Narrative

I. SIGNIFICANCE OF THE PROJECT

The study of Near Eastern cultures and peoples across all time periods provides a crucial framework for understanding the complex relationship between Islam and the West today. An understanding of this region includes learning about the social, political, religious and cultural issues—past and present—that shape the Islamic world. Because of heightened interest in the Near East and the Islamic world, there has recently been a corresponding increase in demand for specialized teaching, learning and exchange of critical knowledge and perspectives on this part of the world.

In order to meet this growing demand, The University of California, Los Angeles Library has begun digitizing and cataloging its collection of Near Eastern manuscripts, one of the two largest collections of Near Eastern manuscripts in the United States, to create the most comprehensive collection of such material available online for a worldwide audience. Made up of approximately 7,000 manuscripts written in Ottoman Turkish, Persian, Arabic, and Armenian, primarily in the fields of medicine, literature, philology, theology, law, and history, and ranging from the 11th through the 19th centuries, these UCLA collections rank among the most important in North America, both in extent and scholarly interest.[1]

Inquiries about the collections come from around the globe and in a variety of fields, even though these manuscripts have never been described at the item level, and so cannot be discovered on the Web through finding aids, through the UCLA Library catalog, or through union catalogs such as the University of California's Melvyl or OCLC's WorldCat.

This long-term, large-scale project of cataloging and digitization will not only improve access to the Near Eastern manuscripts to a variety of audiences; it will also allow us to develop tools that will support research and instruction in the online environment. The principal objectives of the project are:

1. To create metadata records for all significant works in our collections. These metadata records will form the basis for traditional catalog records and archival finding aids, but more importantly, they will facilitate sharing of data and digital objects (e.g. Open Archives Initiative metadata harvesting), and will allow for annotation, transcription, and other scholarly activities.

2. To digitize significant Near Eastern manuscript collections at UCLA. Although our current plans include digitization of only one of the most significant of our collections—the Caro Minasian collection—it will be a model for future digitization projects.

3. To build tools that will allow scholars to manipulate, annotate, transcribe, and share manuscripts and information about these manuscripts in an online environment—a virtual

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[1] See Appendix 6 for an inventory of UCLA Near Eastern manuscript collections.

research environment—and to capture the results of these scholarly activities as new data records, with appropriate metadata for the maintenance, exchange, and preservation of this scholarship.

4. To contextualize these digital collections through cooperative international follow-on projects. The first such effort will be to bring together scholars, archivists and librarians for a meeting to plan an Open Archives Initiative service to provide access to Near Eastern manuscript collections worldwide.

In order to create a large and research-worthy body of digital content in support of this plan the Library has chosen to focus initial metadata, digitization and "virtual research environment" development around a single collection, the Caro Minasian Collection of Near Eastern Manuscripts. This collection is notable for both the breadth of its contents, the significance of many individual works, and the cultural mix of both its contents and its history, including Armenian, Persian, and Arabic.

The Minasian collection is a logical choice as a pilot project for a number of reasons. Although the collection contains many known works, many hitherto unknown works in the collection will become accessible as a result of this project. In addition, the collection is comprehensive and rich enough to provide scholars with a "critical mass" of research material. Our objective is to provide online access to the collection similar in scope and accessibility to browsing the physical archive. The scope of the collection—and this project—is also sufficient to warrant the creation of tools to support a "virtual research environment" for Near Eastern manuscripts, and to serve as a core collection for the creation of an Open Archives Initiative-based service for access to Near Eastern collections worldwide.

The project has been underway for four years, as described in the "HISTORY AND CURRENT STATUS OF THE PROJECT section (p. 9)," and much has been achieved.[2] We are seeking NEH funding to accelerate the cataloging and digitization portions of the project, making these important collections available to the public more rapidly, and to assist in the creation of innovative tools for the use of digitized manuscripts online.

A comprehensive collection of Near Eastern manuscripts: The Minasian Collection

Islamic manuscripts of works from the classical period of Islam (9th – 12th centuries) are nearly exhaustively represented in the catalogues of Islamic manuscript collections.[3] It is only recently, however, that intellectual achievements from the later post-classical period (13th century and on) are beginning to be explored by scholars, including the Persian vernacular tradition that rose in importance to become parallel with the Arabic tradition during the 13th – 15th centuries. A great impediment to the progress in this area has been a lack of finding aids for a significant number of manuscripts from this period. The Caro Minasian Collection of Near Eastern Manuscripts at

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[2] For the most current state of the project see the project website: http://unitproj.library.ucla.edu/dlib/minasian

[3] The outstanding manuscript collection from the classical period in the United States is at Princeton University. See: http://www.princeton.edu/~rbsc/department/manuscripts/islamic.html

UCLA spans virtually this entire post-classical period and represents a great diversity of intellectual concerns, as will be described below.[4]

Caro Minasian, an Armenian physician from the Christian district named "New Julfa" (after the original "Julfa," Armenia) in Isfahān, Iran, began collecting in 1935 and spent his life amassing manuscripts and antiquities of varied provenance and background. In many ways, his collection is a reflection of Isfahān itself, during the Safavid period: a thriving cross-cultural mixture cultivated by Shah Abbas I when he established the Armenian community in 1604 as a way of encouraging interactions with Europeans. Specifically, the collection reflects the interests of the middle-class, learned inhabitants of Isfahān, whose families, at the time Caro Minasian collected these works, had preserved them as the texts that to them represented the scholastic milieu during the post-classical period. The community has developed a unique multi-cultural ambience where historical Armenian traditions intertwined with elements from the Persian setting and were stimulated by interactions with the significant European presence in the city during Safavid times.[5]

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[4] Catalogs include:

Sanjian, Avedis Krikor. *A catalogue of medieval Armenian manuscripts in the United States.* Berkeley. University of California Press, 1976.

Iskander, A.Z. *A descriptive list of Arabic manuscripts on medicine and science at the University of California, Los Angeles.* Leiden. E.J. Brill, 1984.

Richter-Bernburg, Lutz. *Persian medical manuscripts at the University of California, Los Angeles: a descriptive catalog.* Malibu, California. Undena Publications, 1978.

