



The Promise of Digital Humanities

A Whitepaper

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<http://www.digitalhumanities.ucla.edu>

This whitepaper is a call to action and leadership at UCLA. UCLA has made great strides forward in the emerging fields that we define as Digital Humanities, and can already lay claim to national and international prominence. With concentrated effort and resources, UCLA can lead the country and the world in creating, applying, and interpreting new digital and information technologies. Our faculty is poised for this, our students are eager, and Digital Humanities—interdisciplinary, collaborative, socially engaged, and global—is a great fit for the strength, position, and aspirations of UCLA as an institution. At a moment in which our entire relation to knowledge is changing, it is imperative that we respond in visionary and focused ways that move research and education forward in the twenty-first century.

The Promise of Digital Humanities

I. Digital Humanities Defined

Digital Humanities is an umbrella term for a wide array of practices for creating, applying, and interpreting new digital and information technologies. These practices are not limited to conventional humanities departments, but affect every humanistic field at the university, including history, anthropology, arts and architecture, information studies, film and media studies, archaeology, geography, and the social sciences. At the same time, Digital Humanities is a natural outgrowth and expansion of the traditional scope of the Humanities, not a replacement or rejection of humanistic inquiry. In fact, the role of the humanist is critical at this historic moment, as our cultural legacy migrates to digital formats and our relation to knowledge, cultural material, technology, and society is radically re-conceptualized.

Already within the broad field of Digital Humanities, we are seeing a flowering of interdisciplinary, collaborative, and technologically-sophisticated research and pedagogy that is producing new modes of knowledge formation, reaching new audiences for digital scholarship, and setting new intellectual agendas and priorities for the twenty-first century. At UCLA, faculty from the College already collaborate with faculty and students from the Graduate School of Education and Information Studies, the School of Arts and Architecture, and the School of Theater, Film, and Television, all divisions which house humanists working with advanced digital tools. We also see new collaborations emerging between north and south campus, as cultural and social analysis impacts the development of technology and new technologies affect culture and society.

Over the past decade, many leading universities in the United States have recognized the profoundly transformative effect that new media and digital technologies have had on research and teaching. In 2001, Stanford established the Stanford Humanities Laboratory, a collaborative research environment for supporting cross-disciplinary, technologically transformative, intellectually rigorous, multi-institutional projects, bringing Humanities scholars together with artists, technologists, and scientists in a laboratory setting. Duke, a founding member of the international consortium HASTAC (Humanities, Arts, Science, and Technology Advanced Collaboratory), adopted a similar model for the establishment of its interdisciplinary programs in "New Technologies in Society" and "Information Science and Information Studies" as well as its John Hope Franklin Humanities Institute. In 2007, Duke received a multi-year Mellon grant to build a "horizontal" program in Visual Studies, which operates—at all levels—at the interface between science, social science, and humanities. The University of Virginia established the Institute for Advanced Technology in the Humanities, which currently supports more than forty Digital Humanities research projects, and designed a curriculum for a masters program in Digital Humanities.¹ Other top-tier universities such as Harvard, Dartmouth, USC, Berkeley, Princeton, Georgia Tech, and University of Michigan have begun to aggressively hire in the multidisciplinary fields represented by Digital Humanities. In addition, centers, labs, and institutes devoted to specific sub-fields of Digital Humanities can be found at USC, Brown, and MIT.² USC, in particular, has emerged as a leader in the field by harnessing a substantial amount of institutional and extramural support

to create the Institute for Multimedia Literacy, the Institute for Creative Technologies, and *Vectors*, a radical reinvention of the electronic journal format.³

Digital Humanities can be characterized as follows:

1. **Interdisciplinary:** Digital Humanities scholarship not only cuts across and unifies traditional fields in the humanities (literature, history, the arts) but also brings the tools—both technological and methodological—of other disciplines to bear on the analysis of culture and society. For example, tools from Geographic Information Systems (GIS) help historians to map the transmission of cultural artifacts; architectural modeling and simulation tools aid archaeologists in the investigation and recreation of ancient city spaces and societies; text-analysis and data-mining tools help linguists and literary scholars to detect and analyze patterns in the study of complex textual corpora.
2. **Collaborative:** Digital Humanities scholarship is team-based, often engaging humanists, technologists, social scientists, artists, architects, information scientists, and computer scientists in conceptualizing and solving problems. Information and computer scientists may help humanists discover patterns or come up with ways to optimize the search and retrieval process when mining large-scale cultural datasets. At the same time, humanists and social scientists may help technologists by providing real-world data and experiences to test theoretical algorithms or conceive new tools. Working with artists and designers, digital humanists participate in the creation of user interfaces, information navigation systems, and content management systems, all of which directly impact research and pedagogy.
3. **Socially Engaged:** Digital Humanities scholarship opens and extends the reach of the university by bridging diverse communities. Building on the community engagement and activism of the professional schools, digital humanists often work with external cultural institutions (museums, archives, historical societies, and libraries) as well as with local communities, advocacy groups, non-profits, and schools. By bringing together academic and local experts, new knowledge and new forms of civic engagement emerge for community-based learning experiences.
4. **Global:** The new audience for Digital Humanities scholarship and pedagogy is truly global. Because this scholarship is primarily web-based, the general public can not only access it but also engage critically with it. New publication venues such as Google Earth and new broadcasting systems and virtual worlds such as Second Life facilitate long-distance learning.
5. **Timely and Relevant:** Digital Humanities is engaged with the rapidly changing world of today. It is imperative that we prepare our students—both undergraduate and graduate—to be competitive in the job market of the twenty-first century. Digital Humanities teaches students the critical thinking skills, media literacies, and technical knowledge necessary for success in the digital information age.

