[redacted]

Please review the Application Guidelines for important details regarding the information requested in this application. Fields marked with an asterisk are required.

Project Summary

Cover Sheet	proposalcoversheet2.pdf
Applicant Institution	Lehigh University, Linderman Library
Collection/Project Title	Bibliotheca Philadelphiensis: Toward A Comprehensive Online Library of Medieval and Early Modern Manuscripts in PACSCL Libraries in Eastern Pennsylvania and Delaware
Project Summary	This project, hosted at Lehigh University Library and the University of Pennsylvania Libraries and involving fifteen members of the Philadelphia Area Consortium of Special Collections Libraries (PACSCL), will provide online access to high-resolution images, with metadata, of 159,512 pages of medieval manuscripts from more than 400 codices plus leaves. These images will be released to the public domain for free use by scholars and the general public and, added to existing digitized resources, will make the overwhelming majority of the region's medieval manuscripts -- one of the largest concentrations in the United States -- available worldwide, in their entirety and easily downloadable. By providing unfettered, unmediated consolidated access to such a comprehensive corpus of images and metadata, the project will shape a new understanding of libraries' and archives' role in sharing our historical and cultural heritage. (Member libraries are also contributing previously-digitized manuscripts at no cost to the project.)
Amount Requested	$499,086
Project Start Date	04/04/2016
Project End Date	04/03/2019

Is this a collaborative project?

If so, include the names of the collaborating institutions below. Use the green **add** button to list additional partners as needed.

Yes/No	Yes

Collaborating Institutions (if applicable)

Institution	Lehigh University, Principal Investigator and Fiscal Agent
Institution	Free Library of Philadelphia - Co-Principal Investigator
Institution	University of Pennsylvania Libraries, Co-Principal Investigator
Institution	Bryn Mawr College
Institution	College of Physicians of Philadelphia
Institution	Haverford College
Institution	Library Company of Philadelphia
Institution	Rosenbach Museum and Library
Institution	Swarthmore College
Institution	Temple University
Institution	University of Delaware
Institution	Chemical Heritage Foundation (no funding requested)
Institution	Franklin & Marshall College (no funding requested)
Institution	Villanova University (no funding requested)
Institution	Philadelphia Museum of Art (no funding requested)

Materials to be digitized

Enter below the estimated quantities and select the units of measurement and material types that most specifically describe the extent of original materials that will be digitized during the project. You may add as many different measurement/material types as you like by clicking the green add button found below this section, but each individual item should be accounted for in only one category.

If the quantities provided are rough estimates rather than precise descriptions, explain the method used for estimating those quantities in the space provided for additional information.

Materials

Amount of Materials	159510
Unit of Measurement	pages
Type of Materials	manuscripts
Type of Materials: Other	

Amount of Materials	2
Unit of Measurement	items
Type of Materials	other [list below]
Type of Materials: Other	Portolan charts

Additional information (optional)

Most of the medieval manuscripts are in bound codices. Approximately half of the collection totals are derived from actual physical page counts conducted as part of the proposal preparation process. The remainder are derived from item-level records and/or previous surveys of the collections. The participants are confident that these are a close approximation of the total number of pages. In addition to manuscripts, the project will provide for the scanning of two Portolan charts. Page total does not include previously imaged materials to be contributed by project participants.

Quantities, Formats, and Specifications of Digital Files to be Created during the Project

Enter estimated quantities of uniquely described digital files to be created through digitization, as well as the relevant digital format(s) created and technical specifications for those formats (dpi, minimum pixel dimensions, bit-depth, optical density, etc.).

If additional files are to be derived from those created in the digitization process for the purposes of backup, preservation and/or access, do not count these derivative files or formats in the totals entered; you may describe any derivative formats to be created and the purposes these will serve in the space provided for additional information.

Digital Files to be Created

Quantity	159512
Format	TIFFS
Technical specifications	600 PPI 24-bit raw TIFF image; 600 PPI 24-bit LZW color image; 300 PPI derivative jpg

Quantity	550
Format	TEI-P5-XML files
Technical specifications	application/xml

Additional information (optional) In addition to the master TIFF and XML files, the project will create derivative jpgs for online display and thumbnails from each master TIFF. There will be HTML pages for each institution's landing page, The project will also generate HTML pages for each manuscript (a simple display of the XML manuscript description).

Catalogs/repositories/services

Provide names and complete URL(s) for the portals through which digitized content will be available to researchers and the general public.

Portals

Portal	OPenn
URL	http://openn.library.upenn.edu

Portal	Internet Archive
URL	https://archive.org/index.php

Description of Content: Public

Description of materials

Provide a brief narrative description of the materials nominated for digitization, including their provenance, relevant associated people, organizations, events, and/or subjects.

Description	The materials nominated for digitization comprise 159,512 pages of medieval and early modern manuscripts, ranging in date from the eleventh to the sixteenth centuries with the major concentrations in the thirteenth to fifteenth centuries. The topics range from sacred and religious texts (Bibles, Psalters, Books of Hours, liturgical texts, commentaries) through literature, politics and law, to science and technology, medicine and magic, in editions ranging from luxe copies prepared for and presented to royalty to humble text-only volumes copied for individual use. A review of the manuscripts' provenance also reflects the history of manuscript collecting in the United States. Three of the codices are among the earliest medieval manuscripts brought to this country, in the late eighteenth century. Additional manuscripts represent materials assembled in the late nineteenth century by scholars or institutions to form study collections, particularly in the fields of the history of the book, medicine and the sciences, and philosophy and law. Lehigh University is noteworthy for its early institutional commitment to assembling a small but choice collection to support the study of early book production. Among individual collectors, the admiralty lawyer John F. Lewis amassed a collection of more than 250 codices and 2,000 leaves as a research resource, now held by the Free Library of Philadelphia. For more information on the history of collecting in Philadelphia, see James R. Tanis, "Collecting Illuminated Manuscripts in Philadelphia," in Leaves of Gold: Manuscript Illumination from Philadelphia Collections (Philadelphia: Philadelphia Museum of Art, 2001). Scholarly interest in these collections, already stimulated by the 2001 Leaves of Gold exhibition, has grown through the digitization and online availability of selected leaves and representative codex images from the Free Library of Philadelphia and the complete manuscript collections of the University of Pennsylvania Library.

Geographic Scope

Describe the range of geographic regions represented in the nominated collection(s).

Geographic scope	With only a few exceptions from the Middle East, the materials to be digitized are from Europe, with the majority from Western Europe. They represent most of the major manuscript and scholarly centers in England, France, and the Low Countries as well as significant holdings from Italy, Spain,

Date range of materials to be digitized

Enter the earliest and latest dates the original materials in the nominated collection(s) were created, in whole years. Dates should be formatted as YYYY BC/AD – YYYY BC/AD (e.g. 356 BC - 1542 AD).

Date range of materials	1050 AD - 1593 AD

Collection level descriptions (if applicable)

If applicable, identify and provide the URL(s) for any collection-level descriptions currently available online.

Collection URL(s)

Collection name(s)	Bryn Mawr College -- Medieval and Renaissance Manuscripts
Collection URL	http://libwww.freelibrary.org/medievalman/ShelfMarkList.cfm
Collection name(s)	Free Library of Philadelphia - Widener Collection
Collection URL	http://libwww.freelibrary.org/medievalman/ShelfMarkList.cfm
Collection name(s)	Free Library of Philadelphia - John Frederick Lewis Collection
Collection URL	http://libwww.freelibrary.org/medievalman/ShelfMarkList.cfm
Collection name(s)	Free Library of Philadelphia - Moncure Biddle Horace Collection
Collection URL	http://libwww.freelibrary.org/medievalman/ShelfMarkList.cfm
Collection name(s)	Free Library of Philadelphia - Hampton Carson Collection on the growth and development of the Common Law
Collection URL	http://libwww.freelibrary.org/medievalman/ShelfMarkList.cfm
Collection name(s)	Haverford College - J. Rendel Harris Collection
Collection URL	http://www.haverford.edu/library/special/aids/harris/j_rendel_harris_coll

Collection name(s)	Haverford College - Pemberton Bible (item level record)
Collection URL	https://tripod.brynmawr.edu/find/Record/.b2707773

Collection name(s)	Temple University - Book of Hours (item level record)
Collection URL	http://diamond.temple.edu/record=b4389327~S12

Collection name(s)	Temple University - Pore Caitiff Codex (item level record)
Collection URL	http://diamond.temple.edu/record=b1612227~S12

Collection name(s)	Temple University - De Vita et Moribus Philosophorum (item level record)
Collection URL	http://diamond.temple.edu/record=b1610663~S12

Collection name(s)	Temple University - Cochran History of Business Collection (the medieval manuscripts)
Collection URL	http://diamond.temple.edu/record=b1610613~S12

Description of Content: Confidential

Current arrangement and description(s) of materials to be digitized

Provide a brief narrative that summarizes the physical arrangement and the level(s) of processing, cataloging, or other descriptive work that has previously been done for the nominated collection(s). Include the date(s) this descriptive work took place and the standard(s) and/or current format(s) of the records that were created.

Current Arrangement	The codices are shelved at their respective institutions, with some housed in boxes. Other materials are housed in flat files. Some of the manuscripts were described in the Seymour de Ricci census in the 1930s. Many have been cataloged at the item level, with their records available at individual repositories and/or in OPACs. Some of the repositories, such as Bryn Mawr College, the Free Library of Philadelphia, and Lehigh University, have created comprehensive online guides, exhibitions, or listings, including representative images, although the manuscripts themselves have not been

completely digitized. These guides are listed among the collection-level descriptions below. Please note that this list also includes links to records for individual codices. Not all participating institutions gather their medieval manuscripts into collections for purposes of description; some catalog their manuscripts as individual rare books.

Current condition and housing of materials to be digitized and plans for their conservation and preservation

Describe the current condition and housing of the materials to be digitized, including the means through which this condition has been assessed. Identify the individual or individuals responsible for this assessment and approximately when the assessment took place. Describe the strategies to be employed for stabilization, conservation, and/or preservation of the materials, including the means through which this work will be supported and sustained long-term. Explain the environmental provisions made for the long-term management of the source materials and the strategy for responding to requests for access to them.

Current Condition

The medieval manuscripts presented for digitization in this proposal have received a preliminary conservation assessment by curators at the participating institutions and are represented to be appropriate candidates for digitization, housed within secure, climate-controlled facilities at their respective holding institutions. Conservation assessments were performed on the Free Library of Philadelphia's manuscripts prior to imaging of a small sampling of pages of its medieval codices in 2005-2007 as part of an IMLS grant. Janine Pollock, co-Principal Investigator on the proposed project, was principal investigator on the IMLS project, and is familiar with the condition of the codices in the Free Library collections.

In the late 1990s, most of the manuscripts in Philadelphia-area collections were assessed as candidates for the "Leaves of Gold" exhibition by James R. Tanis, then director, and Leo Dolenski, then manuscripts librarian, of the Bryn Mawr College Library. The need for conservation treatment was part of the manuscript assessment and a number of objects received conservation treatment at that time. Additionally, the Free Library has collection care staff who are able to address any conservation issues of its manuscripts.

Lehigh University joined PACSCL after the Leaves of Gold assessment. Its collections are assessed by Lois F. Black, Curator of Special Collections, when requested by researchers, and during periodic reviews. Materials are appropriately stabilized and conserved as needed. All medieval and early modern manuscripts in this collection were consulted by a visiting scholar in October 2014, and at that time were assessed with a view toward digitization and found to be in appropriate condition.

The medieval manuscripts in PACSCL member collections have been well cared for. It is not anticipated that closer examination will reveal a need for conservation prior to digitization. However, each manuscript will be assessed a second time prior to imaging and, where necessary, removed from the current scanning queue pending treatment. (Most of the manuscripts will be scanned at the Schoenberg Center for Electronic Text and Image, whose leadership

works closely with the Libraries' curator of preservation.)

The participating libraries all have a policy of providing access to these manuscripts to qualified researchers. They are also prepared to offer guidance and, if necessary, assistance, in their handling to less-experienced researchers on a case-by-case basis.

Representative samples of materials to be digitized (max. 10 pages, 12 MB, .pdf format only)

Upload a PDF document containing images of up to ten (10) selected items from the collection(s) to be digitized, and provide a brief description of the contents of the file, below. Each image should be accompanied by a description and full citation that includes the name of the holding institution, the collection title, any identification numbers or shelfmarks, and any available information about rights or licensing. The document may contain embedded URLs linking to additional content, such as sample audio or audiovisual files, but must contain samples of no more than ten items.