Some of the smaller Arabic and Persian collections (Shaykhiyah [25 mss.], Qayeni [chiefly 18th and 19th century Persian], and Elmiyeh [70 Arabic and Persian works]) have been described at the item level, but have no finding aids, and are not accessible through the Library catalog. The majority of the Arabic, Persian, and Ottoman manuscripts remain accessible only through the handlist of Muḥammad Taqī Danish'pazhūh, published in Persian in Teheran:

Dānish'pazhūh, Muḥammad Taqī and Ismā'īl Ḥākimī. *Nuskhah'hā-i khaṭṭī.* vol. 11 &12. (corp. author Dānishgāh-i Tehran.) Tehran: Kitāb'khānah-yi Markazī va Markaz-i Asnād. A summary of Dānish'pazhūh's career was published in Manuscripta Orientalia, 6, 2 (June 2000). Danish'pazhūh's handlist is part of a general survey of Near Eastern manuscripts in the US conducted under the sponsorship of the University of Teheran during the 1970s. It contains cryptic descriptions of the bound manuscripts in Persian, divides them into sections by the language in which they are pre-dominantly written (Arabic, Persian, Ottoman Turkish, Urdu), and gives titles of selected texts in the vernacular languages. Its obvious limitations as a guide to the individual works in the collection are exacerbated by the fact that portions of the collections have been processed and re-numbered since that time, so it can be regarded only as an exploratory handlist, not as a finding aid. Nonetheless, it continues to serve as the only means of access to our Near Eastern collections as a whole.

[5] Minasian's collection, acquired by UCLA in 1968, included a large collection of manuscript materials in Arabic, Persian, Armenian, Ottoman Turkish, and Urdu. Based upon our initial assessment of the materials, the largest scholarly impact will be upon the field of philosophy as represented in the Arabic and Persian texts. Therefore, the project will focus initially on Arabic and Persian manuscripts, approximately two-thirds of the collection. A separate project to promote access to the Turkish collection is underway, and we anticipate similar projects focusing on the Armenian and other materials in the future.

By 1968, when his private library was acquired by UCLA, it included several hundred Armenian medieval manuscripts, including the Gladzor Gospels (the prime example of a medieval Armenian biblical codex), a substantial collection of Armenian printed incunabula and rare editions, a small group of Sumerian artifacts and

Although some of these manuscripts were copied in Isfahān, the majority were likely copied in other cities of Iran and in neighboring countries, and were, as time passed, brought to Isfahān, the most important center of Islamic learning in Iran, if not the Near East in general. All of the manuscripts are written in black ink, some with headings in red ink, and a considerable number with frontispiece illuminations, and about 12 with illustrations (some of "museum quality"), on hand-made papers of various types, thickness and sizes. Many of the manuscripts are in folio size, with carefully hand-stitched regular 8/16-folio quires, and many are in the one-half folio size, and some in quarter folio size. The majority of the manuscripts are well preserved; a few show water damage, termite holes, and other types of minor damage, but no major conservation work is anticipated as part of this project.

Arabic and Persian Manuscripts

The largest portion of the collection—nearly two thirds of the total—is the 1506 manuscripts in Arabic and Persian. They comprise a rich repository of Islamic learning containing many unique and rare documents relating to philosophy, law, religious practice, government, language and grammar, history, science, astronomy, and literature. The majority of the works date from the 14th century through the 19th century. The subject range is wide, including anthologies (divans) of poetry, narrative poetry (*Mathnavī*), fables and stories, commentaries on classical authors, books on grammar, letters, guides for religious novices, biographies, coffee house narratives, dictionaries and vocabularies, works of Shiite literature in the traditional Islamic disciplines such as *tafsir* and *hadith*, texts on religious ethics and jurisprudence, history, geography, cosmography, mathematics, astronomy, and genealogy.

The manuscripts on philosophy and logic are perhaps of the most scholarly value. The collection includes several unpublished major works, a number of unique autographs, and a few Persian translations of major philosophical works, hitherto unknown. A few examples are as follows:

- Arabic translations of Aristotelian texts, mostly of parts of the Metaphysics; and books from the logical corpus of the Organon, the primary sources on Aristotle's logic.

- Treatises and aphorisms (usually no longer than one or two folios) attributed to the "Divine Plato." It is difficult to identify all of them, but a few can be shown to be paraphrases of texts such as *Phædo* and the *Timæus*.

- Three of Averroes' epitomes, middle, or major commentaries on Aristotelian texts, such as *The Categories*.

- A large number of philosophical texts by Avicenna, such as his *Shifā* and his *Ishārāt,* plus Persian translations of the original Arabic texts. Many include "glosses" and "super glosses" on the texts in Arabic and/or Persian. This aspect of the collection is of unique

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other archeological treasures, and approximately 1,500 single works and *majmūas* (manuscript collections). The Armenian manuscripts, which comprise 91 items, is the largest collection of its kind in the Americas.

In addition, the Minasian collection holds thousands of archival documents in Armenian and Persian. These comprise letters, agreements, bills of sale, etc. documenting the city's rich commercial life in the 17th-18th century (especially the silk trade), which are of enormous value to economic and social historians. However, at the moment not even a handlist exists of their precise contents.

significance to the study of post-Avicennan philosophical traditions in Iran, a domain of scholarship, which remains mostly unknown.

- A large number of Arabic texts of the post-Avicennan tradition of non-Aristotelian Islamic philosophy, known as the "Philosophy of Illumination." This category includes such works: Ḥikmat al-Ishrāq and Talwīḥāt by Suhrawardī, Nuzhat al-Arwaḥ by Shahrazūrī, and of singular significance Ibn Kammūnah's *Commentary* on Suhrawardī's *Talwīḥāt*.

- A large number of manuscripts on logic, many of which were texts used in the Schools for the purpose of teaching logic. Examples are: *Isagoge* of Abharī, *Hidāyah* of Abharī, and *Shamsiyah* of Qazvīnī. There are a large number of commentaries, glosses and super glosses of these texts all of which were part of the medieval scholastic tradition of Islamic philosophy especially in Iran.[6]

The earliest of these manuscripts date from the 11th century, and the latest dates from the years of Ottoman domination of the region, when the ruling dynasty was looking outward to neighboring powers such as Russia in an effort to modernize Persian society. The oldest works are written exclusively in Arabic, the scholarly language of the time, and constitute important sources of information about Islamic transformations of ancient Greek learning, especially in natural sciences and philosophy. Among these are the medical and scientific manuscripts cataloged by Iskandar and Richter-Bernburg, which show the assimilation of ancient Greek and Arabic scientific learning into post-classical medical practice.

Arabic and Persian contributions to medical science have been well-known in the West since medieval times, and can be corroborated by the Minasian medical manuscripts, which include a previously unknown portion of Galen's treatise.[7] Less well-known are the Arabic-speaking

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[6] Other important subject areas covered by these manuscripts are:

Persian and Arabic lexicography: Several medieval general dictionaries and many technical ones that cover such subjects as philosophy and the sciences, and jurisprudence.

Persian literature: Several Dīvān's (collected poetic works) of a wide range of Persian poets, including a magnificent illuminated Dīvān of the famous 14th century Persian poet Ḥāfiẓ and many other types of literary compositions both in prose and poetry. This aspect of the collection is of special interest for the study of Persian literature. A few of the manuscripts such as Niẓāmī's Quintet, Jāmī's Bahāristān, and ʿAṭṭār's Conference of the Birds, include magnificent illustrations. Some of these manuscripts may rightly be designated "museum pieces."

