NATIONAL ENDOWMENT FOR THE Humanities

OFFICE OF DIGITAL HUMANITIES

# Narrative Section of a Successful Application

The attached document contains the grant narrative and selected portions of a previously funded grant application. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the Office of Digital Humanities application guidelines at http://www.neh.gov/grants/odh/institutes-advanced-topics-in-the-digital-humanities for instructions. Applicants are also strongly encouraged to consult with the NEH Office of Digital Humanities staff well before a grant deadline.

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

Project Title: Digital Cultural Mapping: Transformative Scholarship and Teaching in the Geospatial Humanities

Institution: University of California, Los Angeles

Project Director: Todd Presner

Grant Program: Institutes for Advanced Topics in the Digital Humanities

**Digital Cultural Mapping:**
**Transformative Scholarship and Teaching in the Geospatial Humanities**


**Summary**

We are proposing a three-week summer Institute for an interdisciplinary group of 12 humanities scholars and advanced graduate students to learn how to develop innovative publications and courses that harness the theoretical and practical approaches of the "geospatial Humanities." By geospatial Humanities, we mean the centrality of place, geo-temporal analysis, and mapping for conceptualizing, investigating, and visualizing research problems in fields such as history, architecture, classics, literary studies, art history, as well as the humanistic social sciences (archaeology, anthropology, and political science). Situated at the intersection of critical cartography and information visualization, the Institute will combine a survey of the "state of the art" in interoperable geospatial tools and publication models, with hands-on, studio-based training in how to integrate GIS data into humanities scholarship, develop robust spatial visualizations, and deploy a suite of mapping tools in the service of creating publication-ready research articles and short monographs. UCLA's "HyperCities" platform (http://www.hypercities.com) will figure prominently in the Institute as a "digital cultural mapping" platform to be investigated and studied as well as used for the development of innovative scholarly publications and classes. The Institute will culminate in an "impact and evaluation" seminar of these publications with representatives from UC Press, Cambridge Journals Online, the *Journal of the Society of Architectural Historians*, the on-line journal *Places*, and *Vectors*.

The twelve participants, selected from a nation-wide application process and comprising an interdisciplinary group of scholars at various stages in their careers, will work intensively on-site at UCLA to develop significant works of scholarship that are specifically designed to exploit the affordances of a digital, geo-temporal publication platform. Publications may be city or region specific (such as Philip Ethington's *Ghost Metropolis*, a 13,000 year history of the Los Angeles basin or Gregor Kalas' 3D article, "Visualizing Statues in the Late Antique Roman Forum") or transnational in scope; they may utilize quantitative GIS data or rely primarily on qualitative story-telling such as oral histories and memory maps; they may incorporate 3D models to interrogate spatial questions or compare different mapping strategies for a single site; they may build upon existing geo-collections or develop new ones; they may integrate geo-referenced photo or video repositories, map collections, or GIS data into a publication or course proposal. In every case, however, the research will advance the state of geo-spatial approaches in the humanities by attending to multimodal argumentation, design, and interactivity. The curriculum will teach participants the necessary tools for developing such publications (geo-mark-up, basic GIS, curating geo-data), design and information visualization for humanities argumentation (including symbology, navigation, multidimensional mapping), and development of peer review and evaluation standards for assessing this kind of multimodal scholarship. The end product will be a set of articles or short monographs that will be ready for peer review as well as a knowledge-base to develop further scholarship and new courses. The Institute will be co-directed by Todd Presner, Chris Johanson, and Diane Favro and supported by the staff and laboratory spaces of UCLA's Institute for Digital Research and Education, the Experiential Technologies Center, the Ahmanson Lab for Digital Cultural Heritage and the UCLA Digital Library.

**Table of Contents**

**Significance** -- Space and place, landscape and memory, mapping and visualization have thoroughly permeated humanities scholarly discourse. One need only think of how network analysis has been used to map literary texts and cultural artifacts; or how memory studies have become fundamentally connected to marking place; or how historical studies have sought to articulate both temporal and spatial axes of analysis. In fact, some traditionally-defined fields such as New and Old World Archaeology and Classical Studies have entirely transformed to accommodate the integration of space and place into the current discourse.[1] Although a solid, interdisciplinary theoretical groundwork has been established, these discussions of space and place have occurred largely within the medium of printed books and not within a flexible geospatial technological framework as rich and as multivariate as the arguments themselves.[2]

The academic world has long been interested in developing digital tools for complex geospatial analysis, but it is only recently, with the 21st century model of convergence between commercial and academic enterprises, that these tools have achieved unprecedented numbers of users and interoperable connections. With the popularity of commercial mapping and geo-visualization tools such as Google Earth/Maps coupled with the widespread availability and proliferation of geo-data, it has never been easier for scholars and students to visualize cultural, social, and historical phenomena on maps and as maps. Perhaps most significant in advancing this development is the fact that commercial entities have highlighted the need for adopting consortium-based standards (the Collada interchange file format stands out) or for transforming proprietary standards into community-based ones (e.g., the KML standard, once proprietary to Google, is now overseen by the Open Geospatial Consortium).[3] Though not always a harmonious relationship, this new alliance between the commercial and academic world has accelerated the adoption of geo-tools and the release of geo-data at rapid rates and global scales.

GIS data – now available in a range of output formats that allow sharing across web and desktop platforms alike – has become a critical part of the humanist's toolbox. Mature platforms such as Social Explorer allow users access to the full sweep of census data, with rich "movie" capacities to curate and produce compelling visualizations of demographic data layers. Other projects such as Richard Marciano and David Goldberg's "T-Races" digital archive, bring together the original redlining documents on a series of downloadable Google Maps; David Germano's "Tibetan and Himalayan Digital Library" offers a sophisticated, transnational, multi-linguistic web platform for accessing a wide-range of spatially encoded archival information. Still others, such as "Digital Harlem," focus on the cultural and social layers of a relatively defined urban space and offer users the ability to toggle on and off geo-referenced data on a series of temporal maps. Last year, the University of Virginia offered a NEH-funded Institute on "Enabling Geospatial Scholarship," which specifically instructed humanities scholars and graduate students in the evolving best practices of geospatial scholarship, including meta-data standards, data curation and data persistence, integration of geo-data across platforms and repositories, and critical tools and methods for humanists using geospatial data in their research.