II. Innovative Educational Opportunities

The changes effected by new technologies—ranging from web-based media forms and digital archives to social networking and cluster computing—are so proximate and so sweeping in scope and significance that they may appropriately be compared to the changes wrought by the print revolution. But these changes are happening on a very rapid timescale, taking place over months and years rather than decades and centuries. Because of the rapidity of these developments, the intellectual tools, methodologies, disciplinary practices, and pedagogical approaches have just started to emerge for responding to and interpreting the massive social, cultural, economic, and educational transformations happening all around us.

Our students were born in a world in which computing and information technologies are ubiquitous. Consequently, they are eager to use and apply these technologies to their own learning. Although many students are involved in the creation of their own expressive media presence through personal webpages and social networking,⁴ they are infrequently engaged in either interrogating or applying these technologies in their learning and scholarship. In order to be successful in the world of tomorrow, there are significant technological, social, cultural, and intellectual skills that students need to master. These skills include literacy in both traditional and new media, the technical skills related to this literacy, the development of tools for critical analysis, the ability to navigate across, reconfigure, and evaluate different media forms, the ability to negotiate and work across diverse cultures and communities, the ability to synthesize material and bring together different methodologies to solve complex problems, the ability to interpret and construct models for responding to real-world situations, the ability to critically evaluate the potentials and limitations of new technologies, and the cultivation of a broad understanding of the social, historical, linguistic, and cultural context in which they are learning and working. At its core, Digital Humanities addresses these issues by teaching students to create and critique media content, to develop the necessary skills and abilities to evaluate this content, to manipulate and transform digital media technologies, and to develop the requisite literacy across media forms, including textual, aural, visual, and digital domains.⁵

Because Digital Humanities cuts across undergraduate education, it offers a compelling model for transformative scholarship and pedagogy. Digital Humanities facilitates the necessary critical thinking, analytic skills, and creativity at the heart of the undergraduate educational experience and thus impacts all fields that use new technologies to undertake research. As more and more courses utilize digital technologies for instruction, new information platforms are emerging, which encourage collaboration, creativity, and interdisciplinarity. For example, the “HyperCities” platform—a web-based tool for digital cultural mapping—is used by students in Humanities GE courses on Berlin and Rome, the LA Cluster course, and a range of architectural history classes. Such platforms create powerful new mechanisms for involving students directly in cutting edge research. Trained in new research methodologies, students join collaborative projects as domain experts, eager to use tools and apply skills that did not exist only a few years prior. Projects in Digital Humanities have redefined excellence in undergraduate research by enabling students to make significant contributions to scholarship in fields ranging from archaeology and architecture to history and literature. While few undergraduate essays have ever advanced the state of an academic field, a student contribution to a project focused on the three-dimensional visualization of an ongoing archaeological excavation could easily find its way into a highly-selective academic journal.

Next year, students enrolled in the new program in Digital Cultural Mapping will work in collaborative teams throughout the Los Angeles community to realize capstone projects that are published in Google Earth, allowing students to share their research with the very communities in which they are working. Finally, in an effort to formalize this program, an interdisciplinary group of faculty has already begun to develop a minor in Digital Cultural Mapping and is currently considering the development of a GE cluster course as well as an undergraduate degree and an interdepartmental program in Digital Humanities. In sum, Digital Humanities teaches students the critical thinking skills necessary for success in the digital information age by preparing students to be active participants, rather than passive spectators, in the production of knowledge and the building of this new world.

III. Digital Humanities at UCLA: A Proven Track Record in Extramural Funding

Within the UC system, UCLA has already distinguished itself as the premier institution for Digital Humanities research and education, attracting millions of dollars in extramural support and with the potential for generating much more. Nationally, UCLA is one of a handful of top-tier universities for Digital Humanities. Our peer institutions are Duke, Stanford, USC, and UVA.

