

GREGORY HEYWORTH

408 Morey Hall, Dept. of English, U. of Rochester
E-Mail: gregory.heyworth@rochester.edu
Website: lazarusprojectimaging.com

EDUCATION

- Ph.D. Princeton University, Comparative Literature, 2001
- B.A. Cambridge University, Girton College, English, 1991
- B.A. Columbia University, English and Comparative Literature, 1989

ACADEMIC POSITIONS

- Associate Professor of English, University of Rochester, 2016-present
- Associate Professor of English, University of Mississippi, 2009-2016
- Director, Lazarus Project, 2012-present
- Assistant Professor of English, University of Mississippi, 2001-2009
- Maître de Langues, Faculté ès lettres, Université de Poitiers, 1991-1994

GRANTS, AWARDS, AND FELLOWSHIPS

- Pump Primer II, “History From Above: 3d Multispectral Drone Imaging,” (\$30,000), 2023
- Arcadia Foundation, “Palimpsests in Danger,” sub-award (\$15,000), 2023-2024
- Notre Dame University, “Palimpsests recovery: Ambrosiana Library, Milan,” (\$19,000), 2023
- NCPTT, “Scheimplug Multispectral: A Novel Way for Imaging Books That Can Be Opened 30 Degrees or Less,” \$29,974, 2019
- NEH Curricular Development Grant, \$35,000, 2019
- Pump Primer Grant, UR \$22,000, 2018-19
- NEH to Lazarus Project and EMEL, Martellus Map (\$30,000), Summer 2014
- University of Mississippi, ORSP Research Grant Summer, 2013
- Choice Outstanding Academic Title, *Desiring Bodies*, 2010
- National Center for Preservation Technology and Training Grant, “Portable Multispectral Imaging Lab” (\$25,000), 2010
- University of Mississippi, ORSP Research Grant 2004
- UM School of Liberal Arts Summer Grant, 2003
- UM School of Liberal Arts Summer Grant, 2002
- Carleton Fellow, Princeton University, 1995-99
- Doris Russell Fellowship, Girton College, Cambridge, 1989-1991
- Harry Johnson Scholarship, Columbia University, 1985-89

PUBLICATIONS

PATENTS

- *Multispectral Polarimetric Imaging for Noninvasive Detection of Nerves and other Tissues*, with Haolin Liao, Wayne Knox, and Dave Mitten, US 2023/083680

BOOKS

- *Les Eschéz d'Amours: A Critical Edition of the Poem and its Latin Glosses*, with Daniel O'Sullivan (2013); vol. 2 in preparation for 2025
- *Imag(in)ing Maps and Manuscripts: The Theory and Practice of the Digital Surrogate* (in preparation)
- *Desiring Bodies: Ovidian Romance and the Cult of Form*, Notre Dame, (2009) Winner of Choice Outstanding Academic Title
- *The Cooper Hill Stylebook*, with R. Liberman, Cooper Hill Press (2004)
- *Writing and Revision*, with R. Liberman, American Language Sourcebooks (2001)

