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Introduction: The following report by the CIC Digital Humanities Committee is the product of the first CIC Digital Humanities Summit, held at the University of Nebraska-Lincoln in April 2012. This paper reflects the consensus reached by the sixty faculty, librarians, and administrators attending that there are significant shared requirements necessary to foster thriving Digital Humanities communities, and a common belief in the importance of interdisciplinarity, collaboration, and open access and open source models. Through collaborative and cooperative relationships, from individuals to institutions, many of these needs can be realized.

Background: An initial *CIC Digital Humanities Environmental Scan* suggests that approximately 200 CIC humanities faculty are involved in the digital humanities, leveraging technology methodologically as they pursue their innovative and increasingly collaborative scholarship. Across the CIC, projects are wide-ranging and diverse endeavors including (but not limited to) the creation of open source tools; the development of freely available online research collections across disciplines; the integration of geographic information systems (GIS) to develop geo-spatial and temporal visualizations of our cultural history; and building large scale digital libraries focused on topic or era, in addition to larger initiatives with emphasis on new media, virtual environments, and gaming, to name a few.

Setting the stage for excellence: In addition to their dedication to innovation and collaboration, digital humanists in the CIC recognize and celebrate the impact that their work can have on public scholarship and community engagement. They believe that now, in order to bring the highest quality faculty and graduate students to the CIC, we need to welcome, value, and support digital scholarship in the humanities through a sustainable technological backbone and a forward thinking approach to promotion and tenure criteria. The CIC must also nurture the training of graduate and undergraduate students or risk losing them. We need sustainable labs and centers to support the communities that will use them, and we should adhere to current standards and best practices while being leaders for future developments. Scholars, librarians, archivists, and technologists should be partners in digital initiatives current accessibility and future sustainability.

Promotion and Tenure: The Modern Language Association and the American Historical Associations have spoken in favor of digital scholarship being evaluated fairly and evenly for promotion and tenure cases. The CIC campuses should also develop a joint statement on the impartial and unbiased assessment of digital scholarship and the acceptance of team and cooperative projects in the humanities.

Scholarly Communication: The digital environment makes research more easily accessible. Open access publishing is becoming the responsibility of libraries, and intellectual property and copyright issues continue to present difficulties to those who are participating in digital humanities projects.

Branding and Shared Access to Information: The digital humanities in the CIC should take advantage of potential partnerships within the CIC, such as the HathiTrust or the CIC Data Storage Committee to advance their mutual concerns and shared large scale problems. Additionally, the CIC could look toward consortial branding of CIC products and shared access across campuses.

Summary and Recommendations: The CIC Digital Humanities Committee and Summit attendees believes that CIC institutions should be world class illustrations of universities that foster and reward digital humanities risk taking, collaboration, and exploration.

We recommend, in summary:

Larger investments:

1. Negotiate for non-consumptive use of data from vendors; investigate rights clearance for HathiTrust; share special collections holdings (Libraries);
2. Fund seed grants for multi-institutional digital humanities projects;
3. Cultivate shared consortial branding and federated identity;
4. Strategize and act on cyberinfrastructure issues;
5. Update classroom technology;
6. Develop learning opportunities (seminars, boot camps) on standards and best practices;
7. Host residencies and fellowships;
8. Foster grant development at a high administrative level;

Smaller investments:

9. Expand the *CIC Digital Humanities Environmental Scan*;
10. Lead initiative to educate campuses on evaluation of digital humanities work for promotion and tenure;
11. Exploit available resources to engage faculty and students in digital humanities conversations;
12. Partner with or join national and international digital humanities groups;
13. Develop curriculum: distribute teaching among campuses; offer certificate programs through shared distance teaching; share teaching methods among faculty; and offer small start-up grants for teaching and class development.

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Introduction: In April 2012, the CIC held its first Digital Humanities Summit at the University of Nebraska-Lincoln. Representatives from eleven of the schools discussed the potential within the CIC for raising the bar in digital humanities, or as some prefer, the "humanities in the digital age." While this paper is not an exhaustive coverage of ideas raised at the 2012 Digital Humanities Summit, it demonstrates that the potential for collaboration and excellence in the CIC is outstanding. The candor and the camaraderie at the Digital Humanities Summit offer us hope for many cross-institutional and cross-disciplinary research and teaching opportunities. Participants were energized around different initiatives and the results promise to be diverse and interesting. Finally, and perhaps most importantly, CIC Digital Humanities Summit participants were committed to the shared values of open source technologies, open access publishing models, and interdisciplinary and collaborative research. These comprise the bedrock of current and future humanities research.