Needless to say, these new, digitally-enabled, geospatial approaches have been rapidly adopted, with a number of key institutions and projects playing a leading role. To name a few, the University of Virginia's

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1 It is impossible to overestimate the importance of space and place in the current scholarly discourse in fields focused on the ancient world. Advances in theoretical approaches through survey and landscape archaeology (e.g., Susan E. Alcock, *Graecia Capta: The Landscapes of Roman Greece*. Cambridge University Press, 1996) have promoted phenomenological approaches to historical sources, material remains, and literary material.

2 To be sure, the near comprehensive integration into even the smallest of archaeological projects of GIS databases and even, but to a lesser extent, three-dimensional models have led to a mobilization of space-based, data-driven initiatives. See, for example, PELAGIOS: http://pelagios-project.blogspot.com/2011/02/welcome-to-pelagios.html. But few projects attempt to directly connect the data to the narrative.

3 The Collada format is supported by the Khronos group, a consortium of industry partners and academics: http://www.khronos.org/; and the Open Geospatial Consortium: http://www.opengeospatial.org/.

Geospatial and Statistical Data Center and its more recent Geospatial Data Portal are testaments to the importance of having standards-based protocols and web-services for housing and sharing geospatial data; Harvard's Center for Geographic Analysis and Stanford's Spatial Histories Project have played a significant role in expanding the purview of GIS beyond urban planning and geography, to impact the fields of history, cultural studies, and even literary studies. In lockstep with these peers, UCLA has developed coordinated pedagogical and research programs in the geospatial humanities. UCLA is completing the third year of its undergraduate program in "Digital Cultural Mapping," funded by the W.M. Keck Foundation, and the program is now one of four emphases of study within its recently approved Digital Humanities minor and graduate certificate. UCLA is also home to a number of award-winning projects that aim to advance the state of geospatial humanities scholarship: The NEH-funded Encyclopedia of Egyptology with fully integrated GIS data layers and unique "time map" visualization tools; the NEH-funded Digital Karnak, a temporal reconstruction of one of the largest and most complicated temple complexes in the world; the Mellon and NSF-funded "Rome Reborn" project, a multi-year digital reconstruction of ancient Rome, with models that are now in use in multiple geospatial projects; the recently realized “Visualizing Statues in the Late Antique Forum,” a project funded through the NEH Fellowships at Digital Humanities Centers program; and, finally, HyperCities, a MacArthur and Google-funded digital mapping project for advancing geospatial scholarship and teaching -- and, in fact, the platform used to disseminate the geospatial components of many of the above projects.

Building on the momentum and success of UVA's Institute for Enabling Geospatial scholarship (2009-10), which featured two sessions on HyperCities by project director, Todd Presner, we are proposing a Summer Institute at UCLA focused on using the HyperCities platform and the related mapping and visualization tools to create new scholarship in the digital humanities. While UVA's two-day Institute *introduced* participants to the wide-range of tools, technologies, and methods for geospatial research, our proposed institute is intended to *implement* born-digital scholarship. The end results of the three-week Institute will be: 1) an interdisciplinary set of high-quality, drafts of multimedia articles and short monographs, realized in HyperCities (or a related mapping platform) and ready to be sent out for peer review; 2) knowledge of a series of tools for developing courses for undergraduate and graduate students that explore aspects of the social and cultural layers of city spaces; 3) a set of strategies for the academic vetting of born digital research in the geospatial Humanities. Hence, the program's intended audience consists of humanities scholars who are already engaged with geo-temporal research in their respective disciplines but who would benefit from focused time spent in a laboratory environment, dissecting the theoretical foundation of their work and implementing their research and/or pedagogical agendas.

HyperCities offers a convenient mechanism for teaching digitally-enabled, geospatial concepts, surveying broadly implemented markup and standards, and enabling story-boarding of complex geospatial arguments. Built on the idea that every past is a place, HyperCities is a digital research and educational platform for exploring, learning about, and interacting with the layered histories of city and global spaces. Developed though collaboration between UCLA, USC, CUNY, and numerous community-based organizations, the fundamental idea behind HyperCities is that all histories "take place" somewhere and sometime, and that they become more meaningful when they interact and intersect with other histories. HyperCities essentially allows users to go back in time to **create**, **narrate**, and **explore** the historical layers of city spaces and to **tell stories** and **make arguments** in an interactive, hypermedia environment. The central theme is geo-temporal analysis and argumentation, an endeavor that cuts across a multitude of disciplines and relies on new forms of visual, cartographic, and time/space-based narrative strategies. We are using HyperCities not only because it is a robust, mature platform for developing geo-temporal arguments and complex visualizations, but also because the platform brings together a number of key technologies, methods, and standards in the geospatial humanities that are central for training Institute participants and conceiving of digital humanities research broadly defined.

One of the central challenges facing Humanities researchers is how to imagine and engage with the diversity, multiplicity, and multivocality of layered city spaces in ways that foreground scholarly interpretation while also enhancing scholarly communication, community-based participation, and even, where applicable, civic engagement. As a platform that reaches deeply into archival collections and aggregates content across digital repositories, HyperCities was designed not only to transform how information is produced, stored, retrieved, shared, repurposed, and experienced, but also to augment how people interact with digital media and one another in space and time. The result is the bridging of expert knowledge and citizen knowledge, connecting generations and knowledge communities with university specialists. Within HyperCities, student-created collections co-exist with vetted content which users can manipulate in different ways, asking both factual and counterfactual questions in order to explore, discover, and engage with communities in new ways. Users explore, overlay, and curate various kinds of geo- and temporally-coded information on cartographic, aerial, and satellite imagery in order to view, interrogate, and revise the representations of city spaces, their human histories, and the media-technology apparatus for which they were originally created. HyperCities not only endows digital maps and globes with a temporal dimension—one that allows users to browse and search by "drilling down" in time—but it also lets users add, edit, and curate stories and media, as well as conduct analytical experiments, relating to a given city and its inhabitants over time.

Technically, HyperCities is a sophisticated mash-up built on the Google Maps/Earth APIs and uses the markup language KML (Keyhole Mark-up Language) for organizing all content based on space and time. A KML file is very similar to HTML or XML: the chief difference is that KML files are specialized to encode geographic information, including, but not limited to, latitude and longitude, direction, altitude, and view orientation. All the "content" within HyperCities is ultimately organized by KML, either through files created independently by users or through the front-end interface of Hypercities that lets users build complex markup of media objects without having any knowledge of the underlying KML they are creating. HyperCities is a generalizable, easily scalable platform for aggregating and publishing geo-temporal content using a unified front-end delivery system and a distributed, back-end architecture.