History: Several manuscripts on universal history mostly compiled during the Safavid period in Iran.

Shiite theology and jurisprudence: This is one of the strongest sides of the collection, and includes a large number of Arabic as well as a few Persian works. Most of the manuscripts were part of the medieval scholastic curriculum of the Madrasas. Works like Sharāyiʿ al-Islām by Hillī, written in the 17th century were among the first specifically Shiite canonical compilations of jurisprudence, and were used by the Safavid state to establish Shiism as a state religion—occurring for the first time in Islam.

Practical arts: A unique feature of the collection are a substantial number of manuscripts on subjects such as archery, equestrian arts, cook-books, manuals for teaching calligraphy, etc.

[7] The Islamic contribution to medical arts is documented by an on-line exhibition at the National Library of Medicine: http://www.nlm.nih.gov/exhibition/islamic_medical/islamic_00.html
Medical manuscripts from the Minasian Collection were microfilmed with the assistance of a grant from the National Institutes of Health.

philosophers and scientists whose work is preserved in this collection, which reveals a curriculum and scholarly agenda of great breadth and sophistication evolving within the schools of Isfahān. The majority of single works are commentaries on classical Greek sources: including treatises on theology, jurisprudence, *tafsīr*, *ḥadīth* literature, devotional literature, philosophy, lexicography, philology, poetry, and the natural sciences. They include works by such eminent scholars as Niẓām al-Dīn Ḥasan Nīshābūrī, al-Kullaynī, Ibn Bābawayh, al-Ṣuyūṭī, Firuzābadī, Saʻdī, Jāmī, Ibn Sīnā, Ṭusī, Dawwānī, Shaykh al-Bahāʼī, and Mullā Ṣadrā.

The 12th century is regarded as a time when systems for the rational acquisition of knowledge based on Aristotle's work began to emerge in Europe, but the contribution of Arab teachers to this movement, and the passage of ideas from East to West, is not so widely known or studied. The Minasian Collection preserves a large number of works on logic from the Safavid period, when they formed a part of the colloquial educational system, designed to teach the art of debate and the role of inference. Many reflect the advancement and refinement of Aristotle's syllogistic system, in some cases introducing new topics to this discipline. Some works are commentaries on classic texts of Aristotle and Porphyry, translated into Arabic in the early 10th century; others are refinements of works produced in 13th century by the famous Arab logicians: Ṭūsī, Naṣīr al-Dīn Muḥammad ibn Muḥammad, Abharī, Athīr al-Dīn, and al-Qazwīnī. Well-known texts include: Sharḥ Īsāghūjī, Ḥāshiyat al-tahdhīb, Kubrá, al-Tajrīd, and Risālah fī ādāb al-munāẓirah. Some of these works, such as Sharḥ Īsāghūjī, were translated into Latin for use in Western medieval schools, but none has appeared in a modern edition. One of the most exciting recent discoveries in this collection is, however, the rise of the vernacular Persian philosophical tradition—work that has been only recently made known, but promises to revise the currently held view that philosophy reached its zenith in Arabic during the classical period.

From the perspective of a historian of Islamic science, one of the notable treasures of the collection is the autograph work of Nizam al Dīn Ḥasan Nīshābūrī (d.1328). This manuscript, completed in 1326 C.E., is the work of a prominent Persian astronomer-mathematician of the period shortly after the sack of Baghdad. Practical in design and orthography, replete with geometric illustration inserted by an assistant or student, it outlines the mathematical curriculum of its time; dependent on the Euclidean principles of the ancients as they were used in Ptolemaic astronomy, and then passed into Arabic to be revised and extended by Nasir al-Din Ṭūsī. The astronomical tradition that laid the foundation for the eventual overthrow of Ptolemaic astronomy, as illustrated in this intricate manuscript, did not reach the West until the mid-16th century. Some of the theorems used by Nīshābūrī, developed originally by his teachers to revise the Greek astronomical tradition, were used by Copernicus some two hundred years later.

The collection is also valuable as a view of the dialectic of Shiite theology and the curriculum employed by Shiite seminaries in the 17th and 18th centuries. It includes several unedited and unpublished works of major significance to the study of the history of Islamic law and governance, as well as unique copies of canonical sources that call for further study, comparison, and editing. Finally, an estimate of the collection's value must include texts that shed light on Iranian politics, reading habits, and the process of social change. The project team has also discovered a copy of the anthology Diwān Majnūn Laylá al-ʻĀmirī containing formerly unknown poems, a history of Afghanistan and several other works of historiography, several fictional coffee-house narratives of the 19th century that illustrate political issues of that time, treatises on

practical arts valued in Persian society, and numerous works of folk and classical Persian literature.

At completion of our project, the contents of the Minasian Collection will be discoverable by the scholarly community through rich metadata records in multiple systems, including the UCLA Digital Library, the Online Archive of California, the UCLA and UC-wide catalogs, and OAI harvesting services. Approximately half the collection will also be fully accessible through digital surrogates which can be annotated, collected, exported, and shared among communities of scholars, using both Roman and Arabic scripts.

This work will also lay the foundation for further technical development, with the aim of embedding our collections into the wider universe of Near Eastern scholarship, through two major systems: a union list of Near Eastern manuscripts collections based on OAI protocols, merging metadata from significant collections in the US and throughout the world; and a technical environment that will support online collaboration and new methods of digital publication.

A Virtual Research Environment for Near Eastern Manuscripts

The UCLA Digital Library currently supports a Virtual Collections collaborative tool in all its collections. Users can annotate and save digital objects for later use, and for sharing with others. There are a variety of ways in which users can either privately store or publicly share their virtual collections: they can choose whether or not to password protect their collections, and they can choose to make their collections editable by others. Users can therefore choose to create hidden personal collections, accessible only to themselves; they can create read-only collections for sharing with those with the password (e.g. an instructor sharing information with a class); they can create an editable and annotatable collection for use by a select group (e.g. a group of scholars working on a cooperative project); alternatively, they can choose to make their collection completely open, accessible and editable by anyone with an interest.

Our proposal for the grant period is to further develop this tool in a number of ways:

- To make the annotations visible and searchable—using both Roman and non-Roman scripts—whenever the creator makes them public. Annotations could therefore become part of the generic keyword and Boolean search functions, along with the rest of the metadata.

- To ensure full Unicode compliance so the tools will be able to successfully retrieve and display content in non-Roman scripts, in particular Arabic scripts.

- Develop the capture of annotations at each level of complex digital objects, for instance, at the collection, manuscript, and page levels.

