



NATIONAL ENDOWMENT FOR THE

Humanities

DIVISION OF PRESERVATION AND ACCESS

Narrative Section of a Successful Application

The attached document contains the grant narrative and selected portions of a previously funded grant application. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the Preservation and Access Programs application guidelines at <http://www.neh.gov/grants/guidelines/HCRR.html> for instructions. Applicants are also strongly encouraged to consult with the NEH Division of Preservation and Access Programs staff well before a grant deadline.

Note: The attachment only contains the grant narrative and selected portions, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: Digitizing the University of Pennsylvania's Early Modern, Western Manuscripts, 1601-1800

Institution: University of Pennsylvania

Project Director: Nancy M. Shawcross

Grant Program: Preservation and Access Humanities Collections and Reference Resources

Significance

Objective: The University of Pennsylvania Libraries propose (1) creating digital facsimiles of approximately 1,000 early modern, Western manuscripts held by the Rare Book & Manuscript Library; (2) maintaining a freely-available Web site with faceted searching for the project's facsimiles; and (3) updating MARC cataloging records in WorldCat and Franklin (Penn's online catalog) with persistent URLs that take researchers directly to the facsimiles. The project will make Penn's unique materials accessible globally through a variety of discovery points, enhancing teaching and research worldwide.

Background: This proposal builds on and expands the work of a current, NEH-funded project in which Penn's approximately 800 European manuscripts dated before 1601 are being digitized. The new proposal seeks to digitize Penn's Western manuscripts from the 17th and 18th centuries, yielding an additional 1,000 facsimiles to the Web site entitled *Penn in Hand: Selected Manuscripts* (<http://dla.library.upenn.edu/dla/medren/>). Penn has completed the bibliographic description of these early modern manuscripts in WorldCat and its local catalog, Franklin, and will make the digital facsimiles freely available online. Through the Schoenberg Center for Electronic Text & Image (SCETI) and the progress already made on the medieval and Renaissance manuscripts, the Penn Libraries can demonstrate their fifteen years of experience and expertise in providing high-quality, cost-effective digital surrogates of manuscript materials. Through the department of Information Technologies & Digital Development, Penn has already created and commits to maintain a Web-based delivery system that affords faceted searching of Penn's manuscripts, including four levels of magnification for the images.

One of the guiding principles of Penn's previous and current proposals to the NEH concerns the inclusiveness of the material to be digitized. The Rare Book & Manuscript Library serves a broad subject patronage, and the University of Pennsylvania itself is committed to fostering and supporting interdisciplinary studies. While the first project was restricted by date (up to 1601) and continent of origin (Europe), no additional limitations--such as language, country of origin, or subject--were imposed. By being comprehensive, Penn sought to provide research materials to as diverse an array of students and scholars in medieval and Renaissance studies as possible. In similar fashion, the current proposal--while limited to the West--offers a time frame enlarged by 200 years but no further subject exclusions.

Significance of material and project: Manuscripts remain essential to scholarly research in European and American studies in the early modern period and the Enlightenment. The question of the relationship between print and manuscript in these centuries opens up at least three approaches to manuscripts as indispensable witnesses to their times. First, many manuscript items were never meant to be published or even distributed except in a limited way. Examples include private correspondence, diaries, cookbooks, lecture notes, business records, and governmental records. Such materials give today's researchers unique access to lives, households, and organizations not represented in print and thereby provide raw material for original research and an invaluable context for their periods.

Second, some manuscripts are important for research because of a direct relationship to printed publications. They can show the development of a work before its first edition or between successive editions, challenging the seeming fixity of a printed work. Others document readers interacting with printed publications as they take notes, respond to content, reconcile multiple versions, or create their own miscellaneous collections from printed sources.

A third group of manuscripts comprises intellectual inquiries and discussions that for political reasons or because of perceptions of propriety were discretely circulated in handwritten documents and were never risked being sent to a printer. Historians of the book have become increasingly aware that hand copying was a vital mode for disseminating and even publishing texts in early modern Europe long after the invention of the printing press. Although studies of manuscript culture and scribal publication have focused largely on the writing, reading, and copying of literary and religious texts, recent scholarship has also shown that manuscripts were vital not only to creation but also to circulation in

science, music, and politics. In addition to their importance for research in these fields, these manuscripts also are primary sources for research in understanding not only which authors and which subjects stood outside the channels of print publication but also why.

In general, research and primary resources are growing in their importance to undergraduate and graduate education in the humanities. Manuscript materials encourage students not only to seek answers for themselves but also to formulate new questions. The limited hours of many special collections and the fragility of the materials can discourage the frequent and in-depth use by multiple students that is necessary for primary resources to become an integral part of the curriculum. The proposed project, however, allows Penn to build on its current, NEH-funded project to digitize pre-1601 European manuscripts, affording students with access to the Internet the ability to follow—at will, at any time of day—their interests within an expanded chronological scope, one that more than doubles the number of full facsimiles delivered via the Internet.

Several of Penn's subject strengths in manuscripts benefit from the extended time frame. Material, for example, collected by Henry Charles Lea for his research on the history of the Roman Catholic Church and the Inquisition includes a papal formulary from approximately 1300 as well as a 1799 copy of Juan de Mariana's treatise on monetary policy, the devaluation of currency, and the limits on the power of King Phillip II in these matters (originally written in 1609 and translated from the original Latin into Spanish by the author). Another subject strength concerns university education, specifically the study of philosophy. Around one hundred listings for manuscripts related to Aristotle appear on the *Penn in Hand* site; they range from a 12th-century translation of a work by Aristotle and a 13th-century Albertus Magnus commentary on Aristotle to a 1686 work by a Jesuit priest introducing Aristotelian and scholastic philosophy and 18th-century lecture notes on Aristotle and other philosophers.

The Rare Book & Manuscript Library holds a variety of codex manuscripts and archival documents relating to several branches of scientific study and to the occult. The Edgar Fahs Smith Memorial Collection contains more than sixty manuscript items, as well as a variety of miscellaneous manuscripts concerned with the history of chemistry and alchemy. Most of the manuscripts date from the 17th and 18th centuries and consist of monograph treatises and lecture notes transcribed by students, including lectures by Joseph Black (1728-1799) and James Woodhouse (1770-1809). There are also some family papers and personal effects of the scientist who discovered oxygen, Joseph Priestley. The collection was initiated by Edgar Fahs Smith (1854-1928), professor of chemistry and provost at the University of Pennsylvania; he was concerned with the development of science, particularly chemistry, and the scientific way of looking at the world. Because he was interested in methods of scientific investigation that proved not to be successful as well as those that did, Smith collected many works concerned with alchemy and with modern scientific chemistry. In the general manuscript collection there are approximately twenty-five manuscripts dealing with astronomical and mathematical topics. Of particular note is one from approximately 1500: it contains Latin translations of four ancient Greek cosmologies, including Plato's *Timaeus* and the *De incorruptione mundi* of Philo Judaeus. In addition, among the Inquisition-related materials contained in the Henry Charles Lea Library are a number of items relating to accusations of witchcraft and occult activities. These materials do not fall neatly into the chronological frames suggested by the terms "medieval," "Renaissance," and "early modern": a Web site with full facsimiles of manuscript material up to 1800 will prove a more useful and more rewarding site for the discovery and study of Penn's resources in these areas of research.

Project manuscripts: We estimate 1,000 discrete items within Penn's collection of Western manuscripts dating from 1601 to 1800; many are bound, but also found are one roll, approximately 100 individual fragments or documents, and 100 small collections; languages include Dutch, English, French, German, Italian, Latin, Portuguese, and Spanish. The items split near equally between the 17th and 18th centuries. Physical condition ranges from very good to poor with the majority in the "good" range.

Given the use of digital cameras (rather than flatbed scanners), Penn does not anticipate rejecting any items for photographing. If there are items in need of attention prior to shooting, they will be treated by the library's full-time conservation specialist. By definition, all the items digitized in this project are unique and do not duplicate the holdings of any other repository. With that said, the digitization of Penn's early modern, Western manuscripts offers an abundance of opportunities for resource sharing (see "Relationship to Other Projects," page 12). By making facsimiles of Penn's manuscripts freely available over the Internet, scholars and librarians will be able to collate and compare similar manuscript texts and the handwriting and scribal practices they evince.