Description of Samples	The images in the attached document include selected pages and openings from ten manuscripts. They include a Bible and a Book of Hours, both among the earliest medieval manuscripts to reach Philadelphia; the Lewis Psalter; three works of literature and one of law; two alchemical and one medical-pharmacological texts. Four are from the Free Library of Philadelphia and one each from six of the additional contributing institutions. Some of these images are available online, but no more than 5% of the content of any of these codices is online.
Samples (.pdf format only)	sample_pages.pdf

May CLIR excerpt from and display some portion of these representative samples within the Hidden Collections Registry, elsewhere on CLIR's website, or in program-related social media?

If you select "Yes" but would prefer that some representative samples be displayed but not others, note below which specific samples CLIR has permission to share.

Yes/No	Yes
Selected Permissions (if applicable)	N/A

Rights, Ethics, and Re-Use

All parties to this proposal understand that as a condition of acceptance of any *Digitizing Hidden Special Collections and Archives* award from CLIR, all recipient institutions and collaborating partner organizations will be required to sign and execute the program's intellectual property agreement.

Tick to confirm:	Confirmed

All parties to this proposal understand that as a condition of acceptance of any *Digitizing Hidden Special Collections and Archives* award from CLIR, all metadata created in the course of funded project activities must be dedicated to the public domain under a CC0 Creative Commons license.

Tick to confirm: Confirmed

All parties to this proposal understand that as a condition of acceptance of any *Digitizing Hidden Special Collections and Archives* award from CLIR, recipient institutions, including partnering institutions in cases of collaborative projects, must not claim additional rights or impose additional access fees or restrictions to the digital files created through the project, beyond those already required by law or existing agreements. Materials that are in the public domain in analog form must continue to be in the public domain once they have been digitized. CLIR strongly encourages grant recipients to share digital copies as public domain resources and/or with Creative Commons licenses, as appropriate.

Tick to confirm: Confirmed

Applicants who tick any of the four boxes below should provide details clarifying their responses in the Rights, Ethics, and Re-Use Statement.

Tick all that apply:

Rights, Ethics, and Re-Use statement (max. 3 pp, 2MB, .pdf format only)

Upload a description (maximum 3 pages) that summarizes all known rights, embargoes, and access or legal restrictions applicable to the source materials to be digitized and describes how these rights, embargoes, or restrictions will be communicated to the public. Identify and explain any ethical considerations that affect access to or re-use of the digital copies. Explain the basis upon which the proposed activities are justifiably legal and ethical, and the specific terms under which users of the collections will be able to access and re-use the digital copies created through the project. Explain and justify any institutional watermarks incorporated into copies made accessible to users and any fees charged for re-use. Describe any other measures to be taken to restrict access to or re-use of the digital copies in order to comply with the law or with applicable, pre-existing agreements or contracts.

Statement (.pdf format only) rights_statement.pdf

Value and National Significance

Describe the impact of the proposed project upon scholarship, and explain why digitization is the most appropriate means to maximize the value and significance of the materials to scholars and students.

Address the importance of the collections to teaching, research, and the creation of new knowledge.

Value and National Significance Statement	Wide-ranging in topics, the 400-plus medieval and early modern codices to be digitized in this project document both the range of medieval thought and the history of collecting in the greater Philadelphia area from the late eighteenth to the early twenty-first

centuries. They include three manuscripts that were among the first to reach the United States; research collections in areas as diverse as the history of the book, literature and law, and the history of chemistry and other sciences; and treasured volumes from collectors who acquired codices for their beauty, provenance, and rarity. The collections to be digitized include significant numbers of working texts whose contents have to date been largely inaccessible to the worldwide community of scholars. They illuminate not only the religious life of the middle ages, for which medieval manuscripts are best known, but also the social, political, and legal underpinnings of medieval Europe and the study of science, technology, medicine, and the natural world. The Philadelphia collections are particularly strong in these latter areas. When joined with complementary materials from other PACSCL institutions via this project, or with other collections here or abroad, they provide depth and texture for the study of these fields, as well as the history of the book and the scriptoria and workshops of their scribes and illuminators.

Medieval manuscripts and their users are geographically scattered, and so the ability to compare texts and illustrations across copies is extremely difficult, if not impossible, without digitization, which allows access from remote locations. There has been important new scholarship looking at annotations as a way of understanding medieval reading practices (see, for example, Robert Black, "Humanism and Education in Medieval and Renaissance Italy," Cambridge University Press, 2001). Most of this type of scholarship has been based on surviving medieval libraries, but with many of those libraries having been broken up and the contents widely dispersed over the last two centuries, the ability of scholars to compare large numbers of similar texts has been severely limited until now, when digitization has made it possible to reconstruct medieval collections. Philadelphia is one of the major centers in the United States where medieval manuscripts have accumulated, so by comprehensively digitizing the manuscripts in this city this project will make a major contribution to the scholarship on the medieval book and medieval society, allowing researchers worldwide full access to these collections.

Although many institutions worldwide have digitized portions of their medieval collections, the majority have only provided representative images. Of those who provide entire texts online, very few make it possible to download an entire manuscript at once at a high enough resolution for close study. By providing unlimited access to such a broad range of fully digitized manuscripts at high resolution via OPenn, this project has the potential to revolutionize the way scholars approach this field of study at the same time it encourages a new way of thinking about access to digitized collections in libraries and archives.

Upload three letters of scholarly support for your project (max. 10MB, .pdf format only).

[redacted]

Project Context and Impact

List and describe all envisioned project deliverables. Explain the means through which each will be available to the public, and any applicable conditions or terms limiting their availability.

Describe all expected outcomes, how each will be made accessible to others, and under what conditions. Deliverables will include the digital surrogates created during the project and related metadata, and they may also include aggregations of those files and metadata with related collections, catalog records, finding aids, authority files, description and digitization manuals, training materials, new or improved software tools, reference guides, or other outcomes of the proposed project. Address any relevant restrictions or licensing terms not already explained in the intellectual property statement.

Deliverables

Project deliverables will include 159,512 master TIFF images plus JPG files for online display and thumbnail images (one for each manuscript page), as well as one manuscript description file (in TEI-XML) for each manuscript. All these files will be made available without restrictions through OPenn for access purposes, and will be available in page-turning editions at the Internet Archive. Master files will also be placed in dark archives at Lehigh University and the University of Pennsylvania for long-term storage.

The Schoenberg Institute for Manuscript Studies (SIMS) will create ebooks, in the open source epub format, for each manuscript digitized as part of this grant. The ebooks will be CC0 licensed and will be archived and made available in the existing SIMS Ebooks section of the UPenn ScholarlyCommons Institutional Repository (http://repository.upenn.edu/sims_ebooks/).
Staff from the SIMS will work with each institutional partner to build page-turning interfaces, using the open source Internet Archives BookReader software, for any manuscript digitized through this grant that the institution wishes to make available on their own website.

OPenn's contents can be repurposed in a variety of ways, as the following two examples demonstrate. Each resource provides access to different sets of data collected in OPenn and is a part of the project deliverables.

1) MESA: All the manuscripts digitized as part of this grant will be aggregated in the Medieval Electronic Scholarly Alliance (MESA; http://www.mesa-medieval.org/), where they will be able to be searched alongside manuscripts and other medieval materials from institutions across the US and Europe (including the British Library, the British Museum, and e-codices, the Virtual Manuscript Library of Switzerland, and the existing digitized manuscript pages from the Free Library). Records in MESA will be created for each manuscript, each text, and each illustration.

2) viewshare Search: All the manuscripts digitized as part of this grant will be added to the existing digital manuscript search and browse facility hosted by SIMS, built using the Library of Congress's viewshare software (http://viewshare.org/views/leoba/openn-and-digital-walters/). The search and browse currently includes digitized manuscripts from the University of Pennsylvania and the Walters Art Museum. Records in viewshare are at the level of the manuscript, and contain links to a number of different representations of the digitized manuscripts, including ebooks, online page turning at each institution, data on OPenn, and video orientations where they exist.

Describe all prior initiatives, experiences, or research activities that have directly informed the design of the project, including any notable innovations or practices that will make the proposed approach particularly efficient, ground-breaking and/or cost-effective.

Project Context

Scholars of the medieval and early modern eras were among the earliest adopters of the graphic user interfaces for the World Wide Web, and efforts to aggregate collections of images of medieval manuscripts began in this country in 1993-94 with the creation of the website "The Labyrinth" by Martin Irvine and Deborah Everhart at Georgetown University. Many holding institutions, however, were reluctant to release high-resolution images on the internet, seeking to protect their rights and reproductions revenue streams. Although this reluctance has relaxed somewhat in the intervening decades, many holding institutions, including some project participants, have only released images with significant decorative content, reducing the ability of scholars to perform textual analysis, including transcriptions and translations, from the digital objects. Other repositories, such as the monumental e-codices project in Switzerland (http://www.e-codices.unifr.ch/en), have placed full codices online at high resolution, but the codices must be accessed as single images, with no capacity for downloading the entire codex at once. In other online collections it is not possible to download any high resolution images, even for personal use, making offline study difficult to impossible. Moreover, most of those institutions making full codices available at high resolution also include significant use restrictions, further hampering collaborative efforts that involve aggregating or repurposing images from disparate collections.

The Walters Art Gallery and the University of Pennsylvania Libraries are two exceptions, and have placed high resolution images and metadata for their medieval manuscripts on file servers, where they are available as flat files to be downloaded as described above and in the technical plan.

This project combines the simplicity of the file server architecture with the workflow efficiencies developed at PACSCL member institutions, chiefly the Schoenberg Center for Electronic Text and Image at the University of Pennsylvania Libraries, to digitize these complex and often fragile documents cost-effectively, to generate appropriate metadata efficiently, and to make the entire medieval collections of a major city's libraries freely available for scholars

around the world.

To date, the University of Pennsylvania Libraries has digitized its entire collection of medieval manuscripts and the Free Library of Philadelphia has digitized all of its leaves and a sampling of images from its codices. Lehigh University has already digitized some of its codices and fragments, and will contribute those to OPenn together with the others digitized with this proposal. Finally, the Chemical Heritage Foundation, Franklin & Marshall College, the Philadelphia Museum of Art, and Villanova University will contribute their already digitized manuscripts to OPenn. Participating institutions all have networks of scholars working in these collections who will aid in the dissemination of awareness of the project.

We believe this project will be the world's most comprehensive collection of freely-available, public domain, high resolution images of full codices for this time period held in one metropolitan area. As such, it has the potential to transform the study of medieval life and thought, and to transform the role of libraries and archives worldwide in collaborating to share entire aggregated collections.

Describe all outreach and marketing activities planned to maximize the impact of the project, for both scholarly and professional communities of interest.

Outreach and Marketing

Scholarly: The principal investigators and staff at participating PACSCL libraries have broad professional networks that encompass the medieval studies and other relevant communities. The project will use these connections in order to publicize the project via the American Council on Learned Societies, the Medieval Academy of America (including its Committee on Centers and Regional Association), the Consortium for the Teaching of the Middle Ages (TEAMS), the Index of Christian Art, and the Society for the History of Technology. Project staff and others at PACSCL institutions will also encourage presentations making use of project-created materials at the International Congress on Medieval Studies at Western Michigan University, the International Medieval Congress at the University of Leeds, the Saint Louis Conference on Manuscript Studies, and at other scholarly gatherings where these or comparable materials may be the subject of papers and presentations. Closer to the Greater Philadelphia area, the project will encourage members of the Delaware Valley Medieval Association, which traditionally holds its fall meeting at the University of Pennsylvania Libraries, to make use of these resources in their own research and teaching.

Professional: The project organizers will seek to reach out to the broadest possible professional network to share insights on creating a collaborative collection of digital resources. They will also advocate for the use of open data to allow scholarly collaborations around the world and around-the-clock access to materials that otherwise could usually only be used on weekdays. This outreach will be both discipline-specific, reaching the Rare Books and

Manuscripts Section of the American Library Association, the Society of American Archivists, and related organizations; and, more broadly, to the digital humanities community.

