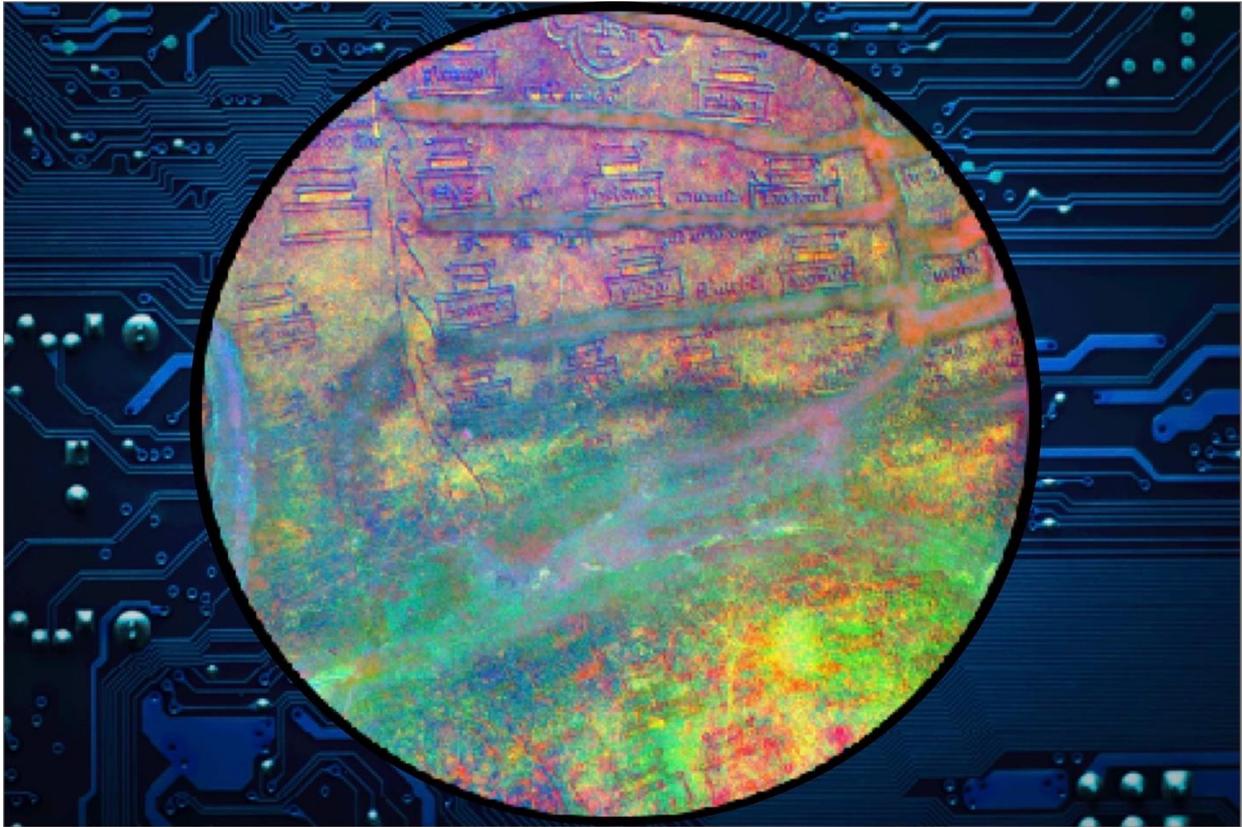


# Terra Digita, 2017



Cornell University  
November 4-5

Sponsored by:  
Olin and Uris Libraries, Cornell Medieval Studies Program, The Cornell  
Society for the Humanities, Cornell Departments of History, History of  
Art and Visual Studies, Near Eastern Studies