ARTICLES

- “Reading the end of Fled Bricrenn: Multispectral Imaging applied to f. 9v of Leiden MS VLQ,” with Nike Stam and Catherine Albers-Morris, *Studia Celtica Fennica* 21: 1-19 (2025).
- *Ostersonate ("Easter Sonata") for Piano, Fanny Hensel (Mendelssohn)*, vol. 1 ed. Marie Rolf, vol 2 (Facsimile) Gregory Heyworth. Bärenreiter Verlag, 2024
- “Multispectral imaging to recover lost text in the Sarajevo Haggadah,” with Aleksandra Buncic and Catherine Albers, *Journal of Cultural heritage* 67: 284-89, 2024.
- “Image, Text, and Technology,” with Helen Davies, *International Center for Medieval Art, News*, May 2023.
- “Fragments under the Lens: A case study of multispectral versus hyperspectral imaging for manuscript recovery,” with Tania Kleyhans, Alex Zawacki, *Digital Philology* 11.2 (2023) 123-138.
- “Multispectral Scheimpflug: Imaging Degraded Books That Open less Than 30 Degrees,” with Keith Knox, Ken Boydston, and Yuhao Zhu in *Archiving Conference*, 2022, pp 1 - 4, <https://doi.org/10.2352/issn.2168-3204.2022.19.1.1>
- “All That We See is Vision: William Blake’s Four Zoas and Multispectral Imaging,” with Oishanti Sengupta, Christina Duffy, David Messinger, Helen Davies, and Alex Zawacki. In *William Blake’s Manuscripts* (Palgrave MacMillan, 2022)
- “From Technology to Text: Reading and Editing the Lacunose Manuscript,” in *New Light on Old Manuscripts: Recent Advances in Palimpsest Studies* ed. Claudia Rapp (2022)
- “New Light on the Vercelli Book: Textual Science and the History of the Book,” in *Old English Tradition: Essays in Honor of J. R. Hall*, ed. Lindy Brady, ACMRS 2022
- “Multispectral Recovery of a Fragment of Richard FitzRalph’s Summa de Questionibus Armenorum from University of Rochester, D.460 1000-03,” with Kyle Huskin, and Alex Zawacki, in *Journal of Manuscript Studies* (2019).
- “Digital Mapping,” with Helen Davies, in *A Companion to English Mappaemundi of the 12th and Thirteenth Centuries*, eds. Terkla and Millea, Boydell Brewer, (2019)
- “Unlesbare Notenschätze in der SLUB,” *BIS – Das Magazin der Bibliotheken in Sachsen* 29 (2015)
- “Initial inspection of reagent damage to the Vercelli Book,” with Ira Rabin, and Oliver Hahn, *Comparative Oriental Manuscript Studies* 1.1 (2015): 34-45. 2015
- “Rediscovering Text in the Yale Martellus Map: Spectral Imaging and the New Cartography,” with Roger Easton, Ken Boydston, Chet Van Duzer, Michael Phelps, in *2015 IEEE International Workshop on Information Forensics and Security (WIFS), November 16-19, 2015, Rome, Italy, Proceedings*, Institute of Electrical and Electronic Engineers, 2015, pp. 1-6
- “Classics and Mythography in the Middle Ages,” in A. Classen ed., *Handbook of Medieval Studies: Concepts, Methods and Trends in the Middle Ages*, De Gruyter, 2010
- “Curialitas,” in A. Classen ed., *Handbook of Medieval Studies: Concepts, Methods and Trends in the Middle Ages*, De Gruyter. 2010
- “Ineloquent Ends: Simplicitas, Proctolalia, and the Profane Vernacular in the Miller’s Tale,” *Speculum* 84:4, 2009
- “Textual Identity and the Problem of Convention: Recovering the Title of Dresden Oc. 66,” *Textual Cultures* 1:2, 2006
- “Missing and Mending: Romeo and Juliet at Play in the Romance Chronotope,” *Shakespearean Criticism* 76, 2000
- ——— Reprinted with alterations from *Yearbook of English Studies* 30, 2004
- “Love and Honor in Cligès,” *Romania* 120, 2002
- “Perceval and the Seeds of Culture” *Neophilologus* 84, 2000
- “Romance/Roman, Novel/Novella” in *The Encyclopedia of the Novel*, ed. Paul Schellinger, Fitzroy Dearborn

FILM

- “Dot the I.” Story written about a love triangle and the machinations of a dogme film maker, starring

- Gael Garcia Bernal (Summit Entertainment, 2003; American release 2005)
- “The Last Elizabethan.” Screenplay about Sir Walter Raleigh’s search for El Dorado and intrigue at the Jacobean court (optioned by Miramax, September, 2003)