The Rare Book & Manuscript Library's collection of Western manuscripts is housed on-site in closed, environmentally-controlled stacks. All codices are shelved in custom-made, two-tray, archival boxes, which provide stability and are dust-proof; all manuscript collections are housed in archival-quality folders and containers (corrosive material such as staples and paper clips having been removed). The manuscripts are available for consultation by any researcher who shows current photographic identification, registers, and completes a manuscript application form. The Penn Libraries provide free, online access to the digital materials created by SCETI, including, therefore, the facsimiles produced through this project. The following is a list of highlights from the Rare Book & Manuscript Library's early modern, Western holdings, all of which would be digitized in the project.

American

- ***The Beehive, 1696.*** Francis Daniel Pastorius, born in Sommerhausen, Franconia, Germany in 1651, was a student of the Latin school at Windsheim and from 1668 to 1676 attended lectures at the universities at Altdorf, Strasbourg, and Jena, spent some time at the university at Basel, and studied for eight months at Regensburg. He received a degree in jurisprudence from Altdorf in 1676 and practiced law at Windsheim; he then moved to Frankfurt where he belonged to a circle of Pietists who formed the Frankford Company for the purpose of purchasing land in William Penn's colony of Pennsylvania for a settlement of Germans. Pastorius arrived at Philadelphia on 20 August 1683 and laid out the plans for the settlement at Germantown. He served Germantown as bailiff, collector of rents, clerk, recorder, tax assessor and collector, and was also a school teacher. Pastorius's commonplace book, known as the Beehive manuscript, is a compendium and alphabetical digest of knowledge that includes inscriptions, epitaphs, proverbs, poetry, Biblical citations, theological citations, quotations, a list of books he read or knew, copies of letters, and notes on science, useful herbs and other plants. Pastorius divided his list of titles into "Quaker" (414 titles) and "No Quaker" (700 titles). A "Catalogue of Francis Daniel Pastorius his Manuscripts" appears in Volume 2. Volume 3 is a continuation of the indexes present in the Beehive manuscript itself; it is in Pastorius's hand, and its references are almost entirely to entries in Volume 2.

- ***Philadelphia Tax Ledger, 1767*** (i.e., the 10th of the 18 Penny Tax for the Province of Pennsylvania). The codex manuscript contains the earliest extant detailed tax list for the County of Philadelphia, which included Montgomery County at that time. All the Philadelphia County tax lists prior to 1767 were lost or destroyed; there are only fragments of about ten or so lists for the period from 1682 to 1767. Because of its status as the first complete list, the 1767 volume is a valuable resource for a wide community of researchers, including historians, archaeologists, and genealogists. It is part of the pre-Revolutionary provincial tax lists that allow users to trace landlords and renters, because the rental income of property owners was itemized by the name and location of the tenant--something that the later tax lists do not do.

- ***William Smith Papers, 1755-1803.*** Ordained as a clergyman in the Church of England in 1754, Smith was the Provost of the College of Philadelphia from 1755 to 1779 and from 1789 to 1791. The collection comprises correspondence, sermons, lecture notes on natural philosophy and theology, and financial records and minutes from Smith's tenure as provost. Also included is a small amount of printed

material concerning the College of Philadelphia. Documented are Smith's efforts to raise money for the college; his roles in the operations of the college as an administrator, a member of the faculty, and a clergyman; and his struggles with political authorities.

- **Benjamin Rush Collection of Lecture Notes, 1783-1810.** American physician Benjamin Rush was professor of chemistry at the College of Philadelphia from 1769 to 1789 and professor of the theory and practice of medicine from 1789 to 1791. At the University of Pennsylvania, which included the former College of Philadelphia, Rush was professor of the Institutes of Medicine and Clinical Practice (1791) and was also appointed professor of the theory and practice of medicine in 1796. The collection of 21 items in 32 volumes comprises manuscript notes, taken by students from 1783 to 1810, on lectures covering the subjects of general medical knowledge, the practice of physic, and the diagnosis of clinical cases. They include lecture notes from Dr. Adam Kuhn (1741-1817) on the treatment of diseases incident to children; notes from the lectures of Dr. William Shippen (1736?-1808); Christopher Heydrick's notes on Rush's lectures; and notes on typhus and influenza with a description of Philadelphia epidemics in 1771-1772 and 1789 and treatments for tuberculosis, smallpox, and measles, as well as an account of the measles epidemic in Philadelphia in 1789. Among the names appearing in various volumes are Moses Bartram, Robert G. Maxwell, James Overton, Constans Curtin, William Simonton, D. Gilder, Christopher Heydrick, and Dr. John Spangler.

English

- **Recipe Book, 17th century.** This manuscript compilation primarily comprises medical recipes, including prescriptions for named individuals: the earliest are attributed to Martyn Hill. There are also a number of culinary recipes and recipes for mead, wine, etc., plus a few verses, proverbs, accounts, and lists. Recipes are attributed to several individuals including Doctors Stephens, Rantt, Garth, and Smithston; Lady Paget, Lord and Lady Howard, Lady Swain, Lady Widderington, Lady Portman, Lady Barkshire, Lady Rudston, the Duchess of Cleveland, the Countess of Kent, the Countess of Manchester; and a number of other men and women including Michael Scott, Charles Carborrowes, Sir Edward Bainton; and others with the surnames Crane, William, Anwell, Hillton, Clarke, Simes, Sandalle, Cocker, Harcourt, Harriss, Morgan, Ettick, Eton, Shaft, Young, Dutton, Hescot, Briscoe, Proctor, Townsend, Warpoole, Gramer, Matthers, Wyatt, Eadward, Attwood, Marshall, Allibon, Douglass, Yeats, Hennage, Webb, Skelton, Snape, Thornton, Grinewell, Fasburey, cousin Swineburn, and more. The names of Morison family members are written on the inside cover. One persona stands out above all the rest--the young woman or child who calls herself "Mary Madcap." The daughter of Christian Maddison, Mary uses the book to practice her letters. Her name appears in several places throughout, including the page that lists the clothes that her father bought her.

- **Thomas Scott, *A Breif Information of ye Affaires of ye Palatinate . . .*, between 1634 and 1799.** A bound collection of three 17th-century English protestant polemical and religious works, with a fourth religious work added in the 18th century. The first work is Nathaniel Bacon's *Fearefull Estate of Francis Spira*, first published in 1638; the second is *Happiness reveal'd*, a religious tract first published in 1752 and written on the blank pages between the first and third works and continuing on the margins of the third and fourth works; the third is an untitled treatise on Song of Solomon 5.6-7 in a 17th-century hand; and the fourth, which comprises nearly half the volume, is *A Brieve Information of the Affaires of the Palatinate*, published in 1624 and attributed to Thomas Scott after appearing in his collected works published later that year. The item represents the circulation of manuscript copies of politically sensitive texts—works considered too risky to print for fear of recrimination or punishment.

- **Sophia Elizabeth Burney Papers, ca. 1793-ca. 1800.** The collection comprises booklets of short pieces of poetry, drama, prose, and one poem written by Sophia Elizabeth Burney, niece of Fanny Burney. Two of the booklets contain original work; one of these has a title page that reads, "The works of

Sophia Elizabeth Burney, aged 13. Written for the instruction of young people and humbly dedicated without permission to Mrs. D'Arblay [Fanny Burney], Vol. I." Another booklet contains Macklin's prologue from Henry Fielding's drama *The Wedding Day*, "A prologue spoken by Mr. Garrick for benefit of the Fund for the Support of Decayed Actors," and an anonymous epithalamium that seems to have been published elsewhere. The single poem, titled "On the death of a beloved and ill-fated daughter," concerns the death of Susanna Burney, sister of Fanny Burney and of Sophia Elizabeth's mother Esther.

- **Hawke: Ship's log: On board between England and India, 1795-1799.** The first volume documents a voyage under Captain R. Edwards from England to Calcutta and Madras between 1795 and 1797; the second volume lists the crew with their stations and wages at the beginning of the volume and documents another voyage, this time under Captain David B. Barker, to Madras and Calcutta between 1797 and 1799.

French

- **Des medicaments, alterants et preparants, ca. 1650.** This pharmacological text is arranged alphabetically by means of medication (such as injections, powders, and unguents), followed by a Latin pharmacological text arranged by parts of the body to be treated. A table of contents follows each text.