1. **W.M. Keck Program in Digital Cultural Mapping:** In 2008, the Keck foundation made its first ever grant in the liberal arts to a research university. The \$500,000 grant to UCLA will support the creation of an undergraduate curriculum in the emergent field of digital cultural mapping. The interdisciplinary curriculum draws on faculty from seven departments, three schools, and three research centers at UCLA. It places project-based learning at the heart of the curriculum, with students working in collaborative teams to realize research projects with real-world applications. Faculty directors: Diane Favro (Architecture and Urban Planning), Todd Presner (Germanic Languages and Comparative Literature), Jan Reiff (History and Statistics), and Willeke Wendrich (NELC).

2. **Digital Humanities Funded by NEH, IMLS, MacArthur, Mellon, and ACLS:** Over the past several years, all of the major humanities foundations have supported digital humanities projects at UCLA, amounting to several million dollars in extramural support:
 - The Encyclopedia of Egyptology: \$675,000 in two phases from NEH. PI: Willeke Wendrich (NELC)
 - The Karnak Temple Complex: \$196,000 from NEH. PIs: Diane Favro (Architecture and Urban Design) and Willeke Wendrich (NELC)
 - The Digital Roman Forum: \$750,000 from the Mellon Foundation. PIs: Diane Favro (Architecture and Urban Design) and Bernard Frischer (Classics; now at UVA)
 - HyperCities: \$238,000 from the MacArthur Foundation as part of its Digital Media and Learning initiative. Directed by Todd Presner (Germanic Languages) with co-PIs Dean Abernathy (Architecture, Orange Coast

College), Mike Blockstein (Public Matters, Los Angeles), Phil Ethington (History, USC), Diane Favro (Architecture and Urban Design), Chris Johanson (Classics), and Jan Reiff (History and Statistics). Also, \$80,000 Digital Innovation grant for "Hypermedia Berlin" from ACLS. PI: Todd Presner (Germanic Languages)

- Digital Cuneiform Project and Iraq Initiative: \$925,000 from the Mellon Foundation; \$749,000 IMLS Leadership Grant, NEH/NSF Grants amounting to \$976,000. PI: Robert Englund (NELC)
- NEH Summer Institute: Models of Ancient Rome. \$125,000. PIs: Sander Goldberg (Classics), Diane Favro (Architecture and Urban Design). Institute Coordinator: Chris Johanson (Classics)
- St. Gall Monastery Plan: \$1.1M from the Mellon Foundation. PIs: Patrick Geary (History) and Bernard Frischer (Classics; now at UVA).
- Cathedral of Santiago de Compostela 3D Reconstruction: €100,000 from Sociedade Anónima de Xestión do Plan Xacobeo, Xunta de Galicia, Spain; \$19,000 from GTE Foundation. PI: John Dagenais (Spanish and Portuguese)
- Digital Humanities has also been identified by the UCLA Mellon steering committee as one of the target areas for institutional support and hiring through the \$2.5M Mellon grant for "Transformational Support in the Humanities." To date, the Mellon program has supported the hire of one junior professor in Digital Humanities, a postdoctoral fellow in Digital Humanities, and two faculty-graduate student seminars in Digital Humanities and Media Studies.

3. **Mellon Seminar in Digital Humanities:** During the 2008-09 AY, an experimental Mellon seminar in digital humanities was put together by Todd Presner (UCLA) and Jeffrey Schnapp (Stanford University). The seminar is held simultaneously in "real-life" (at UCLA's Visualization Portal) and in the virtual world of "Second Life," where a live broadcast is fed via the web. More than half of the one hundred participants—faculty, students, library and technology staff, as well as foundation representatives—attend through Second Life, representing research universities such as Stanford, Caltech, Harvard, NYU, Rice, and USC as well as small, liberal arts colleges like Hamilton College and the Seattle Arts School. Although Second Life participants currently do not receive course credit, SL represents an exciting opportunity for long-distance learning and credentialing.

4. **Collaborating Centers and Facilities:** UCLA has several dynamic campus institutions that over the last few years have promoted digital research and education. Scholars and students in the humanities utilize the technical and staff resources of the Center for Digital Humanities, the Experiential Technologies Center, and Academic Technology Services to conduct research and teach courses. In 2009, an interdisciplinary group of faculty representing the Division of the Humanities, the Division of Social Sciences, the School of Arts and Architecture, and the Graduate School of Education and Information Sciences organized a consortium ("HASIS") for promoting and supporting Digital Humanities at UCLA. As the "north campus" arm

of the Institute for Digital Research and Education (IDRE), “**IDRE-HASIS**” is an innovative, interdisciplinary network of faculty, staff, students, and technical resources for Digital Humanities research and teaching at UCLA.