**Friday, Nov. 3**

**Keynote Address:**

**“From Satellite to Site: Ways of Mapping Medieval Islamic Maps”**

**Karen Pinto, Boise State**

**Rockefeller Hall, 122 | 5:00 PM**

Karen Pinto has spent the last two decades studying medieval Islamic maps. These studies involved extensive on-site visits to manuscript libraries and provided the opportunity to collect thousands of images of medieval Islamic maps, ranging in date of origin from the eleventh to the nineteenth centuries. The sheer number of extant Islamic maps tells us that depictions of the world abounded in Muslim circles from the thirteenth century onwards when copies of these map-manuscripts began to proliferate. The world and 20 regional maps showing the Muslim caliphate in the *Kitab al-Masalik wa al-Mamalik* (Book of Roads and Kingdoms) tradition—the earliest known carto-geographical tradition—loomed large in the medieval Muslim imagination. It was pondered, discussed, and copied with major and minor variations again and again, and all with what seems to be a peculiar idiosyncrasy to modern eyes. The cartographers did not strive for mimesis (imitation of the real world). They did not show irregular coastlines even though some of the geographers, whose work includes these maps, published acknowledgement that the landmasses and their coastlines are uneven. They present instead a deliberately schematic layout of the world and the regions that comprised the Islamic empire in what can be best described as “cartoideographs.” Employing a range of digital tools ranging from an online encyclopedic database called MIME (Medieval Islamic Maps Encyclopedia) to geo-referencing and satellite-to-site identification, Karen Pinto specializes in analyzing the place, space, and artistic matrix underlying these maps to reveal their historical roots and the mentalité of the milieu within which they were conceived, copied, and promoted. Her talk will showcase the use of digital tools to reveal the vistas into medieval mapping that they make possible.

Karen Pinto is a native of Karachi, Pakistan. She received her Ph.D. from Columbia University. She has worked extensively with medieval Islamic maps in manuscript libraries around the world. Her book, *Medieval Islamic Maps: An Exploration*, was recently published by The University of Chicago Press, 2016. Her forthcoming books are “The Mediterranean in the Islamic Cartographic Imagination,” and “What is Islamic about Islamic Maps?” She is the recipient of a 2013-14 NEH fellowship. Her other publications include: “In God’s Eyes: In God’s Eyes: The Sacrality of the Seas in the Islamic Cartographic Vision,” (*Espacio, Tiempo, y Forma*, 2017); “Passion and Conflict: medieval Islamic views of the West,” (*Mapping Medieval Geographies*, ed. Keith Lilley, Cambridge University Press, 2013); “Searchin’ his eyes, lookin’ for traces: Piri Reis’ World Map of 1513 & Its Islamic Iconographic Connections (A Reading Through Bağdat 334 and Proust),” (*Journal of Ottoman Studies*, 2012); “The Maps Are The Message: Mehmet II’s Patronage of an ‘Ottoman Cluster,’” (*Imago Mundi*, 2011); and numerous encyclopedia entries on Islamic cartography.



## Saturday, Nov. 4

**Breakfast and Registration: Goldwin Smith 258, 9:00 – 10:00 am**

**Panel 1: Olin 703, 10:15 – 11:45 am**

**Revealing our Cartographic Past: Spectral Imaging of Medieval Maps**

- New Light on Henricus Martellus’s World Map at Yale (c. 1491): Multispectral Imaging and Early Renaissance Cartography ([abstract](#))  
Chet Van Duzer
- Hyperspectral Analysis of the Gough Map of Britain ([abstract](#))  
Di Bai, David W. Messinger and David Howell
- Exploring Damaged Worlds: Multi-Spectral Imaging and the Vercelli *Mappa Mundi* ([abstract](#))  
Helen Davies

**Lunch: Olin 702, 11:45 – 12:30**

**Panel 2: Olin 703, 12:30 – 2:00 pm**

**Pedagogical Possibilities: Story Maps, Games, and VR**

- Virtual Reality Special Collections ([abstract](#))  
Roland Black
- Choosing Your Battle: Towards an Interactive Pedagogy of Medieval Logistics ([abstract](#))  
Andrew Thornebrooke
- Digital Mapping the Global Middle Ages at an SLAC ([abstract](#))  
Thomas Blake

**Workshop 1: Olin 703, 2:00 – 3:00 pm:**

- Mapping Medieval Data with Mathematica ([abstract](#))  
Jakub Kabala

**Panel 3: Olin 703, 3:15 – 4:45 pm**

**Properties and Exchange**

- Female Émigré Networks and the Translation of Byzantine Culture After 1453 ([abstract](#))  
Lana Sloutsky
- An Ivory Diaspora: Digitizing Exchange and Production Networks in the Medieval World ([abstract](#))  
Sara Ann Knutson
- The London Properties of Two Sisters at the End of the Thirteenth Century ([abstract](#))  
Amanda Bohne