- **Jean-Baptiste Colbert Letters to Gabriel Nicolas de La Reynie, 1667-1678.** Colbert served as the French minister of finance under King Louis XIV and is noted for his work to improve French manufacturing and revitalize a weak economy. He created a favorable balance of trade and increased France's colonial holdings by advocating the policy of mercantilism. Gabriel Nicolas de La Reynie was selected to fill the new position of Lieutenant-General of the French Police in 1671. The duties of his post were vast, and by the end of his term he managed to transform Paris by improving tremendously urban law enforcement, restructuring the Paris police force, reducing dueling, and increasing state control over prostitution. Signed from Saint-Germain-en-Laye and later from Versailles, the letters concern a variety of subjects ranging from trade regulations, licensing, taxes, and imprisonment to simple requests for the expedition of certain orders. The correspondence brings clarity to La Reynie's wide range of responsibilities, since his position entailed not only jurisdiction over the security of the city and its environs but also control of food supply and prices, elections of masters and wardens of the merchant guilds, publishing, printing, and book selling, and reports of surgeons. At the same time, La Reynie was in charge of police organization, which he managed to restructure in order to improve its efficiency. The letters reveal that both Louis XIV and Colbert himself gave the Lieutenant of the Police a high degree of independence in his work. A large part of the correspondence puts Colbert in the role of the King's messenger to La Reynie, often reinforcing the confidence that the two had in each other, while demanding evidence, elimination of privileges, and even the imprisonment of certain subjects.

- **Recueil de chansons, between 1675 and 1725 & Recueil de chansons anciennes et novella, between 1700 and 1750.** The former codex contains a collection of chansons and airs, many on romantic themes, with an alphabetical title index at the end. The latter codex consists of French satirical poetry, specifically 115 poems (chansons) lampooning court figures and notorious characters from the period of Richelieu and Louis XIV, with marginal notes identifying individuals and events described.

- **Marquis de Torcy Correspondence with the abbé François Gaultier, 1711-1714.** Torcy was a French diplomat and minister of foreign affairs (1689-1715) who played a crucial role in the conferences that ended the War of Spanish Succession with the treaties of Utrecht (1713) and Rastatt (1714). The collection comprises 169 items. Most of the correspondence consists of letters addressed to or drafts written by the abbé François Gaultier, a French diplomatic agent stationed in London who moved in the circles of the Tory opposition. Gaultier received Torcy's instructions from Versailles regarding the secret negotiations of the treaties of Utrecht and Rastatt. He then negotiated the terms proposed by the marquis with the English. Of 88 letters by Torcy in the collection, seventy-nine are

addressed to Gaultier; most are entirely or partially in cipher. Original keys for coding and decoding are in the collection. Also found are letters written to Gaultier by other agents associated with the peace negotiations, most notably the Chevalier de St. George (James Stuart) and diplomats Nicolas Mesnager and the abbé Melchior de Polignac. There are also three letter books containing Gaultier's drafts of letters to the marquis, the Chevalier de St. George, Lord Lexington, the Earl of Stafford, Cardinal Filippo-Antonio Gualterio, and possibly Pope Clement XI.

German

- **Guild Records, Ingolstadt (Bavaria, Germany), 1558-1745.** In this booklet containing records of the guild of harness-makers in Ingolstadt, entries include information such as the names of masters and the establishment of their workshops; the names of apprentices (pueben, bueben, gesellen) taken on; the term of the apprenticeship; the places where the apprentices learned their craft (often localities in Bavaria); and the payment of fees. The last dated entry notes the purchase of a seal for the guild and other expenditures.

- **Melchior Adam Pastorius Miscellany, ca. 1695-1702.** Compiled by the father of Daniel Pastorius, the miscellany includes poems, proverbs, epigrams, chronicles, emblems (pasted-in pictures, usually accompanied by text), arithmetic tables, and prose discourses from a variety of sources, some possibly composed by the writer. Interspersed are literary aids such as lists of Latin synonyms or related terms, of Latin vocabulary, and of German-Latin vocabulary; a list of Latin words with metric scansion that was apparently meant to be continued; and a German rhyming dictionary. The manuscript is predominantly in Latin, with significant portions in German, including poems, and discursive writing on topics such as philosophy, history, geography, natural science, and travel. An index covers the entire codex (examples of entries: afflictio, bibliotheca, Christus, curiositas, educatio, fortuna, humilitas, Kräuter Nahmen, loquacitas, martyrium apostolorum, nasse Bruderschaft, occulta, tempus fugit).

- **Juramentbuech, darinnen aller Beambten alsz Burgermaister, Ratsherinn, Stattschreiber, neuen Burger und anderer Aide, den sie in Antretung ihrer Dienst und Pflichten publice laysten müssen, zu finden, 1597-1627.** The core of the codex is a collection of forty oaths of office to be sworn in the context of a town government within the landgraviate of Leuchtenberg in Bavaria, presumably the city of Pfreimd, in the Upper Palatinate (Oberpfalz), dated as of emendations made on 11 April 1597; the oath for new citizens specifies that one is to swear loyalty to Georg Ludwig, Landgrave of Leuchtenberg (1563-1613), sovereign of the land (Landesfürst) and mayor and counsel (Bürgermaister und Rath) of the town of Pfreimd. The offices covered range from mayor and town councillor to diverse functions such as brewmaster, inspectors of bread and meat, and midwife; an oath for Jews is also included. The oaths are given in the form of third-person directives summarizing the responsibilities that the person should swear to uphold, rather than as first-person statements. Interposed among the oaths are two general sections: one pertaining to the meaning of the oath and the consequences of swearing a false oath; and the other, on the Shrovetide court (Fastnachtgericht) and certain tolls collected at that time (Fürsten Zoll). In addition to the oaths, the codex contains an assembly of diverse model letters inserted, both before and after, under categorical headings such as petition, passport letter, wedding invitation, and letter of condolence. A few of the letters are in verse, and one is an acrostic. The model letters are copies of actual letters including names, places of residence, and dates. The dates of the letters range from 1546 to 1627; place names include Nuremberg and other localities in Bavaria such as Fürth, Altdorf, Demeldorf, Hallernsdorf, and Regensburg. The codex includes a table of contents or index that details both the oaths and the letters (the latter listed alphabetically according to category).

- **Collection on the participation of German soldiers in the American Revolution, 1776-1885.** The collection includes a handwritten copy, dated 12 January 1855, of a diary (Tagebuch) kept by Andreas Wiederholdt (Wiederhold) from 7 October 1776 to 7 December 1780, bound together with

copies of and excerpts from other documents (dated 1776 to 1784), related to the participation in the American Revolution of German soldiers from what was then the Landgraviate of Hesse-Kassel. Also included are two original items dating from 1776 and 1777. Wiederholdt was a lieutenant in the Hessian regiment under Johann Gottlieb Rall at the time the diary was written and later a captain in the regiment under Baron Wilhelm von Knyphausen; he died in Kassel around 1805. The copy of his diary includes copies of eighteen color illustrations, including five drawings of ships, eleven maps related to military operations, and two different versions of a chart of flag signals. A note written in a different hand at the end of the Wiederholdt diary identifies the writer of the diary and recounts the history of ownership of the original diary, which was last known to be in the possession of Wiederholdt's grandson, who emigrated to America in 1880, after which his whereabouts and that of the diary are unknown. Of the accompanying copies, most appear to be in the same hand as the copy of the Wiederholdt diary, but a few miscellaneous items, as well as the diary of Caspar Recknagel, might be in different hands. The Recknagel diary pertains to the Battle of Rhode Island in the summer of 1778 and to the departure of Hessian troops from New York to Kassel in fall 1783 to spring 1784. It includes one colored diagram across a two-page spread. The remaining copies include a diary fragment by Colonel (Obersten) Carl Emil Kurt von Donop, which pertains to the Battle of Trenton in December 1776, and excerpts from letters of other officers in the Hessian regiments, including Adjutant Henel, Lieutenant Henkelmann, Sergeant Flachshaar, and Colonel (Hauptmann) Johann Caspar Ries, dating from April 1776 to February 1779. Some copies are from official documents concerning the Hessian participation, including testimony and other documents from the Hessian court of inquiry on the Battle of Trenton held in Philadelphia in April and May 1778 (Aus den Untersuchungsacten über die Affäre bei Trenton), and excerpts from the ultimate finding of the court issued in April 1782. Of the two original documents, one is a diary of an unidentified German soldier dated 18 May to 29 June 1776, written on board a ship leaving from the English Channel; it mentions Lieutenants Wiederhold and Briede. The other is the end fragment of a letter from Henkelmann, dated from Fort Knyphausen (Fort Washington), New York, in January 1777.