Background: A *CIC Digital Humanities Environmental Scan* conducted by the CIC Digital Humanities Committee indicates that there are around 200 CIC humanities faculty known to be working in the digital medium. This reflects world-wide changes since the mid-1990s in all disciplines as a result of the Internet and computer media. While all scholars and students in humanities disciplines are affected greatly by availability of reference databases and Internet websites, digitized content, online searching, and social media as means to conduct research, some are developing new scholarship creating new content and tools. **The breadth of research possible today is remarkable and those institutions supporting new means of interpreting the humanities will lead.**

Among examples of such research might be the following:

Tool development. *Abbot*. With Andrew W. Mellon Foundation funding, a CIC research team from Nebraska and Northwestern is developing and testing a fast, scalable tool for facilitating interoperability among large text collections. Using Abbot will allow humanities researchers to integrate diverse text corpora, enabling search an analysis that may, for example, represent the entirety of public domain Western European literature.

Thematic research collections. The *Walt Whitman Archive*: http://www.whitmanarchive.org, the *Willa Cather Archive*: http://cather.unl.edu, the *Journals of the Lewis and Clark Expedition*: http://lewisandclarkjournals.unl.edu, the *People's Contest*: http://peoplescontest.psu.edu/ and the *Civil War Diaries & Letters Transcription Project*: http://digital.lib.uiowa.edu/cwd/transcripts.html, use the online medium to enhance the readers' experiences in different ways: the *Walt Whitman Archive* developed an integrated guide to poetry manuscripts that uses EAD and XSLT 2.0 to merge finding aids from around thirty different repositories—an IMLS-funded project that won the CFW Coker Award from

from the Society of American Archivists; the *Willa Cather Archive,* funded by a major Nebraska Humanities Council grant, hosts a geographic chronology of Cather's life based on primary source information; the conflated *Lewis and Clark Journals,* funded by NEH, include audio of Salish speaker, Germaine White, and podcasts of editor Gary Moulton on the making of the print journals—a twenty year endeavor; and the *People's Contest* aims to advance scholarship on one of the least understood aspects of the Civil War: the experiences of the northern homefront during that conflict." It includes a diverse collection of resources and archival material for researchers from museums and historical societies from throughout the commonwealth. The *Civil War Diaries & Letters Transcription* is an example of a public humanities project involving community sourcing.

Research involving geographic information systems (GIS). *Railroads and the Making of Modern America*, http://railroads.unl.edu. The project teams in the U.S. and the U.K. received a Digging Into Data grant to develop new means of visualizing spatial-temporal data. Another example is *Civil War Washington*, http://www.civilwardc.org. Using geographic information systems, researchers are unveiling geo-spatial and temporal developments in Washington, D.C. as a result of the Civil War. NEH grant funding supports research on slavery, race and emancipation in the District. A relational database has been developed to exploit census data and primary resources in archives. The NEH-funded research team includes professors of history, literature and libraries; a programmer; a GIS technician; and both graduate and undergraduate students.

Large scale digital libraries. Matrix at Michigan State continues to develop the *Africa Online Digital Library*, http://www.aodl.org/, an IMLS-funded site that is adopting the emerging best practices of digital libraries in America and applying them to the African context. MSU's *Quilt Index*, also IMLS-funded and found at http://www.quiltindex.org/, is a digital repository created in partnership with the Alliance for American Quilts. Other examples are the University of Michigan's *EEBO-TCP (Early English Books-Text Creation Partnership)*, http://quod.lib.umich.edu/e/eebogroup/ and Indiana University's *Victorian Women Writers Project*, http://webapp1.dlib.indiana.edu/vwwp/ .

In addition to award winning work in collections and best practices, CIC institutions bring an exciting range of digital work to what has become known as the "big tent" of the digital humanities. Scholars across the CIC are working on projects as varied as virtual environments, serious games, 3D imaging, digital performances, new media, mobile user experience, digital geography, and user experience design. This work includes I-CHASS NSF project VOSS: Research on the Process of Virtual Research Environment that is doing research into how virtual research environments (VREs) develop over time.

Setting the Stage for Excellence

As evident from these examples, humanities research in the digital age has a public dimension, especially given open access publishing and the Internet. In today's funding environment, it is in our collective interests to highlight the vital role **public scholarship and civic engagement** play in digital humanities research at our institutions.