- Further develop the tool to allow capture of annotations that refer to specific coordinates on a page. We anticipate adopting open source software and making our version available back to the digital library community. Possible sources are the Project Pad,[8] developed at

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[8] http://projectpad.northwestern.edu/ppad2/

Northwestern University under two grants from the National Science Foundation, and iNote, from the Institute for Advanced Technology in the Humanities at the University of Virginia.[9]

- Develop the capability for users to select and save portions of a page (i.e. image) along with their text contribution as a more complex "annotation" of the original.

- Develop a standardized way of selecting annotations so they can be captured, stored and shared within the metadata standards currently in use, including Dublin Core and MODS (Metadata Object Description Schema).[10] Data so captured could then be exchanged via the METS (Metadata Encoding and Transmission Standard) standard for digital object exchange.

With these tools in place users of the collection would be able to effectively manipulate, annotate, and share digital objects from the collection or manuscript level down to individual portions of a page image that the user might define.

Integrated access to Near Eastern collections worldwide

The UCLA Digital Library Program already has significant experience using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) to provide integrated access to digital collections from different institutions. We were the lead developers and are hosting the Sheet Music Consortium, an OAI Service Provider that harvests metadata records from and provides access to digitized sheet music at the Library Congress, National Library of Australia, Duke University, Indiana University, Johns Hopkins University, and the Maine Music Box,[11] as well as UCLA. The Consortium web site provides access to over 120,000 pieces of sheet music, including keyword searching, Boolean searching of names, titles, subjects and publishers, and browsing by title. In addition, users can create their own "virtual collections" (i.e. save references to items from different collections), and choose to search either all collections or individual collections.[12]

A key component of our current project is the establishment of an OAI-based service provider that will provide access to Near Eastern manuscripts collections across the world, and as a step towards that goal we are proposing to host a meeting of possible partners during the second year (2008-2009). The purpose of the meeting would be to gather interested parties together to establish a series of services that could be provided via an OAI-based Near Eastern manuscripts harvester and service provider. The Sheet Music Consortium mounted a similar meeting during its early stages, during which we planned a variety of key components of the service, including

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[9] http://www.iath.virginia.edu/inote/

[10] Mapping of this data to VRA Core would also be possible, though not specifically relevant to the Minasian project.

[11] The Maine Music Box is a partnership of the Folger Library, the University of Maine, Bagaduce Music Lending Library, and Bangor Public Library.

[12] The Consortium's home page is http://digital.library.ucla.edu/sheetmusic.

metadata formats, the search and retrieval options we would provide, and prepared a proposal for a usability study.[13]

The proposed Near Eastern Digital Manuscripts Consortium meeting would address a similar range of issues:

- Desirable functionality to be provided by a Near Eastern manuscripts service provider

- The quality of the metadata needed to provide those services

- The ability of contributing institutions to provide that metadata

- Technical issues, such as reliable searching and display of non-Roman scripts

Potential attendees include representatives from the major US collections, including UCLA, Princeton, Yale, and Michigan; and from principal collections in the Near East, especially the Bibliotheca Alexandrina. Invitations would also be extended to important European collections, including the British Library.

II. HISTORY AND CURRENT STATUS OF THE PROJECT

Work on gathering metadata for the Minasian collection has been ongoing since 2001. Graduate students from the UCLA Department of Near Eastern Languages and Cultures, expert in both Arabic and Persian, have examined each of the 1,506 manuscript volumes in the non-medical Arabic and Persian portion of the collections. To date (July 2006) 2,120 individual works and 717 authors have been identified. Each constituent work has either been identified, or provided with a title or incipit, and a brief abstract or subject heading. In addition 56 complete manuscripts, consisting of 16,839 pages, have been digitized. These digitized manuscripts are freely available online via the project web site at:

http://unitproj.library.ucla.edu/dlib/minasian

This site provides access to all the digitized manuscripts as they become available via a simple browse of the manuscript and work titles. The site also provides information about the project and a link to the prototype search and retrieval application under development.

Metadata is being captured and stored in a local flavor of qualified Dublin Core, called UCLA Core. This internal standard has been created in order to provide the maximum flexibility and to allow for the output of metadata consistent with the standards in general use in the digital library community. UCLA Core is granular enough to provide for mapping to each of these standards, to MARC, and potentially to other standards as they emerge.

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[13] The usability study, funded by a grant to Johns Hopkins University by the Mellon Foundation, guided the design of the Consortium web site.

The UCLA Digital Library Collection System (DLCS) manages UCLA Library's digital assets using Oracle database software and Java programming. DLCS has the capability to store a variety of digital assets, including texts, images, audio, and video, and through its internal metadata schema, UCLA Core, supports a variety of metadata standards. Descriptive metadata standards supported include Dublin Core, MODS, and VRA Core. DLCS will support the import and export of descriptive and other metadata in the Metadata Encoding and Transmission Standard (METS), and will have the capability of exposing all descriptive metadata via the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The metadata collection for the Minasian collection is also rich enough for the creation of MARC records, which will be effected through mapping from the native UCLA Core records.

Metadata creation and digitization will continue between now and the beginning of the grant period. We anticipate reaching the following digitization goals:

Time period	Manuscripts digitized	Cumulative dig. Mss.
Current status (7/1/06)	56 mss./16,839 p.	56 mss./16,839 p.
July 2006 – April 2007	110 mss./ca. 20,000 p.	166 mss./ca. 36,840 p.
GRANT PERIOD:		
May 2007 – Apr 2008	152 mss./ca. 27,650 p.	318 mss./ca. 64,490 p.
May 2008 – Apr 2009	152 mss./ca. 27,650 p.	470 mss./ca. 92,140 p.

Staff from the UCLA Library's Cataloging and Metadata department will create subject headings for all manuscripts in the Minasian collection and complete name authority work, reconciling the personal names of authors with the LC authority file. Catalog records will be created for all manuscripts and uploaded to the UCLA catalog, to the University of California Melvyl catalog, and to OCLC WorldCat. These catalog records will add traditional modes of access to the collection, to supplement the digital library modes such as OAI harvestable metadata and an Online Archive of California Encoded Archival Description (EAD)-compliant finding aid for the collection.

During the grant period we will establish best practices for the cataloging and digitization of manuscripts written in non-Western languages that we will be able to share with collaborating libraries, and use to sustain our own process of describing our collections. These best practices will inform the planning conference on a Near Eastern OAI metadata harvester and service provider. In addition, we will add multi-lingual capabilities to our current Virtual Collections system, conduct needs assessment, specifications, and programming for a virtual research environment that combines the annotation and selection capabilities of our current system with scholarly collaboration tools.