New Audiences. The Middle Ages have already demonstrated their enduring fascination for the general public,especially through their reimagining in various media in popular culture over the centuries. Medieval manuscripts have proven to be particularly appealing to children. Project participants will encourage the use of the digital images among younger learners and their teachers. The Free Library of Philadelphia especially is in a position to reach general audiences and young learners, as it did in its very popular “Traveling Scriptorium” series of after-school workshops in 20 of its branch libraries at the time of the “Leaves of Gold” exhibition. Outreach to these new audiences, although beyond the scope of this project, will be a high priority in future initiatives that build on these digitization efforts, such as publicizing the resource’s value for National History Day projects.

Social Media: Social media cuts across scholarly and professional boundaries. At the time of this writing, Twitter, Flickr and Tumblr are heavily used by rare book and manuscript librarians and medieval scholars, and are obvious outlets for the dissemination of information on the program. Project staff and investigators (aided by their student workers) will be alert to the emergence of new platforms as they appear.

Describe any collections related to the materials nominated for digitization and describe any plans for creating meaningful linkages to those collections.

Applicants should be as specific as possible in naming these related collections. Related collections may be held by the applicant or partner institutions, or by other institutions not participating directly in the project.

Related Collections

OPenn currently holds the digitized manuscripts of the Lawrence J. Schoenberg Collection at the University of Pennsylvania, and will soon host Penn’s remaining medieval manuscripts (for a total of 1,606 manuscripts). These manuscripts can currently be searched and browsed through an interface using the Library of Congress "viewshare" software, which also includes the digitized manuscripts in The Digital Walters (http://viewshare.org/views/leoba/openn-and-digital-walters/). The manuscripts digitized as part of this project will be added to this search and browse facility, which means that all medieval manuscripts in the Philadelphia area will be available through that search. Additionally, the Philadelphia Museum of Art, a PACSCL member that holds medieval manuscripts in itsprint and picture collections rather than its library holdings, has recently decided to contribute digitized images of these objects to OPenn and is now listed as one of the contributors. Links to descriptions of four of its manuscripts are included in its letter of commitment.

For two decades, scholars active in medieval studies have been keenly attuned to the possibilities of online digitized manuscripts to

help compare widely dispersed materials in the fields of art history, the history of the book, and the study of comparative literature, the history of science, and virtually every other discipline in the fields of the humanities and the sciences. Additional aggregations of medieval manuscripts and strategies to create meaningful linkages have been described in the “deliverables” section, above. The lead contributor of manuscripts to this project, the Free Library of Philadelphia, plans to expose its copies of the data via DPLA, and project organizers are in discussions with the other participants.

Describe any future initiatives that would be made possible by the completion of project work.

Future Initiatives

The digital files will be made available through OPenn, which is described elsewhere in this document. The openness of OPenn’s design makes the raw materials available for creating any sort of digital resource. Images and metadata will be available for download, or their URLs can be referenced directly. These files will also be made available through the International Image Interoperability Framework (IIIF). Any scholar or institution who has implemented tools using IIIF will be able to use images from OPenn in their tools. Stanford University has created an IIIF image browser, Mirador, which allows comparison of manuscripts from the Beinecke Library at Yale, Walters Art Museum, and the British Library (see demo at the British Library: http://sanddragon.bl.uk/mirador/).

Two of the project’s deliverables -- integration with MESA and with viewshare, described above -- are instances of repurposing project content. Additional initiatives could include scholarly reuse in digital resources such as ArtSTOR or the Index of Christian Art.

Looking ahead to other uses of these data, we expect to see an increase in scholarly use based on these materials as researchers are more easily able to compare different instances of widely-copied manuscripts, groups collaborate on transcription and translation, and educators find additional uses in teaching from K-12 through graduate school. Lehigh in particular is interested in leading a group to explore public programming.

Finally, we hope this project will inspire others to digitize their rare materials and release the images and metadata as Free Cultural Works.

Project Design

Upload a project plan with timeline that includes all major project activities and deliverables, including a project timeline with deliverable deadlines (max. 3 pages, 2MB, .pdf format only).

The timeline for the project should be as explicit as possible, identifying major activities to be undertaken during each quarter of the proposed grant term and naming the parties who will participate in those activities.

Project Plan (.pdf format only)	2015-09-30ProjectPlan1.pdf

Project plan appendix (max. 2MB, .pdf, .xls or .xlsx format only)

Upload a project plan appendix* specifying in greater detail the collections to be digitized for the project, the relevant holding institution, and the partners who will be responsible for digitization, description, and the long-term maintenance of the digital files that will be created (no page limit, .pdf, .xls or .xlsx format only).

NOTE: The appendix must follow CLIR's template, which can be found here. Non-compliant appendices will be removed prior to review and may result in the application being rendered ineligible for review and funding.

*This document is required for collaborative projects; optional for all other projects.

Project Plan Appendix (.pdf, .xls, .xlsx)	ProjectPlanAppendix.pdf

Technical Plan (max. 4 pages, 5MB, .pdf format only)

Upload a document detailing your proposed technical approach, including a description and justification for the proposed workflow that clearly identifies all tools, systems, standards, and technologies to be employed in the project.

Technical Approach (.pdf format only)	2015-09-30TechnicalApproach1.pdf

Principal Investigators/Primary Staff

Briefly describe the relevant qualifications of up to three individuals who will contribute substantially to the project. The qualifications of all named Principal Investigators (PIs) must be included here. If the project includes fewer than three PIs, applicants may optionally use this space to describe other important staff members' qualifications.

Upload resumes/CVs for these individuals below (.pdf, .doc, or .docx format only). In the event that a person holding major responsibility for the project has not yet been identified, applicants may upload a job description for that unidentified person’s role.

Staff Qualifications	Principal Investigator Lois Fischer Black has over 25 years’ experience managing professional, paraprofessional, and student staff in Special Collections in diverse environments. She holds Master’s degrees in Library Science, with a concentration in rare books, and in the History of Technology, the Environment, and Medicine. She has served as Curator of Special Collections at Lehigh University since 2006. Prior to that, she held professional positions in Special Collections at the University of Delaware, The New York Academy of Medicine, and North Carolina State University. She supervised grant-funded projects (digitization and rare book and archival cataloging and processing) and trained staff to appraise records, encode finding aids, digitize collections, and create metadata. Most recently, she served as Principal Investigator for 2009 and 2013 CLIR Hidden Collections projects to process Moravian collections and civil engineering archives, and also a 2012

LSTA grant project to digitize 400 maps and drawings from the Lehigh Coal and Navigation Company. Black currently serves as a member of PACSCL's Board of Directors.

Dot Porter, Co-Principal Investigator. As Curator of Digital Research Services in the Schoenberg Institute for Manuscript Studies, Porter explores new methods of research in the humanities, particularly the application of digital technologies to textual analysis and the electronic dissemination of humanities research. Porter holds Master's degrees in Medieval Studies and Library Science and started her career working on image-based digital editions of medieval manuscripts. She has worked on a variety of digital humanities projects over a decade-long career, focusing on materials as diverse as ancient texts and Russian religious folklore, providing both technical support and scholarly expertise. From 2010 until March 2013, she was the Associate Director for Digital Library Content and Services at the Indiana University Bloomington Libraries, where she led in planning and implementing new services to support librarians and faculty in the creation of digital projects. She has also worked for the Digital Humanities Observatory at the Royal Irish Academy, and the Collaboratory for Research in Computing for Humanities at the University of Kentucky.

Janine Pollock, co-Principal Investigator, is the Assistant Chief of the Free Library of Philadelphia's Central Public Services Division. Her responsibilities include administrative oversight of the Parkway Central Library's research departments as well as leading a newly appointed team of Special Collections Curators. In her previous position as Head of the Rare Book Department, Pollock oversaw the exhibition program and worked to make the collections better known through cataloging initiatives, partnerships, and outreach. She has been involved in several of the Free Library's digitization projects. In 2007 she was project manager for a grant from the Barra Foundation to digitize over 1,000 of the Free Library's Pennsylvania German fraktur. In 2005 she helped manage the Institute for Museum and Library Services (IMLS) funded project that digitized selections from the Library's collection of medieval illuminated manuscripts. Pollock first came to work for the Free Library in 1999 as the organization's first web librarian. In that capacity she was part of a team that redesigned the website and worked on the first digitization project undertaken by the Library, an online database and informational website for the official photographs of the 1876 Centennial Exhibition. Other non-grant funded digitization initiatives spearheaded by Pollock include a database of the letters of Charles Dickens and a collection of historic photographic images of Philadelphia.

Resume #1 (.pdf, .doc,.docx)	Black_cv.pdf
Resume #2 (.pdf, .doc,.docx)	porter-CV-short.pdf
Resume #3 (.pdf, .doc,.docx)	J_Pollock_resume.pdf

Staffing

How many staff will be assigned to this project? You may include students and volunteers in this list.

Staffing	As noted in the budget narrative, the proposal calls for two hourly staff to serve as quality control and project tracking technicians, based at the Free Library and Lehigh University, respectively. Also included is provision for 1,943 hours of student workers for metadata creation for 136,000 pages. Additional project personnel, in the areas of imaging, metadata, and file uploading, are specified in the service provider proposals from Bryn Mawr, SCETI, and Temple.

Will special skills or training be required?

Explain the nature of any required skills or training to undertake the project and how the applicant institution intends to solicit or provide it.

Training	One of the project's first steps is to review Penn's existing standards for descriptive metadata and adapt as necessary for use as common standards. Both the student workers and the part-time staff (and any appropriate institutional staff) will then be trained in the standards, primarily through the use of a common spreadsheet, in a series of workshops. These workshops, in half-day or full-day format, will be modeled on those used for the earlier Hidden Collections processing project and the current PACSCL Digital Diaries project, a self-financed initiative that also will be placed on OPenn. The workshops will be repeated as needed as new cohorts of student workers are hired. The Schoenberg Center for Electronic Text and Image will conduct all imaging training for project staff based there, and will advise or consult with other partners as needed. Metadata training will be conducted by Dot Porter. Both the University of Pennsylvania Libraries and the Free Library of Philadelphia have developed extensive training and reference materials to assist student workers in identifying elements of medieval manuscripts quickly and accurately in the course of previous project work. Additionally, since many of the codices have been cataloged at the item level, student workers will be able to call on the work of experienced rare book librarians from the MARC records when creating the metadata.

Sustainability

Digital Preservation and Discoverability Plan (max. 2 pages, 2 MB, .pdf format only)

Upload a digital preservation and discoverability plan explaining how project deliverables will be made secure and discoverable for the long term.

Preservation/Discoverability Plan (.pdf format only)	2015-09-30PreservationandDiscoverability1.pdf

Institutional Capacity

Upload a letter of support from the head administrator of the applicant institution.

Letter of Institutional Support	letters_of_commitment_combined1.pdf

Institutional Strengths

Describe the institutional strengths that justify the undertaking of the proposed project by the applicant (and any collaborating partners). Strengths may include existing infrastructure, partnerships, professional associations, staff experience, access to local expertise (scholars, volunteers, students), financial or other resources, etc.

Institutional Strengths	Lehigh University, a doctoral research institution with over 4,900 undergraduate and 2,100 graduate students, takes a leadership role in developing effective methods of education, including the creative use of information technology in teaching, learning, scholarship, and library resources. Linderman Library's Special Collections department has participated in several collaborative initiatives, including PACSCL's most recent Hidden Collections project, and it has successfully completed grant-funded projects on the digitization of Lehigh Coal and Navigation Company Maps and Drawings and a nine-member collaborative project, "Beyond Steel: An Archive of Lehigh Valley Industry and Culture." Lehigh is offering financial oversight; its own choice collection of approximately 20 medieval manuscripts, a well-used part of its teaching collections; and space for the long-term preservation and dark archiving of 20 TB of data. University of Pennsylvania Libraries. Two units of the University of Pennsylvania Libraries are participating: The Schoenberg Center for Electronic Text and Image (SCETI), founded in 1996, has produced over 2,000,000 digital images over the past decade for the Penn Libraries as well as for a variety of cultural institutions. SCETI staff includes three full-time camera operators, two image processors, and additional grant-funded staff to complete projects. Its state of the art image capture equipment is detailed in the attached subcontractor proposal. The Schoenberg Institute for Manuscript Studies (SIMS) was founded to bring manuscript culture, modern technology, and people together for the advancement of learning at Penn and around the world. Directed by Dr. Will Noel, its six-member staff includes medieval scholars, manuscript catalogers, and programmers; its projects include the maintenance of the world's most comprehensive database of medieval manuscripts and a range of fellowships, publications, and other activities at the cutting edge of manuscript studies in the digital age. Free Library of Philadelphia (FLP). With more than six million visits to its 61 locations and nine million online visits annually, FLP is one of Philadelphia's most widely used educational and cultural

institutions. The FLP system advances literacy, guides learning, and inspires curiosity with millions of digital and physical materials; 25,000 yearly programs and workshops; free public computers and Wi-Fi; and rich special collections. Its diverse user base ranges from preschoolers through high school and community college students, job seekers, and the general public, in addition to scholars from around the world. FLP's Rare Book Department, among the largest in a public library, enhances FLP's mission by collecting and preserving historic materials, providing reliable, knowledgeable research services for the collections, and promoting understanding of our shared cultural heritage. The Rare Book Department holds one of the city's most extensive collections of medieval manuscripts, second only to those at the University of Pennsylvania. Digitization of its collection is a keystone of the proposed project.