5. Recent Press about Digital Humanities at UCLA

- “Cultural Mapping Enters New Phase in Digital Humanities,” in: *UCLA Today* (January 2009).
- “Recreation of an Egyptian Temple Complex Merges Technology and Scholarship,” in *Chronicle of Higher Education* (January 20, 2009)
- “Digital Humanities Addresses Changing Nature of Knowledge in Seminar Featured in Second Life,” in: *UCLA Today* (January 2009).
- “Digital Karnak Project Launches Website,” *The American Research Center in Egypt* (October 2008).
- “Digital Archaeologist Traces History of Berlin, Jews,” in: *The Jewish Journal* (June 2008).
- “Digital Legacy for Imperial Rome,” in: *The Roman Forum* (December 2007).
- “Ancient Rome Reborn in 3D,” in: *National Geographic* (August 2007).

IV. The Future: What is Needed to Build Upon This Success?

Unlike other areas of research, which face cutbacks at all levels, the sources for external funding of Digital Humanities projects are increasing. To wit, after the extraordinary success of a pilot initiative, the NEH created an Office of Digital Humanities and a series of domain-specific grants. In addition, Digital Humanities remains one of only two endowment-wide granting initiatives.

Because Digital Humanities engenders truly interdisciplinary work with a potentially global impact, granting agencies now recognize that the Humanities, like other disciplines, have entered the age of the grand challenge.⁶ For example, an unprecedented interdisciplinary and international collaboration between the Joint Information Systems Committee (JISC–UK), the NEH, the NSF, and the Social Sciences and Humanities Research Council (SSHRC) from Canada has just announced the Digging into Data Challenge intended to answer the question, “What do you do with a million books? Or a million pages of newspaper? Or a million photographs of artwork?” Interdisciplinary collaboration is a prerequisite for answering these questions and applying for such grants.

While Digital Humanities has a substantial track record at UCLA, much of its success has come without the support of university infrastructure to sustain it and stimulate its growth. To address this deficiency, faculty representing all divisions from north campus in conjunction with staff from the Library, CDH, OID, OIT, and ATS have created IDRE-HASIS, a new branch of the Institute for Digital Research and Education (IDRE). IDRE-HASIS will cultivate excellence and innovation in all areas of digital research and education that impact the broad study of culture and society. This collaborative organization has initiated a “pipeline” for sharing resources, concentrating efforts, and applying for grants that span the

artificial divisional and departmental silos that have for years limited truly interdisciplinary, collaborative projects.

To formalize this collaboration and remain competitive in the rapidly expanding extramural funding landscape, institutional support is vital. The critical areas of support that are needed include the following:

- Hiring strategies that cross departmental and divisional lines and which target the most innovative leaders in the field of Digital Humanities. We can no longer simply "hire to replace" but must make strategic hires that build bridges and benefit the university as a whole. At the same time, flexible graduate student support for Digital Humanities (across departments and divisions) must be made available to fund graduate students at all stages of their degree. Undergraduate research opportunities need to support and target digital research projects that are team-based and cumulative in scope and duration.
- Close cooperation between IDRE-HASIS and UCLA's Office of Development to investigate and pursue the widest possible sources of funding and facilitate the targeting of Challenge Grants that require substantial matching funds.
- Dedicated space and technology staff resources (programmers and designers) to work with faculty and students on realizing digital research projects, managing equipment, and collaborating with a range of users. The space should function as a collaborative "sandbox" for conducting research and teaching as well as housing visiting scholars, post-doctoral fellows, and student researchers.
- Dedicated staff to advise and administer grants (both institutional and project-based), which span departments and divisions.
- Dedicated staff to work with faculty and the library on archiving, digitizing, and publishing data generated by Digital Humanities research as well as on developing the requisite standards, metadata, and accessibility for this data.
- Institutional encouragement in the form of "incubation grants" and "fellows programs" for Digital Humanities projects in their rudimentary stages; matching seed funds for successful grant applications that involve multiple departments. (At present, in grants with co-principal investigators, only one department receives the full benefit and recognition for a successful grant application.)

In lean times, universities strive to preserve core programs that prepare students to meet the challenges of rapid and sweeping changes. We recognize that difficult decisions must be made in the years to come. We believe that maintaining and expanding Digital Humanities at UCLA not only preserves mission critical skills that will empower students to engage actively in addressing these challenges, but that such an investment positions UCLA at the forefront of a recovery effort that will fuel the next generation of scholars and leaders.

¹ Stanford Humanities Lab: <http://www.stanford.edu/group/shl/cgi-bin/drupal/>. HASTAC: <http://www.hastac.org/>. Duke's program in New Technologies in Society: <http://www.jhfc.duke.edu/jenkins/>; Duke's program in Information Science and Information Studies: <http://isis.duke.edu>. Duke's Visual Studies Initiative: <http://visualstudies.duke.edu/> and the John Hope Franklin Center at Duke: <http://www.jhfc.duke.edu/>. The Institute for Advanced Technology in the Humanities at UVA: <http://www.iath.virginia.edu/>.