Italian

- **Gondi-Medici Archive.** The Gondi-Medici archive comprises original letters and drafts; legal documents, trials, contracts, and wills; business correspondence and ledgers; accounts; records of loans, gifts, and bequests; petitions; real estate ventures; and inventories and travel documents. The collection extensively covers the political, economic, and social history of Florence and the grand-duchy of Tuscany from the early 17th to the late 18th centuries. The families represented in the archive include the Gondi, the Medici, the Concini, the Arrigucci, and the Sangalietti. Most of the bound volumes are ledgers of debtors and creditors, or accounts, with a few items pertaining to specific aspects of the Florentine economy, such as the textile trade or the management of some large estates of aristocratic families. As well as offering a comprehensive set of quantitative data for numerous private businesses, the codices also constitute an invaluable source of information for the study of the financial institutions of grand-ducal Florence, including the Mint, the Monte di Pietà, and the Medici fiscal apparatus as a whole. The collections of documents, on the other hand, contain a substantial amount of private and public correspondence between Italian and foreign aristocrats, sovereigns, and politicians. Letters exceed 1,000 in number and are accompanied by genealogical records, which are extremely useful in identifying the relationships, often obscure, between the Italian nobility and other European nobility.

- **Dukes of Villafiorita Collection.** The Villafiorita Collection offers a multi-faceted portrait of a key Sicilian local government and its protagonists from the late 14th to the early 20th century. It comprises several hundred original documents (some on vellum) and copies, as well as a number of printed items. These materials cover the history of the Dukes of Villafiorita, Princes of Aragon, from their origins until the First World War. Their jurisdiction included the areas of Palermo, Pantelleria,

Trapani, Gibellina, Recalmuto, and Comiso, of crucial importance for the island's economy due to their sulfur mines and agriculture. A large part of the collection consists of legal, notarial, and business documents, although correspondence, both private and diplomatic, is also present. The collection documents in great detail the political and economic activities of some of the most prominent families of the Sicilian aristocracy, including the Burgio, the Carretto, the Galletti, the Naselli, the Morso, and their relationships with the Houses of Aragon and Bourbon and, after 1861, with the Kingdom of Italy.

- **Collection of poetry, between 1600 and 1650.** The codex consists of three separate sections of poems and verses. The first section is dedicated to Cardinal Antonio Barberini by "L'Accademico Innominato." It contains many poems, including several addresses to Cardinal Antonio Barberini and one in praise of Pope Urban VIII--with corrections, possibly by the author. The second section consists of poems of various types--sonnets, canzoni, madrigals, and so forth--to various addressees, both fictitious and real, including Maria de' Medici (Queen of France), Ferdinando di Toscana, Cosimo II, Ferdinando Gonzaga, Pope Leo XI, etc., and one poem "In morte del re Filippo" (probably Philip III of Spain). The third section is titled "Canzonetti" and consists of miscellaneous poems.

- **Benedetto Tommasi, *Il caso celebre di Sciacca*, 1795.** Once owned by Sir Thomas Phillipps, the manuscript purports to be the first critical account, comparing documentary testimony and oral tradition, of the 1529 armed conspiracy of Sigismondo di Luna, Conte di Calzabillotta, and the majority of the nobility of Sciacca, Sicily, against Giacomo Perollo, barone di Pandolfina. While the Luna-Perollo feud was a hundred years old, the 1529 conflict seemed to have elements of anti-Spanish revolt, and Luna and his allies were punished accordingly.

Latin

- **Bernardino Stefonio, *Flavia*, ca. 1620.** This is a copy of the historical tragedy in five acts about the Flavians and Christians in the Roman Empire. The play is set at the end of the 1st century; the main characters are Domitian, Flavius Clemens, Apollonius of Tyana, and John the Evangelist.

- **Alchemical miscellany, between 1650 and 1700?** The codex contains recipes and other texts in Latin, with some works in Italian. Contents are: Aque salis constructio -- Spiritus vini extractio -- Spiritus in meris invenit -- Unidentified text on balsam -- Alia ex Elmontio vel Vanemont -- Cur[r]us triumphalis Basilii Valentini -- Acrosticon -- Paracelsus, De separatione elementorum -- De quinta es[s]entia -- De elixiriis -- Clavis Archidoxorum de separationibus elementorum -- Liber de vita longa -- De v[en]er[is] et restauratione -- Brief treatises on metals, stones, elements, etc., beginning with De auro -- Alchemical treatise -- Recipes for various elixirs -- Recipes for balsamic ointments.

- **Johann August Ernesti, *Johann August, Praelectiones in Petr[i] Burmanni antiquit[at]es rom[anas]*, between 1742 and 1781].** Ernesti taught for his entire career at the University of Leipzig, beginning as an associate professor (Professor extraordinarius) of ancient literature in 1742. He was appointed full professor (Professor ordinarius) of rhetoric in 1756, and of theology in 1759. The volume comprises notes taken by a student at the lectures on ancient Rome given by Johann August Ernesti at the University of Leipzig, with contemporary marginal notes. The marginal notes, predominately in Latin, mostly summarize the adjacent text. An introductory section includes a list of source works by Peter Burman, Konrad Peutinger, Fabricius, Apian and Amantius, Justus Lipsius, Janus Gruterus, Joseph Scaliger, and Thomas Reinesius. The work is divided into three parts, each of which is split into several chapters: Part 1 deals with the history, religion, calendar, holidays, games (including names of famous gladiators), the Roman Senate, and the Equestrian class; Part 2 discusses magistrates, civil laws, and courts and contains a somewhat miscellaneous section, titled Omissions, including information on vestments, banquets, measurements, money, and funeral rites; Part 3 concerns the military, focusing on general information, leaders, army formations, equipment, and rewards and punishments. The last few pages consist of notes in a different hand, concerning the study of all things Roman.

- **Franz Johann Tandler, *Collectaneum medicamentorum tam simplicium, quam compositorum conscriptum*, 1754.** This codex is an extensive pharmacopeia of a young apothecary, trained by Franz Alexander Hofer; he was born in 1735 according to a biographical entry, and this collection of prescriptions may have been submitted in connection with his application for certification.

Spanish

- **Henry Charles Lea Library.** The Lea Library is a collection within the holdings of Penn's Rare Book & Manuscript Library. It has been described by early-modern social historian William Monter as "the world's premier collection of rare source material on the Spanish Inquisition. . . . Lea's collection of books and manuscripts on this subject is unrivalled anywhere in the world." In 1924 the heirs of Henry Charles Lea (1825-1909), a historian of medieval Europe who wrote extensively on the institutional and legal history of the Catholic Church, donated their father's personal research library to Penn. Lea's active writing career on historical subjects spanned more than fifty years, during which time he published ten books and many articles. He wrote a series of books on the Inquisition, beginning with *A History of the Inquisition of the Middle Ages* (1888) and continuing with *A History of the Inquisition of Spain* (1906-1907) and *The Inquisition in the Spanish Dependencies* (1908). He collected materials related to witchcraft, the prosecution of witches by the Inquisition, and contemporary reports of witchcraft. The collection holds approximately 325 codices and discrete documents written in the seventeenth or eighteenth century, as well as ten collections of papers, totaling approximately 80 linear feet. Among them can be found papal decrees; diplomatic correspondence; Inquisition narratives and trials; treatises on ecclesiastical law, privileges, and authority; collections of civil statutes; privileges and customs of cities, regions, provinces, and countries; chronicles of the histories of rulers and princes; deliberations of ecclesiastical and civil jurisdictions; treatises on indulgences and censures; exorcism formularies; and attestations of the miraculous.

- **Lope de Vega, *Carlos V en Francia*, 1604.** Autograph manuscript copy of the play *Carlos V en Francia*, by Lope de Vega, in the hand of the author. It is signed by Lope de Vega and dated 20 November 1604, at Toledo.

- **Pedro Calderón de la Barca, *Autos manuscritos*, 17th century.** This collection of three religious plays by Calderón comprises *Loa; para el auto, intitulado La serpiente de metal; Auto sacramental alegorico: A dios por varon de estado; Auto sacramental alegorico intitulado: A tu proximo como a ti mismo*.

- **José de Cañizares, *Comedias*, 17th century.** The collection of comedies by José de Cañizares comprises *De los echizos de amor la musica es el mayor; De comedia nosestrate allaba ese disparate; and El Domine Lucas*.

