

Attachment 1: Narrative

The Peripheral Manuscripts Project: Digitization and Discoverability of Pre-1600 Manuscripts in the Midwest, Indiana University Bloomington

The Peripheral Manuscripts Project engages in regional outreach, particularly to non-R1, public, and monastic institutions in the Midwest that often do not have medievalists on staff, in order to identify, digitize, describe, and make their collections of often unreported pre-1600 manuscript holdings discoverable to the region, to manuscript census efforts, and to researchers in North America and beyond. Due to institutional, educational, and financial priorities, many small liberal arts colleges (SLACs) and public institutions cannot devote resources to such efforts. To alleviate some of these obstacles, this project launched a network in 2020 comprising twenty-two institutions that faced similar gaps in resources of time, staffing, funding, or equipment. As a result of this collaboration, the project team was able to digitize and describe 663 manuscript items from those 22 institutions, and present them in a digital library repository that not only makes them accessible, but also contextualizes partner collections by aggregating them with other similar materials held across the region. Building on the success of this initial effort, our project seeks NEH funding to expand our work by creating a second digitization hub at the University of Iowa, establishing collaborations with twenty new partner institutions, and continuing our work with three previous partners holding additional in-scope items. These twenty-three current partners collectively hold at least 1,442 manuscript items that we propose to digitize, describe, and make accessible and discoverable, thereby tripling the number of manuscript items included in our project's open access repository by June 2028. Through this expansion, we aim to grow our network of regional manuscript repositories and continue to facilitate the sharing of expertise among researchers, archivists, librarians, curators, collection managers, and community members. Through these collaborations we seek to highlight the wide variety of institutions with pre-1600 manuscript items, to learn more about the history of North American manuscript collecting through a focus on the role of Midwestern institutions in that history, and to increase public and scholarly awareness and use of these resources.

SIGNIFICANCE

The creation of open access repositories of digital manuscript facsimiles has most often been associated with the disciplines of codicology, paleography, fragmentology, and the digital teaching and research approaches in those fields that the International Image Interoperability Framework (IIIF) and other tools enable thanks to accessible data. These are all aims that our project team enthusiastically supports, though our focus is slightly different. The study of medieval manuscripts in North America has tended to center on large research libraries that have the resources and staffing to digitize their holdings, facilitating the use and study of those items by researchers and the broader public. Such collections are often well described, may be highly curated, and often include an overbalance of whole books and highly decorated manuscripts. They have been embraced as the evidentiary foundation for much of the knowledge produced by manuscript scholars, historians, art historians, linguists, theologians, and literary scholars. Meanwhile, the manuscript holdings of smaller institutions (or the small holdings at even well-resourced institutions) which might include a preponderance of manuscript fragments or less lavishly decorated items remain undigitized, and this lack of discoverability reinforces disciplinary preconceptions of the insignificance of those collections.

As a network of scholars, librarians, and community members in the Midwest, the Peripheral Manuscripts Project is invested in telling a fuller story of the history of medieval manuscripts in the United States, and especially in shining light on the role that both smaller collections—which tend to be less well-studied and to occupy supporting roles, if mentioned at all, within dominant scholarly narratives—and a wide variety of holding institutions play in the preservation of this important cultural heritage. An HCCR grant will enable us to build upon the framework established by Indiana University Bloomington in our project's first round and add an additional 1,442 pre-1600 manuscript items held at twenty-three partner institutions to the Peripheral Manuscript's repository by the end of June 2028. These new partners are a diverse group that includes SLACs, universities, religious institutions, regional museums, and even a public high school. When these items are added to those already digitized and described in our project's first round,

our project repository will provide researchers and community members access to over 2,100 items held at 42 Midwestern institutions. By providing open access to images and descriptions of these items in a centralized location, the project will raise the visibility of holding institutions, increase the use of their collections, help promote conservation and preservation efforts, and recenter these items within scholarly studies of medieval manuscripts in North America.

The significance of this project, though, is that we are not “just” digitizing project items and ensuring that item descriptions are searchable and interoperable with preexisting finding aids, although these are certainly core goals of our work. In many instances, the project team is also creating the first authoritative accounting of the existence and extent of partners’ collections of medieval manuscript items, while also cataloging the great majority of project items for the first time. Many of our partner institutions do not have medievalists on staff who can identify and make their holdings discoverable to all those working to identify and count pre-1600 manuscripts in North America, as well as to researchers, teachers, collections managers, and local and regional community members. The most recent census of pre-1600 materials [Lisa Fagin Davis and Melissa Conway, *Directory of Collections in the United States and Canada with Pre-1600 Manuscript Holdings*, 2015] relies on institutions self-reporting on the extent of their holdings and identifies 63,000 total manuscript books and single leaves that reside in North American collections. Through the collaborative information sharing in our project’s first round, however, partners and the project team were able to identify 904 previously unreported medieval manuscripts among the twenty-two partner institutions—165% more material than they were known to hold. Seven previous partners were not previously identified as holders of pre-1600 manuscripts in the *Directory*; six current partners are also unrecorded holders. An additional 600 previously unreported items have already been identified in the collections of partner institutions for the present application. While such items are often known and studied by members of their institutional communities, underreporting to national finding aids has limited regional, national, and international engagement with these materials. Our project team’s experience in working with previous and proposed partners to identify over 1,400 previously unreported items within their collections suggests that many more items remain to be added to current finding aids through projects like ours that engage in regionally-focused outreach and collaboration.

Pre-1600 items held in our second round’s partner collections range widely in their content. Religious texts predominate, represented by Bibles and biblical commentaries, liturgical books (with and without music notation), books of hours, works of theology and canon law, preaching aids and collections of sermons. Theological, scientific, and philosophical treatises can also be found in partner collections, as can a variety of legal texts, including wills, charters, and papal bulls. Most items are written in Latin. The earliest items date back to the 10th century, with most being produced during the 14th and 15th centuries. The vernaculars are represented by texts and marginal notes in medieval dialects of Dutch, English, French, German, and Italian; partnering art museums hold items written in Arabic and Asian languages. Our first grant phase limited project inclusion to only those items written in Roman alphabets; in this current phase, however, we have brought on board an additional manuscript specialist so that we can welcome partners to include all their holdings of pre-1600 manuscript items, regardless of language or alphabet. Each item offers rich historical information to modern readers, adding to our understanding of the material processes of manuscript production in Europe and Asia, the textual histories of included works, and the readership networks through which particular works circulated. Taken as a group, these items provide broad insight into medieval life in a wide range of communities with diverse cultural, geographical, and religious contexts. They additionally reveal the legal, political, and scientific ideas that circulated across Europe during the medieval period and serve as a witness to the evolution of music and art between 900-1600 CE.