Engaging faculty and students: As mentioned earlier, an estimated 200 humanities faculty at CIC schools have been actively engaged in research, pedagogy, new content creation or new media development using computational media. Many waited until they had achieved tenure and promotion to do this; however, younger generations of scholars are more eager to create and publish their research digitally, in part because it suits the nature of their research and in part because it gives them the opportunity to work in a collaborative and interdisciplinary fashion with others and to use social media to its full advantage. **To attract the best and the brightest new scholars, it is imperative that CIC schools create friendly environments for non-traditional research in the humanities.** This includes providing cyberinfrastructural support of existing and new research as well as changing peer review models to accommodate new scholarship and a promotion and tenure environment in which impact and advancement of knowledge are valued.

Among undergraduate and graduate students in the humanities and graduate students in Information Schools (iSchools), the digital humanities opens up new worlds to explore. In part, this is because of the collaborative nature of the work. Graduate and undergraduate students enjoy working as part of a cohort. It will be our loss as a consortium if these future alumni, scholars and information scientists look to other schools for their inspiration. Many CIC grad students have been going to the University of Victoria (B.C.)'s Digital Humanities Summer Institute for training. Training could be done more cost effectively within the CIC.

Ideally, we should be creating a sense of community among CIC graduate students, faculty and librarians engaged in digital humanities.

Cyberinfrastructure: As noted by Stephen Ramsay during his excellent presentation: **People first.** Successful centers are built around people, and the CIC is well-positioned to nurture people. **The most successful centers, institutes, labs and studios will be created and continue to exist because people need them and not because the institution built or created them.** This point is well worth considering.

To ensure sustainability and reuse of content or data published online, the academy should promote existing international standards and contribute to best practices. Technologies underlying the scholarly work should be transparent and, to the extent possible, open source (i.e. not proprietary). Thus both the message and the medium of publication should be expected to meet standards. The importance of campus cyberinfrastructure to sustainability is clear. Libraries and information technology operations on campuses play a huge role in ensuring that online publications and resources are made accessible, and that data is stored and sustained over time. The involvement of librarians, archivists, and technologists on research teams is crucial.

The CIC currently is home to three major interdisciplinary digital humanities centers: the Center for Digital Research in the Humanities (CDRH, at Nebraska); the Illinois Center for Humanities, Arts and Social Sciences (I-CHASS, at UIUC); and MATRIX: the center for humane arts and letters (Michigan State University). All were developed based upon recommendations of faculty groups to administration. These three have been approved at the institutional level by boards of regents or trustees and have become major operations with multiple funding sources.

Many other CIC schools host laboratories, institutes or design studios to serve the digital scholar's needs—often (but not always) related to specific disciplines in the humanities. These contribute to the cyberinfrastructure on campuses on which they are housed. There are international organizations that digital humanities units and faculty in the CIC should be aware of. Some of these are: the Alliance of Digital Humanities Organizations (ADHO), the Associate of Computers and the Humanities (ACH), the Text Encoding Initiative (TEI) Consortium, and **centerNet,** an international network of digital humanities centers. The latter offers consulting services for institutions considering centers and is building lists of faculty who can serve as external reviewers on promotion and tenure cases or as members of accreditation teams. Graduate students may find peer communities in digital humanities through ACH, HASTAC and THATcamps.

Finally, the CIC can contribute to a public and academic understanding of the changing landscape in the humanities, whether it is called "digital humanities" or "humanities in the digital age." This transition is profound, and the CIC can be a leader in promoting and accepting the changes that are underway.

Grant funding: Federal funding agencies such as the National Endowment for the Humanities and the National Historical Publications and Records Commission have developed multiple grant categories that relate to the digital humanities. NEH encourages digital aspects to all proposals categories across its divisions, including Research, Education, Preservation & Access and Public Programs. Within the last ten years, NEH has created an Office of Digital Humanities, and the Institute of Museum and Library Services (IMLS) has created grant categories such as "Advancing Digital Knowledge," which crosses disciplines. The availability for funding in digital humanities can become a catalyst for collaboration among humanities researchers in the CIC. Work in the digital humanities also allows humanities scholars to step outside of traditional boundaries and work with scientists on NSF, NIH, and DOD funded projects.

Promotion and Tenure

Professional associations such as the Modern Language Association and the American Historical Association have issued statements such as the following:

"While the use of computers in the modern languages is not a new phenomenon, the transformative adoption of digital information networks, coupled with the proliferation of advanced multimedia tools, has resulted in new literacies, new literary categories, new approaches to language instruction, and new fields of inquiry. Humanists are adopting new technologies and creating new critical and literary forms and interventions in scholarly communication. They also collaborate with technology experts in fields such as image processing, document encoding, and computer and information science. User-generated content produces a wealth of new critical publications, applied scholarship, pedagogical models, curricular innovations, and redefinitions of author, text, and reader.