III. METHODOLOGY AND STANDARDS

Metadata for the project is consistent with multiple standards for description and transport, and can be mapped to Dublin Core, EAD, MARC, and MODS. The metadata also meet the University of California metadata guidelines for digital objects submitted to the California Digital Library (CDL) Online Archive of California and to the CDL Digital Preservation Repository.[14] In addition, UCLA Digital Library metadata can be exported with SCORM-compliant metadata for import into course management systems and made available for harvesting using the OAI protocol.

The workflow includes roles and responsibilities in the creation of metadata for team members working at several stages to provide quality assurance, especially in such critical areas as Romanization of Arabic and Persian names and titles, and assignment of subject headings from LCSH and locally managed thesauri of Arabic and Persian terms. The project will also provide training and support for students and faculty creating metadata. This program will conform to a UCLA Library policy that our digital library collections provide interfaces in both English and the vernacular language of the collection.[15]

Descriptive metadata

Our consensus view of metadata for Near Eastern manuscripts, based on the recommendations of the advisory faculty, library staff, and the programmers and technicians who contribute to the project, is represented in the following sample record. Three versions of the record are shown corresponding to the three formats in which the records will be created: (1) Qualified Dublin Core, the native schema of the UCLA Digital Library data collection system; (2) MARC, the format for loading records into the UCLA Library catalog; and (3) Encoded Archival Description, the format for the creation of a finding aid for the collection and submission to the Online Archive of California.

Sample descriptive metadata record: Minasian ms. 40

Qualified Dublin Core

In the metadata record shown here angle brackets indicate local element qualifiers introduced both for descriptive purposes, and to provide for multilingual and multi-script search, retrieval, and editing functions that are in development.

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[14] CDL Guidelines for Digital Objects is available at http://www.cdlib.org/inside/diglib/guidelines/. University of California Best Practices Guidelines for Encoded Archival Description are available at http://www.cdlib.org/inside/diglib/guidelines/bpgead/.

[15] The Frontera collection of Mexican and Mexican-American sound recordings is an exemplar of this approach. See: http://digital.library.ucla.edu/frontera

DC.Type	manuscript
DC.Title	Sharḥ al-Majasṭī
DC.Title.Alternative<.Arabic>	مجموعة
DC.Title.Alternative<.Persian>	شرح المجسطي
DC.Title.Alternative<.Persian>	Also known as: رسالة في تربيع الدائرة
DC.Creator	Nīshābūrī, Niẓām al-Dīn Ḥasan, d. 1328
DC.Creator <.Persian>	نيشابوري حسن الدين نظام
DC.Date.created	A.H. 704 i.e. 1326 or 1327
DC.Subject.namePersonal.LCSH	Ptolemy, 2nd cent.
DC.Subject.LCSH	Geometry
DC.Subject.LCSH	Astronomy, Greek
DC.Subject.LCSH	Astronomy – Islamic countries
DC.Relation.Citation	Dānish'pazhūh, M40, p. 661
DC.Language	Arabic
DC.Language<.Script>	Naskh
DC.Source	Box 6, ms. 40
DC.Format.Extent	656 p.
DC.Description.Abstract	A commentary by Niẓām al-Dīn Ḥasan Nīshābūrī on the Majesty of Ptolemy (87 –150 AD). Page 650 describes the work as a holograph of the commentator on astronomy and geometry. Includes diagrams. The last six pages of the Majmūʿah contain an explanation by another author of the Archimedean determination of the surface area of a circle.
DC.Relation.isPartOf	Minasian collection of Near Eastern manuscripts, ca. 1100–1899.
DC.Relation.isFormatOf	Microfilm: 04678
DC.Description<.Incipit>	وبعد فمن ان المعلوم ان كتاب المجسطى المنسوب الى بطليموس القلودي كتاب شهد له العالمون في اختراعه بالقدح المعلى واعترف العالمون في اختراعه بالقدح المعلى واعترف العالمون بان له في ابداع رشيد اليد الطولى تصنيف عجيب معجز وتاليف عزيز وبعضهم امتطى صهوة اطناب ارتمى به الى حد الاسهاب الامر خصه الله تعالى بايده وفاز بمزيد الكرامة من عنده وهو المولى الاعظم والحبر المعظم مظهر الحقائق مبدع الدقائق معاون الحكماء المتقدمين قدوة العلماء المتاخرين مكمل علوم الاوائل كاشف معضلات المسائل نصير الملة والحق والدين محمد الطوس قدس الله سره

<u>MARC 21</u>

Metadata records will be imported into the UCLA Library Catalog and edited to conform to current cataloging standards and practices. The following example corresponds to the Dublin Core record shown above.

100 1_ $a Nīshābūrī, Niẓām al-Dīn Ḥasan, $dd. 1328.

245 10 $6 880-01 $a Sharḥ al-Majasṭī.

246 30 $aٯ ٢

246 1_ $i Also known as: $a رسالة في تربيع الدائرة

260 __ $c 740 [1326 or 1327]

300 __ $a 656 p.

524 __ $a Minasian collection of Near Eastern manuscripts, ca. 1100-1899 (Collection 1147). Department of Special Collections, Young Research Library, University of California, Los Angeles. Box 6, ms. 40.

510 4_ $a Dānish'pazhūh, $c M40, p. 661

500 __ $a Incipit: وبعد فمن ان المعلوم ان كتاب المجسطي المنسوب الى بطليموس القلودي كتاب شهد له العالمون في اختراعه بالقدح المعلى واعترف العالمون في اختراعه بالقدح المعلى واعترف العالمون بان له في ابداع رشيد اليد الطولى تصنيف عجيب معجز وتاليف عزيز

وبعضهم امتطى صهوة اطناب ارتمى به الى حد الاسهاب الامر خصه الله تعالى بايده وفاز بمزيد الكرامة من عنده وهو المولى الاعظم والحبر المعظم مظهر الحقائق مبدع الدقائق معاون الحكماء المتقدمين قدوة العلماء المتاخرين مكمل علوم الاوائل كاشف معضلات المسائل نصير الملة والحق والدين محمد الطوسى قدس الله سره

520 __ $a A commentary by Niẓām al-Dīn Ḥasan Nīshābūrī on the Majesty of Ptolemy (87 -150 AD). Page 650 describes the work as a holograph of the commentator on astronomy and geometry. Includes diagrams. The last six pages of the Majmūah contain an explanation by another author of the Archimedean determination of the surface area of a circle.

546 __ $a In Arabic; script in Naskh.

590 __ $a Microfilm copy available (shelf no. 04678).

600 00 $a Ptolemy, $d 2nd cent.

650 _0 $a Geometry.

650 _0 $a Astronomy, Greek.

650 _0 $a Astronomy $z Islamic countries.

655 _7 $a Manuscript. $2 local

773 08 $i Part of $t Minasian collection of Near Eastern manuscripts, ca. 1100–1899 (Collection 1147).