While individual collections are as small as a single book (LaSalle-Peru High School) or a single binding fragment (Bluffton University), together current project partner collections hold well over 1,400 items (99 books, 957 individual leaves, 257 documents, 1 roll, and 128 manuscript leaves once used in the bindings

of other books); for a full list, see Attachment 8: Document Item 1. This large number of partner-reported holdings necessitated a reworking of our first round's project design, which relied on a single hub (Indiana University Bloomington) to digitize the bulk of partner holdings. Structuring the project so that most digitization work could take place at a single institution allows our team to leverage their digitization expertise to produce consistent, high-quality images of items for partners lacking the equipment, time, resources or staffing to digitize their own items. For this next phase of our work, IU Bloomington will remain the lead institution for digitization and descriptive purposes, and the University of Iowa will assist as a second digitization hub. The team at the U of Iowa possesses a deep knowledge of manuscript description and digitization practices, and their geographical positioning will minimize the distance that items held by partner institutions in Kansas, Iowa, and Missouri need to travel for digitization, allowing us to collaborate with partners across the vast geography of the Midwest. Reduced travel time minimizes the stress on project items from handling and temperature changes during transportation. The staff at both hubs have ample experience in working with fragile manuscript items, ensuring that no project items are damaged during the digitization process. Their expertise further enables them to provide guidance on item handling to the handful of project partners who have the equipment and capacity to digitize their project items so that those images conform to the project's technical specifications. By modeling a hub-and-spokes approach to digitization, we can provide the scaffolding needed to grow our regional network while increasing access to these collections across the vast Midwest.

Although some descriptive metadata already exists for roughly 540 items to be included in the project, much material remains un- or under-described and, thus, the description of these items for the purpose of discoverability will be a key outcome of this project. This work is crucial for partnering institutions, as it provides them with detailed information about their holdings, greatly enhancing teaching, research, and outreach opportunities around local collections. Since partner-reported holdings in this phase more than double our item count in our first round, we are expanding our description team so that we can continue to create detailed descriptive records for all project items. Scholars at Ohio State University and the U of Iowa and an expanded description team at IU Bloomington will join Drs Hebbard and Noonan to complete this description work. Once uploaded to our project's repository, these new and enhanced descriptions will also allow for larger-scale discoverability, beyond the traffic that any individual institutional digital repository might reasonably expect, especially for collections that have not previously been reported as holders of pre-1600 materials.

The diversity of genres and linguistic traditions represented within the repository will attract the interest of a wide range of audiences. Increased awareness of the existence of these materials will encourage instructors across the Midwest to incorporate local collections into their courses, while religious communities will gain access to artifacts of historical and theological significance, as many project items once served as aids to religious practice and understanding, and some were brought to America for that purpose. Antiphoners and breviaries digitized in this project can be aggregated with existing collections inventoried in *Cantus: A Database for Latin Ecclesiastical Chant* to the benefit of musicologists, liturgiologists, and modern performers of medieval religious song. And, to highlight a particular benefit of our project's regional focus, many individual leaves held by partner collections derive from books broken during the twentieth century and sold by the controversial Cleveland-based art historian and book-breaker Otto Ege (d. 1951) and his near contemporaries. Partner institutions, as a result, regularly hold leaves taken from the same, original manuscripts. Our data model and our digital repository allow us to make these connections explicit and visible, reuniting long dismembered manuscripts in the virtual space of our project. Digitization will permit these broken books to be reassembled virtually, via platforms such as Fragmentarium (an international platform for pre-1600 manuscript fragments), generating knowledge unavailable from any of the fragments apprehended *singulatim*.

Medieval manuscripts made their way to North America through a variety of means: carried over by families and religious communities in the eighteenth and nineteenth centuries, sold as art objects to

private collectors, and circulated (sometimes in fragmentary form) as teaching tools in the twentieth century, to name a few. While many of these items have been consolidated within larger research libraries, numerous items remain scattered across North America, in a range of institutional contexts. By building community among manuscript holding institutions in the Midwest, this project offers a consortial model for special collections discoverability and information and resource sharing, and provides a digital platform that brings together the geographically disparate collections in this region so that they can be studied more comprehensively and their records can be incorporated into current finding aids for medieval manuscripts. As a result of this collaboration, Peripheral Manuscripts partner items have the power to reshape our understanding of written cultural heritage pre-1600, while item provenances, institutional collection histories, and shedding light on the number of previously unreported items and holding institutions will enable new histories of collection building in the Midwest in service of a fuller understanding of manuscript history in North America more broadly.

HISTORY & SCOPE

The Peripheral Manuscripts Project began to take shape in 2017, with outreach to 282 institutions in nine states. This outreach effort was guided by Melissa Conway and Lisa Fagin Davis's *Directory of Collections*, which hinted at the depth of Midwestern holdings, with art museums and seminaries, public libraries and private collectors holding one codex here, multiple fragments there. In late 2018, the team formed with Elizabeth Hebbard (Indiana University) serving as the PI, and Ian Cornelius (Loyola University Chicago), Sarah Noonan (Saint Mary's College), and Michelle Dalmau (Indiana University) serving as Co-PIs. Indiana University Bloomington agreed to serve as the digitization hub for this project. By early 2019, multiple institutions had expressed interest in collaborating on this initiative, and the project team began to seek funding.

From this earliest moment, our project team recognized that, to increase the discoverability of and access to the numerous, pre-1600 manuscript items housed in Midwestern collections, we needed to design the project so that institutions, regardless of their size, staffing logistics, or financial capacity, could participate. Collaboration quickly became a core value of our project's mission and central to our project planning. By bringing together multiple institutions within our geographical area to share skills, knowledge, and resources, we set out to create a digital repository that would advance the study of items held across our partner's institutions in a way that separate, siloed repositories never could. We gained inspiration for our project's design from the *Bibliotheca Philadelphiensis* project, also known as BiblioPhilly, that brought together fifteen institutions in the Philadelphia area to create an open-access, digital repository that offered a centralized interface through which all their items could be accessed. Our project sought to embrace the open-access model of BiblioPhilly, even as we had to adapt their collaborative model to account for our larger group of partnering institutions and to acknowledge our project's substantially wider geographical area.