LECTURES AND CONFERENCE PAPERS

- “El Futuro del Pasado: La Historia de la fotografía multiespectral para el patrimonio cultural,” Seminario internacional: Intercambio de saberes y prácticas para el cuidado de los patrimonios en bibliotecas, Bogota, November, 2024.
- “At the Manuscript’s Bleeding Edge: The Challenge of Chemical Reagents and the Future of Manuscript Recovery,” University of Milan, June 10, 2024
- “Images Texts and Technologies,” TRFSEF (Terra Rochester Finger Lakes Science and Engineering Fair,” Rochester, March 2024
- “Using New Technologies to Resurrect Centuries-Old Texts,” Boundless Possibility, San Francisco, March 2024
- “Manuscripts at the Foundations of Modern Law: Multispectral Imaging, Artificial Intelligence, and the Recovery of Gaius’s Institutes and the Oldest Koran,” Princeton University, April 20, 2023
- “Manuscripts at the Foundations of Modern Law: Multispectral Imaging, Artificial Intelligence, and the Recovery of Gaius’s Institutes and the Oldest Koran,” Princeton University, April 20, 2023
- “Manuscripts at the Foundations of Modern Law: Multispectral Imaging, Artificial Intelligence, and the Recovery of Gaius’s Institutes and the Oldest Koran,” Princeton University, April 20, 2023
- “The Undiscovered Country: Ancient Texts and Modern Technologies,” Princeton University, April 19, 2023
- “In the Footsteps of Petrarch,” Rochester Retired Professional Society, April, 2023
- “Resurrect3D: An Open and Customizable Platform for Visualizing and Analyzing Cultural Heritage Artifacts,” The 26th International Conference on 3D Web Technology, Nov., 2021
- “Scheimpflug Multispectral Imaging of Dime Novels: Conservation Technology Showcase,” AIC/SPNHC Joint Virtual Annual Meeting, Virtual, May 2021
- “Manuscripts Through Many Lenses,” I.C.M.S., Kalamazoo, MI, May 2021
- “Editing the Lacunose Manuscript,” New Light on Old Manuscripts Conference, Vienna, April, 2018
- “Textual Science and the Future of the Past,” SUNY Binghamton, April, 2018
- “Deep Surfaces,” Flint Art Institute, MI, April, 2018
- “Creating Value in the Archive: Technology in the Curriculum,” RBMS Conference, New Orleans, June 2018
- “A Timeline and Primer for the Study of Manuscripts,” R-CHIVE Conference, Rochester, July 2018.
- “Multispectral Imaging Workshop,” Terra Digita Conference, Cornell, Ithaca, November, 2017
- “A Short History of Imaging for Cultural Heritage,” R-CHIVE Conference, Rochester, June, 2017
- “Old Books, New Science,” Kandersteg Seminar, Kandersteg, Switzerland, April, 2017
- “What is Textual Science,” RIT Brick City, Rochester, Sept., 2017
- “The Art of Discovery,” Light and Sound Conference, Rochester, Sept., 2017
- “Reading the Invisible Text (in 16 Dimensions),” Data Science Brown Bag, Rochester, Sept., 2017
- “Making Light Work of Old Books,” Interfaith Chapel, UR, Rochester, October, 2017
- “There’s Treasure Everywhere: Imaging Technology and the Future of the Archive,” Carlson Library Keynote, October, 2017
- “Making Light Work of Old Books,” University of South Florida, Tampa, April, 2017
- “The Lazarus Project,” Alumni lectures, Los Angeles and San Diego, Dec. 3-5, 2016
- “Meta-objects: Digital Surrogacy and the Authenticity of Cultural Heritage,” CEMERS, SUNY Binghamton, October 22, 2016.
- “Modern Imaging Technologies to Recover History: The Lazarus Project and R-CHIVE, RIT Brick City, October 14, Rochester.
- “Science + Humanities: The Lazarus Project,” Meliora Weekend, October 7, 2016
- “Cultural Heritage in a Time of Crisis: The Path Ahead,” Invited Lecture to the Imaging Science

Club, RIT, September 28, 2016.