776 08 $i Print version: $t *[Print edition title, where one exists]*

880 00 $6 245–01 $aشرح لمجسطي

Encoded Archival Description

The Department of Special Collections of the UCLA Research Library publishes finding aids for its manuscript collections through the Online Archive of California (OAC), hosted by the California Digital Library:

http://www.oac.cdlib.org/institutions/ark:/13030/tf129008pn

In order to provide as broad access as possible to the collection, and to facilitate cross-collection searching, a complete finding aid for the Minasian Collection will be published through the OAC at the completion of the project.

Although the EAD encoded example shown here—the "component" portion for a single manuscript—includes full descriptive metadata, it is likely that the published finding aid will omit much detail. The record will instead include hyperlinks back to both the full catalog records and the digital surrogates hosted by the UCLA Digital Library.

```
<c01 level="item">
<did>
<container type="box" label="Box ">6</container>
<unittitle>Sharḥ al-Majasṭī</unittitle>
<unitdate normal="1326/1327">[A.H. 740 i.e. 1326 or 27]</unitdate>
<origination><persname>Nīshābūrī, Niẓām al-Dīn Ḥasan, d.
1328></persname></origination>
<origination><persname>نيشابوري حسن الدين نظام</persname></origination>
<physdesc>
<extent>656 p.</extent>
</physdesc>
<langmaterial>
```

<language scriptcode="Arab">Arabic (Naskh)</language>
</langmaterial>
</did>
<scopecontent>
<p>A commentary by Niẓām al-Dīn Ḥasan Nīshābūrī on the Majesty of Ptolemy (87 -150 AD). Page 650 describes the work as a holograph of the commentator on astronomy and geometry. Includes diagrams. The last six pages of the Majmūʿah contain an explanation by another author of the Archimedean determination of the surface area of a circle.</p>
<p>Designation: Ms. 40<lb/>
Arabic title: <title>   </title><lb/>
Persian title: <title>شرح لمجسطي</title><lb/>
Also known as: <title>اللدائرة تربيع في رسالة</title></p>
</scopecontent>
<controlaccess>
<persname encodinganalog="600" source="lcnaf" role="subject">Ptolemy, 2nd century</persname>
<subject encodinganalog="650" source="lcsh">Geometry</subject>
<subject encodinganalog="650" source="lcsh">Astronomy, Greek</subject>
<subject encodinganalog="650" source="lcsh">Astronomy--Islamic countries</subject>
</controlaccess>
<bibref>Dānish'pazhūh: M40, p. 661</bibref>
</c01>

Preparation and Processing of Material

All manuscripts selected for digitization will be examined by Department of Special Collections staff prior to transfer to the Preservation Imaging unit at the University of California Southern Regional Library Facility (SRLF), the digitization vendor. If conservation work is needed this will be done prior to digitization, but we do not anticipate any major conservation work will be necessary. SRLF is also the on-campus storage facility for a large portion of both special and general UCLA collections, so staff are well-trained in the handling or rare materials.

Uncompressed, 600 dpi, RGB color TIFF master images of each page will be created using an Ultrascan Digibook RGB 10000 scanner. Quality control takes place both at the vendor, and again by Digital Library staff during the creation of submaster images. Submaster images (i.e. images used for online delivery) are created for each image, and the master images are stored in a read-only (to all but system administrators) portion of the Library file system. All Digital Library content is also deposited with the University of California's Digital Preservation Repository. Additional discussion of digitization standards and procedures may be found in Appendix 3: Project Standards.

Organization and Access

The UCLA Digital Library architecture, built on Oracle and Java2, is modular and highly generic. Data is collected according to the dictates of a single schema that adapts to any type of collection structure and data elements are captured in database fields that can be expressed in terms of Dublin Core with repeats and qualifiers. Although this approach is rigid in that custom applications are not part of the architecture, it has the merit of being very scalable and highly responsive to needs such as METS export and OAI harvesting, and the middleware does not have to be re-written every time we ingest and deliver a new project. This generic approach allows us to support a wide range of heterogeneous collections by economical methods, and will also allow materials in those collections to be accessed and used in any variety or combination that users require.

Materials managed by our Digital Library Collection System can therefore be re-purposed for the needs of preservation repositories based on METS, harvested for OAI service, or exported into other contexts such as EAD finding aids with relative ease because all digital objects are described and stored in the same way, allowing for minor differences dictated by the descriptive or structural priorities of particular groups of images, texts, or audio files. At the same time, it is possible, using the capacity of Oracle tables to store various data formats, to hand off a wide range of presentation needs, such as XSLT, to custom applications when the need arises, or to enable export of XML-based standards such as SCORM to tools that support classroom instruction or research. Additional information about metadata and data structures may be found in Appendix 3: Project Standards.

Storage, Maintenance, and Protection

All digital files created by and for the UCLA Digital Library program are stored on the UCLA Library's secure file system and backed up daily. The Library's digital library metadata collection system includes administrative and technical metadata for all master files and their derivatives. Master files are maintained on the file system both to facilitate access by collection curators, and to allow for their maintenance.

In addition to local storage and backup services, the UCLA Digital Library is working with the California Digital Library (CDL) to develop a long-term, secure system for the preservation of all our digital assets. CDL is developing a Digital Preservation Repository for use by all University of California campuses.[16] UCLA is one of four UC campuses currently using the Repository, which became available for permanent deposits in 2005.

The CDL Digital Preservation repository provides the UCLA Digital Library Program with an important degree of confidence that our digital assets, including the Minasian collection, will be

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[16] For information about the UC Digital Preservation Program and the Digital Preservation Repository see: http://www.cdlib.org/inside/projects/preservation/. For a complete description of the system design and specifications see *UC Libraries Preservation Repository: System Design*, Version 1.8.8, February 17, 2004 (California Digital Library), available at http://www.cdlib.org/inside/projects/preservation/dpr/RepoDesign_Final_Dev.pdf.

preserved for all future generations of scholars. CDL commits to keep the objects in perpetuity, under the management of the submitters (i.e. the UCLA Library). Digital objects are submitted as stand-alone, platform independent objects, "wrapped" with metadata and an inventory of files. The wrapper format is in XML, using the Metadata Encoding and Transmission Standard (METS). All objects deposited in the Repository have globally unique identifiers, which provide a long-term, stable reference to the preserved object.

All digital objects created during the Minasian project will be deposited in the Repository as METS objects, including full descriptive, administrative, and technical metadata, along with uncompressed master digital images. The Repository makes deposited objects available to the depositing institution upon request. The repository can be searched using metadata extracted from the METS objects upon deposit, and are returned to the depositing institution also as METS objects. The UCLA Digital Library Program is currently developing tools for the creation of METS objects for deposit in the Repository, and for the ingestion of METS objects back into our local digital asset management system. These tools will be complete before the beginning of the grant period.