Academic work in digital media must be evaluated in the light of these rapidly changing technological, institutional, and professional contexts, and departments should recognize that many traditional notions of scholarship, teaching, and service are being redefined."—*Guidelines for Evaluating Work in Digital Humanities & Digital Media*, Modern Languages Association. See also the MLA publication *The Future of Scholarly Publishing*."…[The creation of] equitable ways to assess and credit publicly engaged and collaborative research will not only benefit public historians; such an effort can encourage all interested scholars to pursue such projects with confidence that their hard work will be rewarded."—*Tenure and Promotion and the Publicly Engaged Academic Historian*: a report by the Working Group on Evaluating Public History Scholarship (June 2010)"…some of us engage in large, multi-year collaborative research and writing projects, and with the continued development of digital humanities projects, such projects will no doubt become more common within the profession. …we continue to diversify the modes of production of our scholarship and to disseminate that scholarship in various forms. The AHA welcomes these developments, and encourages history departments to establish rigorous peer-review practices to evaluate new forms of scholarship."—*The Productivity Question: Assessing Historians and Their Work*, passed by the American Historical Association Council and reported in the March 2012 issue of *Perspectives in History*.

Bearing these statements in mind, the following are some points raised during the discussions:

The CIC campuses should issue a joint statement supporting the creation of campus environments for fair evaluation of digital scholarship. Peer-reviewed content and research should be judged by its excellence regardless of the medium in which it is published, so that faculty may choose to conduct and publish research in print and/or in the digital medium without stigma. That said, there should be recognition that new forms of scholarship or experimental work may outpace the institutional structures for vetting it. Traditional signs of impact may be more difficult to determine and peer-acceptance harder won.

We also need to acknowledge the importance of interdisciplinary and collaborative work—a norm in digital scholarship. Some of the best digital work is conducted in team of scholars, librarians, technologists, and students (both graduate and undergraduate). The research team offers opportunities for mentoring and pedagogy as part of the research process. In digital scholarship, the conceptual and the technological aspects of work are intertwined.

Digital humanities unsettles traditional hierarchies in the academy in enlivening and often healthy ways. Team approaches in the humanities are being used successfully at institutions like the University of Nebraska-Lincoln and Michigan State University. By working in collaboration with others, the humanities faculty member's influence upon students will be greater, and in the experience of these institutions, the scholar will learn along with the students. It should be noted that collaborative research is understood and appreciated by institution-wide or college-wide promotion and tenure committees that include social scientists and scientists.

Finally, **some CIC humanities departments do not recognize the importance of peer review conducted by federal grants panels and the achievement of such awards as part of the promotion and tenure process. This situation should be discussed and addressed by the campuses. In the sciences and the social sciences, recognition for competitive grant funding is more clearly articulated.**

Scholarly Communication

Publishing: Those who publish research online have a much broader audience than faculty publishing in print. In the traditional print medium, several hundred copies of a scholarly monograph may be produced and often are sold to research libraries. By contrast, in a digital medium an unlimited number of scholars, students and the educated public have access to the published research. Through Web analytics, it is possible to discover the number of unique visitors (this is a more accurate count than number of hits), the amounts of time readers spent at the site, and the countries that used the resource. With a greater reach and more visibility, the impact of an online resource can be readily demonstrated.

In scholarly communication, there is a sliding scale from personal blogs to peer-reviewed research on the internet. It should be noted that open access publishing of books and journals is falling more and more to libraries in CIC schools. Libraries have a huge obligation to ensure that research is published through open source and open access means and that it is interoperable and peer reviewed. There may be means of having "parallel publishing" —both open access and subscription-based with added value—in instances when this makes fiscal sense.

Intellectual property rights and copyrights. While all humanities faculty deal with copyright issues, digital humanists have a slightly different territory of copyright to traverse. Those who create online research or public humanities sites or build software may want to be aware of Creative Commons licenses and GNU licenses. Those involved in data mining or online publication soon find that changing laws relating to copyright, the public domain, orphan works, and the possibility of non-expressive use of copyrighted materials affect their research.

Branding and Shared Access to Information

The CIC Digital Humanities Committee sees significant opportunities for strategizing with the CIC Data Storage Committee, the Hathi Trust, Hathi Trust Research Center and the CIC Geographic Information Systems (GIS) Committee to consider new forms of publication for data and datasets, as well as the means to ensure interoperable data structures. Among all these groups, some solutions to large scale problems may be possible. An example might be to develop a shared infrastructure for collaborative storing and servicing of humanities datasets, such as the TCP texts, Wright American Fiction, GIS data and endangered languages data, and to consider such things as storage of large-scale image, audio and video data.

The CIC should consider consortial branding and access to peer-reviewed digital research produced by the schools with added value through aggregated searching, federated identity access or other technology innovations that would be beneficial across multiple campuses.