Use: For the past fifteen years, Penn's Rare Book & Manuscript Library has been an integral component for teaching in a wide variety of academic departments. Undergraduate and graduate courses in art history, classics, English, Germanic languages and literatures, history, religious studies, and romance languages are held in seminar rooms within the library, where manuscripts and rare books can be consulted firsthand by professors and students. The facsimiles currently available on the Web site have already been used in several courses taught at Penn and have been projected at academic conferences held at universities both here and abroad. Through the proposed project Penn seeks to provide similar accessibility to more of its manuscripts, specifically those created in the West in the 17th and 18th centuries. In addition to onsite and classroom perusal of the originals, students will have round-the-clock access to the manuscripts through the digital surrogates. High-resolution scans can also make reading a manuscript easier; sometimes they are the only way to reclaim seemingly lost or illegible text.

Penn's early modern, Western manuscripts have been consulted by scholars from the United States and an array of foreign countries throughout the library's history. Research inquiries in the past ten years include the following.

- A professor at the University of the Arts (Philadelphia) is currently consulting the Gondi-Medici documents that pertain to the slave trade in the grand-duchy of Florence in the 17th century.
- A lecturer in Italian Studies at the University of Pennsylvania compiled a series of lectures for her course, "Ideals of Love and Beauty from the Renaissance to the Baroque," on the representation of material culture in the Gondi-Medici archive. Her study, focusing on the relationship between nobility and art, derives from an analysis of the 17th-century Concini ledgers and dowries, as well as some of the Medici inventories.
- A doctoral candidate in Italian Studies at the University of Pennsylvania is currently doing research on the financial and cultural significance of the information contained in the ledgers and correspondence of Vincenzo de' Medici, with special attention to the role of the Florentine Mint in the European capital markets in the early 17th century.
- A doctoral candidate at St. Andrews University (Scotland) examined a selection of Gondi-Medici documents concerning the relationship between the Gondi family and the French crown in preparation for writing her dissertation.
- A recent Ph.D. and current historian at the Chemical Heritage Foundation is publishing a scholarly work on alchemical poetry, *The Circulation and Reception of a Middle English Alchemical Poem: The Verses upon the Elixir and the Associated Corpus of Alchemica*. It includes material from Ms. Codex 111.
- Writing about the art patronage of Vittoria della Rovere, a doctoral candidate in art history at the Institute of Fine Arts, New York University, consulted the Anton Francesco Montauti Diplomatic Collection, comprising correspondence, legal, notarial, and financial documents, inventories, reports, and other miscellaneous writings concerning the diplomatic relationships between the Grand-duchy of Tuscany, the Papal States, and the Holy Roman Empire for the years 1689 to 1744. In particular, a large number of documents deal with the relationship between Anton Francesco Montauti, who was stationed as a diplomat in various European locations, and members of the Medici family in Florence.
- A graduate student and teaching fellow in the Italian Department of Columbia University consulted Ms. Codex 599—a collection of legal documents related to the Torelli family, 15th-18th centuries—for an article she was preparing on Ippolita Torelli Castiglione.
- A professor of Spanish at Colgate University requested copies of a section of Ms. Codex 190 for a critical edition of *La Perinola* (1632), a literary piece written by Francisco de Quevedo (1580-1645).
- A curator from the Philadelphia Museum of Art consulted the Gondi-Medici Archive in his research on the art collecting of Bartolomeo Gondi for the planned publication of a catalog of Villa I Tatti in Florence.
- A doctoral candidate at Cambridge University consulted several of Penn's 16th- and 17th-century hybrid codices, that is, works that combine print and manuscript materials.
- For its 2006-2007 exhibition entitled "Technologies of Writing in the Age of Print," the Folger Library borrowed Ms. Codex 207, a collection of extracts from Lewes Roberts, *Merchant Map of Commerce*, first published in 1638. At the end there is information on trade in Leghorn, dated 1554, and a list of books to be kept by a merchant.
- A professor of Italian History from Stanford University requested a reproduction of Ms. Codex 1015, having recently discovered Penn's relatively new acquisition of a manuscript by Antonio

Baldigiani, “a very interesting Jesuit whom I’ve been researching and will publish an article on in the coming year or so.”

- A graduate student at Princeton University consulted the Henry Charles Lea Collection for a research paper on the Spanish Inquisition.
- A research fellow from Nottingham Trent University examined Penn’s English manuscript holdings to locate items compiled by women from 1500 to 1700 for inclusion in a comprehensive guide to such manuscripts being prepared by the Perdita Project.
- The American Philosophical Society in Philadelphia borrowed Ms. Codex 205, a recipe book from 1777, for inclusion in a 2003 exhibition entitled “From the Laboratory to the Parlor: Scientific Instruments in Philadelphia, 1750-1875.”
- An assistant professor of English at the University of Reading consulted several manuscripts on 16th- and 17th-century almanacs and commonplace books while doing research for a monograph for publication.
- A researcher published excerpts from the John Daniel Pastorius’s *The Beehive* in an anthology of American spiritual poetry that he was editing for Autumn House Press.
- An Italian literature graduate student at the University of Genoa was analyzing the work of Angelo Grillo. We located a letter related to Grillo in our early modern manuscript holdings.
- The Philadelphia Tax Ledger was consulted by an employee of Elfreth’s Alley Association for background research for a women’s tour involving Christ Church, Betsy Ross, and Elfreth’s Alley. The ledger was also consulted by a graduate student conducting research on women merchants in colonial New York, Philadelphia, and Boston, as well as another graduate student preparing his M.A. thesis.
- An author requested permission to quote from Penn’s diary of the brother of Charles Brockden Brown in his scholarly book, *American Sympathy: Men’s Friendships in Early U. S. Literature*, published by Yale University Press.
- A professor of Spanish and Comparative Literature at the Graduate Center of the City University of New York was finishing a critical and annotated edition of the three satirical dialogues written by the Spanish writer Bartoome Leonardo de Argensola. She wrote that she “had copies of all mss. at the National Library in Madrid, but had been for two years after this ms. [Ms. Codex 184] which belonged to the French Hispanist Foulche-Delbosc, and that we [she and her co-editor] believed was at the National Library in Buenos Aires, Argentina, since we understood they had bought his papers. Yet we could not find it there. Now we discovered that it is at Penn and have a description of the ms.” She placed a rush request for a copy, because she had “promised to send our edition to the publishers in Zaragoza by the end of this summer.” She concluded her communication stating: “I do not have much time left, but I also feel that our edition will not be ‘critical’ unless we see this ms.”

This list is a small sampling of the interest in Penn’s early modern, Western manuscripts and their use by scholars within and beyond the University of the Pennsylvania. Improved access and dissemination made possible by the proposed project will substantially increase the consultation and use of these materials.

Relationship to Other Projects: When possible, Penn has always been willing to participate in collaborative projects. We anticipate, for example, that the facsimiles created for the Gondi-Medici Archives will form a collaborative link between Penn and the following institutions or projects:

- The Medici Archive Project: Begun in 2001 and based at the Archivio di Stato in Florence, Italy, and with offices in the United States, the Medici Archive Project is a non-profit international Foundation. Its mission is “to create worldwide access to the historical data in the Medici Grand Ducal Archive by way of a free fully searchable on-line database” and promote and encourage the study of the Archive through a number of initiatives to widen scholarly participation. Two- and

three-year fellowships sponsored by various external sources (including the Compagnia di San Paolo and the Samuel H. Kress Foundation) are periodically awarded to post-doctoral scholars. In addition, in 2009 the Medici Archive Project launched its first online course in Italian paleography and archival studies.

- **The Borromei Bank Research Project:** Initiated in 2001 by Jim Bolton, professor of history at Queen Mary, and Francesco Guidi Bruscoli, lecturer in economics at the University of Florence and senior research fellow at Queen Mary, the project seeks to conduct an extensive interdisciplinary study of two ledgers belonging to the Borromei family of Milan, leading to the creation of a 15th-century currency exchange rate database, as well as to acquire an extensive understanding of the movements of cash-flows in Italian and European capital markets. Within the project, the manuscripts have been transcribed and entered in a machine-searchable database from where they can easily be accessed and analyzed from multiple perspectives; innovative software has been written to investigate both the numerical and alphabetical data. Professor Bolton is actively considering conducting a similar study on a selection of ledgers from Penn's Gondi-Medici Archive.
- **Center for Financial History at Newnham College, University of Cambridge:** The center was founded in 2009 by D'Maris Coffman, senior research fellow at Newnham College, University of Cambridge, and Anne Murphy, lecturer in early modern history at the University of Hertfordshire, thanks to a grant from the Winton Charitable Foundation, a division of Winton Capital Management. Its mission is "to facilitate cutting-edge research in financial history, to encourage its application to economic theory and to public policy, and to explore rigorous and lasting platforms for the dissemination of the fruits of research in financial history." The center has also recently taken over management of the European State Finance Database, an international collaborative research project aimed at collecting and analyzing data of European fiscal history (such as taxes, army size, wool and cloth exports and imports, and stock prices) across the medieval, early modern, and modern periods. The center recently posted a description of Penn's Gondi-Medici Archive on the Web site of the European State Finance Database.