**Panel 4: Oln 703, 5:00 – 6:00 pm**

**A Tour of Fordham Medieval Digital Mapping Projects (4:15-5:00)**

- *The French of Italy TimeMap* project, *The Oxford Outremer Map* project, and *The Independent Crusaders Mapping Project* ([abstract](#))  
Tobias Hrynicky, Laura Morreale, and Stephen Powell



## Sunday, Nov. 5

**Breakfast and Registration: Goldwin Smith 258, 9:00 – 10:00 am**

**Workshop 2: Morrill 106 & 107, 10:00 – 11:00 am**

- Multi-Spectral Imaging ([abstract](#))  
Gregory Heyworth, Roger L. Easton, Jr., and graduate students from both UR and RIT in "Rochester Cultural Heritage Imaging, Visualization, and Education" (R-CHIVE)

**Panel 5: Olin 703, 11:30 am – 1:00 pm**

**Capturing Fluidity and Absence**

- Conceptualizing the Kingdom of Dublin ([abstract](#))  
Craig Lyons
- Place Name sand the Problem of Creating Digital Gazetteers for Medieval Texts and Maps ([abstract](#))  
Joe Wolf
- Incorporating Medieval Maps in the Study of Coastal Erosion ([abstract](#))  
Georgia Andreou

**Lunch: Olin 702, 1:00 – 2:00 pm**

**Panel 6: Olin 703, 2:00 – 3:00 pm**

**Jumping Into the Deep End (1:30-3:00)**

- Why Medievalists (and Everyone Else) Need Deep Maps ([abstract](#))  
Joey McMullen
- Tools for Thinking and Teaching: Deep Mapping and the *Táin Bó Cúalnge* ([abstract](#))  
Catherine Albers
- GIS and the “Representational Space” of the Virtual Pilgrim: a Deep Mapping Approach  
Kathryne Beebe ([abstract](#))



Catherine Albers

University of Mississippi

### **Tools for Thinking and Teaching: Deep Mapping the *Táin Bó Cúalnge***

With the invention of services like Google Maps, the potential of new approaches that layer information over geographic spaces has become evident. Such maps, known as deep maps, provide more than just a cartographic layout of a journey, but also provide a visualization of the relationships between different facets of the text and the informational paradigms we ascribe to it. Despite the relative youth of creating digital maps as an approach to the study of literature, deep mapping can prove a vital tool, not only for pedagogical purposes, but also for revealing new layers and depths within already studied texts. In addition to providing a new critical lens to the geography and space outlined within a text, it enables scholars to engage with enabling and disabling important information for the purposes of comparison. Using Neatline and Omeka, I have constructed a map of the medieval kingdoms of Ireland and overlaid the different routes that the army of Connacht takes on their way to and from Ulster according to different recensions of the Irish epic, *Táin Bó Cúalnge*. The map also includes images of landmarks labeled within the text as they exist in modern Ireland accompanied by a text box of the description of their creation.

As each recension is different, the geographic areas highlighted by each provide useful information about the significance of inclusions in the text. By comparing what each recension chooses to focus on, an idea about the geographic significance of the text's stories can be formed. While there are some questions about whether or not current geography can be compared to literary spaces, it also creates a valuable teaching tool in helping students to create their own ideas about the significance of landscape and narrative within the text.

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Georgia Marina Andreou  
Cornell University

### **Incorporating Medieval Maps in the Study of Coastal Erosion**

The coast, as the natural interface between land and sea, provides unique opportunities to explore past socioeconomic processes and human-environment interactions, as well as poses significant challenges in terms of preservation and methods of archaeological investigation. While these coastal zones shed light on a distinct set of activities in the past, our ability to interpret them is influenced by active natural and cultural processes. Among those processes coastal erosion, that is the annual loss of land from the coast at a rate higher than 50cm/annum, attracted the attention of environmental engineers, geologists, policy makers and, more recently, cultural heritage managers.

How can we reconstruct the historical landscape of coastlines subjected to erosion?

Drawing on multi-period case studies from Cyprus, this presentation attends to the complexities of the dynamic coastal landscape with the use of Medieval maps combined with aerial photography analysis. It firstly discusses the role of Medieval maps in the study of coastal erosion and the reconstruction of the diachronic materiality of the coastal landscape. It subsequently demonstrates how the Cyprus Ancient Shorelines Project (CASP) used digital methods to geo-reference, extract and analyse the Medieval coastline on Digital Shoreline Analysis System (DSAS).