PACSCL and its 34 rare book and manuscript libraries, including all project participants, bring their networks of colleagues and their diverse user communities to the project and PACSCL itself will provide administrative and project management support.

Institutional Priorities

Describe the applicant's (and partners') institutional priorities for digitization, digital collection development, maximizing access, and supporting scholarship, learning, and/or the public good.

Institutional Priorities

Lehigh's Libraries has as part of its mission finding innovative ways to transfer information to the university community and the public via the Web. To date the digitization effort has included University archives, important volumes from Lehigh's collections on historic bridges, regional history materials, and smaller projects associated with courses and faculty research interests. Lehigh's intent to deliver its medieval manuscript collection via the web is fully consonant with the Libraries' mission. Funding from the Council on Library and Information Resources would enable us to meet our goal to digitize this significant material. This is a collection of note, which, once digitized, will meet the needs of an international community of researchers and supplement the strong digital collection of medieval manuscripts at the University of Pennsylvania.

The Penn Libraries made it a priority to digitize medieval manuscript holdings and have digitized to date 1,606 items dating from the 9th-16th centuries, all available worldwide via Penn in Hand, with plans to add them to OPenn. The Schoenberg Collection of manuscripts is available on OPenn at full resolution, with extensive metadata, for worldwide access, in the public domain in human- and machine-readable format for free use without restriction. Items can be individually accessed, or the entire dataset can be downloaded. The Library's digital strategy is to build on these strengths, using OPenn not only for its own manuscripts, but also those of other institutions, working collaboratively with institutions and scholars worldwide. In addition to the Schoenberg Manuscript Database (described elsewhere), Penn supports a Provenance Online Project, an image-based resource for the identification of provenance marks in books

worldwide. It also hosts the PACSCL database of finding aids (http://findingaids.pacscl.org). Penn is also committed to as much access as possible to its physical collections via the reading room (3,000 visits/yr), classes (300 annually, including Rare Book School), and exhibitions and programs.

The Free Library of Philadelphia has been a haven and a launching pad for the people of Philadelphia for more than 100 years. With its mission to advance literacy, guide learning, and inspire curiosity, the Free Library is committed to building an enlightened community devoted to lifelong learning. Its outstanding special collections allow it to engage audiences with unique and culturally significant materials. Through a series of grant-funded projects and its own initiatives the Free Library's digital collections currently contain over 41,000 images, 35,000 available to the public online. The Free Library's strategic plan calls for the library to increase its virtual presence – the ability to deliver programming and services digitally is vital to be known and perceived as a vibrant cultural and educational institution, both in Philadelphia and around the world. The Free Library is also committed to making new cutting edge tools available and staying ahead of the technological curve in order to serve people at all levels of sophistication.

Prior Initiatives

Provide up to three examples of prior initiatives that demonstrate preparedness of the applicant institution(s) to undertake project work.

Initiative #1	Lehigh University. The Moravian Community in the New World: The First 100 Years. Lehigh University and the Moravian Archives received a CLIR Hidden Collections grant to process collections documenting the material culture, religious values, and cultural diversity of the Moravian community of Bethlehem, PA, from its founding in 1741 until its opening to non-Moravians in 1844 and Bethlehem's subsequent 1855 incorporation. Students cataloged personal papers and business records, architectural drawings, and maps. Records reflect the multi-faceted life of this transatlantic community in its interaction with other cultures during this period.
Initiative #2	University of Pennsylvania. Three interrelated NEH-funded initiatives at the University of Pennsylvania Libraries have resulted in the digitization of 800 of its medieval manuscripts written before 1600, its 1,000 manuscripts from the seventeenth to eighteenth centuries, and its 3,000 Indic manuscripts (NEH, ongoing). They may be viewed on Penn In Hand (http://dla.library.upenn.edu/dla/medren/index.html) and will also be added to OPenn. Penn also serves as the institutional host for PACSCL's two Hidden Collections processing grants repositories: (http://findingaids.pacscl.org/) and its nascent Digital Diaries project, described elsewhere.
Initiative #3	The Free Library of Philadelphia received a grant from IMLS for its project, "Medieval Manuscripts in the Digital Age: New Paths to Old Books in the Free Library of Philadelphia." The project, directed by

	Janine Pollock, resulted in the cataloging and digitization of 3,528 leaves as well as 1,361 representative images from its 275 codices. These images are online on its website (http://libwww.freelibrary.org/medievalman/) and have been uploaded to the Digital Scriptorium. They can also be searched via mesa-medieval.org .

Funding

Budget Documents

CLIR requires all applicants to complete and upload two budget documents:

- Budget Narrative (click here for detailed information about the Budget Narrative). *No page limit, max. 2MB, .pdf format only.*
- Budget Detail (must be submitted using CLIR's Excel form; click here for detailed information about the Budget Detail). *Max. 2MB, .xls or .xlsx format only.*

Budget Narrative (.pdf format only)	2015-09-30budget_narrative1.pdf
Budget Detail (.xls or .xlsx format only)	BUDGETfinal.xlsx

Subcontracts (No page limit, max. 5MB, .pdf format only)

Provide below any subcontracts for work associated with this project. Quotes from vendors may be provided in lieu of more formal contract documents as necessary, as long as the relevant work to be conducted and costs incurred are clearly delineated.

If your project will involve multiple subcontracts, combine them into one PDF document for upload into the system.

Subcontract(s)	subcontractor_estimates.pdf

Funding Allocations

Will funds from the grant be applied to current staff salaries or infrastructure? If so, justify the need to cover such costs with external funds and their relevance to the proposed project.

Yes/No	No

Funding Justification

Explain why this project is uniquely suited to this funding program and how it reflects the program's core values. What prior efforts, if any, has the applicant made to identify other sources of funding for this project?

Justification	This project is uniquely suited to this funding program because the University of Pennsylvania, the institutional host, has been moving

toward a transformative model in which the digitization of rare and unique materials is carried out in a way that increases throughput and makes high-quality images and data freely available. PACSCL has also been experimenting with an extension of this approach to a collaborative environment with its self-funded Digital Diaries project, also hosted at OPenn, with an intended launch later this year.

The project serves to reinforce the notion that libraries and archives can and should do what only they can do -- share and care for their collections, in this case digital collections -- by increasing access to the largest possible number of high-resolution images and metadata unmediated by a curator's or scholar's notion of what is significant and in need of emphasis. These files are then available for curators (including those at participating libraries), scholars, and the general public to do what they do best -- aggregating it with similar collections, providing context and interpretation, repurposing the content, crowdsourcing transcription and translation, and presenting it in the formats most meaningful to them and most useful to their audiences.

Additionally, this project will result in the comprehensive digitization of medieval manuscripts from not just one, but virtually all libraries in the Greater Philadelphia area with medieval holdings. When combined with the more than 1,600 manuscripts already digitized by the University of Pennsylvania Libraries and those of the other partners, we believe this will comprise the largest open access collection of high-resolution, bulk downloadable, completely digitized medieval manuscripts in any area in the world.

Applicant Information

Applicant Institution Address

In the event this proposal is approved for funding, payment will be made to the applicant institution as named at the beginning of this application form, and will be mailed to the address listed here.

Proof of Nonprofit Status

Nonprofit Status (Max. 2MB, .pdf format only)	lehigh_EIN.pdf

Board/Trustee List (not required for colleges or universities; required for all other applicants)

Upload a current list of board or trustee members. The list must be on the applicant institution's letterhead.

Board/Trustee List (Max. 2MB,
.pdf format only)

Contact Information

Provide the contact information for the proposed project's primary Principal Investigator(s) (PIs). The PI(s) will take direct responsibility for completion of the project, should funds be awarded. He or she must be significantly involved with the project's direction and execution and will be responsible for submitting required narrative and financial reports to CLIR.

Note: Applicants may propose up to three PIs for their project. All applicants must assign at least one PI. Information for co-PIs should be included below as applicable.

[redacted]

Application Contact

If CLIR's point of contact during the application period should be someone other than the proposed Principal Investigator(s) (e.g. a grants administrator), enter the name and contact information for the relevant individual here.

Application Contact: Mr./Ms./Dr.