Another collaboration currently underway concerns the Digital Scriptorium, "an image database of medieval and Renaissance manuscripts that unites scattered resources from many institutions into an international tool for teaching and scholarly research." Prior to its funding from the NEH, Penn had been able to contribute only twenty-nine records to the Scriptorium. During the course of the current grant, Penn will submit over 750 cataloging records to the DS, as well as selected images for each item. The DS, however, also captures manuscripts that continue the medieval scribal tradition. An additional group of Penn's manuscripts--post-1600 codices--will, therefore, be available to the DS database at the conclusion of the proposed project.

By undertaking the digitization of all of its Western medieval, Renaissance, and early modern manuscript material, Penn stands ready to respond affirmatively to current and future requests to share resources in other online ventures. The curator of manuscripts, for example, has been contacted by Eef Overgaauw, who heads a Berlin-based project entitled *Manuscripta mediaevalia* (MM). This cooperative outreach of MM concerns medieval and early modern German manuscripts in American collections. MM is Germany's leading database on medieval and early modern manuscripts (<http://www.manuscripta-mediaevalia.de>), containing information on more than 63,000 objects in libraries in Germany and beyond. At present it has confined its project to materials dated up to 1600, but it hopes to extend the date. In a 20 February 2008 letter to Penn's curator of manuscripts, Overgaauw sought an agreement between the University of Pennsylvania Libraries and the Staatsbibliothek zu Berlin "with the objective of integrating textual descriptions and digital images of medieval and early modern German manuscripts from the

University of Pennsylvania into MM.” The intention is that each manuscript description would be accompanied by a full digital copy of that manuscript: “In the end, the digitized images as well as the descriptions should be available in the electronic information systems of both partners, the library owning the manuscript and the MM.” Penn was pleased to be able to respond that all of its German-language manuscripts had been fully cataloged (records available in both WorldCat and Franklin). Through the first grant from the NEH, Penn will also be able to contribute the full facsimiles that are a desideratum of the project. Through the current proposal Penn would be able to contribute full facsimiles of its German manuscripts through 1800, if the database is expanded.

Other initiatives in which Penn would be willing to participate are either underway or being discussed. One significant example based at the University of Sheffield is the Connected History project, which “will link up currently separate databases of source materials. . . . Once completed the search engine will index digitised books, newspapers, manuscripts, genealogical records, maps and images that date from 1500-1900.” Penn will be looking to join or partner with such ventures in the future.

History, Scope, and Duration

The project to digitize systematically all of the Rare Book & Manuscript Library’s early modern, Western manuscripts has no previous incarnation or history. On the other hand, this project will build on the work accomplished in the library’s current project funded by the NEH to digitize Penn’s medieval and Renaissance manuscripts and deliver full digital facsimiles over the Internet. The Web site, *Penn in Hand: Selected Manuscripts* (<http://dla.library.upenn.edu/dla/medren/>), is currently fully functional as a discovery site for Penn’s European and American manuscripts dated to 1801. It also offers within a week of being photographed full facsimiles of manuscripts. To date the preponderance of the facsimiles entail medieval and Renaissance manuscripts related to the project currently being funded by the NEH. Demand, however, for digital facsimiles of manuscripts beyond 1600 is high. Whenever possible with existing staff, Penn has honored patron requests for scans of material dating from 1601 to 1800. The current Web site, therefore, contains full facsimiles of selected items beyond the chronological scope of the existing NEH-funded project. Appendix E comprises testimonials from medieval & Renaissance scholars in support of Penn’s Web site, *Penn in Hand*.

The project to digitize Penn’s medieval and Renaissance manuscripts will be completed on 31 July 2011. The requested start date of this proposal is 1 August 2011—the intention being that there will be no break in employment or work flow for the current project staff. A transparent transition from one project to another will afford better efficiency, consistency, and productivity. The training time necessary in the first grant for three new project hires is not needed in the project currently being proposed. We will be able to exploit not only the experience of the digital data coordinator and camera operators but also the fact that the Web site will have been functional and available to the public for nearly two years. The time spent during the first grant to meet, discuss, and formulate standards for cropping and Web site enhancements, such as dropdown boxes for tables of content and illustrations, will not be necessary. The department of Information Technologies & Digital Development (ITaDD) has responded rapidly to amendments and enhancements to the Web site, such as defaulting to the correct orientation for page-turning (left-to-right for most, but right-to-left for material written in Arabic or Hebrew), and providing an advanced search option. By 7 September 2010 ITaDD will implement defaulting to a two-page view for codices but offering only a one-page view for unbound manuscripts, and by January 2011 it will implement image rotation as an added feature.

Among the resources available at Penn for the project is the Schoenberg Center for Electronic Text & Image. Since 1996 SCETI has enhanced the research and scholarly use of rare books, manuscripts, and other primary source materials by making them easily accessible worldwide. It creates archive-quality digital facsimiles and through the DLA (Digital Library Architecture), a project of the

library's department for Information Technologies & Digital Development, makes them available online. The DLA is a piece of the Penn Libraries' software infrastructure that enables the Web delivery of digital content and digital records.

Methodology and Standards

Since 2009 the delivery of SCETI's digitally-born images to the Web and the storage and long-term care of its image files have been incorporated into the workflow of the library's department for Information Technologies & Digital Development. The output of the current project now benefits from the ongoing care and maintenance provided by one of the library's most central departments. The delivery and archival storage of the *Penn in Hand* Web site is fully integrated into the fabric of library services offered through ITaDD and its DLA initiative, which is funded from predictable streams of allocation (the library's annual operating budget) and not dependent on opportunistic funding.

This proposal estimates the creation of digital facsimiles for approximately 1,000 discrete items, averaging 175 leaves per volume (a number that represents 350 pages or digital scans per volume). Over the course of two years approximately 350,000 scans will be created. The project is expected to perform at an approximate rate of ten items or 3,500 images per week. The curator of manuscripts (who is director of the project) will work with the project's digital data coordinator to select the items to be scanned each week and review their condition for safe scanning, referring materials in need of conservation treatment to the conservation specialist. The digital data coordinator will then enter metadata into the administration system for each item. Working under the guidance of SCETI's scanning supervisor, the project's camera operators will capture the images. A project processing assistant will spot check and process the images. The digital data coordinator will perform quality checks on all scanned images, referring problems to the scanning supervisor. Upon verification of corrections, the digital data coordinator will gather, test, and collate the persistent URLs and then revise the related cataloging records in WorldCat and Franklin: MARC (machine-readable cataloging) code provides a variable field (856) in which a cataloger may input a unique URL for the facsimile of the item being described in the cataloging record. The link takes the researcher directly to the digital facsimile if clicked. Scanned and fully processed material will then be returned to the digital data coordinator, who will proofread the images and update cataloging records.

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 and the department of Information Technologies & Digital Development in their capture, storage, and presentation of digital images.

Scanning 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/about/techIn.html>

Scanning & Processing Equipment:

- Cameras: For the purpose of this project two Phase One P45 digital cameras will be used. The P45s are state-of-the-art, auto-focus 39-megapixel cameras.
- Lenses: Schneider-Krueznach lenses

- Reprographic Stands: Two TTI (Tarsi Technical Industries) copy stands.
- Lighting: Although both cameras have auto flash features, we have the following lighting system for the camera stands: ProPhoto Acute D4 heads and “beauty dish” reflectors placed at 90 degree angles to item surface.
- Camera Computers: Two Dell 980 desktops: 2.80GHz Intel Core i7, Quad-Core 860 processor, 512MB ATI Radeon HD 4550 Graphics, 4GB DDR3 1333MHz RAM (2x 2GB), 500GB 7200RPM hard disk, Windows 7 Professional operating system.
- Processing Computer: Dell Optiplex 775 desktop; processor: Intel® Core 2 Duo - 800MHz FSB, LGA 775, 2MB L2 cache, Enhanced Intel SpeedStep Technology, Intel 64 and Execute Disable Bit (E4000 series); 80MB Hard Disk; Windows XP Professional operating system.
- Software: Phase One Capture One Pro; Photoshop CS3.