Content within HyperCities can be shared and infinitely repurposed by simply dragging and dropping (permissions permitting) from one collection into another user's collection, making possible a rich recontextualization and re-aggregation of archival materials. The original archival collections remain "intact" and the contributing archive can decide whether and how to expose its assets within the HyperCities framework. Collections can be nested (every HyperCities collection can hold one or more collections, *ad infinitum*) so that a person or group of users can create a large and complex project all within a single "collection." Creators of collections can also work collaboratively on curating projects within HyperCities. Users can add and view content down to the granularity of a minute and single point (for example, May 7, 2007, 6 AM in the northeast corner of MacArthur Park, Los Angeles) or up to a millennium at a global scale. User-generated content exists side-by-side with archival repositories, academic scholarship, research publications, and community media, allowing a rich cross-pollination between traditionally separated venues and voices.

While HyperCities hosts and stores some data locally (.html, .jpg, .png, .pdf, .kml, .kmz, .mp3, .mp4), it is important to underscore that a central aim of the project is to host metadata connections to content stored and maintained in external repositories and on external servers. These servers range from commercially available platforms such as Twitter, YouTube, and Flickr to library and archive platforms for maps, oral histories, videos, photograph collections, and other media files, and, finally, GIS data (in a variety of formats, including KML and WMS) from any server linked via web-services. HyperCities also contains hundreds of historical maps (and access to, potentially, thousands more via web-services) that have been geo-referenced and tiled so that they sit precisely on the terrain that they represent, providing many layers of historical time to explore. In this way, HyperCities provides the connective tissue for the community

of geospatial time travelers by leveraging the extensive development of data repositories and social networks.

Although there are many compelling geospatial archival projects and GIS datasets, they are largely isolated, "one-off" interpretative collections, which expand through the addition of new data, not direct, iterative engagement with outside scholars. There is yet to be a **mature, yet extensible, story-boarding and publication platform** for supporting the geospatial humanities. *Vectors* is arguably the most robust multimedia journal for emergent forms of multimodal scholarship in the digital humanities. In fact, the HyperCities team has worked closely with the *Vectors* team on realizing individual projects as well as developing transformative and sustainable models for humanities scholarship in the 21st century. While we very much admire the work of the *Vectors* team, HyperCities aims to fill a niche that *Vectors* (and now "Scalar") has not been able to address, namely a streamlined yet infinitely extensible environment for geo-temporal argumentation and visualization.

For our proposed Institute, we will survey a wide-range of approaches to critical cartography, study the capabilities of currently available digitally-enabled, geospatial tools, and, most importantly, we will support direct development of draft publications set in a digital, cartographic space. While our publication efforts will harness the collaborative framework of HyperCities, each individual publication will also have a specific "permalink" that can take users directly to individual publications or allow the publication to be embedded within another website, journal, or platform. This was done, most recently, with Gregor Kalas' "Visualizing Statues in the Late Antique Forum" project (http://inscriptions.etc.ucla.edu). A central mandate for these publications concerns the transformation of scholarly practice in the Digital Humanities: They do not simply "show" archival content or make content "available" for others to use, but they are intended to create new knowledge, new forms of argumentation, and new research methodologies through an attention to both the content and the ways in which this content is visualized in a new scholarly medium. The team will facilitate the development of new symbology, navigation patterns, and visual sign posts to aid the reader/navigator of the geo-temporal publications, including citation practices such as visual footnoting and data transparency for multidimensional mapping. The faculty co-directors and Institute participants will collaborate directly with the HyperCities technical team, the UCLA Digital Library, and the visiting faculty and editors to develop innovative narrative frameworks for conceiving of and evaluating these publications.

There are hundreds of possible ways to develop and disseminate geospatial arguments on the web, but not one currently, we contend, that combines the ease of use with the interoperable power and adherence to standards as HyperCities. Usability claims are easy to make, but we instead have taken the Web 2.0 approach to development and release in order to hone usability and demonstrate viability: HyperCities has already been used in more than forty classes across the world (amounting to thousands of users) and it has been used to produce a successful initial suite of geo-temporal publications. Some of the key publications are documented in the appendix, but are worth mentioning here: Philip Ethington's *Ghost Metropolis* (under consideration by the University of California Press as an online and also print publication), a 13,000-year history of the Los Angeles basin navigated as a series of palimpsest-like collections that allow a user to experience the regional regimes that ruled the territory over time; Gregor Kalas' "Visualizing Statues in the Late Antique Roman Forum," a three-dimensional argument that moves a visitor through the Roman Forum by connecting each part of the argument to a particular view into the forum and the politics of its statuary display; Chris Johanson's "A Walk with the Dead," a first-person, phenomenological analysis of the funerary cityscape; and, finally, a multimedia companion volume to the journal *Urban History* (Cambridge UP) featuring a series of case studies on transnational urbanisms.

**Institutional Profile** -- The development of digitally-enabled, geospatial scholarship at UCLA mirrors that of the HyperCities platform and its affiliated projects. In many ways, HyperCities represents both a digital platform and a social collaboration that has helped to unify many of the once disparate projects at UCLA

through the common theme of geo-temporal analysis and visualization. HyperCities has been in development since 2001 when an early version of the project ("Hypermedia Berlin") was funded by the Stanford Humanities Laboratory. Since 2004, the project has been located at UCLA and supported by various grants and fellowships, including a "Digital Innovation" award from the American Council of Learned Societies. In 2008, the project greatly expanded to include six cities (Los Angeles, New York, Ollantaytambo, Rome, Tel Aviv, and Berlin), involving a consortium of new partner institutions (USC, CUNY-Baruch, Public Matters, the Pilipino Workers' Center, and others) and an interdisciplinary team of scholars. Now called "HyperCities," the project was awarded one of the first "Digital Media and Learning" prizes from the MacArthur Foundation/HASTAC in 2008-09. In addition, four of the co-PIs (Presner, Reiff, Favro, and Johanson) were also instrumental in receiving a major grant from the W.M. Keck Foundation to support the development of an undergraduate curriculum in Digital Cultural Mapping at UCLA, with the HyperCities project as the flagship instructional platform. In 2010, Ethington and Presner were awarded a Haynes Foundation research grant for "Mapping Los Angeles Research Online with HyperCities: An Open Access Publishing and Collaboration Platform," which brings GIS data together with community narratives, oral histories, and qualitative mapping. Finally, Presner and Johanson were also awarded a Google Digital Humanities grant to create an extension called "Geo-Scribe," which will allow users to create and integrate their own maps with Google's massive book archive.