- “From Chartres to Timbuktu: Spectral Imaging in a Time of Crisis,” DH 2016, Krakow, 2016
- “A Demonstration of Multispectral Imaging,” DH 2016, Krakow
- “Textual Science for the Working Medievalist,” Kalamazoo, 2016
- “How to Read an Invisible Classic,” Sightlines/Digital Futures Conference, invited lecture, Harvard, Dec. 3, 2015
- “All Manuscripts are Palimpsests: Spectral Imaging and the Hidden Text,” The Merits of the Book Conference, invited lecture, University of Chicago, 2015
- “How I’m Discovering the Secrets of Ancient Texts,” TedX, 2015
- “Forensic Codicology and the History of the Book: from Mabillon to the Archimedes Palimpsest and Beyond,” invited lecture and multispectral imaging workshop sponsored by the Ecole Pratique de Hautes Etudes and the Institut de Recherche et d’Histoire des Textes, Paris, 2014
- “Multispectral Maps: Ptolemy, Waldseemüller, the Vercelli Mappamundi, and Martellus,” invited lecture at Beinecke Library, Yale, New Haven, 2014
- “Textual Science and Transnational Objects,” invited lecture at the Azerbaijan Diplomatic Academy, Baku, 2014
- “Text, Codex, and Code,” invited lecture at Rochester Institute of Technology, Rochester, 2014
- “Textual Science and the Future of the Past,” invited lecture at Massachusetts Institute of Technology, Boston, 2014
- “Textual Science,” invited lecture at University of Connecticut, Storrs 2013
- “Beyond Mimesis: Digital Aesthetics and the Pre-Modern Text,” invited lecture at Durham University, Durham UK, 2012
- “Treating in Kind: The Merchant of Venice and the Ethics of Exchange,” invited lecture, U.S. District Federal Court, Oxford, MS, 2011
- “Experiential Truth: Chaucer and Recusatio,” invited lecture at Université de Fribourg, Fribourg, Switzerland, 2011
- “The Lazarus Project,” Annual Conference of the National Honors College Council, Phoenix, 2011
- “The Renaissance of the Middle Ages: The Lazarus Project and 2011 Textual Science,” invited lecture at the John Carter Brown Library, Brown University, Providence
- “Technology and Textual Studies,” plenary lecture, Medieval Academy of America, Tempe, 2011
- “Technology and Text,” Oxford Conference on the Book, Oxford, MS 2011
- “Theodicies: Bible, Milton, Leibniz,” invited lecture, U.S. District Federal Court, Oxford, MS, 2010
- “Being Michael Kohlhaas,” invited lecture, U.S. District Federal Court, Oxford, MS, 2009
- “Chess and the Limits of Knowing: Aporetic Allegory in the *Eschéz d’Amours* and Chaucer’s *Book of the Duchess*,” New Chaucer Society Conference, Swansea, Wales, 2008
- “Chess, Women, and Statesmanship: Mary of Burgundy and the Illuminations of the *Esches Amoureux* in Dresden O.c. 66” Southeastern Medieval Association, Spartanburg, SC 2007
- “Restraining the Minotaur: Colonialism, Hybridity, and the Discourse of Union in the Knight’s Tale,” Rocky Mountain Medieval and Renaissance Conference, Jackson, WY, 2005
- “Orienting Paradise: Eastern Artifice and Western Engin in *Cligès*,” Southeastern Medieval Association, Charleston, SC, 2004
- “Chaucer and the Myth of Matriarchy,” International Congress on Medieval Studies, Kalamazoo, Michigan, 2003
- “Knight Work,” Sewanee Medieval Colloquium, Sewanee TN 2001
- “Vergil, Ovid and the Motives of Pamphilus,” Princeton Graduate Colloquium, Princeton, NJ, 1997

DIGITAL HUMANITIES PROJECTS (LISTED FROM LATEST TO EARLIEST)

40. OBJECT: Utrecht Psalter

DATE: 7/2022
LOCATION: Utrecht, Netherlands
STATUS: Ongoing
RESULTS: Imaged this famed UNESCO World Heritage Object, discovering that it was written in rare Theophilus ink.

39. OBJECT: Metrum Leonis
DATE: 7/2022
LOCATION: Vercelli, Italy
STATUS: Completed
RESULTS: Recovered the damaged portions of a famed medieval beast satire, revealing the identities of “animals” representing important 11th century historical personages.

38. OBJECT: Sarajevo Haggadah
DATE: 7/2022
LOCATION: Sarajevo, Bosnia
STATUS: Ongoing
RESULTS: Imaged the famed UNESCO World Heritage Object, recovering numerous censored passages and final folios containing crucial information on provenance, ownership, and how the medieval manuscript made its way from Spain to Bosnia.