Application Contact: First Name

Application Contact: Last Name

Application Contact: Title

Application Contact: Institution

Application Contact: Email

Application Contact: Address

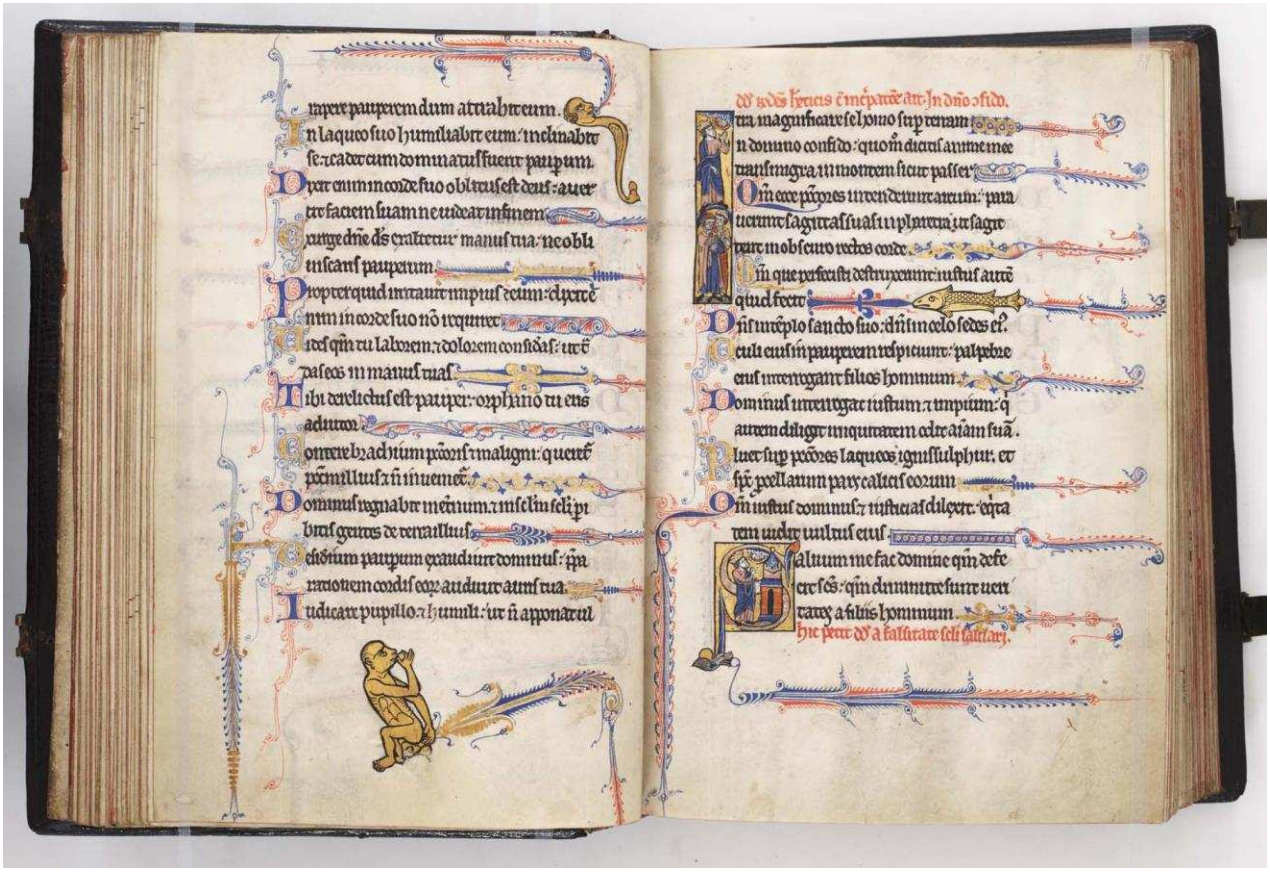
Application Contact: City

Application Contact:
State/Province

Application Contact: Zip/Postal
Code

Application Contact: Country

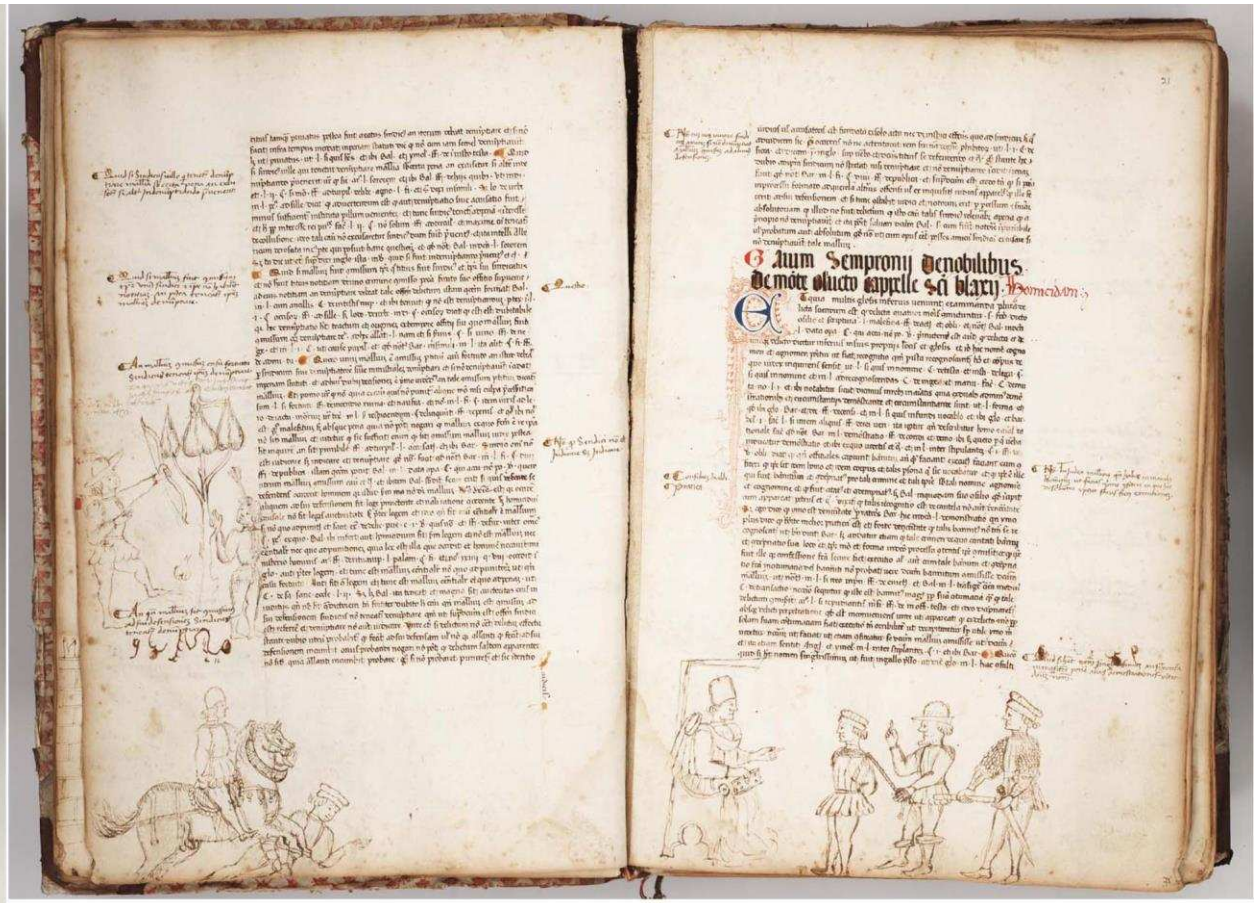
Gallican Psalter with Canticles, Litany, and Two Prayers (Lewis Psalter). France, Paris, c. 1225-30. Free Library of Philadelphia, Lewis Ms 185. Fols. 2v-3r and 38v-39r. No copyright restrictions. (Please note: these images and several others in this proposal attachment are available online. However, only a sampling of images from these manuscripts is available, not the full manuscripts.)



La voie de Povreté ou de Richesse (The Way of Poverty or of Wealth). France, 1425-1450, The Fastolfe Master (artist).
Free Library of Philadelphia Rare Book Department, Widener 1, ff. 65v-66r. No copyright restrictions.

Guillame de Tignonville, *Les dits moraulx des philosophes.* Bourges, 1475. f1r (Sedechias), f24r (Socrates)
Free Library of Philadelphia Rare Book Department Lewis E 209. No copyright restrictions.

Angelo de Gambiglioni, *Tractatus de maleficiis* (Treatise on evil deeds), a manual on criminal procedure. Italy, 1450-1475
Free Library of Philadelphia Rare Book Department, Hampton Carson Collection, LC 14 23. f. 1r; ff. 20v-21r. No copyright restrictions

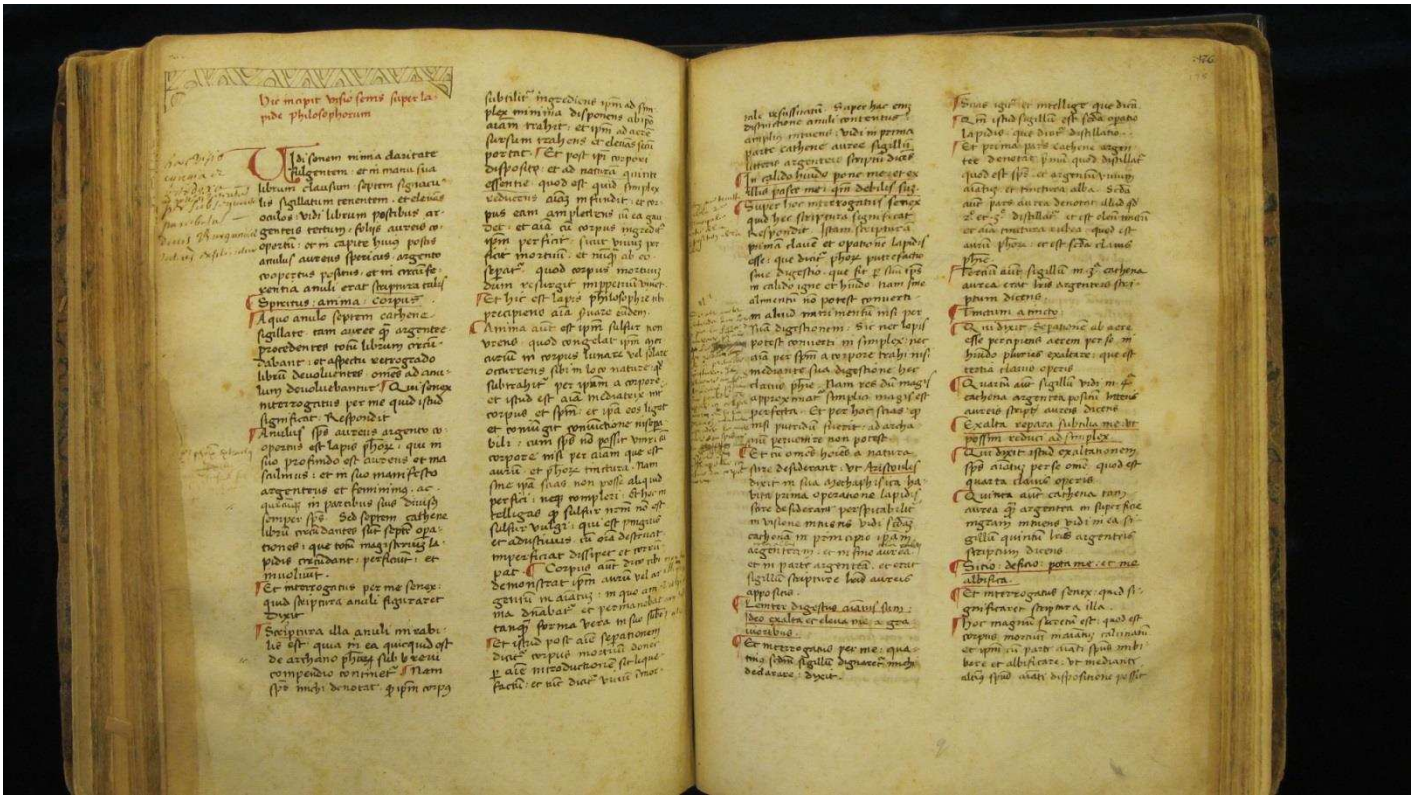


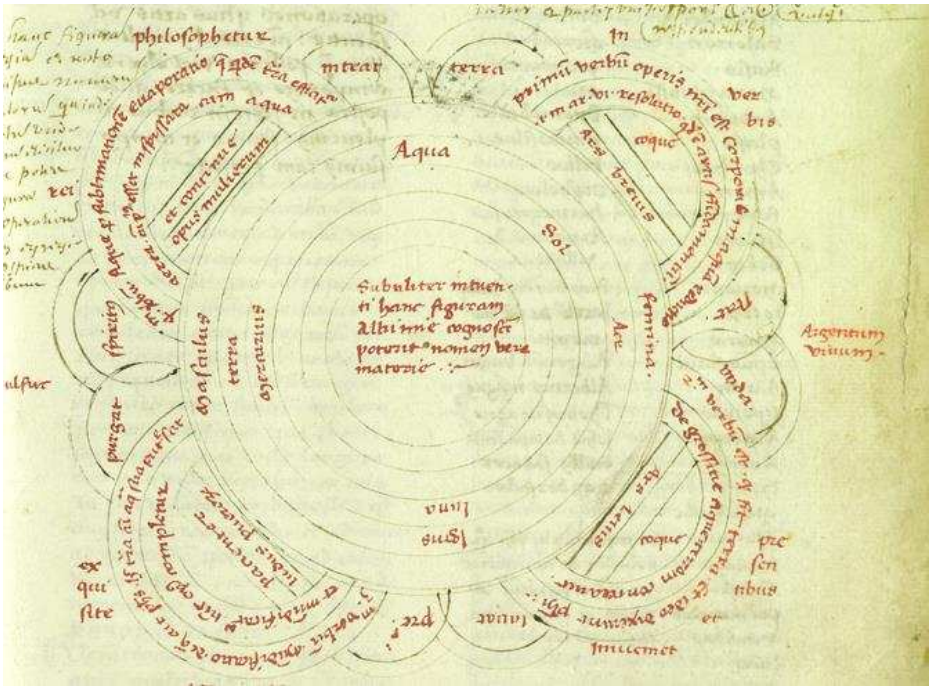
John Lydgate, *Fall of Princes.* England, probably London, c. 1465-1475
Rosenbach Museum & Library, MS 439/16, f. 126. No copyright restrictions.

Book of Hours for Thérouanne Use. Lazarus and Dives. Northern France, Diocese of Thérouanne, first quarter of the sixteenth century. Acquired by prominent Philadelphian William Hamilton of the Woodlands, c. 1786. The Library Company of Philadelphia, MS 24 ff. 100v-101.

Bible. Annotated with text and drawings by John Pemberton, traveling minister for the Society of Friends. The Bible was owned by Richard Wyll (sp.?) in 1482; William Add (sp.?); Robert Mirfield in 1523; John and James --; purchased by John Pemberton from John Kendall in 1787 and donated to the Philadelphia Yearly Meeting Library. Haverford College Special Collections Ms J2.16.10. No copyright restrictions.