The Peripheral Manuscripts formally launched in June 2020, thanks to the support of a Digitizing Hidden Collections grant (\$286,436.10) through the Council on Library and Information Resources (CLIR). Working with an initial group of twenty-two partnering institutions, our project team set out to digitize and create descriptions for 473 pre-1600 manuscript items written in Roman scripts that partners reported holding in their collections during the spring of 2020. Our first round project partners were: Indiana University Bloomington (lead institution), St. Mary's College, Loyola University Chicago, Berea College, The College of Wooster, DePauw University, Illinois Wesleyan University, Earlham College, Northern Illinois University, University of Saint Mary of the Lake, The Southern Baptist Theological Seminary, Saint Olaf College, Knox College, and Saint Meinrad Seminary and School of Theology, Goshen College, Marquette University, Bowling Green State University, Ohio Wesleyan University, University of Dayton, Xavier University, Truman State University and the Muskegon Museum of Art.

After initial meetings with partners and site visits by the project team to review partner collections, an additional 904 pre-1600 manuscript items were identified that fell within the scope of the project. Our original project plan and budget projections could not support the incorporation of all these items into our project's work plan, but we were able to reallocate funds and to secure additional funds in order to digitize 190 of those additional items (for a project total of 663). Three partners chose to digitize their items in house, with the guidance of the project's digitization team; the other nineteen collections were imaged by the digitization team at IU Bloomington. Due to initial Covid-related delays that pushed back our timeline in 2020 and 2021, CLIR provided our project with an 18-month, no-cost extension. Our first-round digital repository will therefore launch in November of 2024 and will provide IIIF-compatible, open-access images and descriptions of items held in the collections of our first-round partners. As described in our first-round MOU (see Attachment 8: Document Item 3), IU Bloomington has committed to hosting and serving project content via this digital repository for ten years, at a minimum.

Over the past four years, the Peripheral Manuscript Project has also received additional forms of support from collaborators and institutions that have advanced our initiative significantly. In the fall of 2020, Dot Porter, a Co-PI of the BiblioPhilly Project, shared the project's data taxonomy and workflow processes with us. While we adapted their data taxonomy to fit the needs of our project items, beginning from this foundation was enormously valuable and will ensure that our project outputs are interoperable with BiblioPhilly's own repository and with other ongoing initiatives, such as the cataloging efforts of the Digital Scriptorium 2.0 working group. In January 2021, as project item numbers grew, we partnered with the Online Cultural and Historical Research Environment (OCHRE) Data Service, based out of the University of Chicago, to manage the project's now substantially larger number of items and their descriptions. OCHRE's database system allows us to associate our metadata entries with other datasets found on the Semantic Web and facilitates the association of items across the database, which is crucial for a project like ours where multiple partners hold leaves taken from the same original manuscript books. A \$5,000 internal grant from Loyola University Chicago and a \$3,000 Grant-in-Aid from Indiana University Bloomington enabled us to fund our partnership with OCHRE, as the use of this database was not originally budgeted in our CLIR proposal. And finally, to help us complete capture and descriptions for these additional 190 round-one project items, and to cover significantly increased post-pandemic pricing for courier service to deliver and return the final partner collections being digitized, our project also received an internal grant of \$38,207 from Indiana University's Office of Research Development in February of 2024.

As this summary of our project's history to-date demonstrates, we are well prepared to expand our initiative into its second round. Our project's workflows (site visit procedures, digitization guidelines, MOU processing, and descriptive plan), data taxonomy and descriptive standards have all been tested and refined (see examples in Attachment 8), and our documentation (metadata guide, stylesheet, and digitization guide) is available on the project's Github repository. The back-end development of the digital project repository has been ongoing since early 2023 and will be completed by the end of summer 2024 so that the project is ready to be launched publicly by Indiana University Bloomington in November 2024. Because significant components of the project's structure exist already, we can make efficient use of a three-year NEH implementation grant to digitize, describe, and make discoverable the substantially larger amount of manuscript material held by our round two partners.

Our newly formed Advisory Board will play a crucial role in our project's transition between its first round and its second round of funding. In 2025, Board members will be introduced to the project protocols and structures, and provide feedback on ways we can improve our approaches to partnerships, digitization, description and discovery. Board members will also help with communication and community building among past and current project partners as well as outreach to potential future partners in order to help the project team identify resources or support that would benefit regional collections of all kinds that are found in varied institutional contexts. In addition to project assessment

and outreach, Board members will provide oversight and feedback as part of quarterly and annual reports to partners to the NEH.

Project-Curated Content and Social Media

Project website: <https://peripheralmss.org/>

Twitter Handle: @peripheralmss

Github site (public-facing project documentation): <https://github.com/midwest-manuscripts/peripheralmss>

Note: the project's repository will launch in November 2024 through IU Bloomington's Digital Collection Services at a different URL.

Project Publications, through July 2024

1. Sarah Noonan, Elizabeth K. Hebbard, Michelle Dalmau, and Ian Cornelius, "Regional Collaboration and the Peripheral Manuscripts Project," *Journal of the Early Book Society* 26 (2023): 195-208
2. Ian Cornelius and Kathy Young, "Medieval Manuscripts at Loyola University Chicago," *Manuscript Studies* 8.2 (2023), DOI: <https://doi.org/10.1353/mns.2023.a916138>
3. Elizabeth K. Hebbard, "The Peripheral Manuscripts Project: Must-Sees in the Midwest," *Manuscript Studies* 8.2 (2023), DOI: <https://doi.org/10.1353/mns.2023.a916133>
4. Sarah Noonan and Anne Ryckbost, "The Manuscript Fragments of Xavier University," *Manuscript Studies* 8.2 (2023) DOI: <https://doi.org/10.1353/mns.2023.a916139>
5. See also contributions to *Manuscript Studies* 8.2 that explore PMSS partner collections, including those by Henry Handley (DOI: <https://doi.org/10.1353/mns.2023.a916136>) and Kara Ann Morrow (DOI: <https://doi.org/10.1353/mns.2023.a916142>)
6. Elizabeth K. Hebbard, "Ege in Muskegon: Broken Books in the Peripheral Manuscripts Project," *Digital Philology* 13/1 (2024) (DOI: <https://doi.org/10.1353/dph.2024.a926885>)

METHODS & ACTIVITIES

The project will be completed over three years (July 1, 2025-June 30, 2028), beginning with an all-partner virtual meeting in July 2025 in which partners will meet one another and present their institutions and the collections that they are contributing. This meeting will allow us to share and collect information about project deadlines and procedures with all partners and to answer questions and address concerns that any partner institutions may have. We will use this meeting to 1) gather feedback about the draft MOU that all partners will sign, 2) identify partner preferences for the timing of site visits and their collection's digitization timeframe, 3) talk through digitization workflows, image and description delivery systems, and project metadata schemes and standards, 4) ask partners to identify any existing institutional records about items (donor records, appraisals, bib files, vertical files, and similar) for scanning, and 5) provide ample time for general discussion and community building.