² The Institute for Multimedia Literacy at USC: <http://iml.usc.edu/>; The Institute for Creative Technologies at USC: <http://ict.usc.edu/about>; Vectors: <http://www.vectorsjournal.org/>; HyperStudio at MIT: <http://hyperstudio.mit.edu/about>; the Center of Digital Epigraphy at Brown: <http://www.brown.edu/Research/CoDE/>.

³ USC has been developing infrastructure to integrate digital media technologies into the humanities for more than a decade. Their Institute for Multimedia Literacy (IML), founded in 1998 with funding from alumnus George Lucas, is an organized research unit dedicated to developing educational programs and conducting research on the changing nature of literacy in a networked culture. The IML's success has fostered a huge range of digital humanities efforts across USC. USC feels that their undergraduate schools of Cinema/Television, Engineering, and Business are very well defined, and wants to have a similar kind of distinguishing and identifiable approach to their core undergraduate college experience. There are now discussions at the Provost's level of literally "rebranding" their College of Letters, Arts, and Sciences as a Digital Humanities initiative. The Annenberg School's recent hiring of renowned convergence theorist/media activist Henry Jenkins away from MIT this year is yet another sign of the significant investment USC has made to embrace digital humanities.

⁴ According to the 2005 Pew Internet and American Life project, more than half of American teenagers who use the Internet are media creators. Far from just passively "surfing" the web, these students are creating media, such as webpages, videos, music, blogs, stories, and other online content. This does not even include the vast number of students who also engage in multiplayer gaming, social networking, and other forms of web-based communication. For a full discussion, see Henry Jenkins and others, *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, MacArthur Foundation (2006). The paper is available at: http://digitalllearning.macfound.org/atf/cf/%7B7E45C7E0-A3E0-4B89-AC9C-E807E1B0AE4E%7D/JENKINS_WHITE_PAPER.PDF

⁵ The New Media Consortium defined new media literacy as "the set of abilities and skills where aural, visual, and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms." *A Global Imperative: The Report of the 21st Century Literacy Summit*.

⁶ E.g., http://www.chass.uiuc.edu/Projects/Entries/2008/5/20_Grand_Challenges_in_the_Humanities.html. See, for example, the grand challenges of global health (<http://www.grandchallenges.org/Pages/default.aspx>) and engineering (<http://www.grandchallenges.org/Pages/default.aspx>).

Appendices -- Recent Press

Cultural mapping enters new phase in digital humanities

We live in a digital world in which just about every academic discipline is part of a sprawling landscape that aids pedagogy, scholarship and communication.

On Jan. 30, a team of UCLA scholars will launch a leading-edge interdisciplinary digital program aimed at further exploring the relationship people have with physical spaces and culture. Called the W.M. Keck Digital Cultural Mapping Program, the \$500,000 initiative will expand on the pioneering efforts of the Center for Digital Humanities to forge a technology-driven liberal arts education in which a range of subjects are spatially and temporally represented.

This marks the first time that the W.M. Keck Foundation has funded the liberal arts in any research university. Using photographs, videos, animated timelines and sophisticated Geographic Information Systems (GIS) – of which Google Earth imagery is the best-known example – the project

reflects an increasing emphasis on “mapping” in higher education. Through mapping, everything from distinctive landmarks and industries to such intangible elements as personal histories and cultural concepts are immersed in a catchy and highly engaging digital world.

“‘Mapping’ is the critical word but it’s not about (cartographical) maps,” explained Diane Favro, a professor of architecture and urban design, who is one of the four directors of the program. Rather, she added, the program “promotes thinking about evolutions of a place.”

In an era in which rapidly changing technologies are used to examine social and cultural questions, “students are constantly collaborating in research-based participatory learning,” said Todd Presner, an associate professor of Germanic languages and comparative literature, who is also one of the program’s directors.



The cultural mapping program brings together the resources and expertise of the Center for Digital Humanities, Academic Technology Services and the Experiential Technologies Center to develop an interdisciplinary minor curriculum for undergraduates. Also associated with the program are other departments, including Architecture and Urban Design, Near Eastern Languages and Cultures, history, statistics, anthropology, sociology and archaeology.

The program will begin with an introductory workshop on Jan. 30 for participating faculty and others who might already be conducting similar digital programs. Scheduled to be held at the Visualization Portal in Room 5628 of the Math Sciences Building, the event, which runs 9 a.m. to 12 noon, will follow an 8:30 a.m. breakfast buffet.

The introductory workshop will present a conceptual framework for exploring cross-disciplinary collaborations as well as a discussion of the curriculum, replete with demonstrations of projects tested in classrooms and labs on campus.

These include the Digital Roman Forum, a 3-D reconstruction of imperial Rome developed by the Cultural Virtual Reality Lab on campus, and HyperCities, an interactive Web-based research platform for analyzing the cultural, architectural and urban history of some of the world's leading cities. (The first of these cities, Hypermedia Berlin, has already been developed to much critical acclaim under Presner's direction.)