IV. PLAN OF WORK

As shown in the table below there are seven main tasks during the grant period: expanded metadata creation and verification for 1506 manuscripts, digitization of 304 manuscripts, creation of catalog records for each manuscript and an EAD-compliant finding aid for the collection, programming to support search, retrieval and annotation in non-Roman alphabets, usability testing and assessment of the resulting interface, needs assessment and programming for the virtual research environment, and an international meeting to plan for a Near Eastern manuscripts OAI service.

May 2007 – April 2009

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 1: Metadata creation/editing for 1506 manuscripts, encoded in qualified Dublin Core							
Task 1a: Vernacular and descriptive metadata records created or edited for each manuscript and each work within a manuscript. Strict metadata and format guidelines followed to ensure accuracy of data and conformity with national standards [Metadata Assistants for Near Eastern Languages, supervised by Metadata Librarian, advised by Hirsch; **May 2007-Jan. 2009**]							
Task 1b: Name and subject authority work. All names checked against name authority files and edited accordingly. Names not found edited to conform to current national cataloging standards. LCSH subject headings assigned. Local headings established to supplement LCSH headings [Wilson, Soufi, Metadata Librarian, advised by Hirsch; **May 2007-Apr 2009**]							

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 2: Digitization of 304 manuscripts							
Task 2a: Manuscript review and collation. Condition of all manuscripts checked and pages numbered. [Olvera, supervised by Guerard; **May 2007-Oct 2009**]							
Task 2b: Digitization and technical metadata. [SRLF Preservation Imaging Unit; **May 2007-Jan 2009**]							
Task 2c: Ingest of technical metadata and image files. Master files stored locally and exported to CDL Digital Preservation Repository. Derivative image files and technical metadata loaded, thumbnail images created and filenames verified. [Davison, assisted by Fornadley; **May 2007-Apr 2009**]							
Task 2d: Metadata editing and quality control. Descriptive metadata verified against online images and corrected as needed. [Metadata Assistants for Near Eastern Languages, supervised by Metadata Librarian; **May 2007-Apr 2009**]							

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 3: Creation of 2300 catalog records for all of the manuscripts and an EAD-compliant finding aid for the entire collection							
Task 3a: Map DC records to MARC for loading into UCLA and Melvyl Catalogs [Atluri, supervised by Fornadley]							
Task 3b: MARC records reviewed and corrected, loaded into OCLC [Soufi, supervised by Metadata Librarian]							
					Task 3c: Map metadata to EAD finding aid [Davison]		

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 4: Programming to support search, retrieval and annotation in non-Roman alphabets							
	Task 4a: Program vernacular input, searching, & display [Atluri, supervised by Fornadley; **Jun 2007-Jan 2008**]						
	Task 4b: Program to allow vernacular notes in Virtual Collections [Atluri, supervised by Fornadley; **Jun 2007-Apr 2008**]						

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 5: Usability testing and assessment							
Task 5a: Needs assessment for vernacular Virtual Collections [Shafer, Davison; **May 2007-Jan 2008**]							
	Task 5b: Usability testing of vernacular searching and Virtual Collections [Shafer; **Aug 2007-Jan 2008**]						
Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 6: Needs assessment and programming for Virtual Research Environment							
	Task 6a: Needs assessment for vernacular virtual research environment [Shafer, Davison; **Aug 2007-Jul 2008**]						
			Task 6b: Program virtual research environment and adapt other open source tools [Atluri, supervised by Fornadley; **May 2008-Apr 2009**]				

Months 1-3	Months 4-6	Months 7-9	Months 10-12	Months 13-15	Months 16-18	Months 19-21	Months 22-24
Task 7: Near Eastern Manuscripts OAI service planning meeting							
Task 7a: Establish international planning committee and seek funding [Davison; **May 2007-Sep 2007**]							
		Task 7b: Identify potential participants; issue invitations to participate [Davison; **Jul 2007-Jun 2008**]					
			Task 7c: Identify location, attendees, agenda; advertise [Davison; **Jan 2008-Aug 2008**]				
					Task 7d: Meeting takes place during the 2008/09 academic year [Davison; **Sep 2008-Apr 2009**]		

V. STAFF

1. Stephen Davison, Project Manager (0.20 FTE for 24 months)

Mr. Davison is the Head of the UCLA Digital Library Program (DLP), reporting to the Associate University Librarian for the UCLA Electronic Library. Mr. Davison is responsible for leadership and strategic planning for the program. He sets direction, communicates priorities to the Library, enhances use of digital library collections, and measures use and impact of digital library collections on research and instruction at UCLA.

As manager of the project, Mr. Davison will be responsible for the overall progress of the Minasian digitization project and coordinate all aspects of the production process, including the production details of the digitization process, scheduling and management of data uploads to the web, and work with the technical staff and usability advisor to ensure that the project achieves its objectives in regard to scholarly integrity and usefulness. He will set intermediate and long-term goals for the project, request progress reports on a regular basis, and meet with both individual

team members and groups as needed to ensure the successful completion of the project both on time and within budget. He will make regular progress reports to the AUL for the UCLA Electronic Library. Mr. Davison also serves as a liaison with UCLA faculty advising the project.

2. Genie Guerard, Supervisor of Manuscript Preparation and Handling (0.02 FTE for 24 months)

Ms. Guerard is the Head of the Manuscripts Division in the UCLA Library Department of Special Collections and serves as the curator for the Minasian collection. She will advise on conservation issues such as whether fragile bindings need special handling and will supervise all aspects of manuscripts handling during the project. She will also provide specifications for the creation of the Encoded Archival Description finding aid for the Minasian Collection.

3. Octavio Olvera, Manuscript Handler (0.05 FTE for 18 months)

Mr. Olvera is the Manuscript Processing Assistant in the UCLA Library Department of Special Collections. He will oversee the handling of manuscript works, the traffic between YRL Special Collections and the digitization facility, and the numbering of pages in order to ensure that the scanning process is synchronized with the works selected for digitization.

4. Metadata Librarian (0.15 FTE for 24 months)

A national search is currently underway to fill the position of Head of the Digital Resources Metadata Section, within the UCLA Library Cataloging & Metadata Center. The Section is responsible for the bibliographic control of a wide variety of digital resources throughout the Library system. In support of local digital library work, the section coordinates metadata creation within the center and/or with other library and university staff. The section head advises on and develops best practices, as well as supervises staff who make controlled vocabulary assignments to digital resources and match names to existing authority files. Bibliographic control standards used include Dublin Core, MODS, VRA Core, METS, XML, MARC 21, AACR2, LCRI, LCSH, Library of Congress Classification, etc.

The Metadata Librarian will assure quality control of all descriptive metadata created for the project and oversee the correct and efficient application of Dublin Core Qualified data elements, Library of Congress Subject Headings, and AACR2r in the construction of personal name headings. The librarian will also be responsible for the mapping of the metadata to create MARC records for inclusion in OCLC's WorldCat.