Data curation and long-term preservation. Hardware infrastructure: Currently the library’s master TIFF images are stored in its Sun X4500 Storage Area Network (SAN), which offers 34 terabytes of redundant disk storage. The department of Information Technologies & Digital Development (ITaDD) is, however, currently deploying its second-generation SAN architecture, and for that purpose recently purchased a Compellent fiber-attached SAN that combines high performance with expandability. The initial configuration capacity will be fifty redundant terabytes, but this platform is expandable to up to one petabyte. Attached to the storage array is a Qualstar XLS robotic tape library with four LT05 tape drives, which will be used for near-line archival storage and backup. This new storage will provide ample room for the Penn Libraries’ growing digital collections and will allow us to implement progressively enhanced security and long-term preservation mechanisms.

Data curation and long-term preservation. Software infrastructure: ITaDD is currently planning the development of a systematic data curation software infrastructure. This infrastructure will probably be based in part on the Data Curation Micro-Services standards being established by several institutions, including most notably the California Digital Library (<http://www.cdlib.org/services/uc3/curation/>) (see also John Kunze, *Permanent Objects, Evolving Services, and Disposable Systems: An Emergent Approach to Digital Curation Infrastructure*: PASIG, 2009 <http://lib.stanford.edu/files/pasig2009sf/pasig-2009-pods.pdf>). The standards that this approach encompasses are:

- PairTree (<https://confluence.ucop.edu/display/Curation/PairTree>)
- CAN (<https://confluence.ucop.edu/display/Curation/CAN>)
- D-flat (<https://confluence.ucop.edu/display/Curation/D-flat>)
- ARK (<https://confluence.ucop.edu/display/Curation/ARK>)
- These standards would be supplemented with METS (<http://www.loc.gov/standards/mets/>), used most particularly to store an archival-quality expression of the physical and logical structure of composite objects like manuscripts facsimiles.

This curation infrastructure will leverage the hardware and software infrastructures to enable digital object auditing, validation, and format migration. The infrastructure will ensure digital object persistence and recoverability through hierarchical file management services, replication, and off-site storage. The re-engineered digital object workflow will package objects with associated descriptive, administrative, structural, technical, and rights metadata to enable automated validity checks, format management, indexing for discovery, and clear parameters for use and re-use of objects. Implementation is planned to span 2010 and 2011.

Long-term access or persistence: Over the years the Penn Libraries have been ensuring persistent access to their digital objects by using institution-specific handles, each digital object being associated with a unique URL, for instance, <http://hdl.library.upenn.edu/1017/d/medren/2487577>. While Penn stays committed to supporting existing handles in the long term for legacy reasons, the library is

also currently considering the implementation of the more generalized ARK-based identifiers. ARK (<https://confluence.ucop.edu/display/Curation/ARK>) is a powerful, cross-institution framework, recently implemented by institutions such as the California Digital Library, the British Library, and the Internet Archive.

Image delivery format: For many years the library has been using the MrSid format for all digital-image delivery. In 2010 ITaDD developed the back end and front end of the software architecture that enabled the migration to JPEG 2000 (<http://www.jpeg.org/jpeg2000/>), an open-source format that is quickly becoming the standard for image delivery in the digital library community. The JPEG 2000 images are delivered to the end users through Djatoka, an open-source, JPEG-2000 delivery application that enables “Google Map-style” tiling and quick zoom-in and zoom-out options (<http://sourceforge.net/apps/mediawiki/djatoka>). For the encoding from TIFF to JPEG 2000, the library will be using the Kakadu encoder bundled with Djatoka.

Metadata and indexing: Prompted by faculty frustration over the then limited, non-existent, or inaccurate bibliographic access to codex manuscripts, Penn undertook an initiative in the 1990s to provide online bibliographic access to its pre-1800 Western codices. At the time the only cataloging records for European codices resided in the 1965 *Catalogue of Manuscripts in the Libraries of the University of Pennsylvania to 1800*, compiled by Norman P. Zacour and Rudolf Hirsch and published by the University of Pennsylvania Press. This compilation, first printed in six issues of *The Library Chronicle*, presented the Rare Book & Manuscript Library’s codices in the order in which they were placed on the shelves (that is, arranged first by language and then by acquisition date), as well as the manuscript holdings of the Lea Library. While the catalogers prepared an index--giving title, personal name, and geographic access--they did not provide any subject analysis. Two supplements to the 1965 catalog were printed in later issues of *The Library Chronicle*, but the three publications were never collated into a unified list. Purchases made and donations received after the publication of the *Library Chronicle* supplements in the 1970s had never been cataloged in any form.

While print catalogs offered some benefits, they were deficient in several key areas: no ability to update, expand, and correct entries; no way to integrate new entries into one list; and no subject access. The curator of manuscripts, therefore, asked Laurence S. Creider, then head of original cataloging, to work with manuscripts staff to create a MARC-protocol for codex manuscripts. The result was “University of Pennsylvania Codex Manuscript Cataloging Guidelines” (UPCMCG), which served as the prototype for today’s national cataloging standard, *Descriptive Cataloging of Ancient, Medieval, Renaissance, and Early Modern Manuscripts* (AMREMM), published in 2003 by the Association of College & Research Libraries. The work is a supplement to AACR2, similar in scope to *Descriptive Cataloging of Rare Books*, allowing creation of item-level MARC records for pre-modern manuscript materials in library online public-access catalogs as well as in OCLC’s bibliographic utility, WorldCat. Collections of papers, on the other hand, are cataloged according to *Describing Archives: A Content Standard* (DACS). The AMREMM and DACS protocols define the categories of information that an online manuscript description should contain and how these records should be implemented according to AACR2 in the MARC environment. All project manuscripts have been cataloged in MARC, and their metadata has already been ingested into the manuscripts Web site.

Metadata for storage and presentation of the digital facsimiles will be derived from existing MARC cataloging records as described above and will be enhanced with page-level description prepared by the digital data coordinator. The Penn Libraries have developed a multi-purpose, digital-content discovery and delivery system called the DLA (Digital Library Architecture). It is based on open-source applications including Lucene, Solr, Cocoon, and Glassfish, and it relies heavily on XML and XSLT, both for data ingest and HTML generation. The DLA has been in production for two years and is now

powering eleven different sites at Penn (<http://www.library.upenn.edu/dla/>), including *Penn in Hand*, the user interface for this project. For the current project, the following outlines the work flow.

- The page-level metadata is generated during image capture by the camera operators and collated with metadata entered by the digital data coordinator in a local database. 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), contains an historiated letter, a miniature, etc
 - The ID of the corresponding image file
- Please note that a unique ID identifies each manuscript and is referred to in the page-level metadata, thus ensuring that object-level and page-level metadata (as well as image files), can be collated into a complete digital object at any time.
- In the library's new data curation architecture (see section "*Data curation and long-term preservation. Software infrastructure*" on page 15), the descriptive and structural metadata will also be harvested and stored in a curated METS file for long-term, archival purposes.
- A nightly, automated process harvests the object-level and page-level metadata pertaining to the project manuscripts, transforms it into Solr-specific XML records, and lets the Solr application ingest and index the records. During the process various searchable fields and facets are generated based on the specific needs of the *Penn in Hand* site.

Faceted metadata searching: One of the goals of the project is to improve the user experience. To that end Penn has implemented a Solr/Lucene (<http://lucene.apache.org/solr/>) faceted-searching module, which will enhance the user's ability to navigate and discover manuscripts that meet specific research needs. Faceted searching reveals the cataloging records in such a way that users can filter their searches based on a default page view that includes the categories and the number of items within a group. Facets can be combined, narrowed, or expanded according to the user's preferences. In addition to faceted searching, users are able to perform text searches as well. A DLA Web site exposes facets in the metadata in dynamic taxonomies, so that users searching for material can see exactly the options they have available at any time. They are able to switch easily between searching and browsing, using their own terminology for searching while recognizing the organization and vocabulary of the data. Features for metadata searching include (1) displaying aspects of the current results set in multiple categorization schemes; (2) showing only populated categories, no links leading to empty lists; (3) displaying a count of the contents of each category, warning the user how many more choices they will see; (4) generating groupings dynamically, such as date or language; and (5) drilling down by facet, so a researcher could choose language, century, illuminations, musical notation, and so forth.