We are now ready to take the next step and open up the platform and its affiliated technologies to a broader humanities audience interested in developing rigorous digital humanities publications that rely on geo-temporal narration, 2D and 3D critical cartography, and mapping visualizations. The purpose of the Summer Institute is to give an interdisciplinary team of scholars and graduate students the opportunity to learn about the state of the field of the "geospatial humanities" through the HyperCities platform, including how it was developed and the particular technologies that it relies upon, develop their own geospatial projects, and contribute to moving the scholarly work in the field of Digital Humanities in the direction of multimodal argumentation. It is not enough to just make data available: Humanities scholars must interpret, analyze, contextualize, and argue in this new media environment, and assume leadership roles assessing the effectiveness of new modes of digital design and interpretation.

The Summer Institute is closely aligned with UCLA's Library, UCLA's Experiential Technology Center (ETC), UCLA's Center for Digital Humanities (CDH), and UCLA's Institute for Digital Research and Education (IDRE), each providing facilities, technology tools, and staffing. The Digital Humanities Institute will be hosted in the Young Research Library's state-of-the-art 9,000 sq. foot Research Commons and the adjoining Laboratory for Digital Cultural Heritage, with branch classes in IDRE's Visualization Portal and Technology Sandbox. IDRE and ETC staff have more than ten years of experience working with a diverse set of digital mapping projects, collaborating with scores of community organizations, and developing an extensive portfolio of successful geospatial historical projects (including the Encyclopedia of Egyptology, the Rome Reborn project, Hypermedia Berlin and HyperCities, Digital Karnak, and Visualizing Statues). The mission of IDRE is to enable and support transformative, interdisciplinary digital research and education with support from a cadre of visualization specialists, web architects, modeling and digital media experts, networking experts, high performance computing consultants, and a GIS specialist.

The **Technology Sandbox** is a collaborative modeling lab providing a full palette of resources for faculty and graduate students engaged in digital research. The facility will be available to the participants of the Summer Institute for training and lab work. The Sandbox features powerful Dual-Core Dell workstations with specialized Nvidia graphics cards and 24" LCD monitors. All workstations are configured with a wide variety of modeling, GIS, visualization, archiving, and graphics applications including Multigen Creator, ArcGIS/ArcMap, Maya, 3D Studio Max, Rhino 3D, Maxwell Render, Sketchup, Google Earth, Adobe Creative Suite, and others. The lab is connected to the **Visualization Portal**, an interactive 3D theater, where participants will review and present their work. The facility is equipped with a Linux-based cluster, auxiliary computers, DVDs, VCRs, sound equipment, a video conferencing system, and a three three-gun

DLP projection system that can display a single image on a floor-to-ceiling spherical screen at 3880x1050 resolution or three separate images. Finally, the **Laboratory for Digital Cultural Heritage**, which adjoins the Library's **Research Commons** and its suite of technology enabled research hubs and digital classroom spaces, brings together advanced visualization technologies in a laboratory setting with access to traditional media artifacts and digitized cultural heritage (print maps, oral histories, photo archives, and so forth).

Accommodations for participants will be on campus in UCLA's Covel Commons Conference Housing, a short, 10 minute walk from the UCLA Library, the Technology Sandbox, and Visualization Portal. Because participants will live together (and Presner lives on campus through UCLA's Faculty in Residence Program), it will have a residential college feel and yet benefit by the resources of a large, public research university.

**Curriculum and Work Plan**--The Institute is designed to support scholars in conceptualizing, designing, and implementing multimodal geo-temporal arguments using the affordances of the HyperCities platform and geospatial tools more generally. The Institute co-directors and staff will generate preliminary reviews of participant projects prior to the actual Institute in order to understand the nature of their individual research questions and the ways in which each scholar is imagining these questions to be addressed in a digital mapping environment. We will also advise participants on appropriate data formats, standards, and tools prior to the Institute, as well as ask them to digitize and submit all their data ahead of time (either through web-services protocols or direct hosting at UCLA), so that participants can focus their time at the institute on developing arguments, not combating technological hurdles.

The three weeks of the Institute itself will be divided up as follows: the first week will be dedicated to introducing the central issues in the field of geospatial humanities, including key projects, practitioners, and readings, as well as learning the key tools (HyperCities, Google Maps/Earth, basic GIS, Sketch-up, and the nuts and bolts of KML). At the end of the first week, all participants will articulate their argument and begin to storyboard their publications. The second week will be entirely hands-on, in which faculty, technology staff, and participants work intensively on realizing their projects and focus on design production. By the middle of the third week, drafts of final projects are completed, and we reconvene over two days, as a group, to peer review the projects and platforms. With the help of key stakeholders in the field, we will discuss the changing nature of peer review for digital humanities projects and articulate criteria by which such projects and platforms may be judged. These stakeholders are: Laura Cerruti, Editorial Director for Digital Publishing at University of California Press; Philip Ethington, Professor of History at USC, and North American and Multimedia Editor of *Urban History* (Cambridge Journals Online); Nancy Levinson, Executive editor of the on-line journal *Places*; Kathleen Fitzpatrick, Professor of Media Studies at Pomona College and author of *Planned Obsolescence: Publishing, Technology, and the Future of the Academy*; Tara McPherson, Professor of Cinema Studies at USC, and Editor of *Vectors*; Kazys Varnelis, Director of the Network Architecture Lab at the Columbia University Graduate School of Architecture, Planning, and Preservation and Multimedia Editor of the *Journal of the Society of Architectural Historians*; Marta Brunner, UCLA Digital Humanities Research Librarian.

The Institute will take place at UCLA from June 17-July 6, 2012 (excluding the July 4th holiday, which falls on a Wednesday); participants will be required to attend daily from 9 AM-5 PM. During the first week, seminars will take place in the Visualization Portal, followed by lunch, and "tool time" in the UCLA Library Research Commons from 1-5 PM. The second week will all take place in the lab stations of the Technology Sandbox. The third week will have sessions split between the Technology Sandbox, the Research Commons, and the Visualization Portal.