At the conclusion of the all-partner meeting, PIs Noonan and Hebbard will begin scheduling site visits to each partner institution, to be completed between late July 2025 and February 2026. The site visits are crucial for strengthening relationships with collaborators; assessing all proposed materials in order to note any concerns they pose for transport or digitization; recording item measurements and incipits for transport manifests when items are sent for digitization; scanning institutional records regarding items or collections; and finalizing details for each collection's participation timeline. Site visits are also opportunities for assessing additional in-scope holdings that partners have identified since the all-partner meeting. At the conclusion of the site visit, the PI and partner collaborator will agree on a final list of items for inclusion in the project. After hosting a PI site visit, a partner collection can proceed with routing and signing an MOU and planning item deliveries. Our draft MOU, which will be vetted and adjusted as needed for each partner institution, outlines insurance coverage for items in transit, provides a

care agreement describing the intake procedures for item delivery to digitization hubs as well as handling and storage of items while they are on site at the digitization hub for capture, identifies the timeframe for digitization (a maximum of six months' time), and describes the mechanisms and procedures for image delivery to partners as well as to the project repository in IU Libraries Digital Collection Services and the term of hosting (10 years).

Seven partners have proposed to do in-house digitization, as they have the capacity to complete their own digitization according to project specifications without requesting additional grant funding. These partners desire to contribute images of their collections to this regional collaboration in order to increase the accessibility and discoverability of their manuscript holdings. The description team will still enrich or create metadata records for these items, as a part of our grant activities. The other sixteen partner collections will be digitized at one of two digitization hubs: Indiana University Libraries or the University of Iowa Libraries. The collections have been divided geographically to facilitate delivery and return of items. For a list of where partner items will be digitized, see Attachment 8: Document Item 1.

Digitization hubs will complete a careful item intake on delivery of a collection for capture, matching each item against the manifest and taking condition photos of each item that are provided to partners. Digitization hubs will additionally record technical metadata for each item including the mode of capture for each item, color profile, and additional information per our Digitization Processing and Quality Control Procedures. Regardless of where a given project item is digitized, all item images will undergo visual quality control (QC) by their respective digitization team. Images will then be transferred to a server managed by Indiana University Libraries for automatic quality control that ensures that all files are well-formed TIFFs with the expected file naming, resolution, compression, color embedding, and uniqueness to avoid overwriting existing files. Once all items have passed auto QC successfully, they are then routed to the subject expert Co-PIs, who complete a final round of visual QC within one week, to identify issues affecting legibility or consistency that would require re-capture. Archive quality digital images will be returned to partners on an external drive during the return of physical items. Item return procedures provide time for partners to review each item against the intake condition photos, and to check items against the manifest.

Measurements, collations (descriptions of physical book structure), and incipits (the first words of each item, used for identification purposes) are recorded by PIs during site visits in order to create item records ("initial pass" descriptions) to facilitate description at a later date, and to record basic metadata for items too fragile for transport or capture, in order that these might still be included in project documentation and reported to pre-1600 manuscript census efforts. Once items are digitized, images are shared via an IUB server with description team members (PIs Hebbard and Noonan, relevant description consultants, Drs. Ensley, Johnson, and Sela, and graduate student description assistants). The project team will continue to use the Online Cultural Heritage Research Environment (OCHRE) to record item descriptions. OCHRE is a fully customizable database system with password-protected user accounts and robust data backup as well as exemplary expert support. The project team has a vetted taxonomy already in place, as well as pre-set record templates of expected metadata fields according to item type. OCHRE allows for individual metadata fields to be controlled in various ways (drop-down lists, formatting, etc.) and allows us to link certain fields to the semantic web for reference to relevant specialized thesauri (eg. the Virtual International Authority File and ISO 639 language codes). Finally, OCHRE allows us to clearly signal relationships between project items in a variety of ways to facilitate further research by identifying fragments from the same original codex and by highlighting other shared item provenance, such as the large numbers of fragments that passed through the hands of Cleveland-based book-breaker Otto Ege.

Our description practices reflect description team members' different areas of expertise, but conform to national standards and best practices regarding the use of established terminology. We have also documented our descriptive taxonomy, metadata fields, OCHRE procedures, and controlled language in a

Peripheral Manuscripts Metadata Guide and accompanying Style Guide for the purposes of clarifying our standards and ensuring consistency across records (see Attachment 8: Document Items 5 & 6). All item descriptions will go through at least two rounds of editorial review by Description Team members; graduate student description assistants will contribute to the initial phase of record creation for project items, but will not contribute to editorial review. After records have been reviewed by senior description team members, they will be provided to partner institutions for additional comments before being finalized. IU Libraries' Digital Collection Services digital library repository uses International Image Interoperability Framework (IIIF) standards, allowing the project team to share item records for integration with other digital infrastructures. After publishing items to the repository, the project team will contribute our project data to existing content aggregators such as Digital Scriptorium (a national pre-1600 manuscript union cataloging effort), Fragmentarium, and Cantus in order to maximize the discoverability of partner items and collections.

The project proposes no known intellectual property, privacy, or cultural concerns. All of the manuscript items to be digitized and described during this project are out of copyright, and there are no known embargoes or restrictions. None of the manuscript material to be digitized as part of the project is known to include culturally-sensitive material that would necessitate restricted access. These conditions allow the project team, with partner consent that is outlined in the MOU each partner will sign before digitization, to feature all project items in our open-access digital library repository. In the first phase of the project, we had a partner at a private religious institution whose administering body was concerned about the way that items and images in the repository could be used or reused in ways inconsistent with their institutional values and priorities. Ultimately, we were able to assuage this partner's concerns and proceed with their planned contributions. Where sensitive information such as purchase price or donor agreements have been recorded in historical metadata, we protect such information in our internal records and do not share it without partner consent.