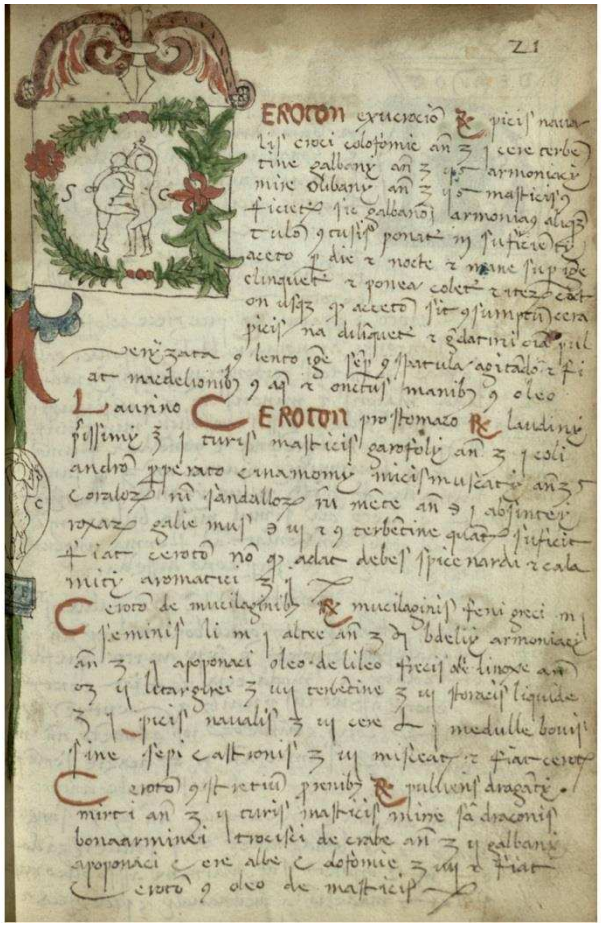
Arnald of Brussels, compiler. Alchemical writings in Latin, Italian and Catalan. 15th-century manuscript on paper, written mostly in Naples between 1472 and 1490. Purchased by the University in 1881. Special Collections, Lehigh University Libraries, Ms 10 Hirsch. No known copyright restrictions.

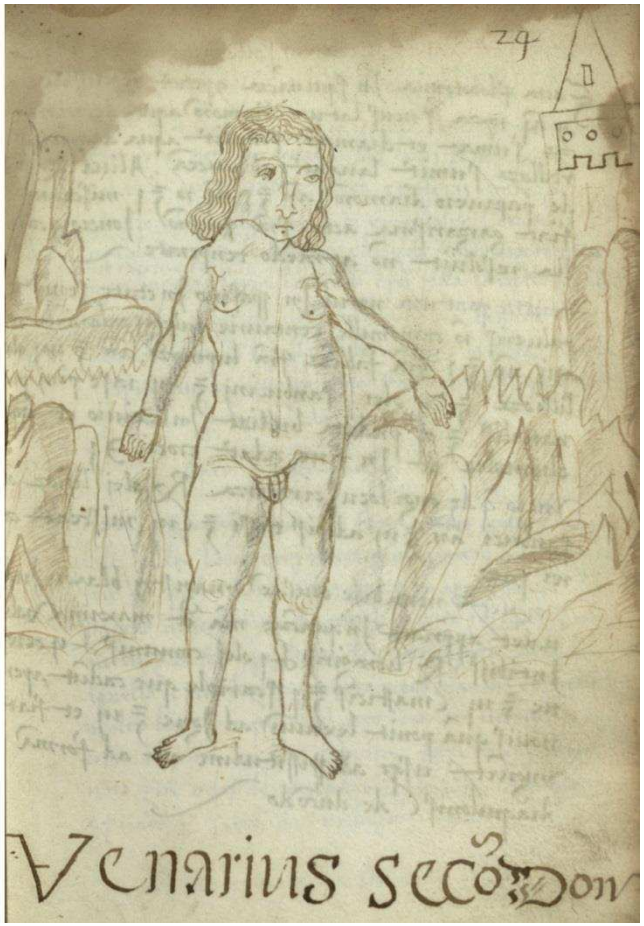




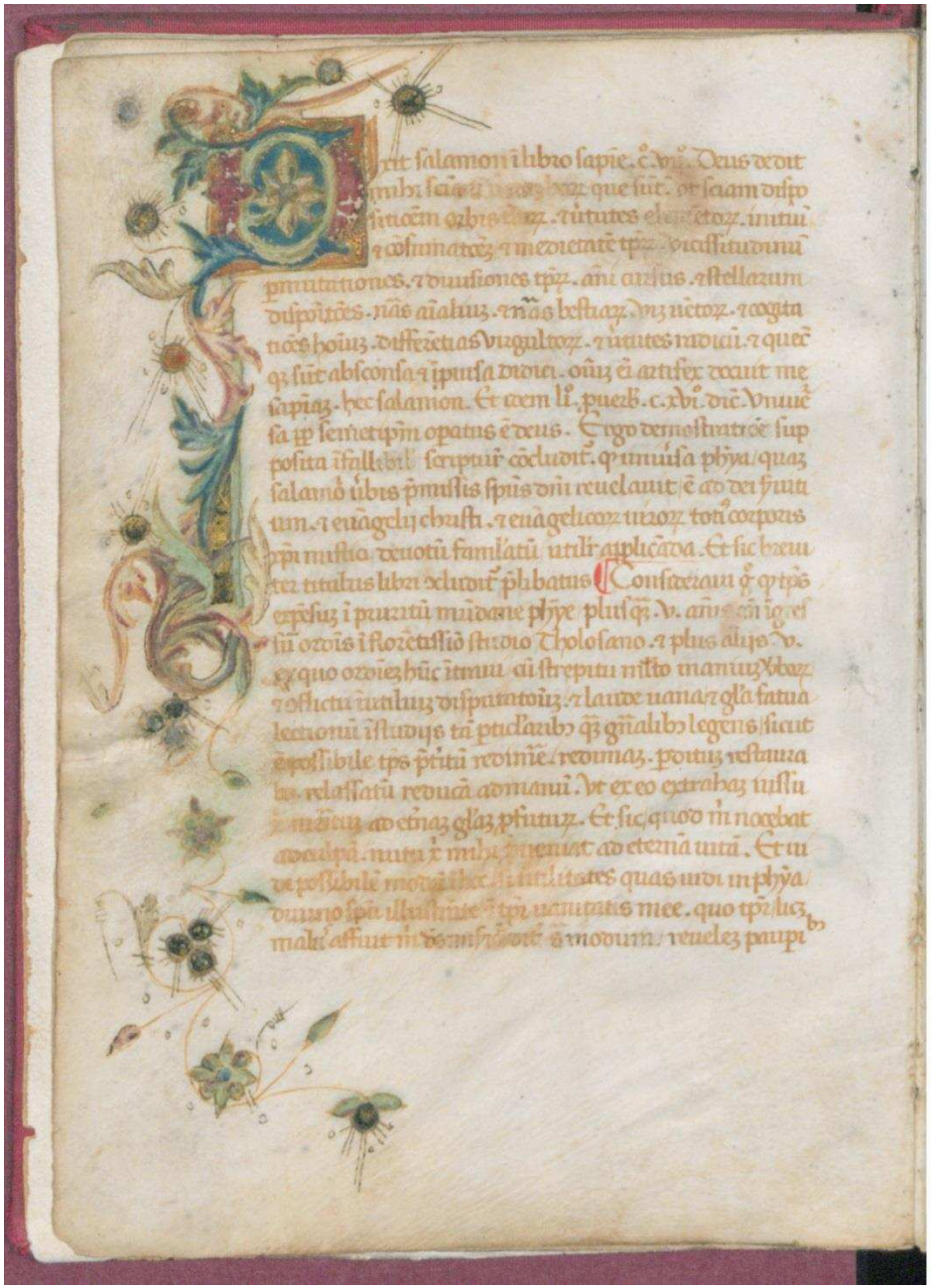
Top: ff. 175v and 176r. Immediately above: diagram of philosopher's stone.

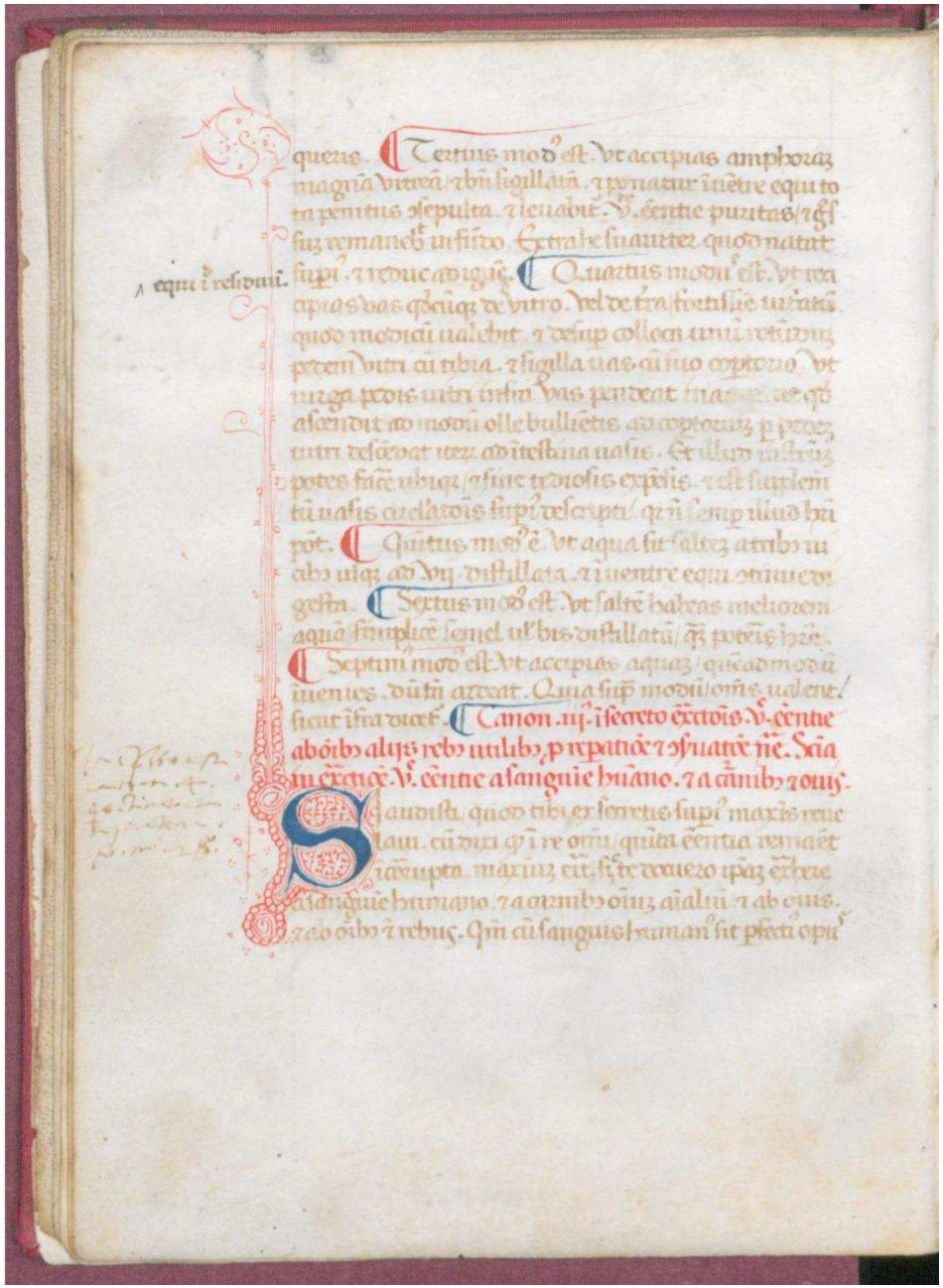
Medical-pharmaceutical miscellany. Collection of tracts in Latin and Italian, probably put together by a practitioner, Italy, first half of 16th century. College of Physicians of Philadelphia Ms 10a 132, selected folios. No copyright restrictions.





Johannes de Rupescissa, *De consideration quintae essentiae rerum omnium.*
University of Delaware Library, MSS 095 Item 014. No copyright restrictions. Selected folios.





Rights Statement for the *Bibliotheca Philadelphiensis* Project

All manuscript images provided as a part of this project are in the public domain. There are no embargoes or legal restrictions applicable to the materials to be digitized. All manuscript descriptions and other metadata are dedicated to the public domain under a CC0 Creative Commons license.

Bibliotheca Philadelphiensis
Project Plan

Overview. This project will result in the digitization and online presentation of approximately 159,500 pages of medieval manuscripts from ten members of the Philadelphia Area Consortium of Special Collections Libraries (PACSCL), together with the presentation of previously digitized materials from another five (no funding requested). The digitized manuscripts and metadata will be freely available for downloading in their entirety under the Creative Commons license and mounted on the OPenn repository at the University of Pennsylvania Libraries (Penn).