37. OBJECT: Fled Bricriu Ms (Bricriu’s Feast)
DATE: 7/2022
LOCATION: Leiden
STATUS: Ongoing
RESULTS: Recovered the illegible ending of the Irish medieval epic tale, *Bricriu’s Feast*. This is the only manuscript in existence that has an ending to the tale.

36. OBJECT: Ms Arabe 328
DATE: 4/2022
LOCATION: Bibliothèque Nationale, Paris
STATUS: Ongoing
RESULTS: Imaged the oldest Koran. Discovered crucial erasures and rewrites in 4:9 and 4:16 dealing with inheritance, suggesting that originally, women *could* inherit with the same rights as men.

35. OBJECT: Gaius Manuscript
DATE: 6/2022
LOCATION: Verona, Italy
STATUS: Ongoing
RESULTS: Imaged the famed Gaius palimpsest containing the only record of Roman law.

34. OBJECT: MsXL – Euclid Palimpsest
DATE: 6/2022
LOCATION: Verona, Italy
STATUS: Ongoing
RESULTS: A palimpsest containing early Vergil and Euclid. Our team discovered a new work by

Apuleius, his commentary on Plato's Republic Book 10

33. OBJECT: 15th Century Armenian Palimpsest, Smithsonian Institute

DATE: 8/2019

LOCATION: Sent to Rochester

STATUS: Ongoing

RESULTS: Only Armenian palimpsest in existence with a complete undertext.

32. OBJECT: Mappamundi (13th century), baroque music by Zelenka (18th century), Dante's *Commedia* (1370)

DATE: 7/4-14, 2019

LOCATION: Dresden, Germany

STATUS: Completed

RESULTS: Recovered previously unstudied, damaged mappamundi; recovered three new pieces by Zelenka; made legible cantos 1-33 with marginalia of Dante's *Commedia* in a previously unstudied manuscript.

31. OBJECT: Ricardus Fragment, Music Palimpsest (RIT), imaged by Hyperspectral system, added fluorescent bands to HSI

DATE: 8/2018

LOCATION: Oxford, UK

STATUS: Ongoing

RESULTS: Comparison of MSI to HIS will result in article

30. OBJECT: Montessu, Bronze Age Cave painting, multispectral imaging for In Search Of ... on Atlantis

DATE: 6/2018

LOCATION: Sardinia

STATUS: Completed

RESULTS: Revealed what seems to be writing in cave painting.

29. OBJECT: Urkunde, German Land Contract 18th century, regarding glassworks in Glashütte

DATE: 5/2018

LOCATION: Rochester

STATUS: Completed

RESULTS: Enhanced legibility of document, both in 18th century hand and early 20th century pencil on parchment (Sütterlin Schrift)

28. OBJECT: Frederick Douglass Bust, 3D Structured light scan

DATE: 2/2018

LOCATION: Rochester

STATUS: Ongoing

RESULTS: First known combination of photogrammetry with structured light 3d scanning to produce a printable, digital 3D surrogate.

27. OBJECT: 19th century portrait atop negative, owned by Skaneateles Historical Society

DATE: 1/2018

LOCATION: Rochester

STATUS: Completed

RESULTS: Failed attempt to identify negative image beneath painting

26. OBJECT: Ricardus Binding Fragment

DATE: 2/2017

LOCATION: University of Rochester

STATUS: Completed

RESULTS: Fragment recovered and identified. Graduate students preparing an article.

25. OBJECT: Codex Climaci Rescriptus,

DATE: February, July 2017, January 2018

LOCATION: Oklahoma City; Rochester

STATUS: Ongoing

RESULTS: Most important palimpsest in the collection of the Museum of the Bible. Undertexts in Christian Palestinian Aramaic now all legible; Greek astronomical undertexts 50% legible, new, previously unseen and unattested text in the Gospel of John

24. OBJECT: Jagiellonian Globe, 1508

DATE: 7/2016

LOCATION: Krakow, Poland

STATUS: Ongoing

RESULTS: Imaged the first globe to show North America.

23. OBJECT: Bronze Age cave paintings; inscriptions on slate

DATE: 6/2016

LOCATION: Jimena de la Frontera, Cadiz, Spain.