One of the highlights of the program is Digital Karnak, a project developed by Favro, who is also the director of the Experiential Technologies Center, and Willeke Wendrich, an associate professor of Egyptian Archaeology and another of the program's directors.

The project revolves around a digital reconstruction of Karnak, an ancient temple complex in the Fayum region of Egypt. Combining years of scholarship with the newest technology, the project offers photographs, videos, animated timelines and Google Earth images of the renowned temple to showcase not just its striking architecture but also how it was built – and repeatedly rebuilt – over a period of more than 2,000 years, replete with information about the rituals and festivals that occurred there.

Another key goal of the collaborators is to introduce critical thinking about the digital realm. Typically, students will learn about the effects of presenting complex subject matter digitally, particularly how digital interaction changes the nature of perceived events over time and space.

A city's history is a good example. "We're used to saying history is chronological," explained Jan Reiff, an associate professor of history and statistics who, along with Favro, has already taught several digital mapping classes on campus. "But change doesn't happen at the same time everywhere." With the help of spatially related maps, students can better understand how a place truly changes from period to period.

A training workshop for faculty is scheduled in March. It will offer consultations, tech support, access to labs, plus exposure to new ideas and basic skills in such areas as GIS, Google Maps and creative thinking.

“This is true collaboration that changes the landscape of UCLA,” said Wendrich, who returned this month from a 12-week field trip to Egypt along with 10 undergraduate and six graduate students regarding the Karnak project. “We’ve all experienced that in our own research, and now we’re bringing it to students.” To learn details about the program, go to this [website](#). For more information about the Jan. 30 event, send an [e-mail](#).

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Digital Humanities address changing nature of knowledge in seminar featured on Second Life

After much economic gloom and confusion in 2008, the new year is a good time to reflect on an increasingly vital issue for universities: The future of knowledge in the digital age.

Under an initiative sponsored by a \$2.5 million grant from the Mellon Foundation two years ago, faculty, postdoctoral fellows and guest scholars from more than 10 departments are exploring new research methodologies and disciplinary paradigms in the humanities. On Jan. 5, they met for the latest in a series of “Media, Technology, and Culture” seminars that offers vital insights from experts in the evermore collaborative fields of media studies, game theory and literary and cultural studies.



In a relatively new twist to Internet-enabled distance learning, the “Humanities Tools in Digital Contexts” seminar was also featured on Second Life (SL), the San Francisco-based 3-D metaverse that some call the campus of the future. Numerous universities, colleges and schools offer courses or educational programs in the digital realm, where they own virtual “islands.” Their representatives communicate with people in “real life” through cartoonlike virtual characters known as their “avatars,” or online alter-egos.

Open to graduate students for credit as well as to the general public, the three-hour seminar was presented by Information Studies Professor Johanna Drucker in the Math and Sciences Building’s Visualization Portal, a 40-seat theater replete with virtual reality technologies.

Drucker’s seminar focused on the cultural, intellectual, pedagogical and technological challenges that still dog the digital humanities after years of pioneering efforts to improve the ways in which the field makes knowledge visually appealing and archives it for wider and more productive use.

For the Second Life aspect of the seminar, a live video feed of the discussion was transmitted to

a virtual “island,” Entropia, as has been the case with past seminars in the Mellon series, which began last October and are offered monthly. The SL virtual island is run by the Digital Library Federation, a consortium of libraries worldwide, including UCLA Library, which communicates key information technology trends and encourages information sharing.

Entropia is remotely managed by Esther Grassian, an information literacy outreach coordinator at the College Library, along with Deni Wicklund, manager of the Stanford University Libraries Tech Support Group. Grassian feeds text transcripts of the seminars on SL for those who might be having trouble listening to the audio version. These are then mounted onto a “wiki,” an online storehouse of the discussions for each seminar, to which users can freely contribute.

“This is the first time in the humanities that anything has been done on such a scale,” said Todd Presner, associate professor of Germanic Languages and Jewish Studies, who chairs the Center for Digital Humanities faculty advisory committee and co-organizes the seminars with Jeffrey Schnapp, a Mellon visiting professor of digital humanities from Stanford.

The seminars are interactive. SL avatars don’t just watch and listen but also ask questions that are answered by the seminar speakers. Meanwhile, attendees in the Visualization Portal focus simultaneously on the seminar as well as the interaction on SL.

“What we want to do is to show how the nature and communication of knowledge is changing,” added Presner, who is the founding director of two notable digital mapping projects – [Hypermedia Berlin](#) and [Hypercities](#) – that use geographic information systems to explore the cultural, architectural and urban histories of city spaces. “If we want our students to be competitive, we have to train them professionally in the technologies of the 21st century.”

One important aspect of these technologies is that it enables all kinds of knowledge to have an impact well beyond university campuses. The digital humanities seminars on SL, for example, are attended by as many as 75 people, many of them affiliated with leading universities such as the Massachusetts Institute of Technology, New York University, Stanford and Rice.