5. Kristen Wilson, Arabic Cataloger (0.20 FTE for 24 months)

Ms. Wilson serves as the Cataloging and Metadata Center's Arabic Cataloger and provides original, full-level cataloging for Arabic-language materials, covering all subject areas and formats. Bibliographic records are created using MARC21 formats, AACR2r, LCRI, LCSH, and Library of Congress classification schedules, and they are contributed to the Program for Cooperative Cataloging for extensive use by other libraries.

She will make Library of Congress Subject Heading assignments to each work contained in a manuscript, with the assistance of summaries/abstracts and other descriptive metadata prepared by the Metadata Assistants for Near Eastern Languages. As needed, she will provide assistance in the construction of personal name headings not found in the national authority file, using the rules contained in AACR2r.

6. Nour Soufi, Metadata Assistant for Authority Work (0.05 FTE for 24 months)

Ms. Soufi, the Arabic Copy Cataloger (Library Assistant III) reviews and edits OCLC MARC bibliographic records for vernacular monographic materials to ensure that accurate records describing the materials are brought into the local online catalog.

She will verify name headings appearing in the descriptive metadata against the national authority file. She will also make sure each Romanized form of name is accompanied by a corresponding Arabic script form.

7. David Hirsch, Vernacular Cataloging Advisor (0.05 FTE for 24 months)

Mr. Hirsch serves as the UCLA Library's collection development Librarian for Armenian Studies, Central Asian Studies, Egyptology, Islamic Studies, Jewish Studies, Middle Eastern and North African Studies, and Near Eastern Languages and Cultures. He has advised the Minasian digitization project from its inception. He provides expert advice on the identity of languages and scripts, the correct standards for description and romanization, and current standards for the application of name authority control and subject headings in the various languages and scripts represented in UCLA's Near Eastern manuscript collections.

He will work closely with the Project Manager, the Metadata Librarian and the metadata assistants to ensure that all current standards for names, titles and subject headings are adhered to. He will provide advice on the creation of uniform titles, the format of vernacular titles and names, the creation and use of authorized forms of names, and the assigning of Library of Congress and other appropriate subject headings. He will also assist the staff metadata creators in the identification of any printed editions of the manuscripts in the collection.

8. Metadata Assistants for Near Eastern Languages (1.00 FTE for 24 months)

The Metadata Assistants for Near Eastern Languages will be supervised by the Project Manager. They will examine the content of bound manuscripts and take primary responsibility for the identification and description of the texts they contain. They will create the majority of the descriptive metadata, encoding it in qualified Dublin Core fields.

These positions require a very high degree of competence in either Arabic or Persian, a facility in reading medieval texts so that important details of the work can be recorded in the abstract for the information of users of the data on-line, an ability to recognize the various scripts in which Persian and Arabic manuscripts were written during the medieval and early modern period, and an understanding of the historical circumstances under which the texts were written and passed through the hands of various owners. Candidates with skills in one language will also be

expected to display sensitivity to the cultural and literary traditions of the other, and to recognize formal conventions of codicology and paleography that prevail in Near Eastern manuscripts in general. A background in literature or philosophy is required. The project has been successful in finding assistants with such skills by hiring students and graduates of the UCLA Department of Near Eastern Languages and Cultures and other local scholars.

9. Curtis Fornadley, Supervisor of Programming and Design (0.05 FTE for 24 months)

Mr. Fornadley is the Digital Library Architect in the Library Information Technology department. As such, he is responsible for the design and development of a database driven, web based, searchable, image, audio and text digital library application. He has built the existing capabilities for storing and displaying metadata in both Roman and vernacular languages in the same record, and has identified the design and programming work needed to support searching and other user input in the vernacular. He will supervise the Project Programmer in that work, as well as assisting the Project Manager in loading digitized images and technical metadata.

10. Lisa Atluri, Project Programmer (0.80 FTE for 24 months)

Ms. Atluri is the primary programmer for the UCLA Digital Library user interface. Under the direction of the Supervisor of Programming and Design, she will enhance the current interface to support the input of search terms in the vernacular and the reliable retrieval and presentation of records, enhance the "Virtual Collections" function to allow for the addition of non-Roman annotations, and extract the records into a MARC format.

11. Sharon Shafer, Usability Librarian   (0.15 FTE for 15 months)

Ms. Shafer will report to the Project Manager and will conduct formal user studies of the existing Virtual Collections and Environment with faculty and students who have dual Roman and non-Roman language expertise and recommend interface improvements based on the assessment. She will conduct formal user studies of the vernacular searching and Virtual Collections with faculty and students who have non-Roman language expertise and recommend interface improvements based on the assessment. Using data gathered from the initial user study and the vernacular user study, she will work with the Project Manager on needs assessment for non-Roman annotation in the Virtual Collections tool and virtual research collections.

VI. DISSEMINATION

At the conclusion of the project the complete digital manuscript repository will be accessible on the web at http://digital.library.ucla.edu/minasian. The website will provide access to descriptive metadata for the entire Minasian Collection, and access to the digitized portion. In addition, catalog records for each individual manuscript in the Minasian collection will be accessible via the local UCLA Library Catalog, the University of California's Melvyl catalog, and the OCLC worldwide catalog, WorldCat. In all of these records the MARC 856 field will provide a link back to the manuscript images housed in the UCLA Digital Library collection.

As part of the cataloging process we expect to be adding large numbers of new records to the Library of Congress Name Authority File. These records will become available both through LC and shared-cataloging utilities such as OCLC. The availability of these records to other collections of manuscript collections will raise awareness of both the identity of these individual authors and scribes as well as the unique works present in the Minasian collection.

The collection will also be made available via the Open Archives Initiative (OAI) Protocol for Metadata Harvesting. This will allow general service providers (e.g. OAIster, http://www.oaister.org) to harvest Minasian data and provide additional points of access to the collection. In addition we expect the harvesting of OAI compliant data by general web search engines (e.g. Google, Yahoo, etc.) to become commonplace, providing access via simple web searches.

Upon completion of the project we will advertise the availability of the Minasian Collection online is a wide variety of ways:

- Press releases through the UCLA Library and campus communications office
- Print, email, and web-based communications through the various campus entities that sponsor Near Eastern studies, including the UCLA Department of Near Eastern Languages and Cultures, and the UCLA Center for Near Eastern Studies
- Postings to a wide variety of scholarly listservs and news groups in the area of Near Eastern Studies generally, and Persian, Armenian, and Arabic studies specifically

In addition, we will work with members of the Near Eastern Languages and Cultures department to identify additional groups and individuals for whom this resource will be of interest, in particular scholars and organizations worldwide.