The **first week** of faculty seminars will be led by Presner, Favro, and Johanson and are designed to introduce the key issues in the geospatial humanities as well as highlight major projects in the field. Spread over three days, the morning sessions will focus on particular developments in various humanities disciplines: "Geospatial Methodologies in Digital History" (presented by Ethington and Reiff, discussing

"Ghost Metropolis," "WPA City Maps," "Digital Harlem" and teaching undergraduates with HyperCities); "Geospatial Tools and Narrative Strategies in Architectural History, Urban Studies, and Classics" (presented by Favro and Johanson, discussing "A Walk with the Dead," "Visualizing Statues," and graduate teaching with HyperCities); and "Geospatial Tools in Literature and Corpus Analysis" (presented by Presner, Brunner, and Borovsky, and discussing geo-mark-up, metadata standards, and teaching "HyperCities Berlin" for undergraduates). The afternoon sessions will focus on "tool time" (using Google Earth/Maps, what GIS can and cannot do, map overlays and geo-referencing of historical maps; an introduction to KML and other geo-standards; the nuts and bolts of curating a collection in HyperCities).

During the **second week**, Presner will lead the story-boarding of participants' publications, assisted by Kawano, Sullivan, Shepard, Borovsky, and members of the HyperCities technical team. During the week, Tara McPherson will work with participants on design and story-boarding projects, as well as discuss the development of the "Scalar" publication platform. The week of intensive project development will culminate in a day of 10-minute "lightning talks" in which participants present their work-in-progress and have the opportunity to receive feedback from the group.

In **week three**, Institute participants will be joined by a group of expert guest lecturers (Ethington, Levinson, Fitzpatrick, Varnelis, McPherson, and Brunner) who will discuss the challenges of reviewing, revising, and publishing multimedia scholarship, using the participants' projects as case-studies. Participants will be asked to familiarize themselves with key projects realized in each platform (HyperCities, Cambridge Journals Online, *Places*, *Vectors*/Scalar, *Journal of the Society of Architectural Historians,* and UC Press) and to come up with a set of critical responses and criteria by which these multimedia projects and platforms should be judged.

Please see the appendix for the full course outlines, including readings, technologies, and tools.

**Participants** -- The Institute will be open to 12 junior and senior faculty and advanced graduate students. This number assures that participants will have the opportunity to work closely and collaboratively with Institute faculty, staff, visiting scholars, and one another. The goal of the Institute is to create a stimulating and creative atmosphere in which participants learn from one another and experiment with a wide-range of tools, design choices, and visualization techniques for best articulating their scholarly arguments and learning outcomes for their classes.

A nation-wide call for applications will commence in October 2011, via postings to major list-serves, such as Humanist, HASTAC, GIS4Lib, Educause, Bamboo, as well as direct contact with all the major Digital Humanities Centers and scholarly societies. Applicants will be asked to submit the following material: A five-page "research agenda" which clearly articulates the nature of the humanities research problem, the reasons why geospatial visualization and mapping technologies are necessary for articulating and investigating this research problem, and the ways in which the applicant imagines digital technologies would be used to create a publication and advance the state of research in his/her respective field. Applicants who are fairly far along in their thinking about these issues and who have an argument already story-boarded or outlines will be given priority. All applicants will need to provide a visual representation of how they imagine the interactivity and functionality of their research in a digital environment. And finally, we will ask applicants to describe the kind of data sources that they plan to use in the final publication (i.e., historical or conceptual maps, GIS data, 3D models, video, photographs, oral histories, and so forth) and the state of this data. These application materials will help us select an interdisciplinary group of participants who are committed and ready to utilize geospatial tools and data to advance research and teaching in the humanities. The Institute co-directors will select the pool of successful applicants.

Once selected and notified (by the end of December 2011), the cohort of participants will begin a six-month "pre-planning" phase, in which they correspond with the Institute faculty and staff to hone their research

questions and determine the "raw" materials that they will need to create their scholarly publication. As Institute Coordinator, our Graduate Student Researcher will correspond and work with participants to create a work flow model appropriate for each of the twelve projects, provide Institute participants with appropriate tutorials, and function as the point-person for coordinating all the digital materials necessary for each project. Institute participants will also correspond with one another and share project ideas via a Moodle site designed to facilitate collaboration. Finally, post-Institute support will also be provided to participants, focused on implementing the recommendations of the evaluation portion of the Institute and, ultimately, placing the publications in peer-reviewed venues.

**Impact and Evaluation** -- The impact of the Institute on digital humanities scholarship will be measured foremost by the ways in which each scholar is able to advance knowledge in his/her own discipline-specific fields through the use of geo-temporal argumentation, curation, design, and analysis. First, this impact can be measured by the number of scholarly articles and monographs—realized as "born digital" arguments—that are produced by Institute participants, peer-reviewed, and accepted for publication by journals or under the imprint of a university press. We hope that some of the pieces will be published using the *Vectors* and/or Scalar publication platform affiliated with USC and partner universities presses such as UC Press, the *Journal of the Society of Architectural Historians*, *Urban History* (Cambridge Journals Online), and *Places*. HyperCities articles can easily be embedded into any of these sites or others. Second, impact can be measured by the number of citations in various scholarly forums, such as discipline-specific and digital humanities conferences, as well as adoption into course syllabi. And, finally, impact can be measured by the participants' own transformed scholarly practice, namely how they conceive of, investigate, and design arguments in a multimodal, digital environment, and by their propagation of digital projects at their home institutions. These, of course, are long-term impacts, which will influence research methodologies, pedagogy, and institutional buy-in.

The evaluation of the Institute itself by participants will take place through written surveys and interviews conducted by the co-directors and IDRE staff, who have extensive experience designing surveys and employing a wide-range of quantitative and qualitative indicators for assessing the efficacy of the Institute. And just as importantly, evaluation is built into the Institute itself, in which every participant will have opportunities to interact with editors from major university presses, journals, and libraries. Ethington, Levinson, Cerruti, McPherson, Varnelis, and Brunner will not only review and evaluate the scholarly output created by Institute participants, but also participate in an ongoing dialogue in which everyone engages with the challenge of determining the appropriate criteria by which these digital publications and platforms should be evaluated.