Although a nascent field, digital humanities is a union of complex open-source practices that treat knowledge in novel, sometimes emotive ways. “We want to create a manifesto of what the humanities can be – or should be – in the 21st century,” said Presner, explaining that one of the results of the Mellon seminars has been a collaborative effort to create a statement about the digital humanities that takes into account not just the future of the humanities but of knowledge itself. (To contribute to the manifesto or to know more about the Mellon seminars, go to <http://www.digitalhumanities.ucla.edu/>).

“The manifesto is brash and provocative and I think it will be a significant publication when it’s done,” Presner said. “We don’t have all the answers but we’re asking the right questions.”

For more information about the SL seminar, contact [Esther Grassian](#).

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The Rome Reborn virtual reality project. An international team of archaeologists, architects and computer specialists premiered a computer simulation of Ancient Rome at a press conference in Rome in June. Ten years in the making the project provides a reconstruction of almost 7,000 buildings at the time of emperor Constantine, approximately 320 AD, when Rome was at the height of its power and size. It may be the start of a virtual time machine making it possible to experience the history of many ancient cities and civilisations as virtual worlds.

When it comes to archaeological Rome you may think you've seen and read it all. But when was the last time content aware interaction interfaces, entity workspace, real-time object segmentation, augmented reality, free-space transparency and hybrid immersive environments featured in your conversations on Chichen Itza, Rome or Persepolis? A safe bet is you won't find references to the latter anywhere in the analytical index of Edward Gibbon's Rise and Fall of the Roman Empire. Archaeology has come a long way since the days when Heinrich Schliemann merrily went about blowing up trenches with dynamite in the hillside of Troy or Howard Vyse scribbled Khufu's name inside the Great Pyramid in Giza, with technology now playing a lead role in the fields of advanced non-destructive surveying and conservation. The trowel and calliper may have been replaced by ground penetrating radar and laser range scanning but while archaeological fieldwork remains a process of controlled destruction, technology is providing new scope for the data-banking and study of existing finds. Virtual reality and digital animation techniques have already made staggering contributions to education and entertainment, and in a very real sense are beginning to change both our perception and understanding of reality.

All in the name

Technology is not a means unto itself and testimony to that was provided by the project's masterminds, professors Bernard Frischer (University of Virginia) and Diane Favro (UCLA). In fact, there's more to the project's name than meets the eye. Rome Reborn gets its name from the book by Renaissance scholar Flavio Biondo, Roma Instaurata. Written between 1444 and 1446, Biondo's work has had an enduring effect on that of latter-day archaeologists by providing the first systematic topographical study of ancient Rome, and is an outstanding example of the spirit which drove today's researchers and academics to embark on the Reborn project: the desire to reconstruct the imperial capital at the height of its wealth and size, hosting a rich, polyglot culture of peoples. On a more contemporary note 'reborn-digital' laser scanning techniques are what provided the raw material for the 3D visualisation layout, generating digital data replicas of objects in physical space. The sheer bulk of data potentially generated through reborn digital techniques is a big issue when it comes to 3D modelling based on commercially available hardware, and some have objected that smaller urban settlements such as Athens, Pompeii and Ostia may have allowed for greater detail on a city-wide scale. Rome however offers an unrivalled combination of archaeological and cultural information and a significant proportion of the modelling – and educated guesswork – is based on surviving literary and historical sources. So although, extent-wise, more Roman remains actually stand in Pompeii than they do in Rome, the lack of substantial written records concerning the former swayed the balance in favour of

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the imperial capital. In that sense, the challenge facing academics and developers was not so much a case of acquiring primary and secondary sources – which abound – as much as how to provide a faithful and comprehensive representation of the data available.

Roman plaster...

The Rome Reborn 1.0 simulation environment is admittedly an ambitious project and its creators and developers would ideally like to see progress beyond the current version. Above and beyond the engineering ingenuity of software developers a conspicuous amount of the inspiration – in terms of bulk data – was provided by the probably less well known work of Ostia's excavations superintendent and architect, Italo Gismondi, and his staggering plaster of Paris model of imperial Rome hosted at Museo della Civiltà Antica in Rome's EUR district. The 16 x 17.4 metre, 250 m² model of Constantinian Rome, was started in the mid 1930s; the model, as seen today, is the end product of forty years of academic research conducted by leading Italian archaeologists under Gismondi's leadership. Built to a scale of 1:250 the 'Plastico di Roma Antica' provides accurate details as to the size, architecture, location, elevation and urban layout in fourth-century Rome, and although conjectural aspects of the model have been questioned in the face of more recent findings the Plastico essentially provided the bulk of what the Reborn project delivers today in digital, fly through format.

... Milanese lasers, ...