Summary: Based in part on this background, the CIC Digital Humanities Summit participants discussed significant ideas for advancing the CIC's stature as a leader in the digital humanities. **We want the most talented scholars and graduate students in the world to look to CIC universities as the best places to pursue their work in digital humanities.**

Recommendations

Larger investments:

1. Libraries-related issues:
   a) When licensing commercial online resources, ask CIC libraries to negotiate non-consumptive or non-expressive use of the underlying data for text analysis.
   b) Consider ways to accelerate rights clearance work already underway in HathiTrust.
   c) Support the Amicus Brief regarding non-expressive rights in the Authors' Guild vs. Google case.
   d) Convert new bodies of text to enhance existing corpora.
   e) Disclose special collections resources across the CIC and seek to build scholarly communities within the CIC around that content.

2. Fund five or six seed grants in the range of $15,000-20,000 each for multi-institutional (2 or more) CIC digital humanities projects that can serve as feeders for potential grant funding at the federal level. Be specific about open source standards and a commitment to open access. This will help raise the profile of the CIC.

3. Develop consortial branding and open access to peer-reviewed digital research produced by CIC faculty. Add value through aggregated searching, federated identity access or other technology innovations that would be beneficial across multiple campuses.

4. Cyberinfrastructure issues: As noted earlier in this document there are opportunities for strategizing about big data storage, interoperability of data sets, and reuse of digital objects through streamlined permissions agreements. Though the discussions will cost little, the recommendations may be high cost.

5. Humanities classroom technology may need to be upgraded in some schools.

6. Offer a series of summer seminars, special courses or "boot camps" for CIC humanities faculty and graduate students to learn about international standards or best practices in digital humanities, and to consult with others on research methodologies. Technology changes quickly and copyright laws change, so ongoing seminars or boot camps are advisable. While this is noted as economically more demanding, a beginning step in this direction might be to fund attendance of interested individuals to preconference workshops and tutorials at the Digital Humanities 2013 conference to be held in Lincoln, Nebraska, in July 2013. This international conference alternating between Europe and the rest of the world is the premiere annual conference in the field. A CIC reception will be held at the conference as an opportunity for consortial conversation.

7. Offer summer residencies, professional leave residencies and postdoctoral fellowships in digital humanities centers at CIC schools.
8. Bring offices of sponsored programs or Vice Chancellors of Research as appropriate together to discuss possible ways in which to develop grant mentalities in the humanities; to consider different approaches to grant writing that are more appropriate for humanities funders; and to streamline multi-institutional grant approvals and reporting.

Smaller investments:

9. Expand the *CIC Digital Humanities Environmental Scan*, which may serve as a means of identifying potential collaborators, consultants, and contractors at other CIC schools. Note: the University of Iowa is developing an internal database for such purposes that may be useful for adoption at other campuses.
10. Create a CIC repository of Promotion and Tenure documents that our institutions can draw upon, and cultivate leadership of chairs and directors in the CIC by offering workshop(s) on evaluation of digital scholarship. Identify success stories of faculty who were promoted on digital research and pedagogy, thus demonstrating the range of possibilities and the scope for change.
11. Tap into existing resources, online presentations and demonstrations, such as *TEI by Example*, *DH Commons, DH Answers, Digital Dialogues* and *TED Talks*, for engaging faculty and students in conversations about theory and practice, and to broaden their horizons.
12. Seek partnerships with or memberships in groups such as the Alliance of Digital Humanities Organizations (ADHO), the Association for Computing Machinery (ACM), and the Text Encoding Initiative (TEI) Consortium. ADHO is an umbrella organization for the Association of Computers and the Humanities (ACH), the Association of Literary and Linguistic Computing (ALLC), centerNet (international network for digital humanities centers), and for associations in Canada, Japan, Australasia, Germany and other parts of the world.
13. Curricular recommendations:
    a) Possibly develop agreements among CIC schools (similar to "Strategy for Less Commonly Taught Languages") for the teaching of digital humanities classes. Examples: The University of Nebraska-Lincoln and Michigan State University both offer graduate level certificate programs in digital humanities that could be drawn upon for shared distance courses among the CIC schools. The University of Wisconsin at Madison offers an undergraduate minor in digital humanities. For such classes, rely upon video-conferencing, Skype and other course sharing technologies to reach across the campuses.
    b) Share how we teach digital humanities at our institutions, both from a content perspective and from a technology perspective. Share information about tools and how to make better use of technology in the work we do. Collaborate with centers for teaching on the campuses.
    c) Small grants for start-up may help foster courses for teaching the humanities in new ways.