STATUS: Ongoing

RESULTS: Significantly enhanced visibility of both paintings and inscription. Results and project will be featured in an upcoming episode of a National Geographic Channel special on the myth of Atlantis.

22. OBJECT: Tira Map; Binding fragments

DATE: 5/2016

LOCATION: Kalamazoo, MI

STATUS: Ongoing

RESULTS: Imaged parts of a 17th century Mexican narrative map in lost language of Zapotec for the American Geographical Society Library.

21. OBJECT: Binding fragment of unknown medieval dialogue

DATE: 4/2016

LOCATION: University of Rochester, Rochester, NY

STATUS: Completed

RESULTS: Illegible late 14th century binding fragment revealed in entirety as an unknown literary disputation/dialogue.

20. OBJECT: Black Book of Carmarthen, faded and illegible pages and marginalia in the oldest book of Welsh; Peniarth 20, reagent damaged and illegible pages.

DATE: 9/2015

LOCATION: National Library of Wales, Aberystwyth

STATUS: Ongoing

RESULTS: Marked improvements in legibility of Black Book. Transcription ongoing. Entirely new Middle Welsh triads recovered from Peniarth 20.

(<http://anglosaxonnorseandceltic.blogspot.com/2015/10/further-developments-in-black-book-of.html>)

19. OBJECT: Cairo Genizah fragments; Codex Zacynthius palimpsest

DATE: 9/2015

LOCATION: Cambridge UL, Cambridge, UK

STATUS: Ongoing

RESULTS: "Kiev letter" renamed after multispectral imaging enables accurate reading; Codex Zacynthius palimpsest rendered 90% legible; Old French colophon revealed, transcribed with date and location.

18. OBJECT: Palimpsest collection containing some of the earliest copies Gospels and texts in the now lost Caucasian Albanian language at the Georgian Centre for Manuscripts and National Archives.

DATE: 8/2015

LOCATION: National Manuscript Centre, National Archives, Tbilisi, Georgia

STATUS: Ongoing

RESULTS: Planned pilot project to image valuable palimpsests as the first phase of a larger collaborative project to image palimpsests of Georgia and Svaneti.

(<https://www.youtube.com/watch?v=xVVDOMMed9Q>)

17. OBJECT: Codex Boernerianus with fading and erasures; faded baroque music scores by Telemann, Heinichen and Dittersdorf, including a new Telemann concerto and a previously unknown Dittersdorf opera.

DATE: 7/2015

LOCATION: Dresden, SLUB, Germany

STATUS: Ongoing

RESULTS: Significant enhancement of legibility to Telemann; recovery of new poem in Codex Boernerianus, along with numerous illegible passages of commentary at the end of the manuscript.

(<http://blog.slub-dresden.de/seite/5/>)

16. OBJECT: Fragments of the Library Cathedral of Chartres.

DATE: 7/2015

LOCATION: Chartres

STATUS: Ongoing

RESULTS: An agreement among the Lazarus Project, The Early Manuscripts Electronic Library, the City of Chartres, and the Institut de recherches et d'histoire des textes to a four-year project to image the damaged fragments and manuscripts of the Cathedral Library of Chartres. This will be the largest multispectral imaging project in Europe, and the second largest in the world.

15. OBJECT: 13th century Askenazic Torah with erasures, palimpsesting, and overwriting

DATE: 6/2015

LOCATION: Orange, CT

STATUS: Ongoing

RESULTS: Complete recovery of undertext; distinctions between carbon ink additions and iron gall text. (<http://www.nhregister.com/general-news/20150620/ashkenazic-torah-scroll-analyzed-atcongregation-or-shalom-in-orange>) and (<http://www.jewishledger.com/2015/08/an-ancient-torah-scrollbrought-to-life-conversation-with-prof-gregory-heyworth/>)

14. OBJECT: Climaci Rescriptus palimpsest; various Greek fragments on papyrus.

DATE: 6/2015

LOCATION: Undisclosed

STATUS: Ongoing

RESULTS: Undisclosed

13. OBJECT: WWI Propaganda Posters; Robinson Collection of Classical artifacts

DATE: 5/2015

LOCATION: University of Mississippi Museum

STATUS: Ongoing

RESULTS: Multispectral damage repair, stitching, of largest WWI propaganda poster collection in the US; multispectral imaging and focus stacking of the Robinson collection including a Greek pyxis lid with the only known depiction of an Amazon with a lasso. (<http://djournal.com/news/lazarus-project-helpingat-ole-miss/>)

12. OBJECT: 1507 Lenox globe.

DATE: 10-18/2015

LOCATION: New York Public Library, New York City

STATUS: Completed.