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Di Bai

David W. Messinger

David Howell

### **Hyperspectral Analysis of the Gough Map of Britain**

The Gough Map, one of the earliest surviving maps of Britain, was created and extensively revised over the 15th century. In 2015, the map was imaged using a hyperspectral imaging system while in the collection at the Bodleian Library, Oxford University. The goal of the collection of the hyperspectral image (HSI) of the Gough Map was to address questions such as enhancement of faded text for reading and analysis of the pigments used during its creation and revision. In particular, pigment analysis of the Gough Map will help historians understand the material diversity of its composition and potentially the timeline of, and methods used in, the creation and revision of the map. Multiple analysis methods are presented to analyze a particular pigment in the Gough Map with an emphasis on understanding the within-material diversity, i.e., the number and spatial layout of distinct pigments. One approach for understanding the number of distinct materials in a scene (i.e., endmember selection and dimensionality estimation) is the Gram matrix approach. Here, this method is used to study the within-material differences of pigments in the map with common visual color. The application is a pigment analysis tool that extracts visually common pixels (here, the red or green pigments) from the Gough Map and estimates the material diversity of the pixels. Results show that the Gough Map is composed of at least five kinds of dominant red pigments and six kinds of green pigments with a particular spatial pattern. This research provides a useful tool for historical geographers and cartographic historians to analyze the material diversity of HSI of cultural heritage artifacts.

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Dr. Kathryn Beebe

University of Texas at Arlington

### **GIS and the “Representational Space” of the Virtual Pilgrim: a Deep Mapping Approach**

Drawing from medieval geodata based upon physical geographies of space, GIS technologies have often been employed successfully by medievalists to understand circumstances as varied as networks of trade or centers of ecclesiastical jurisdiction. However, such investigations do not always consider the implications of non-physical geographies, in which cultural, social, and religious concepts of space overlay and interact with concrete, “reified” space—what Henri Lefebvre termed “representational space”. One way forward in doing so, I suggest, is to explore the combination of a deep mapping approach with GIS visualization techniques.

At the heart of my discussion will be a part of the Digital Observance project listed above: a GIS/deep map of *Die Sionpilger*, a fifteenth-century “virtual pilgrimage” guide for enclosed nuns. *Die Sionpilger* was created within the context of late-medieval Observant reform, which placed strong emphasis on the strict physical enclosure of religious women. The sisters reading *Die Sionpilger* remained physically in their cloisters, yet also travelled in their imagination to Jerusalem...and to communities of other enclosed women throughout southern Germany. In doing so, these “virtual pilgrims” created their own “representational space” that overlaid social networks of Observant reform on top of the physical and religious geography of Swabia and the Holy Land. Yet the mere creation of a GIS map visualization of the nuns’ imagined travel routes is insufficient to understand this devotional practice fully. A “deeper” mapping, akin to a Geertzian “thick description” of the virtual pilgrims’ “representational space,” is needed.

Finally, this paper will query how this might best be done, and how such methodologies could be employed to explore similar issues. I argue that in our use of GIS technologies, we should consider how GIS could be combined most effectively with other approaches in order to render a “deeper” and ethnographically “thicker” understanding of imagined medieval spaces.

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Roland Black

University of Chicago

### **Virtual Reality Special Collections**

This experiment in virtual reality and medieval studies is still under development, and would benefit greatly from user testing (if possible) and suggestions by the attendees of Terra Digita. The project falls primarily under the heading of broad education, but is also an experiment in using virtual reality to let researchers view difficult-to-access medieval objects in their accurate physical proportions, rather than only as images on a computer screen. This virtual experience puts users in a virtual reading room where medieval maps, including, at this time, the Hereford and Ebstorf mappae mundi, are laid out for viewing. On this level, the experience lets users simply see these maps in their true proportions, colors, and textures. On the level of public education, however, several of the illustrations that cover these maps can be selected and pulled out of the map, making them into small three-dimensional characters. This interactivity is meant to draw users' attention to the detail of the illustrations and the cultural and ethnographic insight that they offer into medieval culture and how medieval people perceived their world. Ultimately, this virtual reality experience should be opened to the public, optimized for mobile viewing either as a stand alone app or as a WebVR application. At Terra Digita, the project would be presented as a 20-minute talk with video that has been recorded from the experience. It may be possible, if resources for the presenter and conference organizers permit, to bring a virtual reality headset to let attendees of the conference run the experience first hand.