The PIs at Indiana University (Dalmau and Hebbard) are responsible for budget oversight (Dalmau) and project team administration (Hebbard), for executing MOUs (Dalmau), and for arranging all project travel (PI site visits, partner item delivery and return trips) and reimbursements (equipment, mileage and per diem for travel). PI Noonan is responsible for communications with partners and PI visual QC of all images. The digitization team at IU (Dalmau, Pulliam and Smallwood) are responsible for auto QC of all images, preservation storage for all images, for the delivery of images to partners, and the deposit of completed item descriptions and images into the digital library repository. Digitization Teams at partner locations proposing in-house capture or at digitization hubs (IU and U Iowa) are responsible for capture and initial visual QC, and for documentation of all digitization efforts, equipment, and specs. Our collaborating digitization hub, the University of Iowa, is responsible for coordinating all aspects of the imaging process—including delivery and pickup of items—with partner institutions whose items they will digitize. Partner institutions are responsible for participating in the all-partner meeting in summer 2025, hosting a PI for a site visit, providing any existing metadata records for project items, identifying institutional representatives to sign the partner MOU, working with the Project Team to identify a 6-month window of time for item digitization, and assisting with the coordination of item transport to and from the digitization hub.

ADDITIONAL CONSIDERATIONS FOR IMPLEMENTATION PROJECTS: COLLECTIONS

Partner collections are held in a range of institution-specific conditions. While some second-round partners report that their holdings are almost fully cataloged (such as Loras College), many others report that their items are uncataloged or have descriptive records that are minimal or of doubtful accuracy. Round two partners estimate that about 40 codices and around 500 fragments and documents have relatively complete, pre-existing descriptions; these item descriptions would be reviewed by the description team and migrated into our project's OCHRE database, ensuring that they conform to project

metadata guidelines. The remaining 902 items will require the description team either to enhance partial descriptions or to generate new item descriptions.

Based on our experience in our project's first round, we anticipate that project items will have received different levels of conservation, depending on the institutional contexts in which they reside. Some books will have broken spines, some leaves will be kept in mylar sleeves, while others will be stored in frames or mounted in other kinds of housings. Project team members will review the condition of each item during site visits and discuss with partners any condition issues that might interfere with item transport or digitization. At that time, items that are too delicate for travel or imaging will be excluded from the project. We will also confirm with partners that our digitization teams will not remove items from frames or other housing in which they are secured; instead, digitization specialists will image the items in the housings in which they are transported to IU or to the University of Iowa. Items will be carefully inspected prior to digitization, determining the best approach to image capture to ensure a quality image that prevents damage and minimizes handling.

While the Indiana University Libraries do not employ the Creative Commons Licensing structure, unrestricted use and sharing of metadata with aggregators, scholars, etc. in the CC0 vein is a long-standing tradition at IU. All metadata and digital surrogates are available for re-use via the IIIF standard and functionality and PDF and JP2 download options are available via the digital library repository platform. Batch downloads can be made available to students, researchers or the public upon request. No efforts will be made to restrict access to or limit reuse of digital copies or associated metadata created during the course of the project.

As a participant in the Indiana Memory Digital Public Library of America (DPLA) Hub, the IU Libraries is a regular contributor to the DPLA. As is required by the DPLA, we will assign the following rights statements for sharing and re-use: No Copyright - United States (<https://rightsstatements.org/page/NoC-US/1.0/>). We have employed the following rights statement for our project's first round and will continue to use it in our second round as well:

The materials that are part of *Peripheral Manuscripts: Digitizing Medieval Manuscript Collections in the Midwest* are in the public domain worldwide. If you use or reproduce these materials in any format, we ask that the project be cited as the source of the material with the credit line:

Title of the Manuscript, [Link to Persistent URL], Courtesy of the Peripheral Manuscripts: Digitizing Medieval Manuscript Collections in the Midwest.

Our dedication to ensuring open access to the images and metadata produced during this grant period is also evident in our intent that our digital library repository, hosted at IU Bloomington, be IIIF-compatible. As a part of IIIF-compatibility, we must clearly identify the holders of all digitized materials in the source code. To ensure IIIF-compatibility, we will follow the best practices, as established by IIIF Consortium, regarding Presentation API, which will ensure that all rights and licensing guidelines are accessible to the user through image manifests for each digitized manuscript in our project repository.

This project aggregates images of materials held among twenty-three institutions, and we recognize that we must be attuned to the needs of our partners as regards to reusing and adapting materials produced during this project to their own institutional contexts. By ensuring all digital copies and associated metadata are openly accessible, our partner institutions will be able to craft future digital exhibits for their communities using these materials in the same spirit of open access. This ability meets a significant need of many of our institutional partners that otherwise would not independently have the capacity to produce high-quality images or to produce specialized and detailed descriptive metadata.

Indiana University has been a pioneer in the field of digital libraries, in the development and utilization of open-source software, and an early adopter of repository systems such as Fedora. As part of this project, the IU Libraries have offered the partners hosting on Digital Collections, which is a newly developed digital library repository at Indiana University. Digital Collections (DC) functions as a central gateway for preserving and making discoverable image-based collections held at Indiana University and partner institutions. DC provides standards-based cataloging tools (i.e., enhanced descriptive metadata) and workflows (i.e., automatic extraction of MARC metadata through OCLC or local title control numbers) and submission workflows (i.e., ordering pages, creating hierarchical structures, custom labeling, etc.) for optimal curation of paged materials. DC lets collection managers edit and publish digital items in the administrative interface, allowing for ongoing submission and cataloging/structuring of content and the ability to make items available to the public when ready. Viewers of Digital Collections interact with high quality, zoomable images following protocols developed by the International Image Interoperability Framework (IIIF). The objects – images and metadata – are stored in our Scholarly Data Archive (SDA), which is our digital preservation environment, and can be accessed from our Digital Collections web portal: <https://digitalcollections.iu.edu>. As part of IU Libraries' ongoing commitment to our content, our content contributors, and to these services, the IU Libraries has and will continue to invest resources in maintaining and improving services that support the Digital Collections repository for the foreseeable future.