RESULTS: 3D multispectral imaging involving Structure from Motion technology to produce a 360-degree rotatable digital facsimile for research and display. (<http://www.livescience.com/49444-lenoxglobe-photos.html>)

11. OBJECT: (1) 14th century Cicero palimpsest; (2) Various fragments of medieval manuscripts from the Cathedral Library of Chartres; (3) Papyrus

DATE: 9/2014

LOCATION: Paris, France

STATUS: Completed

RESULTS: Week-long seminar and hands-on training in multispectral imaging for researchers, scholars and students from the Sorbonne and EPHE and IRHT. The imaging project will provide the substance of the practical workshop on image processing. Successful imaging of the Chartres fragments is the basis for a planned, multi-year project to image the entire Chartres collection in collaboration with the IRHT.

10. OBJECT: Martellus Map, 1491 map of the world which Columbus consulted before his voyage to the Americas, damaged by fading and overpainting.

DATE: 8/2014

LOCATION: Beinecke Library, Yale University, New Haven, CT

STATUS: Completed.

RESULTS: Multispectral imaging, stitching, of large map, and pilot multispectral imaging of the Voynich ms. Near complete recovery of text, leading to numerous articles, radio and television reports including in Smithsonian magazine. Discover Magazine has voted the project one of the top 100 science stories of 2015.

(<http://www.dailymail.co.uk/sciencetech/article-2761159/Decoding-Columbus-map-Hidden-text-500-year-old-Martellus-Atlas-shed-light-discovery-New-World.html>) and

(<http://www.neh.gov/humanities/2015/septemberoctober/curio/imaging-technology-reveals-15thcentury-cartographers-world-v>)

9. OBJECT: Palimpsests, one containing a previously unknown play of Menander.

DATE: 8/2014

LOCATION: Vatican Library

STATUS: Completed.

RESULTS: Near complete recovery of Menander fragment to be published by Francesco d'Aiuto and Nigel Wilson.

8. OBJECT: (1) 15th century Venetian manuscript of Martial's Satires

damaged severely by water in Hurricane Sandy; (2) 12th century fragment in the binding of a Boethius manuscript, badly worn and faded to near illegibility

DATE: 5/2013-7/2013

LOCATION: Oberlin College, Oberlin, OH

STATUS: Complete

RESULTS: Returned Martial to 50% to 90% legibility; recovered most of the text in the 12th century fragment. (<http://www.pinterest.com/pin/288793394828275360/>)

7. OBJECT: (1) Vercelli Book (10th century), the oldest manuscript in existence written in Old English, and damaged by chemical reagents; (2) Vercelli Mappamundi (12th century), one of twelve medieval maps of the world, damaged by water and fading; (3) Codex Vercellensis (early 4th century), the oldest translation of the Gospels into Latin.

LOCATION: Museo de Tesoro del Duomo e Archivio Capitolare, Vercelli, Italy

DATE: 7/2013-Present

STATUS: Completed

RESULTS: Made Vercelli Book marginally more legible; have successfully developed a neural network OCR application for whole and partial anagraphs; restored the Mappamundi to near complete legibility; successfully imaged Codex Vercellensis Gospels in July-August 2014, and am in process of preparing an edition and multispectral facsimile for the Beuron Vetus Latina Project. (<http://www.lastampa.it/2013/03/07/edizioni/vercelli/dagli-usa-al-museo-del-duomo-per-rileggere-il-vercelli-book-D5pxcV4SofQlxzdU9PMxoL/pagina.html>)

6. OBJECT: 1916 Collages by Juan Gris and possibly Picasso, held in private collection.

LOCATION: Gainesville, FL

DATE: 5/2013-Present

STATUS: Completed

RESULTS: Recovered ownership information from faded accession tag; recovered multiple undertexts under layers of paint using multispectral imaging and IR thermography; performed material analysis to determine forgery using Raman spectroscopy, SEM (Scanning Electron Microscope) and X-ray diffraction. Determined that the "Picasso" is a likely forgery. (<http://www.ktre.com/story/22238989/ole-miss-students-test-possible-picasso-painting>)

5. OBJECT: Ptolemy map (15th century), Wilczek-Brown Codex, a map of the world damaged by overpainting, that seems to show local geography of the Horn of Africa and its coastline nearly eighty years before the first European travel around the Horn.