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Thomas Blake  
Austin College

### **Digital Mapping the Global Middle Ages at an SLAC**

Last Fall, I incorporated the DH mapping platform [Story Maps](#) into my “Global Middle Ages” course at a small liberal arts college in Texas as part of a Mellon digital pedagogy grant. Junior and senior English majors selected and researched topics like [Victorian Medievalism](#), [Medieval Folklore](#), and [Medievalism in the U.S. Antebellum South](#) using ARC-GIS mapping tools like a narrative sidebar and map pins to trace out routes, from the global dissemination of clusters of demon bride legends to medieval and American slave routes to the paths travelled by authors of medieval travel narratives. Students imbricated hyperlink, narrative, history and folklore into interactive maps that incorporated elements of deep mapping to interrogate Orientalist assumptions about the Middle Ages as well as the othering of the medieval period. This paper will discuss the successes and pitfalls of the project in accomplishing the two major SLOs of the course: to disrupt the notion of a Eurocentric Middle Ages through a more global and cross-cultural survey of medieval literature; and to trace the global dissemination of medieval literature through its afterlives in subsequent literary periods.

The major pitfall of the project was that it relied on ARC-GIS maps based on modern coordinate systems, a cartographic orientation that simply does not match medieval cosmological views of the world. In the next iteration of this project, I am taking advantage of the highly interdisciplinary nature of my liberal arts college and developing with my computer science colleague interactive mappamundae across accessible platforms that will: a) fit the budget and resources of smaller liberal arts colleges; and b) challenge students’ GPS- and cardinaly-oriented assumptions which tended in the first project to obfuscate a greater understanding of the cosmological and climatological bases of medieval mappamundae.

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Amanda Bohne

University of Notre Dame

### **The London Properties of Two Sisters at the End of the Thirteenth Century**

The late thirteenth-century wills of Isabella Bokrel, a widow, and her sister Johanna Vyel, a single woman, are preserved in the rolls of the London Husting Court. Together, the two documents demonstrate that despite dying fourteen years apart, the two sisters coordinated their bequests to address many mutual and individual responsibilities and concerns. Their wills and the wills of other family members from whom they inherited property and to whom they made bequests, mostly in the parishes of St. Mary Aldermanbury and St. Martin in the Vintry, allow us to map the interests of this small network of people. My paper will explore the possibilities of building a map of the properties the sisters inherited, held, and bequeathed, using thirteenth-century sources and modern mapping systems. In addition to providing a rich visual representation of the properties for which Isabella Bokrel and Johanna Vyel were responsible, such a map could also provide a useful example of how properties owned by one testator were distributed throughout a neighborhood and how that distribution may or may not have influenced bequests. Additionally, it could offer a representation of the kinds of properties that were inherited and bequeathed by and to women. Of particular interest will be properties bequeathed by a niece of the sisters, Isabella de Basinges, who contested Johanna Vyel's will when it was enrolled and left some of the properties in question to her own daughter upon her death several years later.

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Helen Davies

University of Rochester

**Exploring Damaged Worlds: Multi-Spectral Imaging and the Vercelli *Mappa Mundi***

The Vercelli *mappa mundi*, rediscovered in 1908 during renovations in the Capitulary Library in Vercelli, Italy, is one of only four large wall maps that survive from the thirteenth century. The singular Vercelli map fills a vital hole in the recent surge of scholarship in cultural geography and the spatial humanities. In this paper, I expand on the writings of Evelyn Edson, Naomi Kline, and others who have recently studied the Hereford map in this light. My paper examines how multi-spectral imaging can recover information from this valuable witness to an important mapping tradition. For the Vercelli *mappa mundi*, I am using multi-spectral imaging to reverse the wear and tear on this manuscript -- and thereby uncovering whole countries in the severely damaged European areas. My work places this new cartographic material in the context of contemporary medieval texts and modern critical scholarship.