ADDITIONAL TECHNICAL CONSIDERATIONS FOR ALL PROJECTS

Digitization: Capture and Quality Control

All digital image files generated by this project must adhere to format-specific archival practices dictated by “Technical Guidelines for Digitizing Cultural Heritage Materials”

(<https://www.digitizationguidelines.gov/guidelines/digitize-technical.html>). With respect to capture, at the University of Iowa, digital files will be created with Phase One 100-pixel iXG cultural heritage cameras mounted on either a Digital Transitions Element or Atom stand. All objects are supported by book cradles created by the UI Libraries’ Conservation & Collections Care department. Cradles are designed to support each volume’s unique needs, including those with tight bindings. These camera stations are lit using Digital Transitions Photon LED lights. At IU Bloomington digital files will be created either via a Bookeye 4 overhead scanner or a Hasselblad H1 digital camera using studio setup with copy stand, depending on the condition and characteristics of the materials. High-end flatbed scanners (Epson Expression 12000XL & 13000XL) will be used to capture size-appropriate fragments and spines and edges of codices. When using the Bookeye 4 or Epson scanners, color images will be scanned at 24-bit color at 600 dpi with embedded Adobe1998RGB color profile. The inclusion of the color profile helps ensure that the image will reproduce as accurately as possible. All digital archival files are scanned at 100% of the original size and saved as uncompressed TIFF files. Color adjustment, when necessary, is done prior to scanning to ensure accurate representation of the original item. The Bookeye will be used for materials that are within size (18” x 24”) and do not require special lighting for optimal capture. For codices with tight binding, the Bookeye comes with a v-shaped cradle that accommodates openings between 120 to 180 degrees. The Bookeye also ensures a touch-free digitization process for materials that do not want to lay open. A top glass plate that is self-suspending keeps materials open without undue weight or pressure on the items.

Materials that are candidates for photography include oversize items or manuscripts that contain metallic illumination that will not capture accurately with a fixed position lightsource. The Hasselblad H1 camera is capable of capturing up to 7246 x 5444 pixels, which is well within archival expectations. Mobile lighting is necessary to reduce glare and shadow on items. Variable lighting allows for adjusting the light angle that falls on the object to reduce reflections, shadows, or other problems that can occur. LED lighting is a cool source light that will not heat up and have possible damaging effects on items like traditional quartz halogen or incandescent bulbs. Filters with studio lighting are a common accessory to correct color temperature, evenness, and overall light balance for accurate capture.

All digital archival files must pass a three-step quality assurance procedure. The first step is an automatic quality control (QC) process that ensures valid and well-formed files. A set of computer programs systematically examines the embedded TIFF tag of every digital file to verify that all files are named according to convention, that they are uncompressed TIFF files, that each file has an embedded color profile appropriate to its bit depth, and that all images were scanned at the appropriate resolution. Files that fail automatic QC, will generate a detailed report to aid in correction. Once the files pass the automatic quality control checks, all of the files are manually examined to ensure accurate visual quality. Each file selected is examined at 100% (1:1) magnification to ensure that the image orientation is correct, that the color balance matches the original items as closely as possible, that it is a sharp, in-focus scan, and that no digital artifacts of scanning are visually present. To aid in the manual quality control process, the physical item is compared with the digital item with attention to color fidelity. If any inconsistencies are found in either the automatic or manual quality assurance checks, the item in question is rescanned until it is acceptable.

Once items pass these two levels of QC, the digitization team uploads the TIFF images to a temporary shared storage location for Project PIs to access for another round of quality review. The Project PIs are subject experts leading the manuscript description process. As part of this work, they may examine the digital surrogates differently than the digitization team. To make sure manuscripts are captured in ways that also support description work and future research, the Project PIs will complete their own review of the digital surrogates. Rescans will need to be re-uploaded to the shared storage location for a final round of automatic quality checks before IU stores files in their digital preservation environment, known as the Scholarly Data Archive (SDA, <http://kb.iu.edu/data/aiyi.html>), an IU data center distributed storage service providing IU researchers with large-scale archival or near-line data storage. Once TIFF files pass all three levels of QC, and metadata is completed per item, they will can be submitted to Digital Collections, which will generate thumbnails, JPEG2000 files following the J2K Codec specifications (minimum 400 dpi/4,000 long-side) and a PDF of each manuscript.

Digital Files to be Created:

- 45,025 TIFFs (Archival Materials)
- 45,025 JPEG thumbnails (Web delivery)
- 45,025 JPEG2000s (Web delivery)
- 45,025 PDFs (Download)

Technical and administrative metadata information will be recorded at scan/capture time following an inventory created by the partners and the PIs as part of their site visits.

Digital Collections Digital Library Repository: Access, Curation, and Preservation

Currently, Digital Collections contains over 396 collections, comprising 135,396 digital objects/records, and growing by the week as IU Libraries continue to migrate legacy digital image collections as well as launch new collections. Digital Collections is based on a suite of tools created by or affiliated with the open-source Samvera community (<https://samvera.org/>), of which Indiana University is a leading, contributing member. Samvera is an open-source, community-supported repository framework that supports institutions to deploy robust and durable systems for fully featured digital asset management applications following digital library best practices. Digital Collections' primary, open-source technical stack consists of Hyrax for the curation and discovery layer, and Fedora as the data management component. The application also relies on Blacklight for faceted discovery, and IIIF functionality, including a viewer for delivery of high quality, zoomable images. The full record view provides structural metadata in the form of a table of contents, descriptive metadata including a persistent URL for citing, different views (thumbnails only or two-page layout), and PDF and JPEG2000 downloads of the images.

Digital Collections provides administrative tools for collection managers to curate digital collections by adding/editing descriptive metadata, and uploading, structuring and labeling images either via batch workflows or item-at-time. The metadata framework relies on a Hyrax gem known as AllinsonFlex (https://github.com/samvera-labs/allinson_flex), a flexible metadata model commissioned by IU Libraries that allows for robust description based on library best practices. In addition to the ability to model metadata per collection with 30+ available fields, Digital Collections is also able to retrieve MARC metadata (via Z39.50 protocol) from the IU Libraries online catalog, IUCAT. The metadata model for the project has been refined in the project's first round and has been mapped to Digital Collections' metadata capabilities; we will continue to refine how Digital Collections displays project metadata, as the capacity of this repository develops.

