort of 5	12 months	\$50,000	Varied	Yes
NDSR Art	RE-40-16-0105-16	\$421,750	\$123,422	Philadelphia Museum of Art, in partnership with the Art Libraries Society of North America (ARLIS/NA)	2016	2016-17, 2017-18	Two cohorts of 4	12 months	\$40,000	\$1,000	Yes

APPENDIX 5: Advisors for the Distributed Cohorts

AAPB NDSR Advisory Board

Snowden Becker

*Program Manager, Moving Image Archive
Studies Program*
University of California, Los Angeles

Howard Besser

*Professor of Cinema Studies and Associate Director of
New York University's Moving Image Archiving &
Preservation Program (MIAP)*
New York University

George Coulbourne

*Former Executive Program Officer, Office of
Strategic Initiatives*
Library of Congress

Andrea Goethals

*Manager of Digital Preservation and Repository
Services*
Harvard University

NDSR Art Advisory Board

Sarah Osborne Bender

*Director of the Betty Boyd Dettre Library and
Research Center*
National Museum of Women in the Arts

Diane Bockrath

Archivist/Librarian, Research Library and Archives
The Walters Art Museum

George Coulbourne

*Former Executive Program Officer, Office of
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Nancy McGovern

Head of Curation and Preservation Services
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Stephanie Sapienza

*Project Manager, Maryland Institute for Technology
in the Humanities*
University of Maryland

Kara Van Malssen

Senior Consultant
AVPreserve

Leah Weisse

*Digital Archive Manager, Production Archival
Compliance Manager*
WGBH Educational Foundation

Doug Litts

Executive Director, Ryerson and Burnham Libraries
The Art Institute of Chicago

Jacob Nadal

*Executive Director of the Research Collections and
Preservation Consortium*
Princeton University Library

Oya Yildirim Rieger

*Associate University Librarian, Digital Scholarship
and Preservation Services*
Cornell University

***NDSR Art Curriculum Development
Task Force***

Karl-Rainer Blumenthal

Web Archivist

Internet Archive

Julia Kim

Digital Assests Specialist

Library of Congress

Morgan McKeehan

Digital Collections Specialist

University of North Carolina at Chapel Hill

APPENDIX 6: NDSR National Advisory Group Members, 2017–18

Snowden Becker

*Program Manager, Moving Image Archive
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Karl-Rainer Blumenthal

Web Archivist
Internet Archive

Elizabeth England

Digital Archivist
The Johns Hopkins University

Tricia Patterson

Digital Preservation Analyst
Harvard University

Shira Peltzman

Digital Archivist
UCLA Library Special Collections

Dave Rice

Archivist
CUNY Television

Karina Wratschko

Digital Initiatives Librarian
Philadelphia Museum of Art