In addition, the DLA team has enhanced its sites by offering keyword and Boolean searching, including an advanced search. A link leading to the "Advanced Search" interface appears in the navigation links at the left side of the site. The advanced search allows for keyword searching within particular fields and combinations of searches in multiple fields. In each search string, truncation and wild cards may be used. The DLA-powered site, *Penn in Hand*, has been available since the fall of 2009, completed during the first quarter of the current NEH-funded project to digitize medieval and Renaissance manuscripts. Appendix A provides screen shots of the Web site, which will serve as the delivery system to the public for the digital facsimiles. The first image is the front page for the site and offers the facets in the right-hand column. Please note that not only does the site indicate fields that one may search but also indicates how many items exist in any given field. The second image shows the display for a given search result: which facets were selected and in which order are displayed in the upper-right-hand corner. The center column lists the items by call number, author, title, place of

production, and date. The third image is the front page to the digital facsimile of one of the items in the search result. Please note that this page also uses a checklist for the facets selected to retrieve this item. The fourth and final image is an example of two pages (an opening) in the selected manuscript; they contain musical notation and illumination (selected in the search request).

The following facets and the order of the facets (i.e., the default setting) on *Penn in Hand* have already been implemented and are fully functional.

- **Collection** [from MARC variable field 852 or variable field 655]: the patron is given the option to select from three subsets or collections
- **Facsimile** [from MARC variable field 999]: the patron has the option to select only those items that have a full facsimile available
- **Illuminated** [from MARC fixed field 008]: the patron has the option to click a “yes” prompt
- **Illustrated** [from MARC fixed field 008]: the patron has the option to click a “yes” prompt
- **Notated** [from MARC fixed field 008]: the patron has the option to click a “yes” prompt
- **Language** [from MARC fixed field 008 or variable field 041]: the patron is given a list of languages represented in the collection from which to choose
- **Century** [from MARC variable field 655, subfield y]: the patron is given a list of centuries represented in the collection from which to choose
- **Date** [from MARC fixed field 008]: the patron is given a list of dates represented in the collection from which to choose
- **Form & Genre** [from MARC variable field 655]: the patron is given a list of forms and genres represented in the collection from which to choose
- **Subject** [from MARC variable fields 600, 610, and 650]: the patron is given a list of subjects represented in the collection from which to choose
- **Author** [from MARC variable fields 100 and 110]: the patron is given a list of authors represented in the collection from which to choose
- **Related Names** [from MARC variable fields 700 and 710]: the patron is given a list of names, with relator terms (when present), such as scribe, illuminator, or former owner

Project Staff

All but one of the project positions represent individuals who are working on the current project to digitize Penn’s medieval and Renaissance manuscripts; the time allocations listed have proven effective.

- *Project director*: Nancy Shawcross, Curator of Manuscripts, Rare Book & Manuscript Library (30% of fulltime employment) [résumé, Appendix B]. Duties: project oversight, including preparation of reports to NEH; liaison with conservation specialist; supervision of digital data coordinator and digital processing assistant; assistance with review and updating of metadata; liaison with staff in the Libraries’ Digital Data Initiative.
- *Conservation specialist*: Sibylla Benatova, Rare Book & Manuscript Library (30% of fulltime employment) [résumé, Appendix B]. Duties: in consultation with the curator of manuscripts and digital data coordinator, evaluate and, when required, complete conservation treatment on project manuscripts.
- *Digital data coordinator*: Marissa Hendriks, Rare Book & Manuscript Library (100% of fulltime salary) [résumé, Appendix B]. Duties: create records in the SCETI administration system for each manuscript, including a table of contents, when necessary, and an index to the illustrations, when appropriate; assess the physical condition of the manuscript and consult with project director about conservation treatment; perform quality-control check for each completed facsimile (assessing clarity and completeness of images and verifying page order); refer problems to scanning supervisor.

- *Scanning supervisor*: Chris Lippa, SCETI (20% of fulltime employment) [résumé, Appendix B]. Duties: trouble-shooting and functional oversight of camera operators; registration of manuscript target information and spot color correction.
- *Camera operators*: Craig Taylor and Kathryn Venzor (100% of fulltime employment) [résumés, Appendix B]. Duties: handle manuscripts according to prescribed conservation techniques; understand and deploy project scanning specifications; use and adjust digital camera settings for each item; set up and shoot objects using appropriate conservation support systems; adjust lighting systems; understand camera software and post-capture processes; re-shoot problem images as required.
- *Processing assistant*: a new project-hire (2,000 hours over the course of two years) [job description, Appendix C]. Duties: Processing digital images created by the project's camera operators using Capture One 5.1 software. Processing includes standardizing crop box sizes for image files in each Capture One session and making small rotation adjustments for correct alignment. Set files to process to create output as TIFF files. If necessary, clean background of image files by opening TIFF files in Photoshop. Transfer completed TIFF files to network.

Work Plan

April-August 2011 (between the time of the award announcement and the start of the project). Upon learning of the success of Penn's application to NEH, the project director will accomplish the following: posting of project's add-on position (digital processing assistant): Jobs@Penn, job-search sites at library schools such as Drexel and Temple, SAA employment site, etc.; interviewing and selection of processing assistant, who will begin employment on 1 August 2011

August 1-15, 2011. Orientation and training of Digital Processing Assistant

August 2011 to July 2013. For the course of the project, the following work flow will repeat itself weekly:

1. The curator of manuscripts and the digital data coordinator select ten items to be scanned in the *following week* and refer any conservation work to the conservation specialist.
2. The conservation specialist treats any identified manuscript material for safe scanning.
3. Page-level information, such as foliation or pagination, table of contents, and illustrations, for ten manuscripts is entered into the SCETI administrative system by the digital data coordinator. Although this work will be performed weekly, the digital data coordinator will be preparing manuscripts a week *before* the camera operators are shooting the items.
4. The camera operators retrieve a prepared manuscript and set up jobs at camera stations.
 - 4.1 The camera operators set object color target and adjust camera settings to project specifications for hue/saturation, color balance, and brightness and contrast.
 - 4.2 The camera operators shoot front and rear boards and spine.
 - 4.3 The camera operators shoot—depending on the scale and condition of the object—either openings or single pages.
 - 4.4 The processing assistant reviews and crops raw images using Capture One 5.1 software. At the conclusion of this work the images are set to process, creating an output of 600 dpi tiff files.
 - 4.5 The processing assistant transfers the files to the network server.
5. Once on the network server, files are ingested by the DLA via JPEG 2000 software.
6. For quality control, the digital data coordinator reviews the scans for each manuscript to ensure all pages have been scanned and that they meet project standards. The coordinator creates a log of problem images and missing scans.
7. The digital data coordinator provides error reports to the camera operators. The camera operators re-scan faulty images and missing pages as required.

8. The digital data coordinator adds the completed item to the production site.
9. Archival Master Files are automatically copied to the backup server.
10. The digital data coordinator creates 856s in WorldCat and Franklin, entering the handle (persistent URL) generated in Step 10.

July 16-30, 2013. Verification that all work has been completed; assessment of project, such as work flow, responsibilities, rate of output, etc.; compilation of information for final narrative report and for press releases and notifications.

August-December 2013. Preparation and submission of final report to the NEH; publicizing the project through appropriate fora.

Dissemination

Upon news of an award from the NEH and upon the conclusion of the project, press releases will be written and distributed both to general publications and Web sites, such as the University of Pennsylvania's alumni magazine *The Gazette*; its online, bi-weekly publication *Penn Current*; the library's Web site; and to publications and listservs devoted to early modern and/or manuscript studies, such as BABEL, DIGLIB, EXLIBRIS and the listserv for the History of Material Text, a site whose membership exceeds 20,000 individuals from more than thirty countries. Penn Library staff anticipate talks about the NEH-funded work—and the Web site, in particular—at professional conferences (Society of American Archivists and Association for Computers and Humanities, for examples).

The most potent form of dissemination is already embedded in the project's work plan: the accessibility of the facsimiles on the Internet. Portals or direct links to the facsimiles will be available from (1) cataloging records in WorldCat and Franklin; (2) the Web site of the Digital Scriptorium; (3) the project's own Web site with faceted searching; and (4) Google searches and links from related Web sites to the project's own Web site. In addition, the site is now officially exposing all its metadata through OAI-PMH: any OAI-PMH harvester can come to the site's URL and harvest its metadata. There is also a mobile version for all of Penn's DLA collections; it is geared toward smart phones (iPhones and BlackBerries) but also works on other mobile devices.