As a memory institution, IU understands the importance of stewarding content into the future. For IU-owned content, IU is committed to steward the content created through this grant in the long-term. For non-IU owned content, project staff will work closely with partner institutions to package digital archival image files and complete metadata for each of the partner institutions in ways that meet standard respective digital preservation and delivery needs. The MOU outlines our commitment to access and preservation with a stipulation to revisit access and preservation needs with each partner institution ten years from the start of the grant.

While our repository is not currently certified as a trustworthy digital repository, we adhere as much as possible to the recommendations in the 2011 report, "Audit and Certification of Trustworthy Digital Repositories" (CCSDS, <https://public.ccsds.org/pubs/652x0m1.pdf>). We employ several mechanisms suggested by the checklist like checksums, manifest files, and other checks for integrity file conformance. Our main digital preservation environment, IU's Scholarly Data Archive (SDA), is a tape-storage solution which supports automated mirroring of content in IU's Bloomington and Indianapolis data centers with two copies stored in each location. IU Libraries abide by their Digital Preservation Policy (<https://libraries.indiana.edu/digital-preservation-policy>) with ongoing review of procedures and processes, especially in light of establishing an enterprise-wide digital preservation service model. Currently, a team in IU Libraries, led by Digital Preservation Librarian, Danielle Spalenka, is testing several enterprise-level digital preservation solutions including products by LibSafe and Preservica as part of Indiana University's commitment to robust digital preservation strategies. In addition to our local commitments to preservation, IU is a member of the Association of Research Libraries, Digital Library Federation, Digital Preservation Coalition, Academic Preservation Trust, National Digital Stewardship Alliance, and together with the University of Michigan is co-host for the HathiTrust Digital Library.

OUTCOMES & SUSTAINABILITY

Project deliverables will include 45,025 TIFF digital archival files, JPEG thumbnail files, JPEG2000 interactive files, and PDF files for download created through the digitization (pending any changes to proposed items made during site visits) for 1,442 items (99 codices, 957 individual leaves, 257 documents, 1 roll, and 128 binding fragments). The project team will review and enhance (as necessary), the preexisting 540 descriptions provided by partner institutions and adapt those to our project's taxonomy; we will also enhance or create robust item-level descriptions for the remaining 902 project items. All images and accompanying metadata will be IIIF-compliant, publicly accessible, and discoverable through the open-access digital library repository, Indiana University Libraries Digital Collections, by June 2028. Long-term access to these project deliverables will be ensured by an initial, renewable ten-year hosting agreement formalized in the MOU each partner institution will sign with Indiana University, in which IU Libraries guarantee the maintenance of project results, their storage on IU servers, and their access via IU Digital Collections for the period of agreement. Images and descriptions will also be aggregated, when possible, to existing large-scale digital infrastructure, such as Digital Scriptorium and Fragmentarium to maximize the discoverability of partner items and collections. Finally, project images and descriptions will be shared with partner institutions via output options within our

description database, OCHRE, likely in CSV format to ensure the most compatibility with our partners' existing cataloging and discovery systems.

OUTREACH

In addition to data sharing with other ongoing projects like Digital Scriptorium, Fragmentarium, and Cantus, we will also include the project's repository in the Medieval Digital Resources Database (<https://mdr-maa.org/>) by the end of 2025, and we will continue to update project documentation on our project GitHub account periodically throughout the grant period. Just as the BiblioPhilly project served as inspiration for our work, we hope that our project will serve as a model for other, geographically-focused projects that bring together institutions of all sizes and financial capacities to work towards the common goal of preserving and making accessible these unique items that can provide insight into the history and intellectual tradition of the Middle Ages, while also revealing the deep histories of manuscript ownership and circulation within North America during the past three hundred years. We have already been approached by others who are interested in following our project's model of allying smaller institutions with a centralized digitization hub to enable imaging to take place in a consistent, financially feasible way. We will continue to support these initiatives as they develop. Based on the results of our regional outreach so far, our team estimates that, at a minimum, as many as 87.5% more pre-1600 items (55,125) exist within North American collections beyond the current estimate of 63,000. Multiple regional teams will therefore be needed to provide a thorough accounting of these items, particularly those held in less well-resourced institutions; conducting outreach to potential future partners and supporting similar regionally-focused initiatives is thus at the heart of our project's work.

We further intend to share ongoing project results with broader academic audiences through regular publications and presentations. Our project's first round has yielded six publications written by project PIs or by project partners. As more items are added to the Peripheral Manuscripts digital library repository in this second round, and as more institutional partners join the Peripheral Manuscripts network, we anticipate that publications generated through project work will continue at this pace, or above it, as we seek to advance the study of pre-1600 manuscript items held in partner collections. In our first round, project PIs have also given fifteen presentations on the project's ongoing work. Digital Scriptorium has invited us to present twice at their annual fall meeting (in 2020 and in 2024, forthcoming), and the Lawrence J. Schoenberg Symposium on Manuscript Studies in the Digital Age has invited us to present on the culmination of our first-round work in November 2024. In our project's second round, we will continue to present widely on our work in order to inform new audiences of our repository's contents and scope, and to spur additional regional manuscript census efforts.

We are not requesting funding to support this event through the present NEH grant, but to mark the end of our project's first round and the beginning of the second round, we are also planning to organize a symposium at IU Bloomington for the fall of 2025 that draws attention to the manuscript holdings found in smaller collections, particularly in the Midwest, and reflects on the state of manuscript research in North America. We would use this event to continue to build community among past and current project partners, raise awareness of this project's work, broadly, and provide partners with an opportunity to present on their research into their institution's holdings or on any early outcomes that will have emerged from the current proposal.

In addition to these formal outreach mechanisms, the project will also maintain an active web and social media presence to document our project's major accomplishments and ongoing work. For this reason, we are currently migrating our project's digital presence away from Twitter to BlueSky. As part of their contributions, project affiliated graduate students at IU Bloomington will help to maintain social media accounts and draft blog posts highlighting round two partner collections and items.