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Chet Van Duzer

Library of Congress

**New Light on Henricus Martellus's World Map at Yale (c. 1491): Multispectral Imaging and Early Renaissance Cartography**

In this talk I will give an account of a recent project funded by the National Endowment for the Humanities to make multispectral images of a world map made by Henricus Martellus in about 1491, which is held by the Beinecke Library at Yale. This large map has long been thought to be one of the most important of the fifteenth century, and was thought to have influenced Martin Waldseemüller's world map of 1507, but the many texts on the map were illegible due to fading and damage, and thus its exact place in Renaissance cartography was impossible to determine. The new multispectral images have rendered most of the previously illegible texts on the map legible. I will explain why the Martellus map was an excellent candidate for multispectral imaging, describe the process of making the images, show the results, and give an account of the place of the Martellus map in late fifteenth- and early sixteenth-century cartography.

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Gregory Heyworth

University of Rochester

Roger L. Easton, Jr.

Rochester Institute of Technology

Graduate students from both UR and RIT in "Rochester Cultural Heritage Imaging, Visualization, and Education" (R-CHIVE)

### **Workshop: Multi-Spectral Imaging**

We would like to propose to hold an imaging workshop at the meeting on November 4-5 (abstract below).

Members of the team have several years of experience in the area of imaging of cultural heritage, including maps and globes. Team members have held similar workshops for imaging of manuscripts at the EPHE in Paris (2014), the Manusciences meeting at Frauenchiemsee in Germany (2015), the Medieval Congress in Kalamazoo (2016), and the Digital Humanities meeting in Kraków (2016). We propose to bring a multispectral imaging system to Cornell from the University of Rochester to demonstrate its value at recovering writings from historical objects. We would be prepared to image our own specimen objects, but would be happy to image objects from the collections of other participants, if these objects could be brought to the meeting.

Given the time required to set up and calibrate the system, we prefer to hold the workshop on the second day (Sunday 5 November).

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Tobias Hrynick

Laura Morreale

Stephen Powell

Center for Medieval Studies, Fordham University

### **A Tour of Fordham Medieval Digital Mapping Projects**

Over the past five years, Fordham's Center for Medieval Studies has created and launched several digital mapping projects using a combination of methodological approaches and tools. The digital mapping platform or grouping of platforms we chose for each project relied upon the humanities question we wished to explore, the personnel-hours and technical expertise at our disposal, or the project timeline, among other considerations. This presentation will introduce three of these initiatives and explore the production process for each project.

*The French of Italy TimeMap*, built with Neatline, combines a scrolling timeline with a mapping feature built upon a traditional corpus-oriented website that provides the data for the project visualization. *The Oxford Outremer Map Project*, built with Omeka, is a digitally restored and annotated 13<sup>th</sup>-century map with external links and associated project content. *The Independent Crusaders Mapping Project*, still in development, uses Carto for its mapping component and combines data from 12<sup>th</sup>-century TEI-encoded charters with the mapping element. The benefits and limitations of each approach were taken into account as we worked through project goals and intended outcomes.

In this presentation, we will discuss the project rationale, the humanities and technical expertise required, and the response we have received for each of these efforts. Finally, we will comment on the pedagogical value of digital mapping methodologies for Medieval Studies, how traditional skills from our discipline combine with new technologies and what this new type of training offers to future medievalists.

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Jakub Kabala  
Davidson College

### **Workshop: Using Mathematica for Visualizing Spatial Data from Medieval Sources**

The workshop I have in mind would be very much hands-on, and would walk attendants through the basics of creating maps and visualizing spatial data drawn from medieval sources using Mathematica. Mathematica is a programming environment for the Wolfram Language that I use in my teaching and research. I love it for many reasons; one is that it is a fully integrated programming environment, so that importing files, plotting data, running computations on the data, exporting maps to, e.g., the cloud, etc. all take place in the same working session. The designers are also making a strong push into a flexible and easy-to-use GIS. So I find it an attractive platform for digitally minded historians. I would of course provide structured examples along with sample data, and would be especially eager if participants wanted to bring their own data to workshop (either as excel files or shapefiles). We also have access to medieval spatial data sets online, for example: <https://darmc.harvard.edu/data-availability>. And I see that Cornell has an institutional license to the latest version of the Mathematica software.