With the emphasis placed upon geo-temporal argumentation, interpretation, and critique, cartographic visualization attuned to the problematic of representations of space and time comes to the foreground. But as with traditional publications, scholarly rigor and peer review is critical for success as well as the wider acceptance of digital publications inside and outside the academy. Cognizant of the criteria for evaluating new media publications developed by the MLA, HASTAC, the University of Maine and numerous other institutions, the review and evaluation process will ask questions such as the following: Does the work present and advance an original argument that could not be made as effectively in a single medium or in a traditional print publication? Is the mode of navigation and media formats appropriate for the argument? How does it make effective use of hypermedia elements to strengthen the argument? Is it extensible and iterative (i.e., can it continue to grow as more research is done either by the author or other people)? How does the scholarship support a federative (non-silo based) approach to scholarly work? Does it allow the audience to see new connections and make new discoveries that would not be possible otherwise? How does it create new knowledge and advance the state-of-the-art in a given Humanities discipline?

**Staff, faculty, and consultants**

• **Todd Presner** is Professor of Germanic Languages and Comparative Literature at UCLA. He chairs UCLA's Digital Humanities Program and is the founder and director of the HyperCities project. His research in digital cultural mapping, media studies, and urban history has been awarded grants by the MacArthur Foundation, the American Council of Learned Societies, the Humboldt Foundation, the Haynes Foundation, and Google. He co-directs UCLA's W.M. Keck program in Digital Cultural Mapping and UCLA's Ahmanson Laboratory for Digital Cultural Heritage, a collaborative humanities research lab at the Library. He is the author of numerous articles on new media, digital humanities, and cultural studies, as well as two interdisciplinary books on German-Jewish cultural history. He will direct the Summer Institute.
• **Diane Favro** is Professor of Architecture and Urban Planning at UCLA, Director of Research of UCLA's School of Arts and Architecture, Director of UCLA's Experiential Technology Center, and Associate Vice Chancellor of Research at UCLA. She was the co-PI of the award-winning "Rome Reborn" project, a virtual reality reconstruction and interactive encyclopedia of Ancient Rome, and "Digital Karnak." Her most recent work focuses on geo-temporal argumentation using digital maps. She has used HyperCities extensively for undergraduate and graduate courses and, most recently, served as the PI of the NEH-funded project, "Visualizing Statues in the Late Antique Roman Forum." She will co-Direct the Institute.
• **Chris Johanson** is Assistant Professor of Classics and Digital Humanities at UCLA. He is the Associate Director of the UCLA Experiential Technologies Center, and has collaborated on many international digital cultural mapping projects. He is currently developing a hybrid, geo-temporal publication entitled *Spectacle in the Forum: Visualizing the Roman Aristocratic Funeral of the Middle Republic*, which is a study of material and literary contexts set within a digital laboratory. He co-directs UCLA's Laboratory for Digital Cultural Heritage, is the PI of the Mellon-sponsored Humanities Virtual World Consortium, and served as co-PI of the "Visualizing Statues in the Late Antique Roman Forum" project. He will co-Direct the Institute.
• **Yoh Kawano** is the Campus GIS Coordinator at UCLA's Institute for Digital Research and Education (IDRE). Kawano served as the technical lead for the HyperCities project for two years and will provide technical oversight, GIS instruction, and leadership during the NEH Summer Institute. Prior to his work at IDRE, he was the Director of Information Technology at UCLA's Center for Neighborhood Research where he designed GIS systems for community empowerment.
• **David Shepard** is a doctoral candidate in UCLA's English department and the technical lead of the HyperCities platform. He is also the lead developer for "Geo-scribe," a Google-funded extension to HyperCities that links user-generated maps with Google books. He will advise participants during the pre-Institute planning and teach lab sessions on HyperCities during the Institute.
• **Elaine Sullivan** is a post-doctoral fellow in UCLA's Keck Program in Digital Cultural Mapping and adjunct assistant professor of Near Eastern Languages and Cultures. She was the lead developer of the Digital Karnak project and has an extensive track-record of developing innovative geospatial humanities courses and research publications. She will teach "tool time" sessions during the Institute and facilitate project development in lab sessions.
• **Institute Coordinator (Graduate Student Researcher, TBN)** will work closely with the faculty co-directors and staff in all pre-Institute preparation, including the call for applications, preparing the training modules and tools, working with the 12 participants in assessing and preparing datasets and digital materials before they come to UCLA, maintaining the Moodle site for communication and information dissemination, working closely with participants during the 3-weeks of the Institute, and providing post-Institute support for projects.
• **Administrative Specialist (staffed by the Royce Humanities Group)** will provide logistical support for the Institute directors, participants, and guests; this includes basic program support during the entire project period, and extensive support during the participant application and selection process, the planning of the summer institute, including arrangements and reimbursements for travel, accommodations, catering, payroll, payments of consultant fees/stipends, and general budget management.

Guest Lecturers/Evaluators:

• **Philip Ethington** is Professor of History and Political Science at the University of Southern California and North American and Multimedia Editor of the journal *Urban History* (Cambridge University Press). He is co-PI of the HyperCities project and is currently completing a large-format graphic book and interactive online publication, *Ghost Metropolis: Los Angeles, since 13,000 BP*. He will present his own research in digital history as well as evaluate participant projects.

• **Janice Reiff** is Associate Professor of History and Statistics at UCLA. Reiff has pioneered the use of digital technologies in history, teaching in NEH-sponsored summer institutes at the Newberry Library and with her *Structuring the Past: The Use of Computers in History* (1992). One of the editors of the *Encyclopedia of Chicago*, Reiff served as the lead editor on the online version of the *Encyclopedia* and has served as co-PI of HyperCities since 2007. She also co-edited with Helen H. Tanner and others *The Settling of North America: The Atlas of the Great Migrations into North America from the Ice Age to the Present* (1995). She will present her own research in digital history as well as evaluate participant projects.

• **Nancy Levinson** is a founding editor of *Harvard Design Magazine* and since 2009 the editor of the multimedia, digital journal, *Places*, an interdisciplinary journal dedicated to urban history, architectural history, and design. She will discuss the scholarly design and review process.

• **Kathleen Fitzpatrick** is Professor of Media Studies at Pomona College and author of *Planned Obsolescence: Publishing, Technology, and the Future of the Academy.* Participants will be asked to read her book prior to the start of the Institute, and she will present on the changing nature of authorship, peer-review, and university presses.

• **Tara McPherson** is Associate Professor at USC's School of Cinematic Arts and founding editor of the on-line journal, *Vectors*. She is co-Director of USC's Center for Transformative Scholarship (with Philip Ethington). She will advise Institute participants in the design of digital arguments and help participants develop appropriate rubrics for evaluating digital scholarship.