PROJECT TEAM

Project Directors:

- **PI, Elizabeth K Hebbard**, Assistant Professor of French and Francophone Studies, Affiliate Faculty in Musicology (Indiana University Jacobs School of Music) and Renaissance Studies, and Co-Director with Patricia Ingham of the grant-funded Book Lab at Indiana University. A specialist of the literature and culture of medieval France (in French and Occitan), and a paleographer and codicologist with a particular focus on manuscript fragments, library history, and medieval book production, Hebbard was the Primary Principal Investigator of the first phase of the Peripheral Manuscripts Project (*The Peripheral Manuscripts Project: Digitizing Medieval Manuscripts in the Midwest*, 2020-2024, funded by a Council on Library and Information Resources Hidden Collections grant). Since 2024, she teaches the Newberry Library Summer Institute in French Paleography, and has written and published on medieval vernacular song, early-twentieth century dismemberment of manuscripts, *in situ* binding fragments, and manuscripts as cultural heritage war spoils. Hebbard will be head project administrator. She will arrange all project travel (PI site visits, partner item delivery and return trips) and reimbursements (mileage and per diem). She is, along with Noonan, co-lead of the Description Team. Hebbard is also the project liaison to OCHRE. Estimated time contribution: 984 hours, with 480 additional hours voluntarily contributed, across all three years.
- **Co-PI, Michelle Dalmau**, Associate Librarian and Head of Digital Collections Services (DCS) at the Indiana University Libraries. Michelle manages and coordinates digital library services for the Libraries and affiliated cultural heritage organizations across all IU campuses. Michelle's portfolio includes the IU Bloomington Libraries' primary digitization lab, dedicated to converting special collections; repository services in support of preservation of and access to special collections, such as Image Collections Online and Archives Online; and digital preservation services to ensure ongoing access and stewardship of the digital content which IU Libraries has a mandate to preserve. Michelle's research areas range from the creation of scholarly editions to organizational trends and practices around digital scholarship. Dalmau is the digitization team lead and, as such, is responsible for coordinating the digitization teams at Indiana University and the University of Iowa, for overseeing development of the IU Libraries Digital Collections repository, and for the delivery of item images and metadata records to that repository. She is also responsible for overseeing the project budget and budget reports, for ordering project supplies for the digitization team and for partner institutions, and she works with PD/PI Hebbard to coordinate partner item delivery and pickup. Finally, Ms. Dalmau coordinates with IU Counsel and partner institutions in ensuring the timely execution of partner MOUs. Estimated time contribution: 310 hours voluntarily contributed, across all three years.
- **Co-PI Sarah Noonan**, Associate Professor and Chair of English, and Program Coordinator of the Digital and Public Humanities Program, Saint Mary's College, Notre Dame, IN. She specializes in medieval English literature and manuscript studies and was the founding principal investigator and Co-PI of the first phase of the Peripheral Manuscripts Project, 2020-2024, funded by CLIR. She has published on North American manuscript holdings, medieval reading practices, early devotional literature, book history, the history of the English language, and pedagogy. Noonan is co-lead of the description team and manages communication with project partners and within the project team. She also assures the PI visual quality control of digitized items. Estimated time contribution: 600 hours, with 480 additional hours voluntarily contributed, across all three years.

Digitization Team:

- **Kara Pulliam**, Indiana University Libraries, Director of Digitization Services. With over 25 years of digitization experience, Pulliam will be responsible for automated quality control of all project images; image delivery to partners; and the coordination of project documentation regarding digitization specifications and equipment. Estimated time contribution: 310 hours voluntarily contributed, across all three years.

- **Caitlyn Smallwood**, Indiana University Libraries, Digital Imaging Specialist. With over a decade of digitization experience, Smallwood will be responsible for the capture of items coming to the IU digitization hub and for their secure storage while on site in Bloomington. Estimated time contribution: 710 hours total, across all three years.
- **Digital Media Specialist**, Indiana University Libraries [Under Hire]. The Digital Media Specialist will be responsible for the capture of items coming to the IU digitization hub and for their secure storage while on site in Bloomington. Estimated time contribution: 710 hours total, across all three years.
- **Bethany Davis**, MSLS, University of Iowa, Digital Processing Coordinator Librarian. With over a decade of experience in digitization practices, Bethany will oversee the quality control of all images produced in the University of Iowa Libraries' digitization studio as part of the process. She will also ensure the safe storage of all early materials as part of the project. Estimated time contribution: 160 hours total, across all three years.
- **Heidi Parker**, MSLS, University of Iowa, Digital Projects Librarian. Having worked in the digitization studio at UIowa for over two years, Heidi will oversee the scanning and post-processing of all images made as part of the project. Estimated time contribution: 600 hours total, across all three years.
- **Elizabeth Stone**, MSLS, University of Iowa, Conservator. With over a decade of experience in conservation at the University of Iowa conservation lab, Elizabeth will check and record all materials' condition upon entering and exiting the University of Libraries. Estimated time contribution: 40 hours total, across all three years.

Description Consultants:

- **J. Eric Ensley**, MSLS, PhD, University of Iowa - Curator of Rare Books & Maps: with graduate training and years of experience working directly with medieval manuscripts, Dr. Ensley will contribute to the creation and enhancement of metadata records for project items in roman alphabet scripts. Estimated time contribution: 300 hours total, across all three years.
- **Eric Johnson**, MLIS, PhD, Ohio State University - Head of Thompson Special Collections and Lead Curator for the Rare Books and Manuscripts Library. A scholar with a particular focus on manuscript fragments, he described and cataloged thousands of items at OSU and within institutional and private collections across North America. Dr. Johnson will contribute to the creation and enhancement of metadata records for project items in roman alphabet scripts. Estimated time contribution: 100 hours total, across all three years.
- **Ron Sela**, PhD, Indiana University - Associate Professor in the Hamilton Lugar School of Global and International Studies, Director of Indiana University's Islamic Studies Program. A historian of Muslim Eurasia, Dr. Sela has worked for over two decades in archives around the world with manuscript sources in multiple languages. Dr. Sela will contribute to the creation and enhancement of metadata records for project items in Arabic, Hebrew, and Asian alphabet scripts. Estimated time contribution: 40 hours total, in year 2.

Advisory Board

The advisory board that will meet quarterly with the project team in order to hear project updates and evaluate ongoing project progress, to advise the project team on outreach and to assist with outreach to regional pre-1600 manuscript collections. The advisory board currently includes:

- **Ian Cornelius**: Loyola U, Chicago (former project Co-PI)
- **Anne Ryckbost**: Xavier U (former project partner)
- **Br. John Glasenapp**: Saint Meinrad Archabbey (current and past project partner)
- **Chris Fletcher**: Newberry Library (regional collection and community member)
- **Dot Porter**: U of Pennsylvania (data specialist; former lead of a regional consortium project)
- **Board Member #6**: Pending Confirmation (national stakeholder in manuscript description standards)