Three institutions are serving as lead partners: Lehigh University will provide administrative and fiscal oversight, technical support, and dark archiving resources; Penn will conduct the bulk of the digitization and will also host the images as a contributed cost; and the Free Library of Philadelphia (FLP) will provide the bulk of the manuscripts to be digitized. When the project is completed, the overwhelming majority of medieval manuscripts in eastern Pennsylvania will be digitized in their entirety, the most comprehensive and most freely accessible collection of its kind in the United States.

The following institutions with previously digitized manuscripts will contribute their content, adding value to the resource but not seeking project funding for these manuscripts: Chemical Heritage Foundation, Franklin & Marshall College, Lehigh University (in addition to its grant-funded manuscripts), Philadelphia Museum of Art, University of Pennsylvania Libraries, and Villanova University. These manuscripts are not listed on the project plan appendix, nor are they included in the page count, but will make the *Bibliotheca Philadelphiensis* significantly more comprehensive.

Staff. The project will employ two hourly staff members (999 hours/year maximum) at the Free Library and Lehigh University. Additional staff subcontracted by the Schoenberg Center for Electronic Text and Image or contributed to the project will be responsible for preparing images and metadata for uploading to the OPenn repository. Metadata creation will be conducted by student workers.

Governance. The project will be governed by an executive committee consisting of the PI Lois Black and co-PIs Janine Pollock and Dot Porter, plus Laura Blanchard, PACSCL staff. This executive committee will be supported by an advisory committee consisting of one representative per institution for institutions with more than twelve manuscripts in the project. The executive committee will meet as needed, in person or via teleconference/email; the advisory committee will meet quarterly. Either body may invite the part-time staff to its meetings.

Prior to start of grant (January – March, 2016)

- Inaugural meetings of advisory board and steering committee
- Finalize job descriptions for project staff and publicize job openings
- Co-PIs Janine Pollock and Dot Porter will meet with other FLP staff to establish crosswalks between FLP digital collections data and the project metadata.

April - September, 2016 (start of funding)

- Advisory committee formalizes recommended standards, policies, and procedures for the project
- CoPIs Janine Pollock and Dot Porter and FLP technical staff establish crosswalks between exported FLP digital collections data and the project metadata spreadsheet and finalize procedures
- Executive committee representatives meet with institutional representatives to determine their scheduling and training needs and develop a more detailed project schedule
- SCETI staff and institutions who are imaging separately recruit imaging and metadata technicians as necessary
- Executive committee meets with advisory committee and relevant Penn staff to review and finalize standards and workflow for collections imaged at Penn and at other repositories, based on existing documentation
- Co-PIs develop training boot camps and documentation
- Executive committee coordinates with repositories to assure that conservation scans have been carried out on the manuscripts to be transferred to Penn
- Project staff hired (September 1 start date anticipated) and oriented

DELIVERABLES

- Documentation, including imaging standards, metadata standards, and boot camp manuals
- Detailed workflow for imaging and metadata creation, in consultation with SCETI and project partners who are digitizing independently

October 2016 – December 2016

- Boot camps held for project staff and first cohort of imaging and metadata technicians and institutional supervisors; and for additional cohorts each semester as needed
- First cohort begins metadata and image creation at SCETI and other institutions
- Project staff assures QC on metadata and images
- Project staff sets up project blogs and social media accounts
- Project staff meets with contributing repositories to plan workflow for upcoming quarters
- Penn IT staff in consultation with executive committee create / adapt systems to create derivative images and to upload content into OPenn for the consortial repository
- Penn uploads content to OPenn -- including at least one test ms from each of the repositories digitizing their collections independently, conducted early in the process

DELIVERABLES

- approximately 8,000 image files and associated metadata files uploaded into PACSCL/institutional medieval mss collections on OPenn
- Blog and social media sites and accounts accounts
- Workflow plans for the upcoming quarter

January 2017 - September 2018
(these tasks repeat quarterly for the next seven quarters)

- Boot camps held for additional cohorts of student workers as needed
- Student workers and staff continue metadata and image creation at SCETI, BackStage and other institutions
- Project staff assures QC on metadata and images
- Project staff meets with contributing repositories to plan workflow for next quarter
- Penn uploads content to OPenn

DELIVERABLES

- approximately 21,000 image files and associated metadata files uploaded into PACSCL medieval mss collection on OPenn
- Posts on blog and social media
- Workflow plans for the upcoming quarter
- Annual reports in appropriate quarters

October 2018 – March 2019

- Finish imaging collections, creating metadata, performing QC, and uploading to OPenn
- Finish making collections discoverable, as well as sharing results via the website, blog, and social media
- Refine OPenn portal as necessary; create or complete linkages and/or uploading to other sites (e.g., MESA, viewshare and Internet Archive)
- Create or revise any project documentation and place on project website
- Arrange to present the results of the project at appropriate regional meetings, publications, online forums, and social media

DELIVERABLES

- Any remaining images and metadata files uploaded into PACSCL medieval mss collection on OPenn
- Complete project documentation, including training manuals, placed online on project website
- Presentations, copies of papers, from any outreach activities
- Publicity emails to appropriate lists and electronic media
- Final report

Collection Title	Collection Size, pages	Holding Institution	Institution/Staff Responsible for Digitization	Institution/Staff Responsible for Description	Institution/Staff Responsible for Quality Control	Institution/Staff Responsible for Long-Term Maintenance	When in the course of the project will this collection be processed?
Medieval and Renaissance Manuscripts	15,000	Bryn Mawr College	Bryn Mawr	Student worker, Bryn Mawr	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	January 2017 - May 2018 (during academic year) imaging, metadata and quality control. Ingestion into Openn TBA
Medieval and Early Modern Manuscripts	2,793	College of Physicians of Philadelphia	UPenn	Shared intern (College of Physicians, Library Company, Rosenbach)	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Moncure Biddle Horace Collection	1,200	Free Library of Philadelphia	UPenn	Student worker, location TBD	Project staff, Free Library	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Hampton Carson Collection on the growth and development of the Common Law	10,400	Free Library of Philadelphia	UPenn	Student worker, location TBD	Project staff, Free Library	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Widener Collection of Medieval Manuscripts	3,600	Free Library of Philadelphia	UPenn	Student worker, location TBD	Project staff, Free Library	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
John Frederick Lewis Collection	102,400	Free Library of Philadelphia	UPenn	Student worker, location TBD	Project staff, Free Library	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
J. Rendel Harris Collection (excluding Syriac and Arabic mss)	5349	Haverford College	Bryn Mawr	Student worker, Bryn Mawr / Haverford	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	January 2017 - May 2018 (during academic year) imaging, metadata and quality control. Ingestion into Openn TBA
Pemberton Bible	904	Haverford College	Bryn Mawr	Student worker, Bryn Mawr / Haverford	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	January 2017 - May 2018 (during academic year) imaging, metadata and quality control. Ingestion into Openn TBA

Collection Title	Collection Size, pages	Holding Institution	Institution/Staff Responsible for Digitization	Institution/Staff Responsible for Description	Institution/Staff Responsible for Quality Control	Institution/Staff Responsible for Long-Term Maintenance	When in the course of the project will this collection be processed?
Medieval and Early Modern Manuscripts	4910	Lehigh University	Backstage Library Works, supervised by Lois Fischer Black	Lehigh University student worker	Lehigh University, Project staff	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Medieval Manuscripts	6694	Library Company of Philadelphia	UPenn	Shared intern (College of Physicians, Library Company, Rosenbach)	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Medieval Manuscripts	4000	Rosenbach	Upenn	Shared intern (College of Physicians, Library Company, Rosenbach)	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
Book of Hours	124	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Pore Caitif Codex	97	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Burley, Walter, De Vita et Moribus Philosophorum	134	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Chirini, Georgio di Lorenzo. [Vade mecum]. In comii[n]cia l alphabeto di yutti l costume cambi: monete pesi & misure & usan	200	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Illuminated Latin prayer on vellum	2	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Missal leaf	2	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA

Collection Title	Collection Size, pages	Holding Institution	Institution/Staff Responsible for Digitization	Institution/Staff Responsible for Description	Institution/Staff Responsible for Quality Control	Institution/Staff Responsible for Long-Term Maintenance	When in the course of the project will this collection be processed?
Cochran History of Business Collection, medieval mss	780	Temple University	Temple	Student worker, Temple	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	2017 spring term for imaging, metadata, and quality control -- ingestion and publication TBA
Medieval manuscripts	923	University of Delaware	Upenn	University of Delaware/Special Collections staff	Project staff, Lehigh	University of Pennsylvania for Openn site and Lehigh University for preservation copies	October 2016-March 2019 (precise scheduling TBA after determination of workflow, June-September 2016)
	159,512						
Previously digitized manuscripts added to Openn database (no grant funding requested)	*N/A*	*Chemical Heritage Foundation, Franklin & Marshall College, Lehigh University, University of Pennsylvania, Villanova University*	*N/A*	*N/A*	*N/A*	*University of Pennsylvania for Openn site; TBA for preservation copies*	*TBA*

Bibliotheca Philadelphiensis

Technical Plan

Overview

The proposed project comprises three principal activities: the creation of human- and machine-readable metadata, digital photography, and making metadata and photographs accessible through OPenn. The infrastructure of OPenn ensures proper technical curation and access for deposited materials. Long-term storage of the metadata and photographs will be provided by University of Pennsylvania Libraries repository and Lehigh University.

Description

This proposal estimates the creation of digital facsimiles for approximately 159,500 pages (more than 400 codex manuscripts plus approximately 150 leaves). Over the course of twenty-four months approximately 500,000 files will be created, representing three images per page and one TEI P5 XML file per codex or leaf. Work is expected to proceed at an approximate rate of 300 shots per day. Cataloged manuscripts will be selected for photography, creating a queue for the camera operator. In the first six months of the project, the curators at the partner institutions will review the condition of selected items for safe shooting, removing those materials from the queue that are not in condition to photograph pending conservation treatment. Student workers at each institution, under the direction of the digital data coordinator, will then enter descriptive metadata into spreadsheets for each item or into the library's data collection system.

Working with SCETI's imaging assistant, the project's camera operator will capture the images, entering the file names in the appropriate space on the spreadsheet as they go. An image processor will then check and process the files. The digital data coordinator will spot check the processed images, referring problems to the library imaging assistant.

In general, the Schoenberg Center for Electronic Text & Image follows the NISO standards as articulated in *A Framework for Building Good Digital Collections,* 3rd edition (http://www.niso.org/publications/rp/frameworks3.pdf). The following represents specific standards adopted by SCETI in their capture, storage, and presentation of digital images.

Photography specifications:

- Archival Masters: 600 PPI 24-bit raw TIFF image; 600 PPI 24-bit LZW color image
- "Golden Thread" color target is used for every exposure. Target also includes interference pattern and inch/centimeter markings. Target is also used to check focus.
- Standards:

  California Digital Library. *CDL Guidelines for Digital Objects*
  http://www.cdlib.org/inside/diglib/guidelines/
  Library of Congress. *Building Digital Collections: A Technical Overview*
  http://memory.loc.gov/ammem/aboutitechin.html

Photography & Processing Equipment: The equipment at the Schoenberg Center for Electronic Text and Image and Backstage Library Works has been described in their respective proposals/estimates.

Image Delivery Format: Images will be made available in OPenn in TIFF format for the high-resolution masters, as 300 dpi JPEG files for the web-ready files, and 72 dpi JPEG files for thumbnails.

Metadata: The page-level metadata is generated during image capture by the camera operators and collated with metadata entered by students at each institution. The information includes both descriptive and structural metadata:

- The actual position of the page in the physical organization of the manuscript
- The visible page number
- Whether the page marks the beginning of a division (e.g., a chapter or a new title) or contains any marginalia or illustrations
- The ID of the corresponding image file

A copy of the current metadata spreadsheet template used by OPenn for the ingestion of medieval manuscripts is online for review here: http://tinyurl.com/OPennMetadata

Management and Staffing

As described in the project plan, the project will be directed by an executive committee consisting of PI Lois Fischer Black (Lehigh), co-PIs Dot Porter (Penn) and Janine Pollock (Free Library), and Laura Blanchard (PACSCL).

Two part-time project staff will support the principal investigators: a metadata and quality control specialist based at Lehigh University and one at the Free Library of Philadelphia. Part-time staff will also assist the PIs in supervising students. These staff positions will be essential to ensure the consistency and quality of work across the project's diverse institutions and collections.

Graduate students specially trained for the project (as described in the proposal narrative) will do the bulk of the imaging and metadata creation, supervised by project staff and staff at participating institutions.