• **Kazys Varnelis** is Director of the Network Architecture Lab at the Columbia University Graduate School of Architecture, Planning, and Preservation and Multimedia Editor of the *Journal of the Society of Architectural Historians.* He will evaluate projects and discuss evaluation metrics.

• **Marta Brunner** is Digital Humanities Librarian at UCLA. She will discuss the challenges of preservation, sustainability, standards, and open environments for digital humanities scholarship.

• **Zoe Borovsky** is the Digital Humanities Research Consultant at UCLA and Adjunct Professor of Scandinavian and Digital Humanities. She will present on analysis and visualization of complex corpora.

• **Laura Cerruti** is Editorial Director for Digital Publishing at the University of California Press; she will discuss how the press is responding to the challenges of digital scholarship and evaluate participant projects.

# Appendix 1: Detailed Course Outline

**Pre-Institute Readings:**
1. Kathleen Fitzpatrick, *Planned Obsolescence: Publishing, Technology, and the Future of the Academy* (NYU Press, 2010).
2. David Bodenhamer, ed., *The Spatial Humanities: GIS and the Future of Humanities Scholarship* (Indiana University Press, 2010).

**Pre-Institute Tools and Projects:**
1. Social Explorer: http://www.socialexplorer.com
2. HyperCities: http://www.hypercities.com

## Week 1: The Geospatial Humanities

Morning sessions take place in the Visualization Portal; afternoon sessions take place in the UCLA Library Research Commons.

**Monday (9-12):** What is "Digital Cultural Mapping"? Three Presentations on HyperCities by Presner, Favro, and Johanson on the conceptualization and history of the HyperCities platform; discussion of how mapping and visualization advances scholarship and teaching in the digital humanities

- Todd Presner, "HyperCities: A Case Study for the Future of Scholarly Publishing," *The Shape of Things to Come*, ed. Jerome McGann (Houston: Rice University Press, 2010), 251-71.
- Diane Favro, "Meaning in Motion. A Personal Walk Through Historical Simulation Modeling at UCLA," in: *Visualizing Statues in the Late Antique Forum*; http://inscriptions.etc.ucla.edu/
- Christopher Johanson, "Immersive Coordinates, Geo-temporal Motion," in: *Visualizing Statues in the Late Antique Forum*; http://inscriptions.etc.ucla.edu/

**Monday (1-5):** Exploring HyperCities (Presner); Using Google Maps/Earth (Sullivan)

- "Mapping the Digital Empire: Google Earth and the Process of Postmodern Cartography," in: *New Media & Society* (2010) http://nms.sagepub.com/content/12/6/869
- Demos: Digital Karnak in Google Earth; Rome Reborn in Google Earth/HyperCities

**Tuesday (9-12):** Geospatial Analysis and Narrative Strategies in Architectural History, Urban Studies, Ancient Studies, Archaeology, and Classics (Favro and Johanson): What does it mean to design a geo-temporal argument? How are discipline-specific assumptions and methodologies transformed in 4D digital environments?

- Richard Brilliant, "Prolegomena to a Very Long Book on the City of Rome," in: *In Memoriam Otto J. Brendel: Essays in Archaeology and the Humanities*, ed. Larissa Bonfante, Helga Heintze, and Carla Lord (Mainz: von Zabern, 1974), 255-261.
- Christopher Johanson, "Visualizing History: Modeling in the Eternal City," in: *Visual Resources* 25:4 (2009): 403-18.
- Diane Favro and Christopher Johanson, "Death in Motion: Funeral Processions in the Roman Forum," in: *Journal of the Society of Architectural Historians* 69.1 (2010): 12–37.

- A. Kenny, *Computers and the Humanities* (Ninth British Library Research Lecture, London: British Library, 1992): 1-11.

**Tuesday (1-5):** Developing courses using HyperCities: A discussion of learning outcomes, collaborative process, design, and experimentation.

- Demos: HyperCities Los Angeles, Berlin, Rome
- Tools: Understanding KML (Keyhole Mark-up Language)

**Wednesday (9-12):** "Geospatial Methodologies in Digital History" (Ethington and Reiff). *Ghost Metropolis* (Ethington) and *Visualizing Statues in the Late Antique Roman Forum* (Favro and Johanson)

- Janice Reiff, "Two Ideas, Two Cities, Two Projects: A Digital Urban World." *Perspectives on History.* May 2009. American Historical Association. 15 June 2009.
- Philip Ethington, selections from the HyperCities "Ghost Metropolis" collection
- Site: "Digital Harlem" (http://acl.arts.usyd.edu.au/harlem/)

**Wednesday (1-5):** Hands-on, "how-to" analysis of "Ghost Metropolis," "WPA City Guides," and "Visualizing Statues" (http://inscriptions.etc.ucla.edu) (Ethingon, Reiff, Favro, and Kawano);

- Tools: Google Sketch-Up; Google Earth as KML editor

**Thursday (9-12):** "From Information Visualization to Critical Cartography and Neo-Geo" (Presner, Ethington, Johanson)

- Stuart Dunn, "Space as an Artefact: A Perspective on 'Neogeography' from the Digital Humanities," in: *Digital Research in the Study of Classical Antiquity* (2010): 53-69.
- "The Power of Geographic Visualizations," *Geographic Visualization,* eds. M. Dodge, M. MacDerby and M. Turner (John Wiley & Sons, 2008), 1-10.
- Anne Knowles, "Historical Maps in GIS," *Past Time, Past Place: GIS for History* (ESRI Press, 2002), 1-22.
- Social Media Mapping: Tehran Election Protests HyperCities collection; HyperCities Egypt Twitter Map: http://egypt.hypercities.com

**Thursday (1-5):** Community GIS and Neighborhood Knowledge

- Mapping Historic Filipinotown through video and oral histories (Reiff, Presner)
- Neighborhood Knowledge Project (Kawano)
- Tools: Basic GIS for the Humanities, linking quantitative data with qualitative story-telling; demo of Haynes Research Project on LA (Ethington): http://www.hypercities.com/haynes

**Friday (9-12):** "Geospatial Tools in Literature and Corpus Analysis" (Presner, Borovsky, Brunner): A discussion of network analysis, visualization, and mapping of literary texts and corpora.