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Sarah Ann Knutson

University of California Berkeley

### **An Ivory Diaspora: Digitizing Exchange and Production Networks in the Medieval World**

The application of ‘diaspora’ has recently gained attention in archaeological inquiries of historical human migration and mobility. This paper considers the potential for material culture studies to illuminate the cultural movements of diasporic individuals and the resulting networks of humans and materials objects through digital mapping techniques. In doing so, this paper investigates the migration and movements of the Scandinavian diaspora throughout the North Sea World during the long Viking Age (ca. 800- 1300 AD). The Lewis Chessmen, Viking-Age gaming pieces discovered on the Isle of Lewis, Scotland, have emerged as popularized icons of Scandinavian material culture. The Lewis Chess pieces, and similar high-status objects from the medieval period, travelled across the medieval world with the Scandinavians that carved, traded, and carried them. Originating as walrus ivory from Scandinavian settlements in Greenland, the material was shipped to carving workshops across Scandinavia, and ultimately traded to merchants across the European continent. This work interrogates the geographic networks of ivory high-status objects of Scandinavian origin and uncovers large-scale patterns in their movements, otherwise imperceptible on an individual level, which shed light on the formation of diasporic identities and cross-cultural interactions across medieval Europe. The materiality and historical context of these chess pieces are examined as ‘cultural data’ for human networks. Ultimately, the aim of this project is to establish a nuanced theoretical perspective for how archaeologists use the material record in order to approach ‘diaspora’ as a cultural framework for human migration and the formation of cultural identities.

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Craig Lyons

Cornell University

### **Conceptualizing the Kingdom of Dublin**

The Hiberno-Norse Kingdom of Dublin, which existed in various incarnations and degrees of influence, independence, and strength from roughly 839 to 1170, was an important factor in the political and cultural development of Ireland in the Early Middle Ages. Among other roles, the presence of this bastion of “foreigners,” as they were referred to by Irish sources, helped propel the emergence of conceptions of “Irish” versus “foreign,” and of a unified kingship of Ireland. So long as it existed as an independent polity, and even after, the presence of this “city of the foreigners” was important to the Irish conception of the political geography of their island. Today, the Kingdom of Dublin is generally represented, at its greatest extent, as roughly equivalent to the modern county of Dublin. The notoriously fluid nature of “boundaries” between Irish kingdoms and the scarcity of written records attesting to specific borders makes it difficult or impossible to do much else in terms of static maps, which hinders the ability to conceptualize the reach of Dublin’s influence over the centuries. My objective with this proposal is to present an overview of a project I am hoping to undertake with the Cornell Library’s Summer Graduate Fellowship in Digital Humanities, in which I hope to map references to the Kingdom of Dublin found in the Irish annals and other sources. With this I hope to provide a fresh way of visually conceptualizing the Kingdom of Dublin, relying on the recorded actions or influence of Dublin rather than an estimated boundary. Such a project inevitably poses many obstacles as well, such as how to deal with discrepancies in time of geography among the various annals, or how to approach uncertain correlations between medieval and modern place names, and I am eager to have this opportunity to seek feedback on how to approach these issues in digital mapping.

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Joey McMullen  
Centenary University

### **Why Medievalists (and Everyone Else) Need Deep Maps**

While deep maps are, conceptually, not new, their potential in critical geography is still untapped, especially when it comes to the study of medieval literature. Humanists, realizing the limitations of traditional GIS in combining space, place, and time, have eagerly developed deep mapping tools in order to work with greater imprecision and fluidity. While most deep mapping projects have focused on the contemporary world (e.g., Los Angeles), I believe (and this conference seems to argue) the idea of deep or thick mapping can apply equally well to the Middle Ages. In this paper, I will explore why deep mapping is crucial for the futures of the environmental and spatial humanities in medieval studies, particularly that of the early insular world. Many early medieval texts—especially Irish and Norse, but also English—reveal a process whereby topography melds with tradition and a place is imbued with culturally significant linkages between humans and the non-human environment. The landscape is given a genealogy, revealing how different temporalities—whether historical, human, supernatural, or even simply of the land—harmoniously coexist within the same place and bring a richness to the place.

With the advancement of digital tools, the medium of the (digital) deep map may give us our best chance of understanding and communicating the kind pre-modern connections with the natural world. After considering what the process of deep mapping might add to our understanding of literary texts, as well as some of the important desiderata for future software (especially, here, displaying temporality), I will consider how medieval deep maps can also speak to contemporary concerns. With the ability to represent visually and experientially an early medieval bond with nature, we might be able to rediscover a deeper connection with the natural world ourselves. Dislocation, or placelessness, is not an essential problem of the human condition, it is rather an essential problem of the *modern* condition which seeks to measure, master, and control the natural world. I will argue that deep maps can ask us to contemplate the natural world, allowing nature to reveal itself on its own terms.