In close collaboration with project staff, staff at participating institutions will contribute substantially, by supervising the student workers and monitoring workflow.

Project Standards

Imaging. The Schoenberg Center for Electronic Text and Image at the University of Pennsylvania Library will conduct the imaging for the Free Library of Philadelphia, Library Company of Philadelphia, Rosenbach Museum & Library, Swarthmore College, University of Delaware, and the College of Physicians of Philadelphia. Bryn Mawr College, Haverford College and Temple University will image their own manuscripts. Because of the distance from Lehigh University to Penn, that institution will contract with Backstage Library Works in Bethlehem, PA for imaging. Manuscripts will be photographed at 600

ppi, producing lossless tiffs as master images. Images taken at UPenn will be ingested into their repository framework, and uploaded to OPenn to make them accessible for use and reuse. Images taken at other institutions will be sent on hard drives to Lehigh for metadata and imaging quality control. They will then be delivered to UPenn where they will be ingested into OPenn.

Metadata. Both descriptive and structural metadata will be collected on Excel spreadsheets. Fields in that template match those fields that the University of Pennsylvania manuscript catalogers currently use in MARC. A similar spreadsheet is being used as part of the PACSCL Diaries Project (a self-financed collaborative venture placing digitized diaries on the OPenn server, in process). During the six-month gear up period of this project, participating institutions will have an opportunity to suggest modifications to the spreadsheet fields.

Metadata will be gathered at the institutions prior to digitization. The spreadsheets will be delivered to Penn through a shared Google Drive. Staff at Penn will convert the spreadsheets into TEI P5 XML as part of the image ingestion process, at which time both the images and metadata will be available on OPenn.

We choose to use TEI P5 XML as our manuscript description format because it is a widely-used format for describing manuscripts. For example, it is used by e-codices: the Virtual Library of Switzerland (http://www.e-codices.unifr.ch/en/about/metadata), Parker Library on the Web (http://parkerweb.stanford.edu/parker/actions/page.do?forward=project_tech_msdesc), Manuscriptorium (http://www.manuscriptorium.com/), and the Digital Walters (http://thedigitalwalters.org), among many others. The manuscript description element of the TEI enables detailed physical, intellectual, and historical description of medieval manuscripts. In addition to general description - title, foliation, provenance - the TEI enables the detailed listing of illustrations, diagrams, and other visual aspects of a manuscript, and the listing of textual items, linking all of these to folios or spans of folios. The facsimile element of the TEI enables the listing of all image files associated with a manuscript - master, web-formatted, and thumbnail - and associates those files with the folio represented by the images. Thus, with the complete TEI manuscript description and image files, users have the raw materials they need to build editions or other resources that take advantage of the robust descriptions and connections between descriptions and images.

Interfaces. The purpose of OPenn is to present first-quality digital images and metadata of cultural heritage material. It is not, primarily, a platform for viewing or browsing material. Instead, it is a platform for sharing - it is simply files made available publicly on a web server, there is no API or other interface required for access. OPenn adheres to the principle that to be open, data must be licensed for use for any purpose, and it must be accessible to all users regardless of their technical ability. Through OPenn, the data created through this project will be made available in human and machine-readable formats via http, anonymous ftp, and anonymous rsync. (See screen captures, next page, or visit http://openn.library.upenn.edu .) In addition to making the data available through OPenn, we will build page turning interfaces using the Internet Archive BookReader at the request of the partner institutions, which can be embedded into the websites of participating institutions, allowing visitors to those websites the possibility of turning the pages of that institutions manuscripts in a seamless experience.

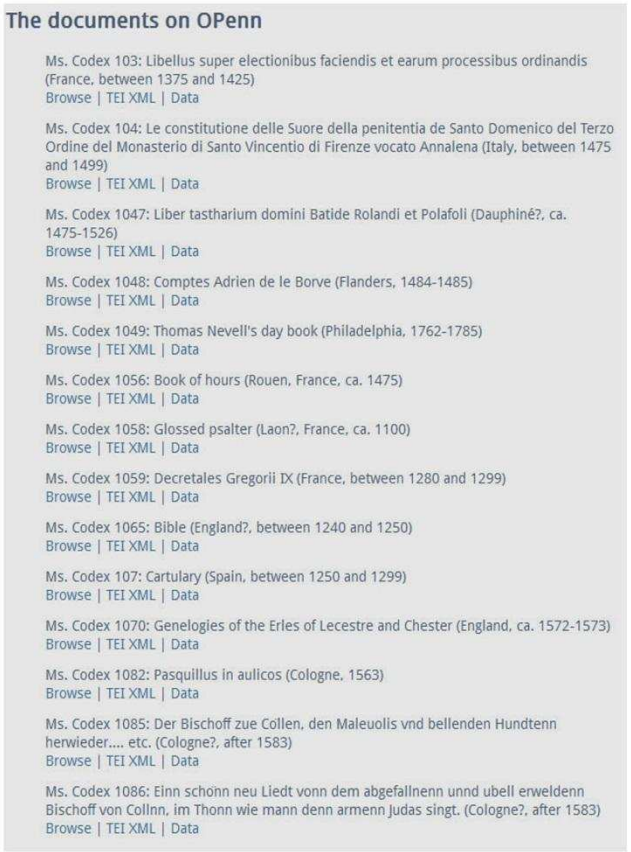
But the purpose of the OPenn is further that data can be taken and reused by the public and researchers the world over, as they like, in their play and their research.

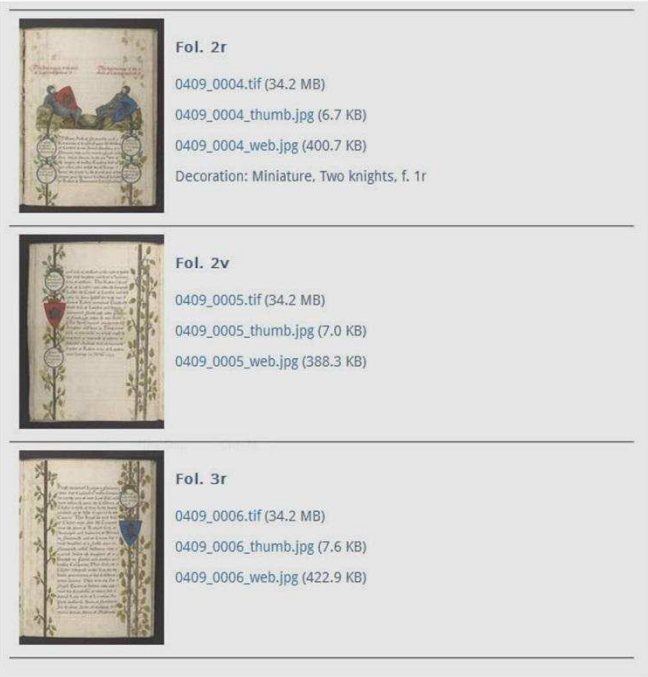
Digital Preservation and Long-Term Storage

Materials will be archived at the University of Pennsylvania and dark archived at Lehigh University. Specifications on the storage area network (SAN) at each institution are described in the preservation and discoverability plan.

Screen Captures from Current OPenn Interface

The medieval manuscripts in *Bibliotheca Philadelphiensis* will be listed according to repository as in the example below. Users clicking on "browse" will reach a page with descriptive information on the manuscript followed by image thumbnails (right), when then can be down-loaded in three resolutions. Users can also click on "data" to reach image and metadata directories that can be accessed via FTP (lower right).





Bibliotheca Philadelphiensis

Digital Preservation and Discoverability Plan

Discoverability

The University of Pennsylvania Libraries, host of the OPenn site, is committed to three core principles in the realm of digitization. First, it is intent upon building a distinctive digital library of unique assets of international quality. Second, it is committed to releasing these assets as freely as binding licensing agreements allow. (In this case there are no such agreements, and images and metadata will be released as Free Cultural Works). Third, it is committed to collaborating with partners, particularly in the greater Philadelphia area, to preserve and host digital data from its partners in order to give quality curated information to the world, and added value to the institutions with which it works. It is for this reason that OPenn was launched on May 1, 2015.

All digitized materials will be available on OPenn (openn.library.upenn.edu). The Bibliotheca Philadelphiensis page will display all the medieval manuscripts digitized, as well as previously digitized medieval manuscripts from institutions contributing to the Bibliotheca (e.g. University of Pennsylvania, Chemical Heritage Foundation). In addition, each institution will have its own page, where visitors can see contributions arranged by repository. All these items will be licensed as Free Cultural Works. They will be available at full resolution TIFFs, and also as reduced size standard all purpose JPEGs for easy web use and dissemination. They will be accompanied by rich descriptive metadata in TEI P5. The data will be available for use, and reuse, by humans and by machine (individually, by anonymous FTP, and by rsync), for any purpose and at no cost. OPenn will be made available for crawling by Internet search engines; and we will be promoting OPenn through social media platforms such as Twitter and Facebook.

The participating institutions will in some cases download the data from OPenn and reuse it in their own applications, or they will connect live to OPenn, either to display individual images, or to access page turning of codices using an embedded Internet Archive BookReader. For those institutions that want it, Penn will display their holdings through its discovery interface, Penn In Hand (http://dla.library.upenn.edu/dla/medren/index.html). Penn in Hand is an interface that allows for full page turning of digitized books, together with the display of descriptive metadata in MARC format. Each of these discovery tools has been customized to engage the scholar through an intuitive interface that allows for deep faceted searching.

In addition all medieval manuscripts in the Bibliotheca Philadelphiensis will be available on the Internet Archive as PDF's, together with metadata that links back the displayed PDF to the institutional repository of the material manuscript, and to the Bibliotheca Philadelphiensis on OPenn. Furthermore, staff at the Schoenberg Institute of Manuscript Studies will integrate the Bibliotheca into the data of MESA – The medieval electronic scholarly alliance, where they will join the records of another 26 institutions containing 115,000 items, including the British Library Catalogue of Illuminated Manuscripts and the manuscripts of The Bibliotheque Nationale de France.

Project files will also be made available through the International Image Interoperability Framework (IIIF). Any scholars or institutions who have implemented tools using IIIF will be able to use images from OPenn in their tools. Stanford University has created an IIIF image browser, Mirador, which allows comparison of manuscripts from the Beinecke Library at Yale, Walters Art Museum, and the British Library (see demo at the British Library: http://sanddragon.bl.uk/mirador/). Finally, we will be providing metadata in a format compatible with DPLA.

Finally, as part of its regular operations, the Schoenberg Institute for Manuscript Studies at the Penn Libraries conducts an ongoing environmental scan for new opportunities to participate in the aggregation of metadata. Such participation would include the *Bibliotheca Philadelphiensis*, as well as Penn's own medieval manuscripts.

Preservation

Lehigh University Library will "dark" archive all the materials created through this grant. The digitized TIFF files will be stored on the Lehigh University storage area network (SAN). To better support storage needs for research computing, digital scholarship, and digital library projects, Lehigh University recently increased the storage resources four-fold to one petabyte. Lehigh SAN is housed in the secure on-site data center. The storage system is built on open source Ceph technology, which runs on heterogeneous commodity hardware and provides excellent scale performance with capacity. Data stored on Ceph platform are replicated in three copies to ensure self-healing, self-managing services with no single point of failure. Since Lehigh's storage system is a software defined platform and using commodity disks, the cost is very affordable and sustainable. Currently the estimated cost is about $100 per TB per year. The cost may be even lower in the future, as the cost of hard drive disks continue to fall.

All the materials will also be archived at Penn. Penn Libraries has a storage area network (SAN), with a current used capacity of 162 terabytes, but with 3 petabyte capacity. Master images will be stored in a compellent storage array, which combines high availability, performance, and an expandable storage backplane, to provide tiered storage in a hierarchically managed system. The storage array consists of RAID-10 AND RAID-5 disk arrays, with LT05 tape drives for archival storage and backup. The architecture allows easy expansion of storage to meet the needs of this project and other digitization projects of the Libraries. Our current Managed Masters system bundles digitization masters and their metadata files into identified archival packages, which are stored in the storage array described above, and which will be replicated in offsite backups. We anticipate migrating to an open source repository framework that will enable more robust management of the content in the near future. Whether managed by our current or our planned infrastructure, the project will use standard formats for images, metadata, and packaging, and include any documentation required to understand project-specific conventions for images, formatting, metadata, and organization. We anticipate that the file formats used in this project will be able to be processed by commonly-supported software past the end of the project period.