- Franco Moretti, selections from *Graphs, Maps, Trees: Abstract Models for Literary History* (London: Verso, 2005).
- Demo: "Litmap" project by Barbara Hui: http://barbarahui.net/litmap/
- Tool: Google Fusion Tables to generate maps

**Friday (1-5):** Data curation and data visualization; identifying, harnessing, and critiquing geo-data; interrogating data transparency (Kawano, Sullivan)

- Demo: T-Races Project by David Theo Goldberg and Richard Marciano: http://salt.unc.edu/T-RACES/
- Amy Hillier "Redlining in Philadelphia," *Past Time, Past Place: GIS for History*, ed. Anne Knowles (ESRI Press, 2002). Includes GIS file of dataset.
- Demo: UCLA Encyclopedia of Egyptology (http://www.uee.ucla.edu)

## Week 2: Generating Transformative Scholarship

Building on the broad introduction to the geospatial humanities in week one, this week focuses on practice and implementation, in which each participant works intensively in the Academic Technology Sandbox with Institute faculty and staff to design their geo-temporal argument. Each participant will have an individual work-station in the sandbox; the flexible architecture of the room allows for all the tables, chairs, and work-stations themselves to be moved (on wheels), allowing for collaborative learning, discovery, and exploration. At any given time, six faculty and staff members will be "in the sandbox," making the learning ratio two-to-one. The following people will be there the entire time: Presner, Sullivan, Kawano, Shepard, and the Graduate Student Researcher (TBN); and the following people will be available for several "office hour" days in the Sandbox: Favro, Johanson, Reiff, Ethington, Borovsky, and McPherson.

**Monday (9-5 PM):**

Six participants will each be paired with a faculty or staff designer who will spend the morning reviewing and assessing the state of the digital data provided by the participant during the pre-Institute phase of the project. Together, they will each complete a data evaluation, which will inform the nature of the work over the week. During this time, the other six participants will be in a single group guided by Presner and Ethington, discussing the nature of story-boarding an argument. Questions of curation, annotation, navigation, interaction, interface design, symbology, and systems of reference will figure prominently into the discussion. In the afternoon, the two groups will switch.

Readings:

- Mark Monmonier, *How to Lie with Maps* (Chicago: University of Chicago Press, 1992), 1-42.
- Calvin F. Schmid, *Statistical Graphics: Design Principles and Practices* (New York: Wiley, 1983), 1-16.
- Edward R. Tufte, *The Visual Display of Quantitative Information* (Cheshire, Connecticut: Graphics Press, 1983), 13-27, 52-105.

**Tuesday and Wednesday (9-5 PM):** Design, Story-boarding, and Implementation

Over the two days, participants will begin "staging" their arguments in HyperCities, Google Earth/Maps, and/or ArcGIS/ArcMap. Staff support will depend on the exact technical needs of the participants. Tara McPherson will give a presentation on the Scalar and Vector platforms on Tuesday afternoon and be available as a design resource in the sandbox on Wednesday. Additional individual instruction in specific digital platforms will be included here on an as-needed basis.

Readings are intended to foreground the social, cultural, and political construction of maps and the history of cartographic representational practices:

- JB Harley, "Texts and Contexts in the Interpretation of Early Maps," in: *The New Nature of Maps: Essays in the History of Cartography* (Baltimore: Johns Hopkins University Press, 2001), 34–49
- Denis Cosgrove, "Moving Maps," in: *Geography and Vision: Seeing, Imagining and Representing the World* (London & New York: I.B. Tauris, 2008), 155-68.
- Denis Cosgrove, "Carto-City," in: *Geography and Vision: Seeing, Imagining and Representing the World* (London & New York: I.B. Tauris, 2008), 169–182.

**Thursday (9-5 PM):** Site choreography: how to inter-relate components and link elements of the argument together, focusing on visual signposting, interface enhancements, legibility, and integration of various kinds of multimedia.

- Scott McCloud, "Time Frames," in: *The New Media Reader* (Cambridge: MIT Press, 2003), 711-36.

**Friday (9-5 PM):** Participants will reach a milestone in the development of their projects by creating a draft ready for initial presentation and review by the Institute participants. The faculty and staff will focus on technical problem-solving and "reality-checking."

**Saturday (10-2 PM):** "Lightning talks over Brunch": Participants will each present the state of their project in a 10-minute lightning talk to fellow conference attendees and Institute staff and faculty.

## Week 3: Creating and Evaluating Transformative Publications

The purpose of this week is to have a two-way dialogue between the seminar participants and a group of editors, publishers, and librarians working on innovative platforms for geospatial humanities scholarship. The impact and evaluation process will go in both directions: Editors, publishers, and librarians will evaluate the digital projects created by Institute participants, discussing possible criteria by which such projects may be judged, reviewed, and archived; and participants will evaluate existing publication and archiving platforms and discuss how they might be transformed to better accommodate multimodal, geo-temporal scholarship.

Outside guests will attend the Institute over two days. The guests are: Nancy Levinson, editor of the online journal *Places* and founding editor of *Harvard Design Magazine*; Laura Cerruti, Editorial Director for Digital Publishing at the University of California Press; Philip Ethington, North American and Multimedia Editor for *Urban History* (Cambridge Journals Online); Kazys Varnelis, Director of the Network Architecture Lab at Columbia University Graduate School of Architecture, Planning and Preservation and multimedia editor of the *Journal of the Society of Architectural Historians*; Tara

McPherson, founding editor of *Vectors: Journal of Culture and Technology in a Dynamic Vernacular* and the Scalar platform; Marta Brunner, Head of the Collections, Research, and Instructional Services at the UCLA Library.

**Monday (9-5):** Participants will return to the computer labs (Technology Sandbox) for collaboration with Institute faculty and staff, and initiate project changes based on group review suggestions. Projects will be prepared for final workshop presentation and "impact and evaluation" discussion. Afternoon lecture and discussion led by Kathleen Fitzpatrick on "The Future of Peer Review, Authorship, and the Mission of the University" (Visualization Portal).

**Tuesday (9-5):** Institute participants make final revisions to projects and prepare brief presentations for a two-day review and evaluation seminar (Technology Sandbox). Afternoon presentation by Marta Brunner on "The Library in the Information Age: Archiving the Digital Humanities" (Visualization Portal).

**Wednesday (July 4th holiday, no sessions scheduled)**

**Thursday and Friday (9-5 PM):** Six presentations by Institute participants per day with a moderated discussion with Levinson, Cerruti, McPherson, Ethington, and Varnelis on creating, evaluating, sustaining, and preserving geospatial humanities scholarship. The forum will last two days and represent the culminating event of the Institute (Visualization Portal).