LOCATION: John Carter Brown Library, Providence, RI

DATE: 8/2011- 10/2012

STATUS: Complete

RESULTS: Moderately improved legibility of map, albeit without conclusive results.

(http://www.brown.edu/Facilities/John_Carter_Brown_Library/I%20found%20it%20JCB/avg11.html)

4. OBJECT: (1) The Lambarde Signature, disputed seventh signature of

William Shakespeare on a 16th century law book, faded and nearly illegible.

(2) Various incunables, scratched out signatures, marginalia on the First Folio

LOCATION: Folger Shakespeare Library, Washington D.C.

DATE: 4/2012-Present

STATUS: Possible return visit in future.

RESULTS: Made Lambarde Signature legible; cast doubt on its authenticity by spectroscopic analysis (<http://collation.folger.edu/2012/03/spectral-imaging-of-shakespeares-seventh-signature/>).

Recovered numerous scratched out ownership signatures on important early modern books including the Shakespeare First Folio.

3. OBJECT: Wynn Faulkner Collection, unpublished poems by Faulkner damaged in a fire in 1941.

LOCATION: UM library, Oxford, MS

DATES: 10/2011-present

STATUS: Completed.

RESULTS: Article and edition of several newly recovered Faulkner poems under submission. Techniques for authenticating manuscripts using the multispectral imaging of fingerprints developed and tested.

(<http://news.olemiss.edu/researchers-examine-rifle-shells-william-faulknersfingerprints/#.U7WHthbWods>)

2. OBJECT: Skipwith Papers, a collection of badly faded Revolutionary War letters between Nathanael Greene and various founding fathers including George Washington and Mad Anthony Wayne and an original battlefield battlemap.

LOCATION: UM Library, Oxford MS

DATES: 10/2011-12/2012

STATUS: Complete

RESULTS: Created archive of enhanced images of the collection.

Students of the University of Mississippi to participating in the imagining gave talks on the collection at the 2011 Oxford Conference for the Book

(<http://conferenceforthebook.files.wordpress.com/2012/08/ocb11program.pdf>)

1. OBJECT: Les Eschéz d'Amours (Oc. 66), a unique 14th century manuscript of a long Old French poem, damaged in the WWII bombing of Dresden.

LOCATION: Sächsisches Landesbibliothek, Dresden Germany

DATES: 6/2010-present

STATUS: Ongoing

RESULTS: Volume 1 of the first scholarly edition of the poem has been published in 2013

(<http://www.brill.com/les-eschezdamours>).

LANGUAGES

- Modern: English, French, Spanish, Russian, German, Italian, Dutch (reading)
- Ancient: Latin, Greek, Anglo-Saxon, Old French, Middle High German

MAJOR SERVICE

- External Tenure Review– Bill Endres, University of Oklahoma (2019); Bridget Whearty, SUNY Binghamton 2021
- NYPL Fellowship Reviewer 2020
- NEH Grant Reviewer 2019
- Internal tenure review – UR: Peter Christensen; UM: Brad Cook, Jonathan Fenno, John Lobur
- Chair, UR Faculty Council Steering Committee, 2019-2021
- Founding Member of the Rochester Cultural Heritage Imaging, Visualization, and Education group (R-CHIVE), 2018- present
- Director, Lazarus Project 2010-present
- Director, Undergraduate Studies, UM English Dept. 2008-10
- Faculty Senator 2013-15
- Coach, UM Fencing Club 2002-present

PROFESSIONAL MEMBERSHIPS

New Chaucer Society

American Comparative Literature Association

Medieval Academy of America
Early English Texts Society
Modern Language Association
Southeastern Medieval Association