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Lana Sloutsky

Independent Scholar

### **Female Émigré Networks and the Translation of Byzantine Culture After 1453**

In 1453, the Ottoman Sultan Mehmed II conquered Constantinople and ended the millennium-long reign of the Byzantine Empire. The ensuing devastation contributed to a wide-scale emigration and many Byzantines fled for the former Byzantine Commonwealth and Western Europe. This relatively educated and wealthy population actively preserved the Byzantine culture and identity in the post-Byzantine world. My research focuses on the female émigrés who were integral in these efforts. By carefully following the lives and social networks of several aristocratic women as well as of their objects, this paper considers the early-modern female identity from an art-historical perspective.

Upon leaving Constantinople, many émigrés took with them remnants of Byzantium's rich cultural legacy. Examples of "rescued" objects included icons, manuscripts, relics, liturgical objects, jewelry, and textiles. These became key for preserving Byzantine culture outside of Byzantium's geographical and temporal boundaries. Their displacement also played an important translational role between various visual languages, and contributed to the development of contemporary art and architecture. While certainly a part of a shared Mediterranean culture, by virtue of Byzantium's demise, these objects and their owners took on a newfound importance in the post-1453 world. By examining several of these remarkable figures and the objects and spaces that they patronized, this paper highlights the role of women, material culture, globalization, and movement in the early modern period.

This paper is based on my recently defended dissertation, which I am starting to turn into a digital humanities project. The goal is to pair relevant primary and secondary research with a series of interactive maps to understand the movement of the discussed women and trace the provenance of their objects. The interdisciplinary contributions of such a work will further both the history of early modern women and Byzantine material culture in the post-Byzantine world.

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Andrew Thornebrooke

Fordham University

### **Choosing Your Battle: Towards an Interactive Pedagogy of Medieval Logistics**

Text-based games and stories, popularly referred to throughout the last four decades as “choose your own adventure,” have captivated the minds of fiction readers throughout the world. The medium, however, also offers rich potential for conveying the function and importance of supply chain management in medieval intercontinental military campaigns. This research explores the potential use of interactive text-based games in teaching medieval military logistics. By offering a case study of an interactive story designed with ChoiceScript software, this paper aims at highlighting how the interactive mode of text-based video games can be used to immerse a student of the Middle Ages within the material realities of the medieval period, and to teach the complexities of managing food, money, and troops within a medieval military framework, and how such a framework would have affected the geographical worldview of those people who took part in medieval warfare.

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Joe Wolf

Harvard University

### **Place-Names and the Problem of Creating Digital Gazetteers for Medieval Texts and Maps:**

Modern digital mapping is driven by the need to fit real world landscape within the tightly defined, discretized, bounds of a computer systems. Doing so has both positives and negatives. On one hand, digital mapping allows scholars to store, view, and analyze large scale geographic data in ways impossible without the aid of a machine. On the other hand, the requirement that geographic data be defined pointwise, that is by a single latitude/longitude georeference or by a line/polygon, makes GIS representations of many types of real world data difficult.

Once such type of data is the place-name. Prior to the advent of digital or paper maps, place-names served as the only way in which humans understood and communicated geospatial information. For the Medieval Period, place-names preserved in texts serve as our primary data for reconstructing and understanding historic landscapes in the absence of maps. Frustratingly, some medieval place-names can be difficult to digitally represent as they can refer to ill-defined, non-pointwise regions. Further, in some cases, we are unable with any certainty to locate a place-name which might survive in a medieval text, making it difficult to incorporate into our digital maps.

In this paper, I will highlight some of the technological issues surrounding the incorporation of medieval place-names into modern GIS-based atlases. The core of these issues involve compiling gazetteers from medieval texts and assigning to historic place-names georeferences. I will present a few solutions to these problems developed over the course of my work on compiling a gazetteer for the *Digital Atlas of Roman and Medieval Civilization*. The goal then is to make available a few methods for geolocating difficult historic place-names that can be incorporated into the production of digital maps and help bridge the gap between historic thinking about landscape and our modern requirements for mapping.

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