Converting the physical Gismondi model – packed with temples, fora and houses only a few centimetres tall – was no mean feat and one that was accomplished by researchers at Milan's Politecnico Indaco laboratory. Boiled down to its simplest terms what the Reborn project required (and lacked) was a template in which to locate digitally enhanced models of Rome's architectural features; so the job at hand for laser specialists was to effectively scan the entire surface of the Plastico in order to generate a digital 'carbon copy' of it. Although laser scanning is a commonly used technique, most of its engineering applications are accurate on either the very large or the very small scale, but nothing in-between. High resolution (small scale) laser optometry has already been successfully applied to another ongoing archaeological project in Rome, namely the rendering, mapping and compositing of the 1,186 surviving fragments of the huge marble map of Rome known as the Forma Urbis, which adorned an entire wall in the Templum Pacis from the reign of Septimus Severus. The Plastico however was a veritable optometric nightmare, packing detailed features over a large surface, none of which could be captured via conventional techniques. The solution was achieved by ingeniously applying radar physics to laser technology, resulting in the development of an all-new laser radar, capable of providing full detail to under one millimetre accuracy. The digital 'mould' – the data 'cloud' – of Rome was in fact so detailed – 260,000,000 rendering polygons – that it had to be cut down to size for the purposes of subsequent real-time virtual reality animation.

... and Californian chips

And then came virtuality. If you think an 'experiential center' is something out of Hunter S. Thompson's "Fear and Loathing in California" you'd be right about California, but wrong about the Hunter. The brains and PCs behind the serious business of turning the raw data into an interactive digital 3D model were provided by California's UCLA Experiential Technologies Center. Yet again, it was not just a case of applying open source rendering engines to bulk data and then crunching. Detailed modelling of internal and external structures, texturing as well as including updated hypotheses into the Plastico's original layout were all fed into the project at this stage in the development process and were then combined within a virtual reality interactive platform which – once available to the public – looks to provide users with a fully immersive experience of imperial Rome.

Digital Rome wasn't built in a day

The successful merger between hard data and virtual reality on this scale is a true achievement, and one whose primary scope and focus is research. The creators of Rome Reborn still have a long way to go before their stated aim of 1996 concerning the development a comprehensive

model of Rome – from iron age to the empire’s fall – is achieved (In fact most of the project’s raw data acquisition was completed in 2004 and number crunching took place subsequent to that). What the project has sought to do – and has indeed succeeded in accomplishing – is establish a new framework for collaborative research. Proof of that, if any were needed, is in the lengthy list of international participants to the project. However, sponsors’ heavy-side focus on technology has so far taken precedence over the project’s research goals which, in the least glamorous – and academically precious – of terms, is to provide an interactive database in which to test their assumptions about the rise and fall of ancient Rome. If the thinking behind the original project remains true to itself, ticking beyond the 1.0 version will reflect advances in researchers’ understanding of ancient Rome rather than improvements in graphics rendering and interactivity.

3D Rome spin-offs

Clearly we all look forward to its X-Box or Playstation spin-offs and there’s always room for a Steve McQueen Bullit-style – or Charlton Heston if you prefer Ben Hur and the 50s – grand theft chariot scene (perhaps I should narrow that down to just me, in case any of you friends-of-Heston are reading this). But the ‘serious’ truth about this project remains firmly grounded in testing historical and archaeological speculation. If confined to the realm of pure research, on the other hand, the project might risk being used to run simulations on time dependent variables such as the rate of weed growth on imperial Rome’s streets in order test assumptions concerning the size of its slave labour road maintenance workforce.

Somewhere in-between pure research and unabashed entertainment lies edutainment, which more often than not has provided the answer to researchers’ funding prayers. Encouraging signs on that front came with the announcement that the project could be funnelled into Second Life (provided that bubble doesn’t burst) and that the 1.0 simulation would be used as the set for a 3D time travel ride in Rome as early as 2008. Not a chariot in sight, but we can hope that the digital weeding is done sooner rather than later.

3D Rome roundup

Rome Reborn 1.0 - www.romereborn.virginia.edu You can watch videos and look at selected images from around the virtual city on the Rome Reborn web site.

Digital Roman Forum – <http://dlib.etc.ucla.edu/projects/Forum> Polished if lifeless 3-D renderings of buildings on the Roman Forum at different points in the city’s history.

Plan de Rome - www.unicaen.fr/rome/index.php?langue=anglais A 1:400 scale model of Rome built in 1900 and situated at the University of Caen, France. The web site includes some virtual reality videos and images based on the model.

Stanford Digital Forma Urbis Romae Project - <http://formaurbis.stanford.edu> Not a 3-D recreation but a fascinating project nonetheless. The Forma Urbis Romae project seeks to rebuild the ancient map of Rome from the hundreds of fragments of the original that hung inside the Templum Pacis.

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Photo: View of the Colosseum and Roman Forum from the Caelian Hill (Rome Reborn, UCLA)